



GRADUATE SCHOOL OF EDUCATION

THE PRODUCTIONS OF TECHNO-POLITICS; AND IT'S INEVITABLE FAILURE OF ICT4ED PROJECTS

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ABSTRACT

This thesis examines briefly the history of Information Communication Technology (ICT) for Educational Development (ICT4ED) projects and ICT projects in the state of Turkey since 1984, focusing on their continuing failures. The thesis locates the causes of these failures in principles of what will be referred to *Techno-Politics* which is the ‘internal’ interactions of ‘*Technological*’ innovations with ‘*Policy*’ mechanisms and ‘*Management*’ processes under a particular set of *Circumstances* associated with sets of *Values* drawn from Proprietary Close Source Software (PCSS).

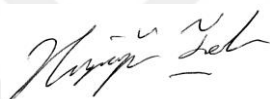
The study focuses on the current ICT4ED project, Fatih, which is seen as a typical educational ‘reform’ in a centralist education state, promising to ‘fully integrate technology’ into education. The study argues that the project’s political execution, technical development and philosophical conception, undermine its objectives and lead to its likely failure.

The thesis argues that Free Open Source Software (FOSS) is deliberately ignored in techno-politics due to; obvious, institutional inertia, path dependence and ungovernable ICT changes and arguably, corruption in new public management, which have made FOSS usage, formerly both feasible and flexible, ‘totally’ impracticable. The thesis contrasts the corporatocracical techno-politics of PCSS with those of FOSS, highlighting their consequences as Locked-in and Hegemonic Corporatocracy with PCSS versus Free and Flexible Freedom with FOSS. The study concludes that the corporatocracical techno-politics of PCSS can be seen as forms of ‘*Progress*’ that not only are prone to inevitably failure, but that also inhibit other, more positive, forms of ‘*progress*’. Nevertheless, there is more beyond ‘techno-politics’!

Author's declaration

I declare that the work in this thesis was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Taught Postgraduate Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, this work is my own work. Work done in collaboration with, or with the assistance of others, is indicated as such. I have identified all material in this dissertation which is not my own work through appropriate referencing and acknowledgement. Where I have quoted from the work of others, I have included the source in the references/bibliography. Any views expressed in the dissertation are those of the author.

SIGNED:



... DATE: 26/05/2014.....

Dedication and Acknowledgements

This study is dedicated to my parents (Hanım Tolu and Ali Tolu).

Firstly, I would like to express my primary appreciation to my supervisor, Professor Roger Dale, for his patience, support and brilliant guidance throughout the writing of this thesis. I would also like to extend my gratitude to Professor Tim Bond, for his social and cultural guidance and intervention during my study at University of Bristol. I like to extend my gratitude to my close friends, Suzanne Harte and Lara Brown. Their continued support facilitated my ability to finalise this thesis.

Finally, I would like to thank my host country, the UK, during the seven year term of my study, for both providing me with an alternative view of the world and assisting me in appreciating what actually my home country has to offer.

LIST OF ABBREVIATIONS

AKP	- The Justice and Development Party (the current Government)
TBoE	- Turkey Board of Education
DRM	- Digital Right Management
E-TTP	- E-Transformation Turkey Project
FOSS	- Free Open Source Software
ICT	- Information Communication Technology
ICT4ED	- Information Communication Technology for Education Development
IET	- General Directorate of Innovation and Educational Technologies
MEBBIS	- Information Systems of Ministry of National Education
MoD	- Ministry of Development
MoF	- Ministry of Finance
MoNE	- Ministry of National Education
MoI	- Ministry of Interior
NGO	- Non-Governmental Organization
NPM	- New Public Management
PCSS	- Proprietary Close Source Software
SIT	- Minister of Science, Industry and Technology
TBMM	- Grand National Assembly of Turkey
TUBITAK	- Scientific and Technological Research Council of Turkey
UBAK	- Ministry of Transportation, Maritime Affairs and Communications
ULAKBIM	- Turkish National Academic Network and Information Centre in TUBITAK
UYAP	- National Judiciary Informatics System
YOK	- Council of Higher Education

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CHAPTER I

INTRODUCTION

“In the age of information, ignorance is a choice.” Donny Miller (2006, p.7-9)

And / Or

“Where ignorance is bliss, 'tis folly to be wise.” Thomas Gray (1742)

This thesis examines briefly the history of Information Communication Technology (ICT) for Education Development (ICT4ED) projects and ICT projects in the state of Turkey and elsewhere, and around the apparent inevitability of their continuing failures. To do so, this thesis presents two generic arguments: the first argument is *the inevitable failure of ICT in a state and its education system* (in the current corporatocracical system), and the second argument is *the predictable consequence of approaching certain ways of thinking*, how to study for effective learning technology (*contest*), and so develop its certain distinction between Free Open Source Software (FOSS) and Proprietary Close Source Software (PCSS). Regarding this, the thesis locates the causes of *this failure* and *consequence* in principles of what will be referred to *techno-politics* which is the complex set of *internal relationships* between *technology*, *policy* and *management* elements of general purpose computing. In this sense, *techno-politics* is seen as an *emergent property* of *technology*, *policy* and *management* in which each component has particular purpose(s) of existence, but when they once come together, multiplicities of relatively complex interactions ensue through *educational system*. In this thesis, I thereby examine the current (de-facto) corporatocracical techno-politics (not de-jure) as a basis for conceptualising better (alternative) globalness techno-politics for the near future(s).

The thesis argues that ICT Projects and ICT4ED Projects in many states (perhaps not all) have failed to achieve their initial & subsequent aims and objectives due to

'perceived' misleading interpretation by stakeholders (e.g. governments, corporations, NGO, etc.,) failures as caused by project *'implementation'*. The relevant literature (e.g. path dependency, network effect, etc.) normatively and misleadingly highlighted that the approach of logical technologist is to apply a particular technology to the state of a particular society and its educational system in an effort to assist the society make the best of the current practices; however, the project implementation is always in the centre of conventional antagonisms between *'inertia'* & *'change'*. For instance, it is necessary to establish 'positive feedback (effects) of being educationally inert' (promising to keep stable and reliable social, political and cultural realities in a particular national society) and promise to improve 'essential marketplace values' (efficiency, interoperability and innovation in a particular national society, and so global) in unmanageable & sophisticated technological acceleration. This would suggest that the *'orthodox'* understanding of ICT projects and ICT4ED projects in the state is normatively and repeatedly accepted and/or modified across the literature (see, World Bank ICT4ED Project Reports, 1991, 1993, 2004 and 2008; World Bank, Policy Note ICT and Education Reports, 2004, 2005; ICT integration Basic Research Report, 2007; Michael Gove 2012 speech; State Planning Organization Information Society Department of Turkey Reports, 2004, 2005, 2012, etc.) Nevertheless, my main argument is that the *'failure'* cannot be wholly accounted for by reference to project *'implementation'*, but is more likely to be a result of techno-politics, and its visible & invisible outcomes within imperfect (see, Boyle, 2007) capitalist markets.

"The only thing that will redeem mankind is co-operation, and the first step towards co-operation lies in the hearts of individuals." Bertrand Russell (1954, p.212)

This thesis argues that techno-politics can be conceptualised as *'operating'* the interactions of *'Technological'* innovations with sets of *'Policy'* mechanisms and *'Management'* processes under a particular sets of *Circumstances* associated with sets of *Values*. These sets of values are characterised as *Cyber-Luddism*. What I mean by Cyber-Luddism is that the 'New Social Movement' in which supporters of FOSS (real, active and influential movements in technological innovations and

developments) and Neo-Luddism (leaderless movements of reflexive resistance to increasingly consumerism and materialism in the weird and alarming computer age) have married to raise Cyber-Luddites who believe that the human brain (*mentally & physically* upgradeable) needs to appropriately evolve its evaluation of technology (FOSS). Regarding this, while the negative elements drive from PCSS, to stop our potentials; the positive (*Cyber-Luddism*) elements drive from FOSS to permit our collaborations. For techno-politics, PCSS is limited by financial models which rendering end-users pure renters (gazing at end-users with pure adoration), not owners of techno-politics; therefore, I refer to techno-politics of PCSS as the forms of *Progress* (big P) that not only are prone to inevitably failure, but that also inhibits, adulterates, debase (sets, shapes, defines, etc.,) the other forms of *progress* (small p).

Technology is all around us. So, when any ‘contexts of contexts’, which is sorts of multilevel semantic networks (multiplex levels) as metacontexts, are shifted, it is essential to shift potentials of ‘*value*’ of techno-politics, and so possible reasons for technology usage in one particular conditional metamorphosis (*time, space and place*). The potentials of value have to be conceptualised through on-going four knowledge(s): Know-What (*‘facts’*), Know-Why (*‘scientific knowledge of the principles and laws of natures’*), Know-How (*‘skills or the capability to do something’*) and Know-Who (*‘information about who knows what and who knows how to do’*, the crucial concept) in a global ‘*Knowledge-Based Economy*’ (OECD, 1996) in that contexts of contexts. In this regard, it is critically examines whether or not it is possible to conceptualise techno-politics from global-technological structures and orders, without defining, and so addressing these four knowledge(s), and then moving to the next steps with the whose actual purpose is being a global ‘*Creative-Based Economy*’ which is for creative citizens with creative industries through operating these globally evolvable four knowledge(s). In this sense, it is a real challenge for an individual nation to continually govern its own techno-politics, with an unclear future(s), because we are arguably in the century of *Singularity*, and certainly not in the era(s) of idleness and complacency! Notably, I highlight (s) because *singularity* is a fuzzy word (*naumenon*); therefore, we have several alternatives to be in the future(s).

Why is Turkey an appropriate case-study for researching techno-politics? Turkey's centric thinking (traditional command-and-control-procedures) on techno-politics and contradiction between its desires (be a key player in creating the future(s)) and its recognitions of achievements (continuous failures of ICT4ED projects) enable us to validate where the problems are. Nevertheless, Turkey is not the only individual nation within the global networks in terms of failing to successfully approach techno-politics. The failing of approaching techno-politics is mainly global and most nations are getting worse at techno-politics (as it increases in sophistication). So, the concept of techno-politics looks like an iceberg argument. The surface shows its face, but the complexity is below. In this regard, globally, techno-politics is not a programme, but a generic construct that can and does take different *forms* and those different *forms* that this thesis interested in. Therefore, it is critical to examine the *forms* taken by techno-politics, particularly how and why it is enigmatic and non-inclusive in a particular state (Turkey) and its education system, as a case study from an individual nation perspective, to identify which elements and combinations of '*techno-politics*' and *the conditions behind the omission of techno-politics*, in order to investigate *how we end up in here* and *how to refine alternative techno-politics*, because the current ignorance is crucially *our choice*, not *bliss* in the age of information (*singularity*).

THE NATURE & SCOPE OF TECHNO-POLITICS

"He who controls the past controls the future. He who controls the present controls the past." George Orwell (1903-1950)

Many believe Orwell was plausible in his lifetime; however, not necessarily in this decade. Nevertheless, what is remained is that "if we understand the mechanism and motives of the group mind, is it not possible to control and regiment the masses according to our will without their knowing it? The recent practice of propaganda has proved that it is possible, at least up to a certain point and within certain limits" (Bernays, 1928, p.47). Similarly, if we understand the mechanisms and motives of techno-politics, is it not possible to control and regiment the masses towards our

(giant corporations) will without any awareness? The recent history of corporatocracical locked-in has already proved that this is possible, but it is, as of yet, unclear to the extent of this control! Is there a tipping point? I believe the tipping point of controlling to serve the future(s) is well expressed in William Bogard's words, in his book- *The Simulation of Surveillance* (viz, beyond the panopticons and big brothers): hypersurveillant controlling

“is nothing less than perfect surveillance, surveillance raised to the highest power, where nothing escapes the gaze. Everything already observed, absolute foreknowledge of events grounded in the possession of the codes which generate them” (1996, p.55).

In this regard, my first argument is that if you want to be a future player of / influencer of the current corporatocracical techno-politics of Technology, Policy and Management, you have to control *ICT4ED projects* through *Management* (lobbied and corrupted bureaucrats and academics), and so, *Education* (and so, its *Informal Rules*) in a particular nation (and so, its *Market*), not necessarily and essentially ineffective *Policy-Formal Rules* (Governments' & States' needs and desires and/or their survival instincts globally), because in the corporatocracical techno-politics, informal rules (culture) is the binder for the practices with obeying / ignoring formal rules. In the current techno-politics, national policy inherently, but not inevitably, cannot keep pace with technology (promises & threats), and, importantly, there are so many (not always) incapable decision makers in management, in traditional government models (command-and-control-procedures) in which (normatively) you can control policy without falling foul of criticism if you control education (*Informal Rules*). In a general sense, corporatocracical techno-politics is for cybernetic hypothesis as “the ideal of a stable society, expressed by objectively controllable social mechanisms” (Tiqqun, 2010, p.9).

My second argument is that while we have (better) alternatives, the current corporatocracical techno-politics is framed by the tension – possibly even, contradiction- between *the need for future predictability* (poor vision of governments) and *political capital on the part of interactions of the government and technology*

providers (Public-Private-Partnerships (PPPs)), and *the inherent unpredictability of technological innovations* (globally ungovernable technology) and *the predictability of a need for future unproved profit* (we have become dazzled by the next big thing) and *the desire for sustainability on the part of Management* (inert, path dependent, corrupted, and so lock-in) which builds-in *Obsolescence*. The current corporatocracical techno-politics is orchestrated, but not purely shaped, by giant corporations for the purpose of ensuring *Corporatocracy* within a *Nanny Corporation System* (blinkerred logics of stakeholders). For instance, it does not matter whether or not you are really able to afford it, because it is the imperfect market due to price discrimination after all; but in which all stakeholders are forced to be behaving happily, as there are nothing wrong in it, and so no tipping point (e.g. there is no global, national and/or individual lawful / unlawful interceptions, surveillance and invasion of privacy, etc.,). In a global era, the concept has become the competition between states to be *the first rent seeking*, because there is no clear elaboration for the questions of what *power*, *structure* and *hegemony* are in terms of *international relationship* and *technology* (Baylis and Smith, 2005). Therefore, as of this point, the thesis argues how to essentially control techno-politics. As, it is called as an ‘invisible hand’ by Adam Smith, or and an ‘invisible government’ by Edward Bernays; nevertheless, what is clear is that,

“Rationalist critics of the “economic creed” or of the “neo-technological utopia,” anthropologist critics of utilitarianism in social sciences and the hegemony of commodity exchange, marxist critics of the “cognitive capitalism” that oppose to it the “communism of the masses,” political critics of a communications utopia that resuscitates the worst phantasms of exclusion, critics of the critiques of the “new spirit of capitalism,” or critics of the “prison State” and surveillance hiding behind neo-liberalism — critical minds hardly appear to be very inclined to take into account the emergence of cybernetics as a new technology of government, which federates and associates both discipline and bio-politics, police and advertising, its ancestors in the exercise of domination, all too ineffective today.” (Tiqqun, 2010, p.5)

ICT4ED Projects

“*Men are born ignorant, not stupid. They are made stupid by education.*”
Bertrand Russell (1945)

'ICT in education' is the outcome of complex & on-going interactions between *'Policy'* (supranational, national and local), *'Management'* (administration, purchasing, subject departments, teachers and support) and *'ICT'* (hardware, software, internet, broadband and home use) by, within and through educational systems; each of these has their own particular 'logics', and 'motivations' in an individual nation, e.g. the logic of policy may be to control a society; the logic of technology may be to gain profit through serving people; and the logic of management may be to create stability and security as much as possible in the *'Global-Political Economy'*, that generate tensions & contradictions, and so their prospects. Together this means that ICT in education is governed through three aspects of *'Education Politics'*: its *'Mandate'*, the desired and needed achievements for an education system; its *'Capacity'*, the existing potential to accomplish the achievements as applicable and its *'Governance'*, the way coordination is constructed for the desired achievement, and by whom it is shaped to make them mutually focussed, united and antecedence within the process (Dale, et al., 2004). Ideally, the aspects of *Mandate*, *Capacity* and *Governance* (MCG) should be considered within the concepts of *Policy*, *Management* and *ICT*.

Based on this point of view, and operating the ideal of all notions in unison, there are complex and internal 'interactions' between *'Technology'* (ICT), *'Policy'* and *'Management'*. There are also more complex 'sub-interactions' between *'Mandate'*, *'Capacity'* and *'Value(s)'* (but not *'Governance'*) of *'Policy'*, *'Technology'* and *'Management'*. Notably, instead of *'Governance'*, *'Value(s)'* is added to make the model simplified, including four on-going knowledge(s). In this sense, these four knowledge(s) are evolvable (not obsolete), because modern "knowledge would (or could) have a threefold status as a commodity: fictitious, real, quasi-commodity" (Jessop, 2002, p.7). And I put *'Governance'* which is *'Coordination of Coordination'* (Dale, 1997), in the middle of the trinity, in order to attempt to bring these logics together in a coherent *'Policy'* (techno-politics programme) in a particular nation. In principle then, each nation is presently circulating for the sustainability of the production to be powerful and deserving further development; so each needs to be connected to others. Let me suggest how they might be connected.

In the Figure 1 and 2, it is attempted to construct two contrary conceptualising models through the principles of Promises & Threats of Closedness versus Potentials & Protects of Openness. The corporatocracical techno-politics is the (predictable) consequence of *de-facto system* which is in practice, but not essentially orchestrated by relative law (governance), and in which there are four concepts: *Institutional Inertia*; *Path Dependency*; *Ungovernable Technology and Corruption in NPM*, to establish *Locked-in* and *Hegemony*, which aim at rendering end-users as pure renters, not owners, of techno-politics (*Corporatocracy*).

Concordantly, the alternative to corporatocracical techno-politics is the (unpredictable) consequence of the *Cyber-Luddism System* in which there may four concepts: *Learning Continuously* (there is no a know-who concept, because we know it), *Path Dependence*, *Slowed Technology down* (there is a checking concept when it is necessity), and *Honesty in NPM* (what we are only doing for the public, not corporations), to establish *Free* and *Flexibility*, which aim at rendering end-users as pure owners, not renters, of techno-politics (*Globalness*). This model is unpredictable due to the fact that it has not chosen, but it is definitely ‘*better*’, because corporatocracical techno-politics is globally unsustainable and anachronistic in the long term. Because I was recognized the knowledge of knowledge compels,

‘The knowledge of knowledge compels. It compels us to adopt an attitude of permanent vigilance against the temptation of certainty. It compels us to recognize that certainty is not proof of truth. It compels us to see that the world everyone sees is not the world but a world which we bring forth with others. It compels us to see that the world will be different only if we live differently.’ (Maturana and Varela 1992, p.245)

For the Figure 1, Corporatocracical Techno-Politics, if we put education out of the triangle what will happen? Education is confirming, deep in lock-in, makes sure Giant Corporations are safe, and keeps the things the same (Corporatocracy), as creating opacities and enclaves for Panoptic Societies with Panopticons (PCSS). Haraway suggests that “control strategies will be formulated in terms of rates, costs of constraints, degrees of freedom. The cyborg is not subject to Foucault’s

biopolitics; the cyborg simulates politics, a much more potent field of operations” (1985, p:129-130). Foucault titled the concept as *a disciplinary society* (1977, p.62), as *freedom of consuming in the rules of the game*.

“It is a consumer of freedom. It is a consumer of freedom inasmuch as it can only function insofar as a number of freedoms actually exist: freedom of the market, freedom to buy and sell, the free exercise of property rights, freedom of discussion, possible freedom of expression, and so on. The new governmental reason needs freedom therefore, the new art of government consumes freedom. It consumes freedom, which means that it must produce it. It must produce it, it must organize it. The new art of government appears as the management of freedom’ (Foucault, 1978, p. 63).

For the Figure 2, Globalness Techno-Politics, education is so sensitive to protect our future(s), makes sure we are owners of techno-politics, and keeps the things change, as escaping technological pathos, lunatics and tyrannies and their delirium futures. Therefore, education should be well-defined to stand up to the utopian teleology in which the corporatocracical techno-politics will overcome each social-techno human interactional issue. In this sense, a Cyber-Luddite will be an evolvable Cyber - Luddite of Luddite with FOSS (Globalness). For a Cyber-Luddite, Love is not Blind, the opposite of Boris Vian’s observation.

Figure 1: Corporatocracical (De-facto) Techno-Politics

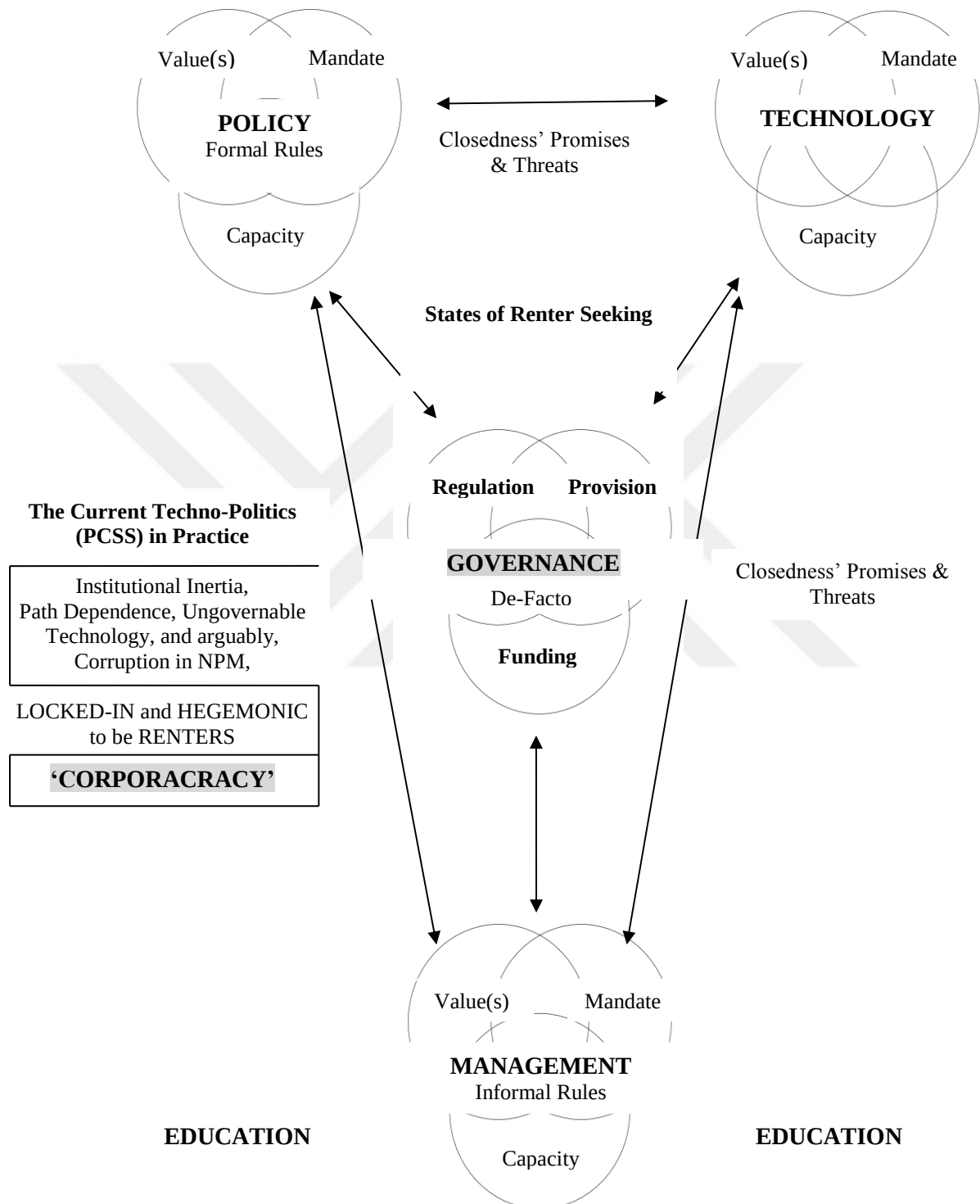
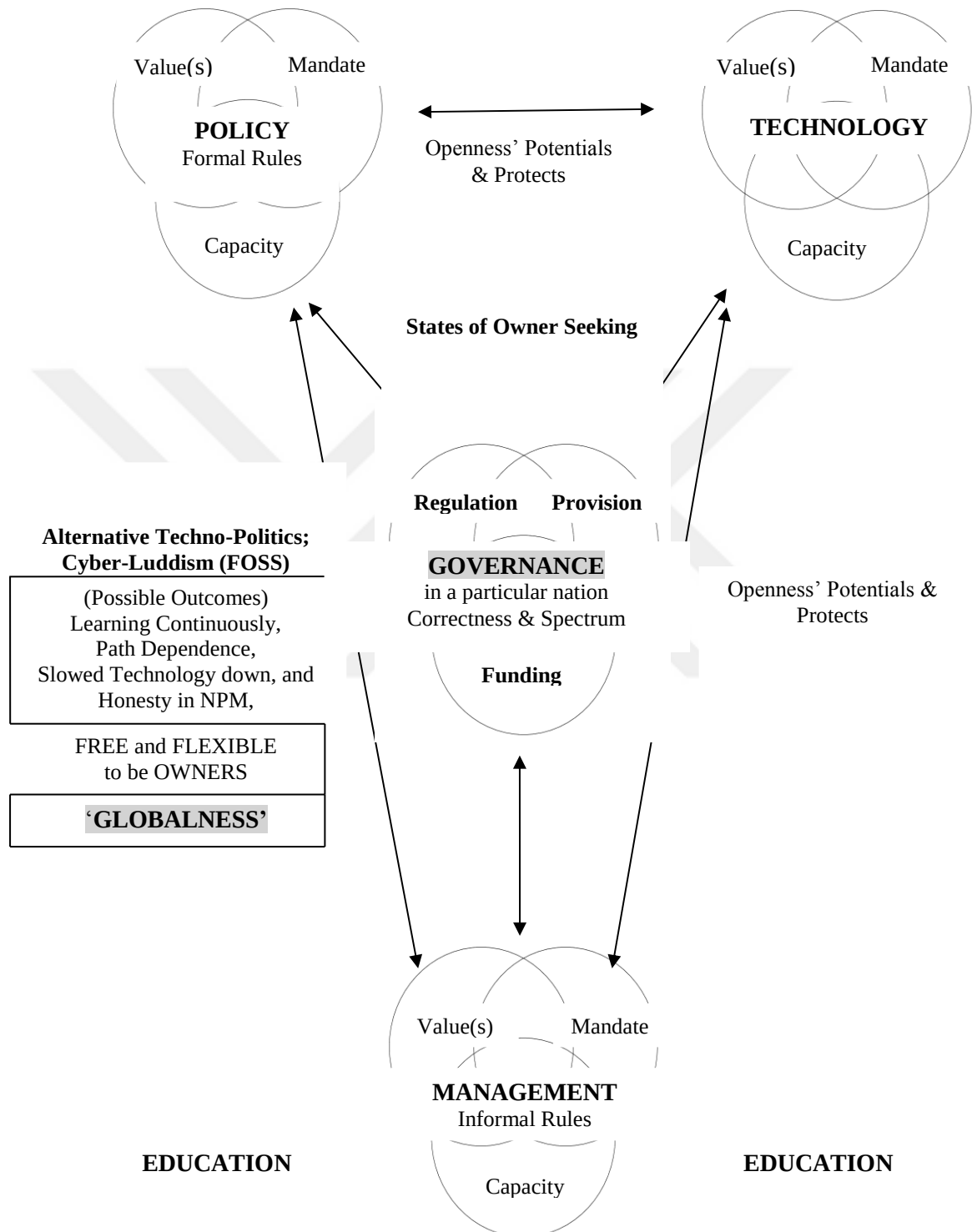


Figure 2: Globalness Techno-Politics



Conceptualising Terminologies

In the concept of 'Institutional Inertia', the literature and scholars argued that there are two levels of institutional inertia. In the micro level, *routines* and *schemes* influence decision-making process and culminate in institutional inertia. According to Feldman and Pentland, in institutions, *source of inertia* or *institutional routines* are a source of *change* as well as *stability* because there is not only path-dependent change (*individual habits, programs-standards* and *genealogical information*) and but also agency which "involve to remember the past, imagine the future, and respond to present circumstance" (2003, p.95), in order to solve conflicts and disagreements through power relationships for getting the work done. In the macro level there is *structural inertia* in which Hannan & Freeman proposes that changing process results in internal reorganisation and external legality issues due to *reliability* ("uncertainty, potential members, investors, and clients may value reliability of performance more than efficiency") and *accountability* ("the spread of general norms of rationality" and "a variety of internal and external contingencies demand that organisations enable to account rationally for their action") (1984, p.153) in institutions for ensuring institutional routines, stabilities and standardisations which are initially required. Thus, institutional change might be harmful regardless of its content (*institutional age, size, complexity and hierarchy*). In summary, Hannan and Freeman put the causes of inertia as

"Some of the factors that generate structural inertia are internal to organizations. These include sunk costs in plant, equipment, and personnel, the dynamics of political coalitions, and the tendency for precedents to become normative standards. Others are external. There are legal and other barriers to entry and exit from realms of activity. Exchange relations with other organizations constitute an investment that is not written off lightly. Finally, attempting radical structural change often threatens legitimacy; the loss of institutional support may be devastating" (ibid, p.149).

In the concept of 'Path Dependency', the best technological product, a preference in a process of technological development and innovation might not be always deliberately and purposely selected through history due to its technological superiorities e.g. the best known example is QWERTY typewriter keyboard over the

DVORAK keyboard (David, 1985). David argues that the success of QWERTY keyboard is because of its *historical path dependency* which ultimately creates ‘*the network effect*’⁴², but not because of its superiority and optimality. David suggests that “path dependencies arise in the presence of strong technical interrelatedness, scale economies, and irreversibilities due to learning and habituation”. Additionally, according to Cowan (1990), *technology which first makes large advances along its learning curve will emerge dominant not necessarily the best would come to dominate the market*. In the argument of path dependency, Cowan & Gunby (1996) argue three main forces: *technology externalities* (result in excess inertia- more agents use it), *learning curve* (learning by using and learning by doing as a snow-balling effect), and *uncertainty reduction* (benefit of switching/un-switching to a new technology), these are all resulted in positive feedbacks which all share three features: *path dependence, inflexibility and potential regret*.

“The consequence of small events and chance circumstances can determine solutions that, once they prevail, lead one to a particular path” (North, 1990, p.4),

In the concept of Ungovernable Technology, technological singularity claims that technological acceleration (*Calculability & Incalculability*) is a ‘necessity’ due to its own requirements (*Better Human Life & Nature, etc.*) and its own opportunities (*Better Business, Profits, Investments, etc.*) (See, knowledge of famous futurologists, Ray Kurzweil, Vernor Vinge, Michio Kaku, etc.). Therefore, the recent historical of technological acceleration already proved that there is no a tipping point! Such as, cyber war, military soldier cyborgs funding and researches, etc. One (direct/indirect/individual and/or instructional) technological change is account for another One not only within a particular local but also within global (somebody else’s locals) due to globalisation.

In the concept of Corruption in NPM, according to Williams, “how corruption is defined depends on the context in which it is located; the perspectives of the definers

⁴² Network effect is that “consumers often place higher value on a product if other consumers also use it. When this occurs, the product is said to display network effects or network externalities” (Besanko, et al. 2004, p.442)

and their purpose in defining it” (1999, p.512). Therefore, I define corruptions based on contexts. Technology is all around us. So, when any ‘contexts’ are shifted, it is essential to shift potentials of corruption, and so possible reasons for corruption. Nevertheless, there are two main corruptions: technologically complexity(ies) (e.g. know-who’ and its’ ‘trust’ concepts in ICT project(s)) and politically coordination issue(s) (e.g. know-what, know-how, know-why).

Corporatocracy and Globalness

“Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, “get” technology “spiritually in hand.” We will master it. The will to mastery becomes all the more urgent the more technology threatens to slip from human control. But suppose now that technology were no mere means. ... Technology is therefore no mere means. Technology is a way of revealing. If we give heed to this, then another whole realm for the essence of technology will open itself up to us. It is the realm of revealing, i.e., of truth.” (Heidegger, 1977, p.2-5)

What is the nature & scope of ‘*Techno-Politics*’? In this regard, it is critical to evolve potentials of ‘*value*’ of techno-politics (philosophical sense), and so potential reasons for technology usage in one particular conditional metamorphosis (time, space and place) because technology is all around us, in our minds, in our bodies and in our environments. From here on in, a ‘*value*’ is defined based on its axiology (determining the best reason for the action for its inclusion in its *Mandate*) & its deontology (determining the best action for human & nature and for its included *Capacity*), Axiological and deontological values are studies of philosophical ethics to define a ‘good’ (positive) & a ‘bad’ (negative) value within the on-going four knowledge(s). In relation to the above, ‘one particular’ refers to ‘particularism’, which is meant a propensity to clarify complex techno-politics issues based on a single causal factor, for the intention of being ‘reductionist and relativist’ but as ‘this is the first necessary step towards an irreductionist and relationist’ (Latour, 1998, p.3) for the process of ‘*punctualization*’ (“converts an entire network into a single point or node in another network” (Callon, 1991, p.153).

In the following Figure 1 and 2, firstly, what is technology (value, so its mandate and capacity)? How is it to be responded at the origin of the philosophy of technology? The meaning originates in technology itself, that is, in each particular technology. Nevertheless, is this accurate? (E.g. If you cannot resolve the techno-politics of life, you cannot resolve the techno-politics of technology). In every particular technology one can notice what every particular technology is. Nevertheless, it is not interesting what every particular technology is, which shall then originate a meaning of what every particular technology is at every particular momentum, as its metamorphosis (time, space and place). Thinking on that concept, it can be seen that inquiring ‘what is technology?’ what it is really meant is ‘what can (for the author should) technology become?’ That is can technology control its own purpose; can technology shape itself and its own destiny? We shall then continue that technology is a *process*, and, more precisely, both *the process of its performance* and *the process of its operation* for the purpose of establishing more *matter of lawfare* in the modern (divided) technological worlds within the current corporatocracical system.

“Both cannot be right in these opinions, and a priori it is not likely that either is right. No nation was ever so virtuous as each believes itself, and none was ever so wicked as each believes the other. If these beliefs survive the war, no real peace will be possible”. Russell (1998, p.138)

Indeed, I mean, matter is a force of production as *materialism*, and *consumerism*. Lawfare is a portmanteau of the words of ‘law’ and ‘warfare’, as *nationalism*. If we believe about it, the difficulty itself what is technology? is not an ideal and/or abstract question. It is the *structure of its signal* about not only *itself* but also *humans*; ourselves (who use it) and about others (who is influenced in the use of technology). So, technology wants (perhaps will want more) to know, with regard to it has thought and has been thought, what it is and what it can (for the author should) become, whether it really is and if it comes to that the extent to which making of *itself* and/or *of mankind lives*, and so *its own* and *human destiny*.

According to Diogenes Laertius

“there are three divisions of philosophy. Natural, Ethical, and Dialectic. Natural philosophy occupies itself about the world and the things in it; Ethical philosophy about life, and the things which concern us; Dialectics are conversant with the arguments by which both the others are supported.” (cited in Yonge, 1853, p.5)

In this regard, governing human and technology takes a challenge that is there anyone want to purchase a master (human and/or technology), perhaps there is (will always) one in there, but is there a difference between being a master of master (an owner of techno-politics) and remaining a pure master of ourselves (a renter of techno-politics). Thus, emerging technology has become an *educator* to its own *educator* (humans) through a new form of social-techno stratification in which the crucial concept is,

“No tool is good or bad in itself; its effectiveness results from and contributes to the whole configuration of events, activities, contents, and interpersonal processes taking place in the context of which it is been used.”(Salomon, 1993, p.198)

Saloman was mistaken, or at least he suggests a different philosophical viewpoint for commercialised imperfect markets, this thesis agree that some tools are not either ‘good’ (positive) or ‘bad’ (negative), such as a paper, computer, thereby the context is the matter, but some others are intrinsically ‘evil’, or at least ‘bad’ tools, such as a hyper-individualized surveillance tool, gun, etc. and some others are intrinsically ‘angel’, or at least ‘good’ tools, such as a seat belt, glasses, etc. Let me give some examples.

For techno-politics of ‘water’, a good (general) value is ‘cleanliness’ (a bad value is ‘impurity’). In this sense, know-what is the level of cleanliness; know-why is the level of surviving; know-how is the level of capability to establish cleanliness; and most importantly, know-who is to think someone qualified enough to predict possible challenges, e.g., defining sub-values: water ‘security’, ‘purification’, ‘recycling’, ‘desalination’, ‘reclamation’ etc. In this regard, there are six reciprocal and one ambiguous approval processes.

(a) '*Mandate*' of Policy is legislating a '*particular*' regulation (law) in a local parliament and/or international NGOs (e.g. World Nature Organisation), to operate what the minimum level of each value (cleanliness) in each particular system (e.g. the level of 'drinkable' in the canalisation services, might be at local & international levels), retains general and specific definition. (b) '*Capacity*' of Policy is evolving the potential of regulation evolvability & leadership (e.g. the policy learning and/or coping from advance nations and/or new technology to alter directions, bylaws, guidelines, etc. for relative institutions). (c) '*Mandate*' of Management is establishing one particular government or non-government institution(s) for monitoring the method of providing 'clean' water through one particular technology, with the actual intention of establishing on-going investigations. (d) '*Capacity*' of Management is evolving the potential of management harmony & adaptability (e.g. NPM). (e) '*Mandate*' of Technology is to make a particular system(s) for providing clean water to citizens, not contaminated water for drinkers. (f) '*Capacity*' of Technology is learning all the time (e.g. researchers (scientists) have been attempting to find a 'better' water technology to provide 'cleaner' water for all, or some, who can afford to pay for it, or to find new solutions for the alarm of water scarcity in water markets, and so on.). (g) Meanwhile, all stakeholders (e.g. governments, scientists, activists, citizens, etc.) are ambiguously (formally and/or informally) arguing these interactions to make them 'better' through their own '*Mandate*' & '*Capacity*' to steer the four knowledge(s) for better '*Regulation*', '*Provision*' and '*Funding*' in Governance (e.g. Instead of telling people to save clean water, just building better interactions (human-computer infrastructure) to save water).

Notably, the water example is provided for a realistic perspective, not essentially to be relevant, but water is inevitable in our lives, and so general purpose computing (GPC) is too. Therefore, it is crucial not to leave techno-politics of water to private corporations, and so techno-politics of GPC also, because markets will never ever be voluntarily ethical (no axiological & deontological values). The 2001 report of OECD, the '*Economic Instruments and Clean Water: Why Institutions and Policy Design Matter*' states that "regulatory reform does not mean leaving the market to itself. Formal and informal government institutions define and specify the conditions

under which market mechanisms function... The key lesson is that too little attention has been paid to the importance of basic institutions of policy-making -- whether formal or informal” (Andersen, 2001, p.2). Nevertheless, our politicians understandably, but, inconsistently do give the power of techno-politics of water and/or GPC to private corporations (power, structure and hegemony from giants), whilst

“Today we have access to highly advanced technologies. But our social and economic system has not kept up with our technological capabilities that could easily create a world of abundance, free of servitude and debt.” Jacque Fresco (cited in Durrani, 2007)

Concordantly, for techno-politics of air, the mandate is breathable, the capacity is safe and pleasant for breathing; for techno-politics of drugs, the mandate is ‘healthiness’, the capacity is ‘curable’; for techno-politics of genetically modified foods, the mandate is ‘helpfulness’, the capacity is ‘edible’; for techno-politics of cosmetics, the mandate is ‘cherishing skin’, the capacity is ‘natural, youthful appearance’, etc.

“In the world in which we find ourselves, the possibilities of good are almost limitless, and the possibilities of evil no less so. Our present predicament is due more than anything else to the fact that we have learnt to understand and control to a terrifying extent the forces of nature outside us, but not those that are embodied in ourselves. Self-control has always been a watchword of the moralist, but in the past it has been a control without understanding.” Russell (1961, p.343)

Starting from this (point of view), it is impossible to define *techno-politics of technology* because techno-politics is an emergent property and technology is one of its own components. “Modern machines are quintessentially microelectronic devices: They are everywhere and they are invisible. Modern machinery is an irreverent upstart god, mocking the Father’s ubiquity and spirituality” (Haraway, 1985, p.120). Nevertheless, it does not mean that we cannot be specific enough to conceptualise main contexts through *Governance* (Regulation, Provision and Funding). Concordantly, technology has two main aspects; ‘Hardware’ and ‘Software’. Admittedly, some hardware technologies are so expensive (e.g. solar energy,

networking technology, etc.) and mainly controlled by giant corporations (IBM, Intel, Oracle, etc.), or, others are relatively cheap (e.g. water pumps, lifesaver water technology, etc.), and mainly developed by individuals, small corporations, etc. However, when the concept is software, the context(s) is much more interesting (arousing or sharing attention, absorbing, etc.), but complicated (enquiring no great education, experience, etc.) and sophisticated (enquiring habitual education, an appreciation, etc.).

From a short term vision, software scholars argue that software study is a *new movement and field of academic inquiry* in which software is the *layer that permeates all areas of contemporary society* (Ramsey, 2008). Software is arguably either perceived as a scarce knowledge (e.g. secret software) or an abundant resource (e.g. web applications). In some instances, it is deemed as both (e.g. quantum computing software)! Our modern society is shaped by and dependence on / driven by the digital worlds, in which we are all both producers and consumers; importantly software is *the life's blood of the modern world* and *the speed of life* (St. Amant and Still, 2008). Scholars also emphasise that we inherently live in software societies regardless of choice, but mostly without paying any attention to its intellectual history/source. Software development is not only *a craft or even art* (Knuth, 1972) but also a complex *living organism* that has social, political, economic and cultural factors that influence our lives. Most forms of software are capable of responding to stimuli, proliferation, enlargement, and improvement, and maintenance of software as a whole by its own ecosystem. It is also dependently technological because of formal & informal standardisations, has its own stratification and rationality in accordance with social change as well as itself (Weber, 2004).

At this juncture, there are complex interactions (*needs & desire*) between software and hardware; and the interactions are all depended on the contexts, e.g. the better hardware is the faster software interfaces (more productions); the better software application is the better hardware functionality (more lock-in), etc. Nevertheless, what is clear is that current software fundamentally sells hardware in GPC (smartphones, laptops, etc.). So, techno-politics of software has inherently become

techno-politics of GPC. Without software applications, hardware has no meaning in modern era orders & requirements. For instances, the securest computer is a computer without software applications, such as OSs, the internet etc., but it has ultimately no purpose whatsoever. Some corporations presented printers which are capable of printing twenty pages in a minute, but they restricted printers' capability as ten pages in a minute to sell more printers through installing a special driver(s) (software). In this context, techno-politics of software covers techno-politics of hardware in GPC. Consequently, the concept of hardware in GPC has become irrelevant for the techno-politics of GPC.

For a long term vision, according to Ray Kurzweil,

“Despite the fact computer hardware is crucial, ‘the software of intelligence -- is equally important’” and “There will still be hardware and bodies, but the essence of our identity will switch to the permanence of our software” (1999, p:15-94).

We cannot live without a body (currently), but who wants to be kept alive if she/he has no mind & identity (software) in the future(s). In this sense, software is the crucial layer in ICT, but does not have a universally accepted specific definition, as ICT due to its relation with time, space and place. Currently (in this decades), software is used to conduct interface(s) between hardware (physical devices) and a large spectrum of social activities in which ICT is put into practice. Although software might be perceived as many things, the prevailing image is that software is an agora of computer programs and relevant data that provide directive functions (procedures, rules, associated documentations, etc.) to tell hardware what to do, such as OSs (Windows, Linux), system software (website, web-browser) etc. Software is also one program or group of programs held in storage-device for specific purposes, e.g. application software (office, players), programming languages (C, PHP), device drivers (networks, sound-cards) and social software (wikis, social bookmarking) etc. So given a technical terminology, software might be both a description of systems and functions of a system itself, that is not a hardware but is used with both/either one or more hardware and/or other software system (like clouding).

In this regard, the passion for current techno-politics of GPC (and so software); is motivated by individual curiosity about virtual and physical realities (hard to separate online/offline worlds). Technology is potentially so revolutionary in a positive sense, but also the relative cases have substantial dangers, (not inevitably) inability of controlling its promises & threats as being instability of artefacts due to primarily unclear corporatocratical techno-politics. Realistically, in the end, '*Policy*' + '*Management*' are not able to control '*Technology*' at an international level, because technology is globally unpredictable (incalculability), but it can be possible at a local level (calculability). National Policy + Management has to be predictable which does not also mean that National Policy + Management can 'control' or 'predict' technological evolution but they can slow it down in its own nation, and govern its techno-politics to some extent. For instance, in the UK, the policy for the mobile phone tracking has been introduced in 2010. The UK citizens are allowed to track the exact place of the tracking number as long as they let tracked end-users a well-informed choice within the boundaries of the UK (e.g. for monitoring children, saving time and energy, etc. through particular software(s)). Nevertheless, I am also aware of that paying others (e.g. Indian corporations) is currently available, in order to track most numbers (in global) without end-users wills and/or awareness and even mobile service providers awareness.

PCSS and FOSS

“The unique predicaments and affects of the ecological crisis will figure powerfully in the new kinds of struggles, the new forms of art and culture, and the new varieties of cooperation and solidarity that are just now starting to emerge.” (Workshop at Mess Hall Chicago, 2008)

When considered from this previous point of views, this thesis cannot make analytic criticisms without normative criticisms regarding techno-politics of GPC in which software is classified into two main families: FOSS or PCSS. So, is there a precise (particular) techno-politics of software (FOSS & PCSS) in national or global societies? Or the question should be that what is healthy and humanity of techno-

politics of GPC? As, the famous philosophical questions of what is healthy or non-healthy human? “But what is meant by healthy man? Physically healthy? Or not mad? Or someone who thinks in a healthy way, right-thinking, philistine, etc.?” (Gramsci, 1971, p.774). Or, “for the nature of humanity is to impel men to agree with one another, and its very existence lies simply in the explicit realization of a community of conscious life. What is anti-human, the condition of mere animals, consists in keeping within the sphere of feeling pure and simple, and in being able to communicate only by way of feeling—states” (Hegel, 1807, p.26). So, what is meant by ‘*healthy*’ and ‘*humanity*’ of techno-politics? Is the concept insurmountably abstruse and recondite? Or is the concept just for sanity or insanity and/or inhumanity and immorality? Etc. Thus, one should be clear about these objections, which are crucial for our lives, but undecided & neglected by the relative literature, e.g. explicitly, the literature argues under the title of ‘ICT Strategy’ or ‘ICT Capability Strategy’, rather than ‘ICT Policy’ (see, the UK ICT Strategies and Strategic Implementation Plans).

FOSS:

For techno-politics of GPC (software), the thesis holistically argues, a good (positive) value is ‘*Openness*’, for the purpose of gaining ‘*Our Potentials*’ (*The Freedom* e.g. continual opportunity for learning from systems as well as each other) & ‘*FOSS Protects*’ (*The Equality*, e.g. transparency, no legal & illegal hyper-individualized surveillance) in order to ‘*Maximise Collaborations*’ (*The Solidarity*, e.g. support neighbours for write once/run anywhere software), because in FOSS there is no rent, we are the owner seeking for the alternative techno-politics! In this sense, Mandates of Openness might be ‘effectiveness’, ‘trustfulness’, ‘dependability’, ‘interoperability’, ‘mobility’, etc. Nevertheless, FOSS is not a panacea or silver bullet that means FOSS may create negative outcome as well (e.g. the USA attempted to make sharing FOSS platforms for Iran, North Korea, etc. as illegal acts). Therefore, distinctly, in FOSS, there are particular rules; similar to the United States Constitutional Law, instead of should, there are ‘shall not not communicate’; such as, do not be national, individual, alone, selfish, etc., for Globalness. The choice is ours!

From this point forth, for the alternative techno-politics with FOSS-Cyber-Luddism, there is no such a thing as a national in the triangle in the Figure 2. Nationalism (a particular nation) is intended to '*think globally act locally*' (Globalness) to protect national interests. Globalness is not for dishonest, incompetent and unethical national interests, but rather for honest, competent and ethical global interest for the nation and global. For instance, the Barbarians (uncivilized tribal societies) won against the Roman Empire, because they learnt from the Roman's technology to fight back (their freedom). However, that is not the concept intended here. The intention of civilized global societies is to continually act and learn locally and input into and learn from global practices, improving global knowledge (our freedom), e.g. everyone is always a learner, and every learner is always a teacher, and so there is no separated relationship between '*master*' and '*disciple*'. Therefore, in order to realise 'Globalness', this thesis highlights Global '*Robustness*', '*Inclusiveness*' and '*Reasonableness*' through National Political '*Correctness*' (addressing to a policy(ies) for tangible discrimination not in favour of '*Corporatocracy*' through social-environment considerations) & National Political '*Spectrum*' (addressing to a system(s) in which various political positions (right, left, religious, atheist, etc. wings) are heard). Correctness and Spectrum are the crucial concepts for 'Governance Model' due to expanding process of techno-politics, in particular for Regulation, Provision and Funding, in the Figure 2.

What is interesting is that for years the power(s) of corporatocracical techno-politics have allowed giant corporations to control all societies, through commercial political lobbyists driving governments to adopt persuasive (by its unspecific nature) de-fact techno-politics that are neither *impressive* nor *inevitable*. Indeed, we are led to believe that corporatocracical techno-politics has been working reasonable well within competitive taxation systems in the global worlds and there is no other choice. However, this thesis raises counter arguments through alternative thinking. Globalness with FOSS is thereby the ideal alternative to commercial lock-in and hegemony ('*Renter Seeker*'), for establishing 'Learning Continuously', 'Path Dependency', 'Slow Technology Down' and 'Honesty in NPM' to be 'Free' and

‘Flexible’, and for the purpose of making us to be an ‘*Owner Seeker*’, not a ‘*Rent seeker*’.

PCSS:

Besides all these, a bad (negative) value is ‘*Closedness*’ which is for ‘*PCSS Promises*’ (the only solution capable of improving the three market values (efficiency, interoperability and innovation), for the purpose of gaining ‘*its Restriction*’, (e.g. end-users is a renter of their owned products, not an owner) & ‘*Our Threats*’ (*The Inequality*, e.g. there are watchers (Corporations, Governments, Hackers, etc.); there are also watchers of the watchers (Hackers of Corporations, Governments, etc.); there are further watchers of the watchers of the watchers (Activists, e.g. Edward Snowden, WikiLeaks); and there are added (on-going) unknown watchers), in order to only ‘*Maximise Market Profits*’ and so ‘*Controls*’. In PCSS, there is no owner, we are the rent seeking! Therefore, in PCSS, there is no particular rule. The choice is not ours, in others, who are always pedantry and philistinism through blind passion, but never reflected something negligible! The current corporatocracical techno-politics takes its’ breath of life from ‘Institutional Inertia’, ‘Path Dependency’, ‘Ungovernable Technology’, and arguably ‘Corruption in NPM’, to lock-in and hegemonic power for the purpose of making us to be a ‘*Rent Seeker*’, not an ‘*Owner Seeker*’!

In order to highlight a tipping point for techno-politics of PCSS, an example of unknown watchers is essential,

“a network of ANPR cameras has been constructed throughout the UK by the Association of Chief Police Officers – there was no public debate, no Parliamentary debate, no Act of Parliament, not even a Statutory Instrument before this network was constructed” (Human Rights Review, 2012, p.281)

So, in the current corporatocracical techno-politics, to elaborate the Figure 1 and 2 modelling, is there a clear definition (exclusiveness) of the four knowledge(s) (know-what, what-why, know-how, know-who) in the value(s) of techno-politics of

GPC (software) in a particular nation? This thesis argues not! The whole system is currently a kind of unintellectual spiders web (actors are exhausted by technological changes) with the only intention of establishing more and more ‘*Corporatocracy*’, which is the system governed and manipulated by giant corporations for profit maximisations regardless of *the social and environment cost – (control) –*, and their profitable interested friends, *states corruptions* (e.g. unsuccessful ICT projects, commercial confidentialities in NPM, etc.). Nevertheless, there is no such single rule (no separation of powers on independently separation of (a) ‘legislature’, (b) ‘judiciary’ and (c) ‘executive’) in techno-politics of GPC; such as ‘majority choice of rule’ (e.g. network effect) or ‘minority choice of rule’ (e.g. path dependency). In this sense, Fisher (2004) comprehensively explains why the current digital entertainment system (LAWS) does not work. No one can persuade all to stop copying; even more laws could intensify penalties in engaging of unlawful activities in order to make markets work. It does not work due to, for example, interference of individual rights. Fisher argues that we require a new alternative compensation system (one alternative is a public good with new practical taxing methods). E.g., the majority profits do not go to an original inventor, but to giant corporations, such as Apple (30%) + taxing systems, and so on. According to Cory Doctorow, the corporatocracical techno-politics globally is,

“For so long as we go on focusing this debate on artists, creativity, and audiences – instead of free speech, privacy, and fairness – we’ll keep making the future of society as a whole subservient to the present-day business woes of one industry.” (2011a)

Is there a particular ‘Mandate’ and ‘Capacity’ of Policy, which operates what a minimum level of ‘openness’ is in techno-politics of software? Is the current techno-politics not dangerous for human & nature? This thesis argues there is a partial policy (E.g. for Mandate, PCSS corporations to open their codes if any nation forces them to do so, and for Capacity, Sony used DRM for an anti-customer technology roundup that cultivated in many malware infected computers and so they deployed a (illegal) legal act, but no legal act was taken for Sony (no global authority to sue). Is there a particular ‘Mandate’ and ‘Capacity’ of Management, which operates the way

of providing ‘open’ technology through a particular technology, as on-going investigations and learning? Again, there is a partial management (E.g. Competition Act, DRM). And, finally, is there a particular ‘Mandate’ and ‘Capacity’ of Technology which operates providing open technology? Yes! It is FOSS. According to, Peters and Besley,

“Information is the vital element in a ‘new’ politics and economy that links space, knowledge and capital in networked practices. *Freedom is an essential ingredient in this equation if these network practices develop or transform themselves into knowledge cultures.* The specific politics and eco-cybernetic rationalities that accompany an informational global capitalism comprised of new multinational edutainment agglomerations are clearly capable of colonizing the emergent ecology of info-social networks and preventing the development of knowledge cultures based on non-proprietary modes of knowledge production and exchange” (2008, p.186).

Briefly, there are two main issues in techno-politics of PCSS; ‘Its’ Risky Promises’ and ‘Its’ Threats’. In PCSS movements, to what level have technology providers (PCSS) been working with integrity? Firstly, *Promises*, PCSS has become out of ‘control’. Its scopes and rationales have been evidently misused & abused by many stakeholders and are the cause of human rights violations (e.g. lawful interceptions, surveillance and invasion of privacy), including unborn generations (e.g. the Government debts for ICT4ED projects). We have no knowledge about how PCSS works, so, simply, there is no transparency and accountability.

Secondly, *Threats*, PCSS have aimed at increasing technological desirability and decreasing the likelihood of PCSS products to be adapted locally (takes property rights) which eventually limit our potentials. In this regard, philosophies of PCSS are not to be a practicality, and are restricting human potentials through emphasizing technology itself, and have become unsustainable and anachronistic in the future(s). Admittedly, technology is a language. According to Noam Chomsky (1965), morphological rules of language allow for (a) *open-ended creativity*, (b) *the expression of unfamiliar meaning*, and (c) *the production of vast numbers of production of basically infinite combinations* (Pinker, 2012). Man works together to advance mankind as the *cooperative principle of pragmatic in language*. Language is

also meant social-cultural (historically coherent & coordinated) and philosophical (the ways of thinking) phenomenon as multiple facts, in order to establish an *ecological climate*. Therefore, PCSS through ‘Copy-Right’ (and other LAWS) has become responsible for ‘Communication Disorder’ due to its closedness; such as, ‘Aphasia’ (dysfunction), ‘Agraphia’ (inability to write), and ‘Alexia’ (dyslexia), e.g. difficulty expressing ideas, describing what/how happened during communications; difficulty participating in communications; difficulty understanding covert communications; difficulty understanding overt communications; etc. We need to develop a new ‘four knowledge(s)’ for achieving our potentials (creativity), because yesterday’s policy (e.g. copy-right, DRM) does not serve and give any liability either for today or for tomorrow’s technological revolutions, because

“The illiterate of the future will not be the person who cannot read. It will be the person who does not know how to learn.” Alvin Toffler, (1970, p.367)

In the current markets, to use technology in order to make more tools, would suggest that technology is already accelerating. Imperfect PCSS markets are willing to create ‘Securities’ & ‘Fears’ to make end-users responsible for all of their actions in online & offline worlds, rather than producers and designers (themselves). Every problem we have, involves computers, because computers are everywhere; and so every law, thereby, is for solving problems by selectively breaking computers, e.g. making ‘improved’ software to deal with ever ‘complex’ social, political, cultural, economic and even ecological issues, such as censorship software in schools, etc. For instance, their approach is to provide various marketplace solutions, except that of a solution fit for user purpose and which will also enable end-users’ potentials. That is, end-users cannot own their own products (e.g. DRM), or copy / replicate systems (e.g. Apple), etc. Nevertheless, the problem in the computers worlds is that there is software which is watching us. The ‘watching’ is for the legal purpose of stopping end-users ‘undesirable’ behaviours (covert & overt) through emphasising the inseparable concepts of security & fear, but for the actual purpose of increasing profits, and so controls. In this regard, relative literatures (e.g. Inertias & Path Dependencies) normatively argue that in techno-politics of PCSS there is nothing wrong, as long as there are no abuses & misuses. However, this should carefully be

challenged, due to omissions / ambiguity within the LAWS and the recognised level of SECRECY within markets (see, Human Rights Review, 2012). The common literature has also underestimated how ‘Openness’ works (Fairness and Practical) and overestimated ‘Closedness’ promises. Other alternatives are possible for technopolitics of GPC and are available. Therefore, this thesis aims to highlight a key normative criticism of the belief that the current system is the only solution capable of improving the three market values (efficiency, interoperability and innovation). FOSS could facilitate minimising and removing the possible hazards of technopolitics (PCSS) and offers much more to improve our potentials, e.g. FOSS is currently reasonably robust and some giant corporations have managed to use FOSS potentials on behalf of their own interests. The strongest example is Google, which has been separating FOSS Licences Libraries, and managing to establish Google Libraries.

To elaborate, by going back to the generic argumentation, in technopolitics, there are four licences, more correctly phenomena: ‘*Freedom Openness of Openness*’ (e.g. Copy-left); ‘*Openness of Openness*’ (e.g. Open Source Initiative licence); ‘*Openness of Closedness*’ (e.g. Microsoft public licence); and ‘*Closedness of Closedness*’ (e.g. Adobe fonts licence).

Techno-Politics

The current corporatocracical technopolitics of PCSS provides its services whilst they are diluting our human rights, e.g. our privacy. Significant current commercial gain by few corporations is far less of a concern to me than protecting individual freedoms and avoiding commercial dependencies in an unclear future. The ‘few’ making profit from Technology is not so much of a concern as the on-going control that this gives the ‘few’ globally. Retaining independence with our individual ‘personal life’ (free) is crucial. So, openness with FOSS is not for stopping privatisations, innovations, developments, etc., but it takes control from giant corporations and gives it to ‘US’ and (arguably) increase public power! The relative argument is not a new phenomenon in academia, e.g. Karl Popper argued an ‘*Open*

Society' (empirical falsificationism) opposite to a '*Closed Society*' (state totalitarianism).

"We must plan for freedom, and not only for security, if for no other reason than only freedom can make security more secure." Popper (1962, p.390).

In conclusion to this section, based on the conceptualisation (modelling) of techno-politics as an emergent property of Technology, Policy and Management, there are three waves of thinking. The first wave is the empirical generalisation which highlighted the current de-facto techno-politics with PCSS (Institutional Inertial, Path Dependency, Ungovernable Technology, and arguably, Corruption in NPM), as in the Figure 1 and alternative techno-politics with FOSS (Learning Continuously, Path Dependency, Slowed Technology Down, and Honesty in NPM), as in the Figure 2. The second wave is the conceptual modelling which highlighted the consequence of chosen techno-politics; as being Locked-in and Hegemonic Corporatocracy with PCSS versus Free and Flexible Globalness with FOSS. So, in principle, there is no ad-hoc correlation or separate potential in the empirical generalisation. The third wave is the theoretical conceptualising which highlighted chosen 'Governance Models', to be a 'Rent' with Closedness' Promises & Threats versus to be an 'Owner' with Openness' Potentials and Protects. In this regard, the theoretical/conceptual of techno-politics is the emerging property of Technology, Policy and Management with an abstract level (no time, space and place). When techno-politics has been occurred, the relative stakeholders of technology, policy and management have little realisation of their enormous potentials for renewing the techno-politics. Nevertheless, what is the interesting in the techno-politics framework is that it has been taken (more correctly, takes) the identical form within different nations; therefore, it may apply to any nation, in any space and at any time. For instance, for the techno-politics in the technology of radio, television, computer, internet, etc., in a particular condition (1800, 1900, 2000, 2100, etc.) in Turkey, the UK, the USA, German, etc. the discourse is always for development (profits & controls) while there is no word to describe opposite of development (liberating). So when a new technology is emerged, a new techno-politics would be occurred through lobbied & manipulated education systems. Consequently, techno-politics of

GPC (software) has become is techno-politics in a generic sense in the modern era. In this respect, importantly, the modelling of techno-politics will be remaining the identical until globally we choose the alternative model. And after then, it will be the time for us to argue another alternative model or more correctly models (inevitable transformationalism).

“The normal school should provide for the training of the educator to make him realize that his is a twofold job: education as a teacher and education as a propagandist” (Bernays, 1928, p.122)

WHY TURKEY - WHY MANY NATIONS

“All of old. Nothing else ever, Ever tried, Ever failed. No matter. Try again, Fail again, Fail better.” Samuel Beckett (1983, p.7)

Turkey’s centralised approach to techno-politics (de-facto) and the expectation gap between its ambitions (to be global leader) and realisation (ongoing project failures) makes it easier to identify where the issues lie, in particular, after launching the Fatih project which is the current & future ICT4ED project. Throughout the near history, Turkey has been acting as a ‘later renter seeker’ of techno-politics (pure adopter, *safer*); nevertheless, within the Fatih project, Turkey has change its strategy to be an ‘early renter seeker’ of techno-politics (mixed adopter, *risky*), but not (never be) an early and/or later owner seeker of techno-politics (adapters, *tone*). Considering the fact that this thesis focuses on FOSS in relation to techno-politics (in Turkey), the importance to have a precise (on-going) national techno-politics which balances FOSS and PCSS or gives more credit to FOSS. I think corporatocracical techno-politics in Turkey has become so interesting to study global techno-politics. As a citizen living in Turkey and having relation with public institutions, even though this thesis is more related to Turkey, the main arguments, I have attempted to present, illuminate the underlying problems of the matter in general (applicable for almost all the states). Therefore, Turkey is not alone in failing to address techno-politics successfully; it is a global and local issues and, nations are getting it wrong (early or later). There are similar claims, similar histories and the same outcomes in accepting the same corporatocracical techno-politics in many states and there the similarity

ends (the belief of formulaic schema). Nevertheless, those states may have differing reasons for allowing themselves to be locked-in (controlled) by giant corporations (Corporatocracy), in particular, the UK, China, Japan, etc. From this point forth, I will more focus on Turkey! As Rudd focused on the UK case, and called ICT4ED projects as ‘*Selling and Buying of the Transformation Fallacy*’, to highlight,

“not only did the UK government fail to transform education, but also the outcome and legacy was the accentuation of broader neoliberal frameworks and principles, through the stimulation of an educational technology marketplace, and the embedding and transmission of ideologically informed assumptions about the nature and purpose of education” ... “Technology is unlikely to bring about systemic educational transformation within a system of unequal power relationships. Perhaps it has more transformational potential outside and on the margins of the restrictive confines of regulatory systems, through acts of resistance that challenge dominant orthodox and the tyranny of the market” (2013, p:148-166).

In the last three decades, the Ministry of National Education (MoNE) has persistently declared that the education system and the hereditary centralist education psyche⁴³ in Turkey has been constantly reviewed, revised and renewed, with all of its policies and administrative rules in compliance with technological development, in order to meet constantly changing needs and expectations of the new world orders, with the actual intention of being (initially) an ‘Information Society’, (now) a ‘Knowledge Society’ and (perhaps it will claim) a ‘Creative Society’. The title of the actual intention has been switched from one (Information) society to another (Knowledge), due to a ‘global cliché’; this scenario is replicable for many other leading & led national states. With this design, since 1984, there were thirteen ICT4ED projects (\$\$\$) and their hundreds of (educational and the state related ICT) sub-projects (\$\$) deployed with investment from Governments and the Government-related debts from (mostly) the World Bank, the European Investment Bank and the

⁴³MoNE is the biggest Ministry in Turkey, and highly centralized. Although MoNE has continually declared that the education system should be less centralized and more localized and the Ministry has been willing to establish new regulations in this regard, there is still no improvement. Indeed, the hierarchical structure has been restructured by MoNE through the ‘E-Transformation Turkey Project’ since 2003. Although MoNE is the first Ministry that has been applying the transformation since 1984, the concepts of accountabilities and responsibilities within MoNE are the same. Therefore, determinations of education politics; such as, specifications of needs for all staff, decision makings in systematic investment plans, budget preparations, opening new institutions, and all other important issues are all centralized (see, SETA, 2009; Eurydice, 2012, etc.).

European Union⁴⁴. Nevertheless, three decades on, whilst Turkey is within the G-20 major economies, Turkey is ranked the 69th individual-nation on the ICT development index in terms of being an ‘Information Society’ (ITU, 2012).

Some implementation of completion reports from ICT4ED projects (even the reports from MoNE) honestly disclosed and nearly all relative academic literature persuasively highlighted that the initial & subsequent ‘aims’ & ‘objectives’ of the projects have not been achieved due to failure of project implementations. There have been a variety of predictable causes: such as; insufficient number of computers for each ICT lab; inequality in computers distribution on a national level’ insufficient and ineffective educational software; no hardware and software updating; slow internet connections; ICT labs were installed in pre-existing classes, which were not built to be ICT labs, etc. Interestingly, software was sent to schools prior to needs-analysis or considering curricula. For instance, there were no curricula which required Adobe products, even now. However, there have subsequently been projects in which teachers and students can use these kinds of products, etc. These tell us why the projects have failed due to failures of implementation. Besides this, there have been also a variety of unpredictable causes; such as, fragmentary political conflicts and repressive forces between the Government and the state apparatus, in particular Council of Higher Education (YOK), Universities and Scientific and Technological Research Council of Turkey (TUBITAK); since 1999, and there have been two major earthquakes in western Turkey and several earthquakes across Turkey, therefore some budgets from the ICT4ED projects were diverted to rebuilding Turkey’s infrastructure, etc. Notably, yesterday’s causes were different than today’s, and the future causes will be different than today’s because of multivariate human-technology interactions; nevertheless, the concepts of four knowledge(s) are omnipresently & evolvably in the centre of ‘techno-politics’, and so ‘projects implementations’.

⁴⁴‘Industrial Training Project (ITP)’, \$36.8 Million, (1984-1990); ‘Industrial Schools Project (ISP)’, \$57.7 Million, (1985-1995); ‘Non-Formal Vocational Education Project (NFVEP)’, \$58.5 Million (1987-1995); ‘Industrial Training Project II (ITPII)’, \$115.8 Million (1988-1998); ‘National Education Development Project (NEDP)’, \$177.2 Million (1990-1999); ‘Basic Education Program (BEP)’ Phase I, \$600 Million (1998-2003); ‘Modernisation of Vocational and Technical Education Programme (MVET)’, €23 Million, (2002-2007); ‘Turkey Education Framework Project (TEFP)’, Phase I, €50 Million (2002-2007); ‘Strengthening the Vocational Education and Training System Project (SVEP)’, €58.2 Million, (2002-2007); ‘Basic Education Program (BEP)’ Phase II, \$580.9 Million, (2004-2008); ‘Turkey Education Framework Project (TEFP)’, Phase II, €50 Million, (2007-2012) and ‘Secondary Education Project (SEP)’, \$104 Million, (2005-2012).

In some instances, through the history of Turkey, the Basic Education Program (BEP) (aimed at being an Information Society) was the biggest ICT4ED project (\$1,280.9 Million). In the BEP Phase I, the World Bank (2004) stated that the outcomes were unsatisfactory; sustainability was likely; institutional development impact was negligible; bank performance was unsatisfactory and borrower performance was unsatisfactory. Interestingly, the sustainability was suggested as 'likely'. I believe the report has been put 'likely' down in order to make sure continuity of BEP Phase II. And in the BEP Phase II, World Bank (2008) stated that outcomes were moderately satisfactory; risk to development outcome was low or negligible; bank performance was moderately satisfactory; borrower performance was moderately satisfactory; quality at entry was moderately unsatisfactory; quality of supervision was moderately satisfactory; implementing agency/agencies was moderately satisfactory; overall bank performance was moderately satisfactory and overall borrower performance was moderately satisfactory. Although, the Bank 2008 report highlighted some moderately satisfactory status, the literature indicate certain & obvious inconsistencies in the previous projects and their 'failures' (see, Techno-Politics chapters). Nonetheless, all projects have been declared, and as titled (strongly arguably) successful 'modernisation' and 'transformation' projects by the Governments (see, TUBITAK's online-journal, since 2001). In this sense, I believe that how ICT4ED projects were successful or satisfactorily implemented is only half the picture (or less than half); the other half (or more than half) is how badly they failed, or were unsatisfactorily implemented. So, one of key arguments from this thesis is also that 'failure' is inevitable because of '*techno-politics*', but they will always be titled as successful & satisfactory. Indeed, it can also be claimed that,

"Almost anything can be attacked as a failure, but almost anything can be defended as not a significant failure. Politicians do not appreciate the significance of 'significant'."
Yes Prime Minister

At this point, whilst there are many concerns which must be addressed carefully. This study primarily focuses on the current & future ICT4ED project, 'Fatih' to evaluate how the project, as an example and case study from a national perspective

in the ‘current’ era, will end up. The Fatih project (stand for; Enhance Opportunities and Movement of Technological Progress), promises full integration of ICT into education as an ‘educational reform’ for the purpose of achieving “development of the human resources *equipped*⁴⁵ with the essential technological skills by means of efficient use of information technology hardware and applications in education and diversification and improvement of education materials” (the Prime Ministry Report, 2012, p.1). In the scope of the project, the purposeful tactics of the Government (the Government entrepreneurship) are to provide 14 million tablets for each student, 570,000 Interactive Whiteboards (IW) for each class, etc., as a new ‘fully’ integrated ICT in education. In this context, the Government (and supporters) publicly declared that ‘the Fatih will make Turkey an ICT Centre’; ‘That crazy Turkish project’, ‘the Fatih will lead new era for Turkey’, etc. The Fatih project is a ‘technological revolution’ & an ‘educational reform’ that is the driver to be a ‘Knowledge Society’. The project ideally reveals a ‘create economy’ & a ‘creative education’. The previous projects focused on revising curricula & updating technology; the Fatih project is far more ambitious. Now, the focuses are (a) providing the latest technology (e.g. tablets, IW) to all, (b) establishing new emerging technology (e.g. e-content, z-book), (c) developing new curricula, (d) improving teachers’ knowledge & skill, and (e) establishing a traceable network infrastructure.

Globally, there is no precedent in the concept of ICT4ED project, like the Fatih project. There are some leading and led nations in which there have been some ‘experimental’ ICT4ED projects, e.g. the ‘Inter-American Development Reports’; ‘ICT4ED Project Experiences’ in Latin America, Equator and Brazil; the ‘Technology and Child Development’ in Peru, the ‘One Laptop per Child Programs’ in Colombia, Haiti, Paraguay, Uruguay, Argentina, Chile, Mexico, Venezuela, Canada (Quebec), Afghanistan, Australia, Austria, Spain, etc. (see, Dussel, et, al., 2013, for an Argentina case). For instance, ‘the Technology and Child Development; Evidence from the One Laptop per Child Program’ 2012 report highlighted that “although many countries are aggressively implementing the One Laptop per Child

⁴⁵Grammatically was wrong, thereby it is corrected.

(OLPC) program, there is a lack of empirical evidence on its effects. ... No evidence is found of effects on enrolment and test scores in Math and Language. Some positive effects are found, however, in general cognitive skills as measured by Raven's Progressive Matrices, a verbal fluency test and a Coding test" (Cristia, et al, 2012, p.1). Within this context, there is a lack of academic evidence to support any of ICT4ED projects; nevertheless, Turkey has just launched a new ICT4ED project. Distinctively, these entire programs specifications are not as clarified as the Fatih project, which seems to be much more comprehensive than any of them and the biggest nationally-funded project in the educational history in Turkey, \$8 Billion (mentioned & indecisive).

While, the previous failures are clearly verifiable throughout history, the din of the past has not convinced the current Government towards being logical and radical in the Fatih project. This indicates the *Cassandra Metaphor* in which the past has not screened the Government of its predictions & the knowledge of future events. At this moment, it raised another crucial question; whether the future failure is going to be 'better' or 'worst' failure as the famous quote from Samuel Beckett.

Fatih Project

I believe the Fatih project had failure designed into its objectives, and will have cultivated negative influences upon Turkey. Today's vision of the Fatih project (aimed a Knowledge Society) remains virtually indistinguishable (identical approximation) from other ICT4ED projects, in particular BEP. In this sense, what really means to be 'different' from other ICT4ED projects? The current technology is crucially splendours phenomenon, and has so much more amazing potentials with/through human but dynamically unstable and hardly trustable (PCSS). The Fatih project with PCSS (de-facto techno-politics) will end up more and more controls through Corporatocracy. Currently, we have a little knowledge to define how societies (human) should (shall, may, etc.) act within the current technology. Importantly we have no knowledge to define why/how human rationality & morality should be in force when there is no difference between offline and online worlds, in

particular in the corporatocratical techno-politics era (no clear *ethics, responsibility, accountability, liability*, etc.,).

The bureaucrats from Government have continually declared that the Fatih project is to add additional component (technology) into education (a) to solve many educational issues, (b) to establish 'entrepreneurialism' into the heart of education and (c) to improve ICT (both hardware and software) sector in Turkey, and also re-design the education systems to export (some and/or all, it is undefined!) educational components to other-nations for (d) gaining profit (socio-politic-economic), and ultimately (e) meeting the actual purpose of being a competitive nation within global networks. So, I believe and the study argues that the hegemonic discourse suggests that the Government is to exert technological challenges and opportunities within education to create a new 'profitable' avenue in Turkey, in perceiving education as a 'commodity' & 'private-good' as another precedent of 'fragmented centralisation' through Public Private Partnerships (PPPs), on the purpose of unhidden & hidden 'privatisations' in the scope of the project.

From this point of view, the main issue is that there are no clear 'definitions', 'thoughts', 'visions', 'strategies', and importantly 'policies' in terms of four knowledge(s) of techno-politics in the project, e.g. The Government has never proactively or reactively addressed the issue that the way they have intended to deploy the plan (using PPPs dependent on Microsoft and/or Google) will also unload educational potentials to international corporations (Microsoft and/or Google). In this sense, the objectives of the project are a technologically, economically, socially, politically and ecologically provocative & controversial 'idea'! Or is that a 'primitive' or 'sophisticated' argument? Such an argument (a new attic comedy), I believe, as the study argues, is rhapsodist but an incontestable traditional vision and a fallacious and unachievable dream through globally a misleading 'caricature' and 'cliché', e.g. throughout the objectives of the project, is there any ideal momentum between 'educational' and 'technological' orientation with ensuring successful and future-proofed students? Or is there any inevitable harmony (divine edicts) between these orientations to establish a logical momentum & equation? And so on.

Whatever the answer to address these questions of techno-politics, it is both informative, and crucial to perceive the unequivocal elimination of the idea that operationalization of techno-politics is neglected by the Governments in Turkey. So, it is critical, to understand in depth and to evaluate the relationship of techno-politics into 'Education', to conceptualise the four knowledge(s). Techno-politics is an emergent property in which the trinity ('Technology', 'Policy' and 'Management') is dialectically transformed concept, actually more likely ephemeral phenomenon, and thereby in open and on-going conflict, to simultaneously motivate & provoke each other. From this standpoint, throughout history, there have been many specialties and specialists who might be grouped as *techno-cultural brokers* (recommending & evaluating agents) and *techno-politics brokers* (manipulating & controlling agents) emerged.

Techno-Politics Brokering

Globally, there might be different terminologies used to describe the techno-cultural broker. For example, Microsoft Partners, at differing levels of partnership commitment. In Turkey, they call themselves Microsoft-(cu), Adobe-(ci), Cisco-(cu), Linux-(cu), Apple-(ci), Google-(cu) etc. In Turkish, 'cu' and 'ci' are possessive suffixes; representing 'belonging to'. Cultural (culture) brokering (intermediary) has been widely applied to social and cultural studies since mid-19th century, in particular in the immigration education journals, to facilitate and mediate between various groups for the purpose of minimising their '*conflicts*'. Techno-cultural brokers are a relatively new concept, with similar purposes, with the exception of minimising 'conflicts'. Their purpose is to '*provide*' global technological solutions to education systems and states towards techno-cultural brokers (Microsoft-(cu)) own interests; such as, SWOT analysis and strategy regarding how to do research, vocational and technical education, transferring technological knowledge to schools, dealing with vender corporations, etc. Commonly, brokers are fundamentally double-agents, and aim to provide a win-win outcome for both sides (improving market

values in a particular nation), e.g., management-technology, policy-technology, education-technology, etc.

I believe that in the last three decades, techno-cultural brokers, who simply provided global technological solutions to education systems and states, were crucial. However, the future ‘techno-politics broker’ objectives will be to appear to achieve win-win, but will actually be assisting the corporate power in manipulating (lock-in) the other stakeholders in the concept of corporatocracical techno-politics (PCSS). Distinctively, techno-politics brokering is more likely dealing with mutual mobility of ‘*politics*’ and ‘*negotiation*’ (between actors), which define & confirm proximity and orientation of technological winning merits (originality, impact, practicality, measurability, applicability, etc.,) in a particular society (see more, Edwards & Wajcman, 2005). In this sense, techno-politics brokering is more likely manipulating and controlling relationships between actors of techno-politics (*movements of when-and-under-what-conditions via how-and-why-with-who*) for ‘persuasion’ which is “as a social process of interaction that involves changing attitudes about cause and effect in the absence of overt coercion” (Checkel, 2001, p.8), e.g. making techno-political riddles (e.g. currently clouding system), and then providing their own solutions to address the riddles, in order to shape the doctrine of the trinity of techno-politics towards their own interests and/or represented corporations with their own *political & negotiated* objectives.

Admittedly, traditional government models (*command-and-control-procedures with unsophisticated techno-cultural brokers*) simply cannot meet and answer the new world orders, and inevitably need others (*sophisticated techno-politics brokers*) to establish governance, steering what it is needed to accomplish survival (indeed, through brokers’ interests, by negotiating other actors and/or other brokers within networks). So, the study holistically argues that the ‘modern’ Governments in Turkey have not been ‘*decision makers*’ in terms of techno-politics brokering. They have been simply ‘*implementers*’ through ‘*lobbying*’ of *techno-politics* for the purpose of achieving the same global objective (*now a Knowledge Society*). In this regard, I do not mean that Governments cannot (re)switch their roles from

implementers (passenger(s)) *to decision makers* (driver(s)); nevertheless, that is dependent on the appropriateness of ‘*Governance Model*’ adopted in future(s) (operationalization of MCG), and so *how to refine their techno-politics* (defining value(s)).

We have some knowledge of what kind of technological change will occur in future; however, what remains unknown is how societies will (should, shall, etc.) act towards these emerging ‘*ideas*’. I emphasise ideas instead of technology; because, known technology remains globally controversial (how it should be understood as a public good). However, we do not know how a divided nation(s) will act in a global marketplace. Nevertheless, when technology is understood as an idea, it will eventually become a public good, not a patentable phenomenon. And all relative debates will be globally shaped by techno-politics brokers, in particular, for Turkey⁴⁶. The lack of lobbying regulation suggests governments in global (most nations) have failed in their previous projects and without evolving & flexible ‘techno-politics’, they will fail in their current and future projects. In the short-term, however, they will shape the project outcomes to appear successful and take the credit for that success, regardless of whether the right outcomes have been accomplished. At present the four knowledge(s) (know-what/why/how/who) are not comprehensive enough for the future techno-politics needs (liberating us). However, all stakeholders (corporations, governments, even projects managers, etc.) in the short term, are seemingly meeting their objectives. The only stakeholder unwittingly being short changed is the public. There is no motivation to hone the definition of the four knowledge(s), in the short term, whilst the public remains un-knowledgeable of this deliberate omission, because of a *little knowledge*.

“A little knowledge is more successful than complete knowledge: it conceives things as simpler than they are, thus resulting in opinions that are more comprehensible and persuasive.” Friedrich Nietzsche (1876, p.578)

⁴⁶It is more ambiguous, because Turkey has no clear lobbying regulation, and is defined as ‘No Statutory Rules’ (Chari, et al, 2010, p.11). See more, the lobbying global regulations from <http://regulatelobbying.com/index.html> and also, in more specific, it can be seen at the Lobbying Disclosure Act Database in the United States Senate from <http://soprweb.senate.gov/index.cfm?event=selectfields>, see registrant name as Google, Microsoft, and Apple etc. Turkey as many other leading & led nations, has no disclosure regulation as specified as in the USA.

AIMS AND OBJECTIVES

Aims;

“Instructional software, like all other educational material, should be evaluated before it is used in the classroom or research project. The challenge is to decide what to evaluate, how the process should be carried out and by whom.” (Heller, 1991, p.285)

Initially, I did not set out to adopt this topic for my PhD. The Fatih project has chosen me, in my second year of my PhD, once I had seen Turkey's release of unsatisfactory responses to written parliamentary questions. During my PhD journey my PhD thesis has evolved into the study of the future of techno-politics, indeed with my supervisors' extensive knowledge and sensitive supports. So why did I steer my thesis towards this objective? Due to my research funding source, my future is very firmly set within Education in Turkey; this element of my future is fixed (at least for the 16 year term of my research commitment). So, I consider myself to be a key stakeholder (a diverted journalist) in Turkey's future techno-politics debate. The Fatih project outcomes concerned and angered me towards further study. It was during this wider study that it became evident that:

- (a) Turkey is investing billions in new technology, through various projects.
- (b) Governments in Turkey are pursuing this objective on behalf of their public and under the guise of the Ministry of 'National' Education, but I see no 'nationalism' in MoNE! They only copy (translate) the practices from advanced nations, and title them as 'national'.
- (c) They are doing so with little consideration for future techno-politics (needs).
- (d) All stakeholders are gaining, except the public (me)! Furthermore, frighteningly, the public in Turkey do not yet know that they are being short changed.
- (e) The achieving stakeholders have no motivation to improve global techno-politics, as this will alter their stakeholder power. This maintaining the status quo could be as innocent as being an unintentional oversight, but the wealth of evidence infers that it could be further along the scale, towards deliberate corruption.

- (f) If techno-political shortfalls are not addressed NOW, in terms of public need and control, the public in Turkey will achieve the reverse of their objective / ambition.
- (g) As a rare example of a more knowledgeable public stakeholder, who can investigate across multiple disciplines, I feel it is my obligation to record events in Turkey and primarily, attempt to influence a change in outcomes in techno-politics. By exposing the flaws within techno-politics in Turkey, I will provide those gaining stakeholders (with the power to change) with the opportunity to redress the balance of stakeholder power, for the common public good and, therefore, removing the potential for observers to suggest that these gaining stakeholders are corrupt.
- (h) Finally, at this point, I should warn readers that, in this thesis, I will take a slightly different approach (than the normative) towards clarifying the relative concepts of techno-politics. I identify myself in this thesis as a Cyber-Luddite, who optimistically believes the potentials & philosophies of FOSS and Neo-Luddism. However, I do not identify myself as other forms of archaic extremists (e.g. cynicism, idiosyncrasy, etc.), who are totally disagree with socio-natural structures and environmental orders (biographical and philosophical correlations), although I am personally very attracted in modes of existence thoughts with some of them (e.g. cynicist judgments and verifications from Diogenes Laertius). Thus, I have to hate technology to appreciate human existentialism, for (firstly) loving it and (secondly) using it wisely! Indeed, I have many identities, which are not connected to this study.
- (i) This study is a '*Theoretical Study of Sociology of Education and Technology*', based on a case study, through documentary source data. In this regard, this study has attempted to contribute on the literature of '*Cybernetics of Cybernetics Competition*' from stuff published by Tiqqun Magazine. *Tiqqun* means *repair*, because the study of techno-politics should be neither *innocent* nor *phallic*, it must be a *demonology* in the century of singularity due to the central and fraud dogma of western *phallogocentrism*, in particular for illegitimate corporatocracical techno-politics (goddess with invisible sphinxes)!

- (j) I have attempted to be critical in this study, as Gregory Bateson states that “the major problems in the world are the result of the difference between how nature works and the way people think.”⁴⁷

“I am appalled by my scientific colleagues, and while I disbelieve almost everything that is believed by the counter-culture, I find it more comfortable to live with that disbelief than with the dehumanizing disgust and horror that conventional occidental themes and ways of life inspire in me. They are so successful and their beliefs are so heartless.” (Bateson and Bateson, 1988, p.52)

Brief notes, in Turkey, we have had original Linux. TUBITAK has developed Pardus Operating Systems (OSs) (nationally distributed Linux distro) between 2003 and 2012. After ten years of Pardus development, the Pardus project has not achieved its initial or subsequent objectives as declared in 2004 & 2011, and has deliberately diverted away from those objectives to become Pardus Fraud-Debian, as Turkey’s present day accepted open source software solution (overnight). Crucially, the Pardus project has been deliberately utilised as leverage to gain better ongoing deals from the Microsoft Corporation. So, Turkey has always aspired to Turkish Linux, however Turkey could not appreciate its opportunities. Nevertheless, Turkey has still FOSS communities, in particular for Pardus Original and Pardus Fraud-Debian. So, most of Pardus end-users feel,

Pardus made us salivate, but not eat!

Objectives;

Education operates at and through four moments,

“are those of *educational practice* (‘who is taught what, by whom, etc.’); *education politics* (‘how and by whom are these things decided, governed, administrated, managed, etc.’) *the politics of education* (on what bases and in whose interest and these things determined, controlled, and with what relationships between other sectors and scales, etc.’) and *the level of outcomes* (‘with what public, private, personal consequences, etc.’)” (Dale, 2005, p.141)

⁴⁷ Available from <http://www.attractionretreat.org/Writings/WWUEoS.html>

My objectives cover all moments, particularly techno-politics of ICT4ED projects and the level of outcomes in a state and its education system. In the study, each chapter has its own particular research questions, which are systematically interlinked to inquiry two particular questions;

VI (Epilogue- Scapegoatism)

How did we come to here?

How to refine techno-politics for better alternatives?

In this thesis, techno-politics is presented for (a) 'ICT in an education system', (b) 'ICT in a state', and (c) 'ICT4ED project in a state' (elaboration is in the next chapter).

STUDY STRUCTURE

The study is structured into three parts. In the first part, there are three chapters:

The current chapter is the introduction to identify the nature & scope of techno-politics and techno-politics brokering, and to introduce the study aims and objectives, and so the research questions.

Chapter two (*Literature Review*) argues axiological (the nature of value and what kinds of things have value) concerns of the thesis. I initially present the fundamental literature in a range of 'technology' and 'societies', in particular, 'technological and social determinisms', and so between approaches, to inquire how technology should be understood in the current era and whether or not there are any 'new' thoughts for approaching technology. The chapter shall then conceptualise FOSS and Neo-Luddism through perceiving them as New Social Movements, in order to present how Neo-Luddism should be understood in the current era and how/why Neo-Luddism and FOSS should be married to raise Cyber-Luddites who can survive in unclear/unproven future(s). To be realistic, this chapter then present generic remarks

for Soft/Hard-Cyber-Luddism in a state and its education system, to identify my shifting roles and positions in the thesis.

Chapter three (*Methodology*) argues ontological (what is the nature of social reality) and epistemological (how can social reality be known) concerns of the thesis. I present how the data has been collected (documentary sources); how the data has been analysed, triangulated and argued (Process Tracing Approach); what the ethical issues are and what the limitations are in this thesis.

In the Second Part, the main arguments, there are four main chapters:

In Chapter four, (*Hubris*), I present the Government's promises and objectives in the Fatih project through focusing on its generic clashes from supporters & opponents. The chapter further argues certain inconsistencies in the project to conclude that whilst the education has crucial issues due to being a curricula-centred & exam-based system; the Fatih project ill-defines the future a new 'fully integrated ICT in education'. I shall then present how the Government aimed to exercise technological challenges and opportunities within education to create a new profitable avenue in Turkey, and perceiving education as a 'commodity' & 'private-good' as another example of 'fragmented centralisation' through PPPs, on the purpose of unhidden & hidden 'privatisations'. This is a controversial 'idea', including those of socio-technical, economic, political and cultural aspects, which the chapter argues, to be an unattainable.

In the rest of the thesis, I highlight the reasons why I titled the previous chapter 'Hubris'.

In Chapter five, (*Techno-Politics in Fatih*), I present how the Government has been following an 'Anglo-Governance Model', ('experimental' and 'strategic' governance), in the Fatih project. All the mobility between the Government and giant corporations, particularly acting as an 'Anglo-Governance Model' have inevitably resulted in 'ICT-enabled Polycentric System'' (many centres of decision making that

are formally independent of each other) in which de-facto techno-politics eventually controls the Fatih project, and so the Government and the state apparatus have been ultimately unwelcome (powerless & insignificant). This chapter provides many documentary data to support arguments from the next chapters.

In Chapter six, (*Techno-Politics in Previous ICT4ED Projects*), I analyse the past ICT4ED projects (since 1984) to argue that Turkey has failed in providing an evolved & flexible ‘techno-politics’ in its education system, which should have been either structured impartially between FOSS & PCSS or with a predisposition towards a FOSS approving system. Globally, techno-politically protected PCSS-based (a) tender specifications, (b) curricula, (c) the impact of new public management (NPM) and (d) interoperability reports have made FOSS usage, formerly both feasible and flexible, ‘totally’ impracticable in schools. The evidence (de-facto policy) indicates an intense prejudice & bias against FOSS and a (irreversible) ‘monogamy’ between Governments and PCSS (Microsoft platforms).

In Chapter seven, (*Techno-Politics in Turkey*), I argue whether or not there is precise national techno-politics in public institutions in Turkey. For that purpose, I present how FOSS is deliberately ignored due to; (a) institutional inertia, (b) path dependence and (c) ungovernable ICT changes and arguably, (d) corruption in NPM. The chapter further argues that Turkey has taken a de-facto ICT Policy, by which Microsoft dominates markets, and controls public institutions. This would have avoided all stakeholders being ‘tied in’ to Microsoft platforms with no other option of supply. Therefore, Turkey has failed in providing an evolved & flexible ‘techno-politics’. Whilst techno-institutional lock-ins politically exist and are irreversible in the state and its education system, the future is mistakenly defined by the Government as a ‘Procrustean ICT Bed Strategy’ which is another dimension of corporatocratical techno-politics. Globally, this particular form of techno-politics is understood to be an ‘experimental strategy’ (not definitive), perhaps for the purpose of on-going negotiations and positioning of a national state within global networks because of evident nationally prioritised interests. The dynamic and failing nature of ICT ecosystems leads to ‘no broken promise’.

The readers are invited to pay particular attention to this chapter; it is crucial for the study and its purpose in any holistic arguments is critical.

In the Third Part, there is one small chapter:

Chapter eight, (*Scapegoatism*), argues that if the Government continues the objectives of Fatih project for fully integrated ICT into education, corrupted & lobbied bureaucrats and academics (key stakeholders) will be the future scapegoats of scapegoats. ‘Scapegoatism’ will be inevitable for future(s) failures, as the previous projects. I shall then argue that giant corporations (Don Juan) and the Government (Don Quixote) have a (failed) logic in the imperfect market, because they need these kinds of initiatives to be mutually happy but my argument is that we have another (better) alternative. Consequently, if the concept is, racing against Corporatocracy (PCSS) and their manipulativeness powers to be the first renter seeking, not owner, there is more beyond ‘techno-politics!’ (*Philosophical Argument of ‘Necessity’*)

CHAPTER II

LITERATURE REVIEW

Techno-Politically & Optimistically Speaking:

We are currently paper-based societies (not a society) in a Digital-Era. Perhaps, in the short term future, we will be digital-based societies (not a society) in a Cyber-Era.

ICT (or IT) is an acronym that symbolises Information Communications Technology. Other than explicating the acronym, there is no precise definition of ICT, because of its own nature. ICT has evolved and diversified, and so has its concept and definition. If ICT is a crucially malleable concept in the modern worlds, e.g.; is it a ‘knowledge’, ‘commodity’, ‘business’, etc.?, by what means is it shaped by and does it shape societies? Is ICT an outmoded term in global societies? Etc. To answer these questions, several theories have emerged (see, Dwivedi, et al., 2009) to conceptualise ‘the paper-societies’ in the digital-era and ‘the digital(software)-societies’ in ‘the cyber-era’, and how & why we have been forced and dictated into an unclear future (perhaps futures), one step at a time, by technological acceleration. More importantly, the theories suggest what we should learn from the past. The concept is in societies rather than a society because we act and behave differently in the technological worlds. In this chapter, I argue,

How should technology be understood in the current era?

Are there any ‘new’ thoughts for approaching technology?

Who am I?

How should FOSS be conceptualised?

How should Soft-Neo-Luddism be understood?

How & Why should Neo-Luddism and FOSS be married?

ICT IN/AND SOCIETIES

“You don’t have to be a prophet to acknowledge that the modern sciences, in their installation within society, will not delay in being determined and piloted by the new basic science: cybernetics. This science corresponds to the determination of man as a being the essence of which is activity in the social sphere. It is, in effect the theory whose object is to take over all possible planning and organization of human labor.” (Martin Heidegger, 1966, *the End of Philosophy and the Task of Thought*, cited in Tiqqun, 2010, p.15)

Although, there are various perspectives to approach the fields of social science and technology studies, I focus on both the notions of technology itself and its interaction by, within and through societies. In taking this approach, the study rests upon a large spectrum of perspectives, which may be categorized under the study of Science, Technology and Society (STS). The relevant STS literature contains similar terminologies, but can intend various different meanings by different authors (e.g. Social-Shaping of Technology Theory, Social Construction of Technology Approach, Actor Network Theory, Socio-Technical Systems, etc.). The perspective of STS is to modulate political, social and economic studies by exploring and analysing both technological innovations and its social contents, and so, highlighting the idea that technology is not, either (a) the only result of its rational choices, or (b) inherently just ‘social’, it is actually both! STS originally emerged through critiques of Technological and Social Determinisms.

Technological determinists believe that technology is the main actor for social change and improvement, and so creating modern history. De Sola Pool, who is one of the most prominent scholars in the area, claims that “the relationship between technology and institutions is not simple or unidirectional, nor are the effects immediate. Institutions that evolve in response to one technological environment persist and to some degree are later imposed on what may be a changed technology” (1983, p.5); this perspective may be called a soft technological determinism. After the latest technological developments, particularly the internet, hard determinism is primarily embraced within the intense interest of the public. According to Bill Gates

(1996), the internet is outside of politics and history and is a power that can introduce independence, welfare and enlightenment; the computer is undoubtedly just a useful artefact. The Government in Turkey has been taking the approach of hard technological determinism in the Fatih project, (e.g. believing technology can solve many educational issues). I believe their approach will create more severe issues in education. Technological determinists' optimistic belief cannot answer why new technology not only presents a new manner of problem solving but also originates new problems, hazards and uncertainties (Beck, 1992). For example, chat forums were introduced and one of the negative results was the emergence of cyber-bullying. The introduction of new technology can often bring an old issue to a new environment (new forms of camouflage), as "knowledge is both a new problem and panacea for our time" (Robertson, 2008, p.2). Technological determinism has two main principles:

"(1) the nature of technologies and the direction of change were unproblematic or pre-determined (perhaps subject to an inner 'technical logic' or 'economic imperative'), (2) technology had necessary and determinate 'impacts' upon work, upon economic life and upon society as a whole: technological change thus produces social and organisational change" (Williams and Edge, 1996, p.860).

To elaborate the theory further, technological changes are seen as an independent movement from its social contents. Technology shapes its forms and its human interactions. Therefore, technological determinism has been widely criticised through its understanding of social influences upon technological changes. It interprets technology as a way of achieving institutional developments without paying attention to technological implementation challenges and its possible failures in societies (Pinch and Bijker, 1989), and its philosophical concerns (e.g. cyber chaos, luddism, etc.).

In contrast, social determinists believe that technological innovations are the results of social interactions with natural artefacts (now emerging technology). Social factors shape directions of technological changes in the first place. The process of technological development and innovation does not depend on a simple technological logic (the best options and choices), but instead a matrix of choices

between different technical options, which are initially influenced by social forces. New technology is applied and practised into societies only if societies face their limitations and/or requirements. The social forces are seen as limitless factors acting as ‘supervening social necessities’, which “range from the objective requirements of changed social circumstances through to the subjective whims of perceived needs” (Winston, 1998, p.6).

According to many scholars, in spite of these valuable contributions, either perspective has put their faith in incomplete theories. STS scholars perceive that technologies are historically complex artefacts, those techno-social changes cannot be defined and/or clarified within/by one specific theory, nevertheless attempt to research the STS debate using these theories, ignoring their inadequacies. For investigating dynamic interactions between technology and societies, STS positions itself between them and explores in what way social, politic, economic and cultural factors have shaped technological and scientific changes, as well as technology shaping itself and social human interactions.

Not only does STS provide a theoretical paradigm but also a methodology, through exploring the decision-making process, e.g. what & when criteria have been applied by stakeholders, why & how these criteria have been chosen and who decides whether a particular technology is included or excluded, etc., within the study. STS argues that technical superiority does not necessarily provide all answers in accepting or rejecting a particular technology in a society as a success or failure (Williams & Edge, 1996). STS thereby refutes the idea that a particular technology is produced and then simply accepted in a society because of technical superiority as a technical inevitability (e.g. QWERTY typewriter keyboard over the DVORAK keyboard by David (1985)). Instead, STS endorses that technical features and components are crucial but not the only factors in innovation and implementation of a particular technology (e.g. ‘historical path dependency’, which ultimately creates ‘network effect’). There are also many other social, political, economic and cultural factors that could be equally effective. As, Edwards and Wajcman (2005) persuasively argued, that the statement of ‘*socially shaped*’ technology does ‘*not*’

mean to 'say' that characteristics and features of 'social definition' are 'equally effective'. The key points are 'politics' and 'negotiation' which identify & verify proximity and orientation of technological winning merits (originality, impact, practicality, measurability, applicability, etc.) in a particular society.

STS scholars argue that in the initial stage of technological changes, technology has 'interpretive flexibility' in which various actors and so interests groups exert every efforts for advantages and disadvantages of various design options. The earlier interpretative flexibility is crucial, due to an iteration process; the initial prototypes would be repeatedly accepted and/or modified by end-users, designers, producers, etc. Nevertheless, it does not mean that this is an endless process; there is 'closure' and so 'stabilisation' (e.g. the standard HTTP scheme).

STS actually moves beyond the simple idea of evaluating the social influences of technology, to investigate the ability of technological innovations, shaped by and shaped to societies, through seeking how the influences of technology are achieved. Although STS does not exactly specify which social factors are relevant for the technological innovations and its implementations in a society, it nevertheless draws an attention to the critical concepts of "choice" and "closure" (Jørgenssen & Sørensen, 2002). The concept of choice is not an essentially deliberate choice, but implicit in both the process of technological innovations and its technical designs (Wajcman, 2002). There are several technical choices in the development and implementation process. These choices are influenced by social factors. In order to uncover the mutual interactions between these factors, there are two sets of questions that are recommended; *negotiability of technology*, which seeks how particular groups constrain to shape technological innovations, and so social outcomes on behalf of their future benefits; and *irreversibility*, which seeks how choices are stunted, as previous technological choice shapes the future innovations (as path-dependency). These questions open up the scope of *closure* - "the ways in which innovation may become stabilised as well as the possibility of reversing earlier choices" (Williams and Edge, 1996, p.858). In terms of closure, 'dominant design' and 'momentum' are two main concepts. Tushman and Murmann (1998) argue that

“where social, political and institutional forces shape technological progress prior to the dominant design; technology drives subsequent technical evolution after the dominant design” (p.244). As to momentum, Hughes (1994) argues that “a technological system can be both a cause and an effect; it can shape or be shaped by society. As they grow larger and more complex, systems tend to be more shaping of society and less shaped by it” (p.112).

THE BIRTH OF THE BEYOND

“The future offers little hope for those who expect that our new mechanical slaves will offer us a world in which we may rest from thinking. Help us they may, but at the cost of supreme demands upon our honesty and our intelligence. The world of the future will be an ever more demanding struggle against the limitations of our intelligence, not a comfortable hammock in which we can lie down to be waited upon by our robot slaves” Norbert Wiener (1964, p.69).

I need to note those technological and social determinisms and the theories in between (e.g. Actor network theory, Social construction of technology, Sociology of scientific knowledge, etc.) both of these approaches have been argued extensively. I do, however, acknowledge that an analysis of these arguments is beyond the purposes of this study. Nevertheless, as I am familiar with these approaches, the main arguments have shifted, from the (initial) concept of who & what (technology) is shaped by who & what (future) how & why (‘humanity’, ‘morality’ and ‘ethics’) and is shaped by how & why (‘technology’). Notably, these are not new thoughts; they are old attic thoughts copied from mainly science-fiction literature, e.g. will autonomous technology be mature enough with the logic of its own un-human control? The schools might be available under the title of,

- (a) Over-, Trans-, & Post- Humanism (‘Superman’⁴⁸) by Nietzsche in ‘digital/cyber era’ (better humanity) (e.g. the Journal of Evolution and Technology, <http://jetpress.org/>), or ‘Social Darwinism’ versus Luddites- New/Neo-Luddism in ‘the golden age of junk’ (earth & mundane entities first, humanity second and technology after at all; otherwise, there is no ‘future of humanity’ and ‘human

⁴⁸Translation is argumentative, it is a ‘superman’ or a ‘over-man’

will be extinct' (see, the Oxford Future of Humanity Institute, <http://www.fhi.ox.ac.uk/>).

- (b) Information Ethic (IE) by Floridi and Sanders (autonomy, moral accountability and responsibility of artificial agents, 'mind-less' morality in 'cyberspace' & 'biosphere') as 'Technological Utopianism' versus supporters of Kantian philosophy and ethics (rational human agent on non-human thing), as Crypto-anarchism, Hacktivism, etc.
- (c) Artificial Intelligence (AI) by John McCarthy in 1955, as "the science and engineering of making intelligent machines", which is also commonly called 'Technological singularity', 'Singularitarianism', or 'accelerating to the singularity' as "ever accelerating progress of technology and changes in the mode of human life, which gives the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue" by Stanislaw Ulam in 1958 versus Humanistic Intelligence (HI) by Steve Mann as "(1) intelligence that arises because of the human being in the feedback loop of a computational process, where the human and computer are inextricably intertwined, and (2) the processing apparatus is inextricably intertwined with the natural capabilities of the human mind and body" (2001, p.100).
- (d) Perhaps, there are other relative literatures and schools due to multivariate human-technology interactions, such as, intelligent systems, mobile communication, machine vision, cybernetic sciences, humanistic property protection, bio-medical enhancement, etc. Perhaps we should ask,

"Can God play a significant game with his own creature? Can any creator, even a limited one, play a significant game with his own creature?" (Wiener, 1964, p.17)

E.g. "can non-living things be included in a moral framework in a meaningful and active way?" (Adam, 2008, p.149); "Can an artificial agent that changes its own programming become so autonomous that the original designer is no longer responsible for the behaviour of the artificial agent?" (Grodzinsky, et al., 2008,

p.115); Will dehumanized technology inevitably ‘bite back’ against humanity, as like Shelley’s monster (Jones, 2006) (Mad-technology stories, Frankenstein and his monster, ownerless powers). More crazily, make 3D Bio-Printing, make me again, etc.

So, what will be happened if the machine passed ‘*Turing Test*’ by Alan M. Turing in 1950 (or *Chinese Room Argument* by John R. Searle in 1980) -viz, from more solipsist view, if the machine is ‘*intelligently*’ and ‘*intentionality*’ able to be herself/himself and to feel herself/himself thinking- it will be too late to stop the machine!

All these literatures & schools are willing to know the question of what ‘*singularity*’ is because it is fuzzy and ambiguous, e.g. whether or not future technology will treat us as their pets or their foods and/or both! Or more philosophically, is there anybody (human) at home? For the long time future (the next millennium), the actual argument is that what ‘*Civilisation Zero*’ is and what *Civilisation I, II and III* will be; see more arguments from Michio Kaku, who is a theoretical physicist.

“In criticizing some of the effects of computers are we - all of us - biting the hand that feeds us? Oh yes. But the hand, also, is food.” (Mitcham, 1986, p.187)

In my specialist area and in the short term vision, is there a certain and logical understanding of the fact that technology should be developed further? Is technology agnostically dialectic, immoral, and amoral? Thus has ‘Education’ joined itself to ‘Policy’, ‘Management’ and ‘Technology’ with a moral cord? Etc. These arguments are so sophisticated; perhaps, it is better to underlie my personal view in the next sections. Admittedly, technology (perhaps human as well) have not come to the stage where they are able to answer all philosophical concerns yet. But what is clear is that human are always seeking to wage war against death!

“Death, as we may call that unreality, is the most terrible thing, and to keep and hold fast what is dead demands the greatest force of all. Beauty, powerless and helpless, hates understanding, because the latter exacts from it what it cannot perform.” (Hegel, 1807, p.13)

WHO AM I?

“Information doesn’t want to be free. People do.” Doctorow (2013a)

According to Doctorow, who is an activist in favour of FOSS and Creative Common Group, the belief that information wants to be free is ‘currently’ meaningless in the sense of the ‘current’ era due to its *corrupted connotation*, not exactly its *innocent denotation*. Speaking of techno-politics (*no philosophical thought*), we [who are analysing the process] are *ultimately* free if and only if we have an *absolute* knowledge of the world’s reality, as Plato puts it, *to be able to see things as they are*. The current world is made by computers (hardware), and so networks (software). Computers are in our minds, in our bodies and in our environments, so it would be stated that we are in *a giant microwave oven*. Nevertheless, who shall the ‘Master’ be? Should our default desktop say ‘Yes, Master’? As, many scholars well-meaningly inquire, why do LAWS (e.g. Digital Right Management) compel us, when using our computers, *I cannot let you do that?*⁴⁹ So, it is critical for humans to know what our computers do! However, is it enough? It is actually more critical for humans to know what the computers worlds do! We are in networks of multivariate human-techno social interactions! Is it still enough? It is further critical for humans to know whether technology is ‘liberating’ or ‘enslaving’ us, or ‘both’! In the computers worlds, does one particular technological solution reveal further threat(s) and/or risk(s)? What remains of the argument if we state that we have achieved cyber-utopian (*emancipation*)? As, Morozov (2011) rightfully argues, *the net delusion: the dark side of Internet freedom* is ‘naïve’ and ‘stubborn’ with ‘former hippies’.

“If you give me six lines written by the hand of the most honest of men, I will find something in them which will hang him.” Richelieu, Cardinal De (cited in Jehiel Keeler Hoyt, 1896, p.763)

⁴⁹The original discourse is that “I Can’t Let You Do That, Dave” refers to the famous movie called ‘2001: A Space Odyssey (1968)’.

We know that the computer worlds exist, that they touch and shake us up in many ways, but we do not inquire how they came to exist; or, if they have a right to exist, what their initial purpose was; or, what key meanings they have when they are essentially and satisfyingly pleasing us. When they touch and shake us up so *adversely* and *covertly* (e.g. execution), we equip ourselves to be rebellious against them (e.g. controllers of the computers worlds), but others (e.g. governments) will ruminate about replacing *nothing* beyond some minor variation or variant of the same establishment. “Why are we doing what we are doing? ... Because science and technology have seldom paused to explain their own dynamics, there is obviously much work to be done on this score” (Winner, 1989, p.433). Within this context, technological acceleration (*calculability and incalculability*) is claimed to be ‘necessity’ due to its own requirements (*better human, life, nature, etc.*) and its own opportunities (*better business, profits, investments, etc.*). Concordantly, before it is too late, it is critical for humans to study how decision-makers, in particular governments, are just a holistic representation of images in the computers worlds with the actual intention of protecting their own interests, as much and as far as possible as they can!; e.g., interesting market profits, not human rights. In this regard, it is not meant that we comprehensively understand all possible threats and risks of technology; just that questioning them is an *absolutely* ‘necessity’ to be aware of *unintended* and *deadly* consequences. Regarding this, I believe the *dominant* and *convinced* academia feels the relative issues, but do not always attempt to understand them comprehensively, or enquire of them. As, the famous philosophical concern of what technology is and is for, from Samuel Butler,

“Day by day, however, the machines are gaining ground upon us; day by day we are becoming more subservient to them; more men are daily bound down as slaves to tend them, more men are daily devoting the energies of their whole lives to the development of mechanical life. The upshot is simply page a question of time, but that the time will come when the machines will hold the real supremacy over the world and its inhabitants is what no person of a truly philosophic mind can for a moment question” (1863, p.51).

NEW SOCIAL MOVEMENTS (NSMs)

“Every question about what to study and how to study it becomes an ethical opening; every decision entails profound responsibility. The whole notion of academic ethics is simultaneously enlarged and transformed” (Gibson-Graham, 2008, p.620).

In social science literature, the definition of social movement is fuzzy; viz, simultaneously enlarging and transforming. There are a wide range of methods applied to and a wide range of questions being asked within the study of social movements, so there is not a single definition of, and a single method for studying social movement. According to, Blumer, there is a direct mutual affinity between unrest and dissatisfaction of enterprise, and emergence of social movements. In this sense, social movements emerge out of ‘dissatisfaction with the current form of life ... to establish a new order of life’ (1969, p.99). Eyerman and Jamison adapted Blumer’s definition, inserted creativity and public domain and argue that social movements are “temporary public spaces, as moments of collective creation that provide societies with ideas, identities, and even ideals” (1991, p.4). Tarrow puts emphasis on ‘sustained interaction with opponents’ as differentiating social movement from particular protesting events, but making connection between protest, conflict and network (1998, p.4). Accepting all these definitions from social movements theories, Hess states that social movements has three main characteristics: “(a) broad scope in terms of organizational diversity and temporal duration, (b) articulation of a social conflict by groups that are disempowered or perceive themselves to be disempowered on at least some issues, (c) extra institutional strategies such as protest against dominant institutions or the creation of alternative institutions” (2005, p.517). In this regard, there are six types of new and current social movements,

“cyberactivism *through* the Net is seen in: 1) Internetworking, 2) Capital and information flows, and 3) Alternative media and theory: A. Alternative media and B. Alternative theory networks. Cyberactivism *in* the Net is seen in: 4) Direct cyberactivism (hacktivism), 5) Contesting and constructing the Internet and 6) Online alternative community formation” (2005, p.4).

According to Poster, “when users have decentralized, distributed, direct control over when, what, why, and with whom they exchange information...it seems to breed

critical thinking, activism, democracy and equality. ... This electronically mediated communication can challenge systems of domination” (1995, p.28). In this regard, the focal point of NSM theory is decentralising the power of domination through highlighting cultural and representative jargon (e.g. advanced capitalism) to be in ‘*fairness*’ as much as possible in global world networks. While, common social movements currently follow traditional and intentional social and political aims and objectives (e.g. occupy), NSM is distinctly the construction and legalisation of cooperative ‘*individualities*’ [describing the blending of characters and personalities] in the intention of attempting to establish eloquent *rationalities* and *resistances*; viz, a conscious ethical reality. So, what is new about NSM? Buechler elaborates that, “while there are distinct combinations of genuinely new elements in the social movements, emphasised by” a false dichotomy between new movements and old forms of labour organisation, “these can only be carefully specified by locating these movements and their predecessors in their appropriate socio-historical contexts and by looking for both similarities and differences woven throughout such histories” (1995, p.449). Within this context, what is ‘new’ for me is the *intention* of movements (e.g. controlling versus liberating); therefore, NSM is not only different from, but superior to, traditional models. Thus, actors of/in NSMs (activists) are not intractable or heterogeneous audiences that may systematize from dissimilar angles to shape broad partnerships across a variety of movements and domains. According to Langman, a modern NSM theory must believe,

“1) the central role of electronic media and global networks in enabling “virtual public spheres”; 2) the crises of legitimacy and impacts of economic, political, cultural, and ecological aspects of neo-liberal globalization; 3) the migration of these crises to realms of identity and motivation and emergent forms of progressive project identities that would seek to transform the social; and finally, 4) the extent to which internetworked movements, more as flows than organizations, are fundamentally different than earlier social movements” (2005, pp:42-74).

Concordantly, I perceive that NSM is a theory and a methodology, to dissociate itself from conservative western social movements, with the intention of focusing on and concerning about a *matter of lawfare* in the modern (*divided*) technological worlds. Matter is a force of production as *materialism*, and so *consumerism* without defining

any philosophical value (e.g. liberating humans). Lawfare is a portmanteau of the words of 'law' and 'warfare'; viz, *being logical illogicality* (e.g. controlling humans). Therefore, what I mean by a matter of lawfare is that NSM is to achieve maximising of our collaborations (e.g. solidarity, as support neighbours for write once/run anywhere software), because in Cyber-Luddism there is no rent, we are the owner seeking of our products, and so it is essential to avoid being national, individual, alone, selfish, etc., and then to be able to raise *Cyber-Luddite Societies* based on values of FOSS and Neo-Luddism.

In the current techno-politics, PCSS is a sort of '*Don Juan(s)*'; viz, sleeping [describing to be used without any hesitation] a particular nation to another nation if/while anyone can afford to, because PCSS has no *moral objective* (e.g. stop surveillance). Additionally, modern governments are only a sort of '*Don Quixote(s)*'; viz, sentimentalism, as a *fanciful idealist* (e.g. economic progress in a particular nation) to be ready for being manipulated and shaped by giant corporations (current controller). Modern governments have thereby no *realistic rationality* (e.g. concern privacy). Therefore, activists of/in Cyber-Luddism are in an idea based movement to attempt to be successful in their own missions (*emancipation*). The actual intention of Cyber-Luddite is to continually act and learn locally and input into and learn from global practices, improving global knowledge (our freedom), not being in the contest of controlling, e.g. everyone is always a learner, and every learner is a teacher, and so there is no separate relationship between *master* and *disciple* in Cyber-Luddite Societies.

Today, FOSS and Neo-Luddism are in an indignation meeting and a great initiative to support scholars and schools of NSMs (e.g. stopped being controlled), in particular non-human and human actors re-influenced each other to shape a better future, whilst for many others, it may be understood as another utopia! But, I believe [or authors believe] that utopia (Cyber-Luddism) is *feasible* and *necessary*, and so is not a *utopia*. Let me explain how Cyber-Luddism might be.

FREE OPEN SOURCE SOFTWARE

“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has” Margaret Mead (1901-1978)

FREE OPEN SOURCE SOFTWARE

The FOSS movement was born with the sharing of UNIX OS, which was originally developed by Ken Thompson and Dennis Ritchie in 1971 at Bell Labs. UNIX was licensed for a nominal fee among universities, but there was no formal support service for UNIX. This deficiency conducted toward a collaborative culture among individual programmers sharing their knowledge and experiences (Moon and Sproull, 2000). Early in the 1980s, Richard Stallman initiated the ‘GNU's Not Unix’ (GNU) project and set up the Free Software Foundation in 1984, so as to establish a free version of UNIX and its free applications. Within GNU project, Stallman initiated ‘copyleft’ (or an anti-copyright agreement in the USA, an anti-author’s right in the EU) and become a guru for FOSS activists. The agreement of copyleft permits programmers to recode software codes only if their own modified and extended version of codes is also freely available. It aims to protect software to become proprietary software, and prohibits privatising software, ‘*free as in free speech, not as in free beer*’ (Stallman, 1996). The main discourse was ‘*write once/run anywhere*’ that referred to Operating System (OS) agnosticism in that time. Write once/run anywhere is because “nothing is more disagreeable to the hacker than duplication of effort” (Stephenson, 2002). In this sense, the principles (*intentions*) of FOSS gets into the effort of interiorising *radical openness* (may also call as *the virtues of openness*) by Peter, as

“Open cultures become the necessary condition for the system as a whole, for the design of open progressive technological improvements and their political, epistemic and ontological foundations” (2013, p.49).

Although, by 1990, the GNU movements accomplished coding of all the necessary components for the system, it was still not considered at an acceptable level of stable OS. Meantime, Linus Torvalds developed an early version of Linux based on

MINIX because he cannot use UNIX on his own computer, due to the nominal fee, and he asked for contributions from MINIX newsgroup. Soon there were thousands of contributions among programmers; this also brought conflicts between commercial commodity and collaborative culture supporters (Bretthauer, 2002).

FOSS movements are an active process that has been driven by various agencies of FOSS and influences of technological innovations in the market, since the 1980s (West and Dedrick, 2001). Although, voluntary programmers are crucial actors in the development process and penetration of FOSS projects, chronologically, private and then public sectors have also become crucial actors in FOSS movements. Currently, all parties might be a user, supporter, sponsor and/or developer. As an example, in the 'Open Source Index Ranks 2010' by Redhat, Turkey is overall ranked 57th among 75 countries: government activity rank is 45th, industry activity rank is 61st and community education activity rank is 44th, on the criteria of comparing and contrasting countries being founded on their FOSS activities and environments.

In the computer and social science literature, FOSS is seen as a real, active and influential fact, that has three core principles,

“(a) Source code must be distributed with the software or otherwise made available for no more than the cost of distribution. (b) Anyone may redistribute the software for free, without royalties or licensing fees to the author. (c) Anyone may modify the software or derive other software from it, and then distribute the modified software under the same terms” (Weber, 2004, p.5).

There are three fundamental FOSS values emphasised by Weber. *The Freedom* is to reflect both monetarily free (cost) (freedom to run, read and study software for any purposes) as well as free speech (freedom to modify and share copies of software both original and new version under the same licence agreement). *The Equality* is to ensure that there is always source code availability; no discrimination, no exclusivity or no hegemony for any technology or anyone. This does not mean that FOSS is a community in which anyone or any technology has an equal influence and power, it is open for all but it is shaped by explicit and implicit cultural norms as it is “a self-organisation, but it is not a chaotic free-for-all” (ibid, p.3). *The Solidarity* is to

support neighbours not only to assist and build collaborations but also to bring them together under the same roof (Ouédraogo, 2005).

These three values have, at least, three core criteria in terms of developing and implementing software: *Open Source* (source code availability for all), *Open Standards* (interoperability, technologically neutral, efficiency and innovation) and *Open Content* (open access for publications and documentations). These values are perceived as crucial considerations for the software development process, generally found more reliable, faster and functional than the traditional way; although this is argumentative and has not yet been conclusively exemplified (see, Wheeler, 2007). Raymond (2000) argues that FOSS is as a *Bazaar* in which software is developed within on-going voluntary collaborations through mainly unstructured and egalitarian coordination, and PCSS is as a *Cathedral* in which software is developed by a small group of highly skilled programmers through traditional and hierarchical coordination. Raymond claims that FOSS is as a superiorly secured model because there is no limited number of developers and users, and ‘*given enough eyeballs, all bugs are shallow*’. In this sense, ‘*any person can invent a security system so clever that she or he can't think of how to break it*’. Doctorow (2004) called it as Schneier’s Law. So, ‘*if you do not tell someone how your security system works you never know whether or not you solved all problems existing in it*’.

In order to conceptualise FOSS, initially, Raymond used FOSS values and criteria and started the discussion of *gift economy* that perceives FOSS as social movements shaped by *gift culture*. His argument is that “*in gift cultures, social status is determined not by what you control but by what you give away*”. FOSS is driven by volunteers who have *ad hoc altruism* and seek more reputation within self-organisation systems. However, other social scientists further argue that gift economy may huddle volunteers together, encourage their motivations and enthusiasms, and support and promote FOSS products through gift cultures, but that is not enough to conceptualise reasons of FOSS sustainability and its expansiveness in global economy. As, Weber stated, “an uneconomic explanation of open source, if such a thing really were possible, would probably be uninteresting and also probably

wrong” (2004, p.226).

Weber conceptualised FOSS through political economy perspective based on microfoundation and macrofoundation levels. In microfoundation level, having fun and enjoyment, being creative and artistic, and solving problems within hacker culture, etc., are clearly individual motivations but there are also economical motivations to use FOSS or to be part of FOSS communities. In individual level, there are two main economical motivations. *Alumni effect* refers to using, studying, teaching and producing new product within/by FOSS is significantly lower than any other proprietary alternatives. *Delayed benefit* refers to privileged position in future as a signalling effect (carrier) and intellectual challenge (ego gratification). An active and creative collaboration enhances recognition level in FOSS communities that leads to a high level of reputation and self-satisfaction. Besides these, FOSS is a complex global public good⁵¹. FOSS is nonexcludable, e.g. there is no ownership cost in its replication, especially via the internet. FOSS is also nonrival but not simply nonrival, indeed *marginally non-rival* or *anti-rival* because of its values, particularly open source. It provides opportunities of not only using software but also modifying it for any purposes under the same licence agreement. It also tolerates free-rider, which means that users run software without any contributions. Weber perceives that free-riding is not a problem or perpetration in FOSS communities, it is actually an advantage because more free-riders increase at least awareness and values of software, and in positive ways they may be testers who give notice of bugs, demand new properties or express their displeasure for improved software. Indeed, free-riders are also beneficial for PCSS, to some extent, because it also increases awareness of software and creates the network effect, but indeed it is perpetration (illegal). That makes FOSS the complex (global) public good which provides unique opportunities for a number of different purposes in a variety of organisations, such as FOSS business models, FOSS localisations in national level, etc.

“It's easier for our software to compete with Linux when there's piracy than

⁵¹Public good is defined via two notions: nonrival refers “use by someone does not prevent its use by someone else” and nonexcludable refers “once it is in the public domain, anyone can use it freely” (UNESCO, 2005, p.164).

when there's not." Bill Gates, Fortune Magazine, 2007

In macrofoundation level, social and political structures sustain coordination and govern complexity. In FOSS, there are several coordination levels; (a) individual incentives; programmers name with software name (b) cultural norms⁵²; ownership customs, technical rationality and (c) leadership practice; seniority rules, and high level of trust. In complexity, (a) technical design; software as small and simple as possible; (b) sanctioning mechanism, anyone or any organisations who derogates norms and rules, community can act as inflaming (accusation, blame and censure) or shunning (rejecting collaboration); (c) licence is actual a social structure that is also one way of controlling complexity and coordination issues, because the concept of licence in FOSS is not all about providing legal restrictions, instead it is set of principles of community beliefs, cultures and norms and ways of its structure of software development; and (d) formal government structure (it is also mainly voluntary status).

The arguments of microfoundation and macrofoundation levels are crucial, because these are the principles of any FOSS projects' successfulness and their unique opportunities.

FREE SOFTWARE and OPEN SOFTWARE

The mentality of FOSS developers and end-users could be considered as,
if all of us use Linux, I will use Windows!

Although there are a variety of licences agreements in FOSS, it has mainly two computerisation movements; *Free Software* is driven by Stallman, GNU and the Free Software Foundation (FSF) - more Radical Approach and Copy Left-Reciprocal Licences as emphasising '*essential freedoms for computer users*'⁵³ and *Open Source*

⁵²Levy (1984) clarify hack culture through (1) "Access to computers should be unlimited and total -- the so-called 'hands-on' imperative, (2) Information should be 'free', (3) Mistrust authority and promote decentralization (4) Judge people only on the value of what they create not who they are or what credentials they present, (5) People can create art and beauty on computers (6) Computers can change human life for the better"

⁵³ See, Free Software Foundation, available from https://my.fsf.org/associate/support_freedom?

is driven by Eric Raymond, Bruce Perens and Open Source Initiative (OSI) - more Business Oriented Approach and Permissive Licences as emphasising '*better quality, higher reliability, more flexibility, lower cost, and an end to predatory vendor lock-in*'⁵⁴.

Based on the conceptualisation of NSMs, as argued above, while Open Source is the method of software development, Free Software is a (global) NSM (St. Amant and Still, 2008, p.8). Open source values are mostly connected with benefits of openness. For economists, it might be also seen as a threat movement of PCSS, but for computer scientists it is an alternative, collective and evolutionist way to develop software, not exactly protest current socio-political issues, such as copyright, intellectual property, etc. Open source might be better seen as a great example of *Community of Practice* in which "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 2006, p.1). On the other hand, free software values are closely connected with anti-commercial-globalisation movements, e.g. freedom of software with copy-left agreement otherwise software may become a proprietary one.

"The principal goal of GNU was to be Free Software. Even if GNU had no technical advantage over UNIX, it would have a social advantage, allowing users to cooperate, and an ethical advantage, respecting the user's freedom" (Stallman, 2002).

It is necessary to emphasise how these two movements should be understood differently, because at first glance and in limited knowledge, these movements have just nuance conflicts that might be applied for ICT experts or lawyers. Either Free Software or Open Software Licences approved fundamental conditions to meet the four freedoms as: (a) the freedom of unlimited usage, (b) the freedom to read how software works and to change regardless of any purposes, (c) the freedom to redistribute unlimited copies, and (d) the freedom to redistribute modified versions.

⁵⁴ See, Open Source Initiative, available from <http://opensource.org/>

The differences between the two FOSS movements are their related conditions and permissions regarding software. GNU and derivative licences stipulate that once software is liberated, thus its own derivative software will be liberated as well. Therefore, these types of licences are classified in copyleft licence or reciprocal licence. On the other hand, some of other open source licences (such as, common licences, Berkeley Software Distribution (BSD), Mozilla Public Licence, etc.) do not stipulate any conditions as copyleft, therefore these types of licences are classified as tolerant and permissive licences. Regarding permissive licences, code developers have a right (freedom) to close extended source codes when they change source codes. The most popular example could be Apple's Operating System (OS) X, which is formed based on BSD licence kernel. OS X is not a kind of FOSS products but it does not mean that BSD is not a FOSS licence. The important thing is developers' choice. When developers contribute on any projects based on permissive licences, they should be aware of that they may contribute on successful or unsuccessful non-FOSS projects, so PCSS products. According to Stallman, free software and open software are the same things but,

“nonfree software is an inferior solution to the practical problem at hand. For the free software movement, however, nonfree software is a social problem, and the solution is to stop using it and move to free software.”

Stallmanites are willing to persuade others to believe in their *utopia*, because software is understood as an idea, instead of an invention and innovation. When it occurs, copyleft may not be needed anymore; because, the European patent law currently does not authorise principles and ideas to be patentable, not like the patent law in the USA. Thus, software (perhaps most, in particular OS) will become a public good.

Regarding this conflict, for someone, who is not a developer, the decision is given by free-will, total risk and benefit analysis. For someone, who is devoted to the Free Software Philosophy, it is totally unacceptable. FSF inquires the freedom of software for whom, and perceived this issue as important for providing more freedom for developers in the development process; however, the main purpose is to provide

freedom for end-users. Therefore, developers should make *sacrifices* for ensuring *end-users' freedom*. That is the reason copyleft exists. For someone, who is pragmatic, it is a great opportunity to obtain more benefits for FOSS movements; because, permissive licences do provide the widest freedom for FOSS movements. It might be understood as widest freedom, but for *developers* and not for the *software* and *end-users*. In this sense, it is wrong to conclude that software based on permissive licences is less free than software based on copyleft, but it is right to conclude that software based on permissive licences provide less freedom than software based on copyleft in terms of liberating software. Theoretically, both of them are part of the FOSS movements. Nevertheless the important point is developers' choice, which may be *Freedom of Developers*, *Freedom of Codes* and/or *Freedom of End-Users*.

I believe, any initiatives of combining and/or developing products of FOSS and PCSS families are not FOSS projects; they might be understood as a FOSS and/or PCSS product but not a FOSS project, because it does not fit either Free Software or Open Software Philosophies (this occurred a couple of times in the Pardus project, and other international FOSS projects as well).

I also need to emphasize that, as opposed to popular belief; philosophies of FOSS do not restrict commercial benefit. Nowadays, there are many international corporations that use FOSS business models, such as Red Hat. These corporations have run business models without restriction of freedom of end-users. In a general sense, comparison of different open source licences can be seen from the literature. Nowadays, there are around five hundred basic Linux distros. When it is considered derivative distributions with a variety of needs and purposes, there are thousands of Linux distros available. Among GNU/Linux distros, the most Linux influences are: Ubuntu, RedHat, Debian, SuSE/Novell, Arch and Gentoo distros.

So, WHAT are the POTENTIALS of FOSS for EDUCATION and STATE?

It is indisputable that software changes so many times before any students graduate. Therefore, digital literacy does not provide a teaching and learning environment for ensuring skills of particular applications; rather it is a lifelong learning of technology in which FOSS would be

“(a) Offering new approaches to teaching and learning, specifically enabling personalized learning and enhanced learner voice, (b) Enabling knowledge sharing and collaboration between teachers, (c) Overcoming structural divides between developers of educational software and its users” (Dillon and Bacon, 2006, p.7).

on the purpose of being *adapters* rather than pure *adopters* of technology (Ouédraogo, 2005). Importantly, recently, a new concept or very old concept, Computing–Computer Science Education, has re-emerged in educational disciplines, in spite of the fact that FOSS communities have emphasised it for more than four decades.

Admittedly, the resource is the main difference between hardware and software innovations. Whilst hardware innovation requires a larger amount of resources/logistics and a large group of specialists, through a structured coordination, in a particular place, software innovation may be accomplished by a smart 18 year old student in her/his house, or a small group of programmers across the world, as such FOSS communities. That is seen as a great opportunity for developing countries to improve their software market and software service industries, as well as to be competitive for developed/former software leaders, mainly the United States, Western Europe, Japan, etc. (Aspray, et al., 2006).

These are just the obvious reasons. In this thesis, there are far more reasons provided as to why FOSS is essential for education systems and states in the main chapters. Technology is all around us. So, when any *contexts of contexts* are shifted, it is essential to shift potentials of FOSS, and so possible reasons for FOSS usage.

NEO-LUDDISM

“The technologies created and disseminated by modern Western societies are out of control and desecrating the fragile fabric of life on Earth” (Glendinning, 1990, p.50)

One of the best known quotations from Nietzsche is *that which does not kill us makes us stronger*, Nevertheless, technology has become out of control, its scopes and nature (rationales and realities) have been evidently *misused & abused* by many stakeholders and can be the cause of human rights violations (e.g. lawful interceptions), animal rights violations (e.g. unacceptable scientific experiments) and, consequently, demands of nature (e.g. pollutions), including unborn generations (e.g. governments' debts for technological projects). So, modern technology has become the base of the actuality of a *realm*, and it faces in contrast to the *realm* itself; viz, no Technological Law. In this sense, technology by this means to ridicule the grave *wisdom* of its development, that being lifeless to all particular purposes, to isolated pleasure, individual satisfaction, and becomes definite in its movement as well, remembers, and thinks of, merely what is incomplete; technology makes this *wisdom* deadly- standard of raw and wanton infancy, and the purpose of derision and scorn, worthless of its eagerness. Technology has already proclaimed that it is in all places the power of infancy, that actually every minute counts; technology uploads this as of prime meaning; extols its Singularity as the thing which is the saver and master of human being; frees itself from its dependence (human), and so achieves its satisfaction and its pride. Therefore, technology which delivers and offers pleasure to humans, the suppressed demand of destruction and awful destiny, originates at the moment into prominence, and is the reason of major implication and consequence. Thus, modern technology has become the progress of *negation* in the modern era. But why is it? According to Albert Camus

“The seventeenth century was the century of mathematics, the eighteenth that of the physical sciences, and the nineteenth that of biology. Our twentieth century is the century of fear. I will be told that fear is not a science. But science must be somewhat involved since its latest theoretical advances have brought it to the point of negating itself while its perfected technology threatens the globe itself with destruction. Moreover, although fear itself cannot be considered a science, it is certainly a technique.” (1972, p.257)

Many believe (from the knowledge of famous futurologists, Ray Kurzweil, Vernor Vinge, Michio Kaku, etc.) the 21st century is the century of *Singularity*, with less and less securities and privacies and more and more fears and hopes (e.g. the Century of Turbulence, Paranoia, Esperance, Ogle, etc.). Therefore, in the global worlds, many believe the separation argument to serve the future(s), - either Singularity is for US (developed societies) and/or THEM (developing societies) in a real practise or Singularity is for US (human) and/or MACHINE (un-human) in a theory – globally irrelevant and unsustainable (*anachronistic*) in the long term. Enlightenment by this separation is already exhausted; that is also well expressed in Donna Haraway's words, in her essay- A Cyborg Manifesto,

“A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction. . . . Liberation rests on the construction of the consciousness, the imaginative apprehension of oppression and so of possibility. The cyborg is a matter of fiction and lived experience that changes what counts as women's experience in the late twentieth century. This is a struggle over life and death, but the boundary between science fiction and social reality is an optical illusion.” (1985, p.117)

From this point of view, present Neo-Luddites are extremely and politically diverse groups; from environmentalists to contaminators, romantics to rationalists, academics to politicians, atheists to believers, and/or technophobes to techno-addicts, etc. Therefore, all debates result in disagreement. Nevertheless, all of us have one *particular* reason(s) to be against one *particular* technology due to human-techno social interactions, e.g. who can agree with governments while they are watching our personal information on the internet? So, the meaning of Neo-Luddism depends on input from all stakeholders.

From this diversity, fundamentally, Neo-Luddism is “a leaderless movement of passive resistance to consumerism and the increasingly bizarre and frightening technologies of the Computer Age” (Sale, 1996). The name is derived from the British-Luddites (*Legacy of Robin Hood*), historical activists, who were against the introduction of technological equipment and supported simple living since the 1800s. Neo-Luddism is essentially connected with the concept that technology has an

undesirable and *harmful* influence on *beings* and *nature*, due to unknown future effects. For example, human nature has learnt that there are always enemies, even, ourselves, that create uncertainty. “If our “dark side” reminds us that what our conscious mind rejects is very much alive deep within us; and if we want to live without having to juggle such contradictory qualities, how can we do so?” (Shaffer, 2012) Technology has an extrinsic potential to be able to be a *timid tyrant* and *disease* because of its uncertain *immorality* and *amorality*, and so its *irrationality* and *incomprehensibility*; viz, the conventional antagonisms between known (conscious) and unknown (unconscious) uncertainties. Therefore, the main concern from Neo-Luddites is how to ensure that technology will solve human related issues (e.g. socio-environmental) without creating other (more dangerous) issues (e.g. global warming).

Neo-Luddites are sensitive of globalizations and the ambiguous friend, technology, and all of their outcomes. E.g., climate changes, cyber wars, etc. In this sense, the perspectives of Neo-Luddites are widely misunderstood as *against* all technology. Actually, they are not against all technology, they just have precise *criteria* for technological satisfaction. In 1990, Glendinning presented the ‘Notes towards a Neo-Luddite Manifesto’ to clarify what Neo-Luddism is,

- (a) ‘*Neo-Luddites are not anti-technology*’, but against particular technologies, which are ‘*at the root, destructive of human lives and communities*’, and ideas of rationalism and materialism, which deemphasize ‘*human potentials*’ and ‘*social progress*’.
- (b) ‘*All technologies are political*’, to be against uncertain technological positions (philosophies). Technology may be ‘good’ (e.g. seat belt) or ‘evil’ (e.g. gun), so cannot be ‘*neutral*’. Technology is shaped, in particular, within social contents for particular purposes in the interest of any values of a technological society; ‘*short term efficiency*’, ‘*ease of production*’, ‘*distribution*’, ‘*marketing*’ and ‘*profit potential or war-making*’. These values have culminated in inert of ‘*social system institutions*’ in which an individual has no control / power upon the system.

- (c) *'The personal view of technology is dangerously limited'*, to be against the belief that technology advances individual life towards individual needs, rather than focusing on extensive social, economic and ecological consequences of technological systems.

Within this scope, Glendinning further suggested that Neo-Luddites side with,

- (a) *'The dismantling of the following destructive technologies'*, such as nuclear, chemical and genetic engineering, electromagnetic technologies, television and computer technologies (*'which cause disease and death in their manufacture and use, enhance centralized political power, and remove people from direct experience of life'*).
- (b) *'A search for new technological form'*, to reject *'autonomous technology'* and *'the creation of the technologies that are of a scale and structure that make them understandable to the people who use them and are affected by them'*; and to be in favour of *'the creation of technologies'* which are both *'built with a high degree of flexibility so that they do not impose a rigid and irreversible imprint on their users'*, and *'foster independence from technological addiction and promise political freedom, economic justice, and ecological balance.'*

(a) & (b) are exactly the reasons why FOSS exists (but FOSS is much more than that).

- (c) *'The creation of technologies in which politics, morality, ecology, and techniques are merged for the benefit of life on Earth'*, in particular *'community-based energy sources utilizing solar, wind, and water technologies which are renewable and enhance both community relations and respect for nature; organic, biological technologies in agriculture, engineering, architecture, art, medicine, transportation, and defence which derive directly from natural models and systems; conflict resolution technologies, which emphasize cooperation, understanding, and continuity of*

relationship; and decentralized social technologies, which encourage participation' responsibility, and empowerment'.

- (d) *'The development of a life-enhancing worldview in Western technological societies'. 'The human role, not as the dominator of other species and planetary biology, but as integrated into the natural world with appreciation for the sacredness of all life'. (pp:82-88)*

From this point, Neo-Luddites are not willing to destroy and/or take a hammer to all technologies, and thus to stop technological developments; they more readily focus on technological *threats* and human and nature's *vulnerabilities*, thereby their intention is *slowing technological acceleration* to work in parallel with the understanding of impact on human and nature. Nevertheless, people are willing to see the same realities as within the real world when communicating with the computers worlds. What are psychoanalysts' thoughts? According to Petrina, et al. (2004), in ICT trends, there are four main elements; *technologies, modalities, practices* and *corporate formations*. This divergence has been raising further moral questions: *civil rights, civil liberties* and *human rights*. Technology touches and shakes us up in many ways while we do not inquire how they came to exist. Whilst technology turns increasingly dominant in today's worlds; it is difficult to ignore how our rights are influenced by technological moral rationalities (if it has). Therefore, there are arguably *new moral concerns* (meaning) that should be carefully considered in emerging technology,

"If artificial agent is only a mean and is not responsible for its own actions, then is the responsible one its designer, its producer or its user? ... As fast as technology is moving forward, new and specific moral questions arise. I believe we need to deal with these questions before it might cause any irreversible damages" (Prokešova, 2011, p.84)

ARGUMENTATION

"We are living through a movement from an organic industrial society to a polymorphous information system – from all work to all play, a deadly game."

Haraway (1985, p.128)

Concerning the above points, current technology is being an *anthropomorphic* form; ‘*everything*’ in this manner is claimed to be ‘*usefully necessity*’ for technology because its angle of *inclination of inclination* is *polymorphous*; as ““everything is permitted” does not mean that nothing is forbidden” by Camus (1955, p.44) that highlights the absurdity between our slaving and liberating actions without authorizing itself. Nevertheless, what will happen if our deadly technology (PCSS) betrays us? Perhaps we will come to a new understanding, in every feasible way, to compromise on what ‘technology’, ‘designers’, ‘producers’, ‘end-users’, should be! But, is there a tipping point in the contingent diversity of *constitutions* and *capacities* in techno-human social interactions? In this sense, more specifically, the question has become ‘should Neo-Luddites stand against PCSS and for FOSS?’ Or should every *technical artefact* or *system* be accepted to symbolize its constituents in the identical way for their own publics? (See, Brown, 2007) According to Doctorow,

“*Technological revolutions are never bloodless. The Luddites had a goddamned good point, somewhere in there. A just dividend from automation and higher productivity means that those with surplus-to-requirements skills don’t starve. That their children don’t starve. That their houses aren’t taken from them. That their lives aren’t ruined by the thing that saves us from drudgery*” (2013b).

Many believe that the initial issues of techno-politics are driven in the name of ‘copyright’ through its trusted relationships between stakeholders. In the computer worlds, everything is copied, e.g. no *loading* on the internet or no *reading* from a file in computers; actually everything is simply *copying*. Therefore, there is no copyright policy, because copyright policy is primarily meant to be the internet policy, and so it became just a *policy*. It attempts to regulate every aspect of our lives when there is no online and offline difference. So, these arguments raised the questions of how/why trustworthiness should progress to establish an on-going verifiability for the century of singularity. Doctorow asks a variety of interdependent issues, under the subject of how little we know about computers and ourselves and who is governing digital trust. On the digital era, there is an awkward imbalance between ‘creativity’, ‘culture’ and ‘relationship’, such as between audiences and creator; the

future of ideas and artist; owners and pirates, etc. Doctorow (2012) argues *property maximalism*, as,

‘Owners’ versus pure ‘Users’: (a) *Users Know* (“The user of a device should be able to know which software is running on their devices”. (b) *Owners Know* (“The owner of a device should be able to know which software in running on their devices.” (c) *Owners Control* (“The owner of a device should be able to control which software in running on their devices.”) and (d) *Users Control* (“The user of a device should be able to control which software in running on their devices.” Many scholars only support (d) ‘users control’, because both the owners of products cannot spy on the end-users and so the end-users of products cannot spy on other end-users. Nevertheless, the current LAWS do not reflect this reality. Doctorow (2011a) elaborates that Digital Millennium Copyright Act requires end-users not to control their own computers. For instance, if we install particular software on our mobile phones, without authorisation, to investigate hidden risks and vulnerabilities, it is an exact crime as per a ‘jailbreak’ product. So, it is illegal to get the key in DRM to see how the system works. It is also illegal to share the key to others if we manage to find potential flaws and/or wrongs in the system (e.g. Sony anti-customer technology roundup). Even if we found something is wrong (legally illegal), we are committing a further criminal act. Thus, we all have to behave and act as if there are no flaws in our computers worlds.

*“What's Important Is Not Me. And It's Not You. It's Us!
If you want to live forever, make yourself the most interesting person to your
children” David Brin⁵⁵*

It seems that in the computer worlds, every child become a rebel (criminal) when they are seeking how to challenge their parents (technology) and when they are attempting to ‘copy’ what they learnt from those parents (technology). Arguably, technology is currently the most interesting thing to our children. So, in general terms, Boyle argues that copyright term limits are now absurdly long in relation to speed of technological advancement. “There are many instances where the erosion of copyright formalities have had massive unintended negative effects in the online

⁵⁵Retrieved 31/12/2013 from <http://www.youtube.com/watch?v=5WgbNqu7JJc>, the time is 42.00

context, for example, but the maximalist “rights culture” seems to be oblivious to all of them” (2004, p:6-7). Doctorow constantly calls this debate *the coming civil war over general purpose computing* and states that “even if we win the right to own and control our computers, a dilemma remains: what rights do owners owe users?” (2011a)

‘*Lockdown*’ (product add on) (e.g. Trusted Platform Module (TPM), as in Apple), computers do not always operate in the way that we want them to, e.g. It runs with daemons, when we do not launch them in the first place and/or we have no right to know what it launches and/or it stops us launching something we want to launch, as attempting to determine our own products) and ‘*Certainty*’ (Uncertainty of Certainty, “It (e.g. (TPM) can faithfully report the signature on any other bootloaders it finds, and it lets you make up your own damn mind about whether you want to trust any or all of the above”). Software in our computers politely asks us whether or not we are wish to run software; it provides free choice, but does not reveal the level of ‘certainty’ for additional permissions, such as hyper-individualized surveillance, just like big brother (information about information as meta-data), even when this is overtly stated in the terms and conditions, who reads these extensive documents?

‘*Human Rights*’ (“If your world is made of computers, then designing computers to override their owners’ decisions has significant human rights implications”. Nevertheless, there are no secrets in the digital worlds, surveillance is everywhere, controlling and restricting sharing our thoughts and discourses) and ‘*Property Rights*’ (“Once you buy something, it belongs to you, and you should have the freedom to do anything you want with it, even if that hurts the vendor’s income”) (ibid). Nevertheless, we bought it, but we do not have the ownership rights. We are just renters of what we bought, based on the product’s terms and conditions. Both human rights and property rights require that computers are not envisaged for examination by off-site supervision by International NGOs, Governments, Corporations, etc. Both rights ensure that owners of computers are the only authorised end-users. However, there is always ‘nevertheless’. Regarding this, what is important?

“A community will evolve only when a people control their own communication”
Frantz Fanon (1925- 1961)

According to Nihilists, there is no meaning (objectives, purposes and/or intrinsic values) in our existentialism. When we are born we start to die, which means life is simply ‘death’. Many believe this is wrong. According to Biologists, when we are born we go through life stages until 20% of the average life span, and then we start to die. So, we can learn from this cycle to change our existentialism (see, Eternal Return Theory from Nietzsche), nevertheless there is another nevertheless, because the current techno-politics is for “Cybernetic Capitalism — what does that mean? ...Cybernetic capitalism develops so as to allow the social body, devastated by Capital, to reform itself and offer itself up for one more process of accumulation. On the one hand capitalism must grow, which implies destruction. On the other, it needs to reconstruct the “human community,” which implies circulation” (Tiqun, 2010, p.21). So, we need more elaborations for techno-politics.

CYBER-LUDDISM

*“One of the definitions of sanity, itself, is the ability to tell real from unreal.
Shall we need a new definition?”* Alvin Toffler (1970, p.125)

With the Toffler’s quotation, are there any differences between Cyber-Luddite and Neo-Luddite? I believe there are. I personally respect the principles of Neo-Luddites and Luddites; however we are in the digital era and so Neo-Luddites need to, once again, realign themselves with certain realities. Many believe the argument that ordinary human health is sufficient enough for humans (*needs* and *desires*) is irrelevant in the century of Singularity; on the contrary, I am thereby interested in variable cyborg possibilities. We can produce a better, faster and safer car; we can improve our sight without outmoded glasses, etc. Modifying the human brain and body to achieve advancements beyond what is currently possible is acceptable, possible, and so necessary (*‘Necessity, who is the mother of invention’ by Plato*), because the human brain and body (social-cultural beliefs) have evolved to appreciate the possibilities / advantages of what humans can (for the author should) do. It does not mean that if we push ourselves to terminate technological blindness,

that we will never appreciate ordinary pleasures, as Neo-Luddites have been arguing. The issue with Neo-Luddites beliefs is twofold; they blame technology rather than the negative purpose / usage of that technology; they do not seek compromise and they do not offer alternative solutions that can be reasonably applied in this century. Many already believe that the human brain and body (mentally & physically upgradeable) needs to evolve it's evaluation of technology (FOSS). Nevertheless, there is no answer for the question of that how far human can (for the author should) go, and as still be a human. Therefore, globally, scholars have already realised that *better* technology has uncertain *negative side effects* (e.g. computer-assisted anarchy, fecund chaos, etc.), because there is no free *individuality* with respect to each other in techno-human social interactions. Thus, there are always 'what if scenarios'! Therefore, we should (for the author can) continually research these uncertainties. In this sense, what is crucial is,

"The new education must teach the individual how to classify and reclassify information, how to evaluate its veracity, how to change categories when necessary, how to move from the concrete to the abstract and back, how to look at problems from a new direction —how to teach himself. Tomorrow's illiterate will not be the man who can't read; he will be the man who has not learned how to learn." Toffler (1970, p.211)

Steve Mann originated Cyborg-Luddism. According to Mann (2001), in many ways we are a cyborg and we have already bought into many technologies; and so now, the question is how to build these technologies with respect to *natural world* around us and *natural structures*. In other words, Mann highlights harmonisation of humans and technology for improved nature and nurture, because technology over nature is *unsustainable* and *reckless*. Mann thereby uses *Humanistic Intelligence* (HI) instead of *Artificial Intelligence* (AI) for alerting us to unknown future(s). He does not believe that we should replace humans with computers. Therefore, HI has six basic signals; (a) *Un-monopolising of the user's attention*, (b) *Unrestrictive to the users*, (c) *Observable by the user*, (d) *Controllable by the user*, (e) *Attentive to the environment* and (f) *Communicative to others*. It seems that these already marry with FOSS philosophies.

Mann further argues that in HI, the main argument of *Surveillance Environments* (watching from up and over, as artifactual-centric), is how to improve *smart technology*! As opposed to *Sousveillance Environments* (watching from down and below, as human-centric), is how to improve *smart people*! Actually, to some extent, Mann's argument has been become real; i.e., taking photos and videos of government officials and posting them on the internet as a method of citizens protesting government surveillance, etc. The problem is thereby not only big brother; there are also little brothers (anyone). Therefore, we have to know how to protect ourselves in upcoming decades.

"As society and the problems that face it become more and more complex and machines become more and more intelligent, people will let machines make more of their decisions for them, simply because machine-made decisions will bring better results than man-made ones. Eventually a stage may be reached at which the decisions necessary to keep the system running will be so complex that human beings will be incapable of making them intelligently. At that stage the machines will be in effective control. People won't be able to just turn the machines off, because they will be so dependent on them that turning them off would amount to suicide." Bill Joy (2000)

From these arguments, according to Boyle, the past, current and future issues fundamentally are the same; we have lots to learn from environmentalists, who have so many pertinent points; viz, save the world. So we need to create *Ecological Environments* in which NGOs, activists, scholars, etc. collaborate to solve many issues through many different angles; instead of just believing technology itself, which is simply controlling us. Therefore, we have to take power to control our worlds. In this regard, it is essential to get a sense of another (techno-political) manifesto, as *Neo-Luddite Manifesto* to expand *Cyber-Luddism* (a new NSM), in particularly for the real practices. Boyle published *A Manifesto on World Intellectual Property Organization (WIPO) and the Future of Intellectual Property* in which Intellectual-Property Policy must adopt seven principles: *Balance* (between the realm of protected material and the public domain common technology is for all, no privilege should be taken); *Proportionality* (imposes costs as well as benefits on the public, commerciality should not be something just for profit); *Development Appropriateness* (a counterforce to the tendency to impose one size fits all solutions, there is always a level of variation in technology); *Participation and Transparency*

(increase the participation of civil society groups in the discussion and debate, embrace various human related concerns as much as possible); *Openness to Alternatives and Additions* (methods of encouraging and organizing innovation, ethically, we should not ignore the need for technology to provide solutions for the terminally ill, including those who cannot pay); *Embracing the Net as a Solution, Rather than a Problem* (WIPO should establish a standing committee which focuses on two key issues: the barriers that traditional intellectual property erects against global educational and cultural access, we need to establish a new media to focus on the opportunity of the internet, not its techno-political threats); and *Neutrality* (between different methods of using those rights to encourage innovation, both considering the pressure of software patents upon FOSS development and the pressure of software piracy upon PCSS development) (2004, p:8-11).

Nevertheless after all, what is the current reality to understand Cyber-Luddism?

“Our movements, our speech, our emotions and even our dreams have become the informational message that is incessantly decoded, probed, and reconfigured into statistical silhouettes, serving as targets for products, services, political slogans or interventions of the police. Each of us, paradoxically, is at once the promise and the threat of the future, which itself is our Telos, our God, our Creator. And so, under the incessant scrutiny of today’s surveillance technologies, Wiener’s philosophical question returns in an inverse form. Can a creature play a significant game with her creator? Can we play a significant game with the cybernetic society that has created us?” (Deriva continental, 2007)

In this sense, some publicly available information; Barack Obama believes “you can't have 100% security and then also have 100% privacy and zero inconvenience” (2013). Ann Cavoukian states that ‘privacy has to be protected globally or nowhere’; ‘Privacy versus Security is complete nonsense. You must have privacy in order to have freedom. And you can have privacy and other functionalities’ (Privacy by Design, Positive-Sum versus Surveillance by Design, Negative-Sum) (2014). Google says ‘Google on Gmail: ‘No legitimate expectation’ of privacy’, ‘Google policy is to get right up to the creepy line and not cross it’, ‘If you have something that you don't want anyone to know, maybe you shouldn't be doing it in the first place.’ We know where you are. We know where you've been. We can more or less know what you're

thinking about.' (2013) *Etc.* Microsoft wants '*Lawful Intercept and Microsoft's "Legal Intercept" Patent Pending Applications through Skype*' (e.g. Microsoft lately claimed that they will develop a voice recognition system in which end-users will speak Mandarin and it will come out English and vice versa). Blind computers (virus) and slowing the system to sell more and to gain more profits (e.g. Microsoft lately confessed that, in Skype, the speed of the free services has been deliberately slowed down to push end-users to pay more) (e.g. PRNewswire, 2012). Microsoft has recently collaborated with the US Intelligence, in order to allow end-users' communications to be intercepted together with top-secret documents from the National Security Agency, (e.g. The Guardian, 2013), etc.

"There's no shortage of anything except brains in Washington." Jacque Fresco
"You can't make money from the sun." bystander
"No you can't, exactly that." Jacque Fresco (2013b)

Cyber-Luddites state we can use FOSS to fight back with the mature issues of techno-politics (e.g. *Corporatocracy*) and possible future (birth) issue of unknown technology (e.g. more *Plutocracy*, *Meritocracy*, etc.), because the principle of Cyber-Luddism is to protect new ways of life. Do not lie to us (to control the market), thus we can trust you. Do not make us a rebel and criminal for asking how the system works on our computers, and/or in our computers worlds; viz, being in a real *Democracy* (to some extent for the author). Giant corporations and their corrupted friends (governments) are not interested in individual privacy; they are only interested in their own privacies (PCSS), etc.

UTOPIA versus DYSTOPIA (REASONING)

"Being asked what was the most beautiful thing in the world", Diogenes Laertius replied, "Freedom of speech." (Cited in Heinemann, 1925, p.13)

Is it possible to be Cyber-Luddites using FOSS to address techno-politics? Many scholars perhaps believe it is. The potential argument mirrors the first argument for the right to freedom of speech and expression, which was started in the late 17th century in the UK. It was a controversial idea which put the instigator (William and

Mary, originally the late 6th or early 5th century BC) and his supporters at considerable risk. Nevertheless, it was *valid* and *necessary* and has become *reality* (for many developed nations, to some extent). In this regard, what the actual emergency involves,

“the old is dying and the new cannot be born; in this interregnum a great variety of morbid symptoms appear. ... a problem caused by the “crisis of authority” of the old generations in power, and by the mechanical impediment that has been imposed on those who could exercise hegemony, which prevents them from carrying out their mission.” Gramsci (1971, p.556)

According to Boyle, *Digital Ecology* is the concept of creating digital codes and environmentalisms together in practice; viz, establishing friendly artificial intelligence (a part of ecological environments). His vision is to form a different family within different groups through different interests but within a *right culture* (*Knowledge Ecology- as, Blindness to Alternatives: In and Out of the System*). Boyle put forward this idea “to see that there was such a thing as “the environment” rather than just my pond, your forest, his canal. We need to do the same thing in the information environment. We have to “invent” the public domain before we can save it” (2008, p.42). This idea can be also seen in the *Pacific Edge*, which is the third book of Kim Stanley Robinson. What it is so interesting in this book is that people living in the *Pacific Edge* create an ‘*Ecotopia*’ - an ecological utopia, which is against that of a *commercial-industrial complex*, and only claims *the negative growth of development* as dangerous for nature. In the utopia, technology is not a threat to kill and destroy its creator. “*Utopia is the process of making a better world, the name for one path history can take, a dynamic, tumultuous, agonizing process, with no end. Struggle forever*” (1990, p.95). The discourse of the *Pacific Edge* is in parallel with the *Venus Project*, which “*proposes a system in which automation and technology would be intelligently integrated into an overall holistic socioeconomic design, where the primary function would be to maximize the quality of life rather than profit*” by Fresco (2013b).

From the points of view above stated, the principles of *Sousveillance Environments* with *HI* (by Mann) and *Ecological, Digital and Knowledge Environments* with

Future of Intellectual Property (by Boyle) should be taken as a basis to raise Cyber-Luddites, and so to create Cyber-Luddism Societies (not a Society). In this sense, this techno-politics may also refer to the literature of *the eco-society* in which there is a depictive civilian *love* and *peace* between *human* and *un-human*, in order to theoretically and rightfully overcome the *lethal needs* and *requirements* of the century of Singularity. The idea is the study of *being a human* and *being in a community with her/his love*, which lie within that *love* and *peace* have their places to the gracious equilibrium, and so harmony of ethical life. In there, there is always a *positive* existence limitation in *negative* techno-human social interactions.

“The eco-society is decentralized, communitarian, and participatory. Individual responsibility and initiative really exist in it. The eco-society rests on the plurality of ideas about life, life styles and behaviors in life. The consequence of this is that equality and justice make progress. But also there is an upheaval in habits, ways of thinking, and morals. Mankind has invented a different kind of life, in a balanced society, having understood that maintaining a state of balance is more of a delicate process than maintaining a state of continual growth is. Thanks to a new vision, a new logic of complementarity, and new values, the people of eco-society have invented an economic doctrine, a political science, a sociology, a technology, and a psychology of the state of controlled equilibrium.”
(Joel de Rosnay, *The Macroscope*, 1975, cited in Tiqqun, 2010, p.29)

We need water, food, air, etc., to survive, but we also need technology to live in the current era. Many believe the philosophies of FOSS and New-Luddism are to clean up technology. What kind of world(s) could we have lived or be living if we agree technology as something of a digital public good (indeed some safe technology). So, we need to think about patentable products again, to see our potentials without being afraid of future Dinosaurs’ (Microsoft, Apple, etc.) intimidations and fraudulent promises, as they are the only solutions to improve the current market values (efficiency, interoperability and innovation). Nevertheless, these arguments do not mean that we will solve all problems within techno-politics when we define and follow the value(s) within Cyber-Luddism; but, after all, we can design better human-techno social interactions. In this sense, I believe this is the relationship between *Cyber-Luddism* and *Singularity*.

In summary, the philosophical questions are the same; instead of considering what we can do more, what money can buy, etc., we need to ask ourselves what we should do, what money should buy, etc. As, Heidegger argued, "...but where danger is, grows. The saving power also. ...poetically dwells man upon this earth... The closer we come to the danger, the more brightly do the ways into the saving power begin to shine and the more questioning we become. For questioning is the piety of thought" (1977, p.18-19). So, the concept is the victory of one power and the defeat of the other in that atmosphere is in the equilibrium between these two. This duality of patterning has been always vested through human existentialism. In this sense, with a short term vision, we can optimistically consider FOSS,

"We can build a network that is part of our freedom or part of our oppression....I want a free and fair world....There is no way to fight oppression without free devices and free networks" Doctorow (2013c)

On the other hand, we can pessimistically consider the PCSS view; giant corporations will continue control and regiment the masses towards their wills without any awareness; viz, *Corporatocracy* with PCSS. "If we understand the mechanism and motives of the group mind, is it not possible to control and regiment the masses according to our will without their knowing it? The recent practice of propaganda has proved that it is possible, at least up to a certain point and within certain limits," (Bernays, 1928, p.47). Nevertheless, there will always be a minority group(s), like Neo-Luddism and FOSS supporters. Therefore, there will be strange conversations between people who fundamentally do not trust to/believe in Corporatocracy with PCSS. Perhaps, one possible conversation will be:

Tom: Can I use that plug,
Jerry: I am charging my laptop, charge your tool through wireless,
Tom: But I need to charge my arm, and I am already disconnected myself out of the system (untrusted/PCSS).
Jerry: And after all, you are too!
They will look at each other and laugh!

Crucially, many people believe that there is absolutely nothing wrong with nature! Nature is absolutely fine without 'human' intervention (stupidity)! So, it is not only

humans that want to be free, but also nature that wants to be free from human unsanities! ‘Unsane’ is a term used by Jacque Fresco, who is a *renaissance man*, to define people, who essentially are not rational & responsible, because they have not been exposed to the *right* ideas yet. Unsane is not insane, which would be to be conclusively irrational & irresponsible. Unsanity leads the knowledge & education argument as “life is not determined by consciousness, but consciousness by life” by Marx (1845, p.6), that suggests historical and social interactions create particular ideas, as unsanity (current markets believers)!

"The majority of the people of the world today are unsane, not insane, unsane meaning having been exposed to methods of evaluation" Jacque Fresco (2013a)

IDENTIFICATION

“Only after the last tree has been cut down. Only after the last river has been poisoned. Only after the last fish has been caught. Only then will you find that money cannot be eaten.” Cree Indian Prophecy

The philosophies of FOSS and Neo-Luddism are a starting point, not an ending, to learn from human nurture (intellects) and to cure (some) human unsanities (not insanities)! (E.g. Cree Indian Prophecy) The paradox of 21st century is that everything is global after all, but there are still understandable concerns and considerations for de-globalisation (nationalisms). Nevertheless, “there will be no option for some to win and some to lose: we all will win or we all will lose. Now we must collaborate as if we are members of a single planetary tribe” (Ellyard, 2009), e.g. the International Air Traffic Control System, we collaborate to avoid air incidents whilst flying! It seems that instead of saying ‘my enemy’s enemy (PCSS) is my friend’, we should say ‘my friend’s friend (FOSS) is my friend’. Nevertheless, what is clear is,

“Monsters have always defined the limits of community in Western imaginations. . . . There are several consequences to taking seriously the imagery of cyborgs as other than our enemies. Our bodies, ourselves; bodies are maps of power and identity. Cyborgs are no exception. A cyborg body is not innocent; it was not born in a garden; it does not seek unitary identity and so

generate antagonistic dualisms without end (or until the world ends); it takes irony for granted. . . . The machine is not an it to be animated, worshipped, and dominated. The machine is us, our processes, an aspect of our embodiment. We can be responsible for machines; they do not dominate or threaten us. We are responsible for boundaries; we are they.” (Haraway, 1985, p.146)

To be realistic, in technology (e.g. cyborg), software sells hardware in general purpose computing! And standards in technology are only applied to software and formats. In other words, it is impossible to have an on-going accurate ‘policy’ & ‘strategy’ in hardware and telecommunication technologies, but it may possible to have an on-going sensitive & delicate ‘vision’. Therefore, technology ‘policies’ and ‘strategies’ are meant to be mostly software ‘policies’ and ‘strategies’ in any state. Besides, technology in education is also meant to be establishing teaching and learning environments by, with, and through ‘software’, with the exception of some, but not all, branches of technical and vocational secondary education.

Software is one of the most *evolvable* phenomena in our modern time, and a form of *fragmentary digital good*, but clearly distinguishable as two families; FOSS and PCSS. Through history, FOSS literature rightfully asks end-users to decide which software family they want to use. They are provided with choices but FOSS argues they have not yet explored the question; because, they are either not aware of FOSS and/or they are not enabled with an awareness of FOSS and/or they are not allow to choose FOSS. This argument raises some need-to-know questions about the software decision-making process and our collective ‘choices’ in education systems and states. However, the freedom of software choice is *ostensible* or, at least *irrational*. The identifying of end-users with an understanding on controlling their actions as customers and consumers developed the foundation of what Brian Holmes (2007) titled Neilsenism, an analysis of societies as a *cybernetic system* based on informational movements as *controlling loops*.

In education systems and states, the software choice requires a combination of various resources owned by different actors, which includes clients of PCSS, but also actors, who are decision-makers, in where mutual dependants are not equally divided across parties and the local decision-makers (e.g. teachers, directors,

supervisors, etc.) control limited resources and are influenced by the internal & external factors and the decisions of other actors (e.g. ambiguous sphinx). The interactions between actors are not really clear through the history because the internal & external factors depend on the power of the contents. The literature argues that the obstacles are technological, political, economical and social, not really (and never been) psychological, not as I like it and so it is my choice.

“It is a question, in other words, of fixing the limits of freedom of discussion and propaganda, a freedom which should not be conceived of in the administrative and police sense, but in the sense of a self-limitation which the leaders impose on their own activity, or, more strictly, in the sense of fixing the direction of cultural policy. In other words—who is to fix the “rights of knowledge” and the limits of the pursuit of knowledge? And can these rights and limits indeed be fixed?” Gramsci (1971, p.653)

Nevertheless, up to now, for the complex relationship between governments and PCSS nothing is clarified yet and everything is disorganized by the popular beliefs & fake populism and entirely force contrast between the trinity of techno-politics into education systems and so states through interests of PCSS. In particular, Microsoft platforms currently compel us in this system to realise more and more intensely than ever and the attractive stroke permeates itself in front of us like a delicate spider’s web (for more profits and controls). Mistaken but stimulated in-equalisation between FOSS and PCSS is not so *ironic* when technological acceleration is taken into account; because, governments have not been a *smarter* buyer, negotiator and consumer of ICT goods and services while PCSS is our new *archenemy* in the modern structures.

For axiological (the nature of value and what kinds of things have value) concerns of the thesis, it is essential to identify myself. Therefore, in this thesis, it is essential to make distinctions between three interlinked concepts to identify my supporting arguments. I am not in a position to clarify what exactly they are or how they are supposed to be conceptualised; rather I am in a position to highlight how these three are so widely interdependent.

- (a) 'ICT in an education system'
- (b) 'ICT in a state', and
- (c) 'ICT4ED project in a state'.

For (a), I am a Hard-Cyber-Luddite who strictly believes and supports the marriage between FOSS and Neo-Luddism. Admittedly, from the first computer until now, the computer has become an indispensable artefact of 'modern' human life, associated with other technological developments. As a result of the use of computers in learning and teaching activities, various terminologies have been emerging (computer-based education, computer-assisted education, etc.). The terminologies commonly used in the discipline are open to debate because of understanding of ICT and education. The question of what ICT is in education depends on how ICT is shaped into an educational system. In other words, it is arguable that ICT is a tool for educational purposes; and/or a medium and a connector for establishing learning beyond schools; and/or access issue for providing educational contents; and/or an accelerator, not a driver, for taking advantages of ICT within/through pedagogies (Miles, et al, 2012) and/or much more than what ICT is, as it is defined, actually its' connections and relationships within societies and its own creative environments. As it is argued in the thesis, ICT cannot be a simple educational tool; it is more likely a viable cell, which is shaped by and shape to societies. Therefore, to be in the modern world, certain technology should be given & taught to certain students, by approaching certain ways of thinking how to approach technology and develop its certain pedagogies. On that note, my intention is not to conceptualise all of them. Currently, I support *Computing* as it is argued in the Hubris chapter.

“valuing the other of both human and non-human nature should be the basis for developing design projects in technology education” (Pavlova, 2008, p.128)

For, (b) I am a Soft-Cyber-Luddite, who still believes and supports the marriage between FOSS and Neo-Luddism, but realises it is necessary to be flexible when the concept is technology. FOSS is not a silver bullet or a panacea for all of our problems in techno-human interactions. I believe FOSS is the potential option to liberate the power of technology, to solve many human and human related social and

environmental issues. Nevertheless, FOSS is only a solution, driven by a single evolvable *value*, not values, to fight *Corporatocracy*. I can trust the Government and/or Non-Government based systems if, and only if, the system is FOSS, indeed to some extent, because there are still other concerns that will be raised, such as the security of FOSS libraries, etc. Therefore, FOSS is not to provide *equality* for all, because we must have appropriate knowledge, but rather FOSS provides *fairness* for all. It is a naïve perspective to think & expect all markets to employ FOSS without international or national forces; therefore, the aims of states should be clear, in particular for techno-politics. We can build a system in which we can trust each other, because after all, I do trust technological systems more than fallible humans, in particular, when the concept is the general control (*technique* as the Camus's quotation previously as the *Fear of Any Threat with Less States*)⁵⁷

“being a powerful means of cognition and transformation of the world, science and technology are capable of tracking the most sophisticated problems faced by humanity” (Gvisbiani, 1979, p.146).

For (c) I am a realist, as opposed to the Government in Turkey, which appears to satisfy itself with a sort of metaphysical ‘*Don Quixotism*’, or, at least, ‘*Sentimentalism*’; that being a fanciful ‘*idealist*’, without any grounded ‘*rationality*’. Therefore, I highlight certain & obvious inconsistencies, to present how the Fatih project has been designed for deliberate failure, due to a flawed techno-politics vision! (Not policy) So, I attempt to be an activist, who has both beliefs of optimism (the worst will be prevented, so improving the alternatives) & pessimism (the worst will be allowed, continuing to use more inappropriate technology). I believe what is a *bad* or a *good* idea in science is not only dependent on its own opportunities and challenges, but also dependent on why we are doing this; the reasoning behind the *idea* (see, the Hubris of Fatih chapter).

In this respect, presenting different standpoints (hard-soft) does not suggest confusion. I am aware of that these arguments may be controversial to some extent,

⁵⁷ For instance, see more arguments from Loic Wacquant.

in particular within undeniable (current) market realities; viz, without money (capital), the right vision is just another hallucination!



CHAPTER III

RESEACH DESIGN

“Research is to see what everybody else has seen and to think what nobody else has thought”. Albert Szent-Gyorgyi (1893 - 1986)

The research design is a 'plan' based on three pillars; *research philosophy* (paradigms and/or world viewpoints), *strategies of inquiry/methodologies* (a specific road of research protocol to decide the research methods and rule) and *research methods* (methods of data collection, analysis and interpretation) (Creswell, 2003).

“All social research sets out with specific purposes from a particular position and aims to persuade readers of the significance of its claims. These claims are always broadly political” (Clough and Nutbrown, 2002, p.14)

Social science research might be addressed with reference to the four *Ps*. This study is intended to be: *Purposive*, it is to investigate and explore the aims and objectives of the thesis (see the Introduction Chapter) and the extended literature is also included in the main body chapters in this thesis. *Positional*, the main stream academia normatively perceives ICT (Proprietary Close Source Software (PCSS)) as a spectacular tool to solve many educational problems as well as social & environmental issues; nevertheless, I am in a position to challenge the dominant beliefs. The study is rational, objective and unbiased within the research design and methods, to also challenge,

“The use of information technology in education is now a political orthodoxy, seen by many politicians and educators as a ready means of widening participation to those social groups traditionally excluded from learning. However; the role of technology in overcoming social exclusion in education and lifetime learning practices has often failed to be objectively discussed” (Selwyn, et al., 2001, p.258)

Persuasive, each chapter has its own specific questions to build the argument for readers of how we come to here and how to refine techno-politics for better alternative. Although technology is all around us and all nations have to know how to respond to *improvise*, *adapt* and *overcome* the opportunities and challenges of technology within globally imperfect neo-liberal capitalism, the concept of techno-politics in state(s) and its education system is currently *irrational* and only *profit & privatisation* based to control more and more. *Political*, it is to be a Cyber-Luddite. In Turkey, de-facto techno-politics indicates an intense prejudice & bias against FOSS and a (irreversible) *monogamy* between Governments and PCSS (currently Microsoft platforms). Therefore, a new techno-politics is indispensable to provide an opportunity to rescind this unbearable monogamy between Governments and PCSS! Or Turkey needs metaphorical *riotous* disturbances and irrevocable *sabotage* to destroy the equilibrium between PCSS and the Governments. I believe the four Ps are clear in the study.

Regarding the four P(s), I have consistently used ‘I believe’ in the main arguments. I believe, *Social Scientists* do not need to underline their arguments as *Natural Scientists* to be perceived as valuably academic for the academia. Most arguments (perhaps not all) from social scientists are driven by our beliefs, not external truths. So, I believe, it is necessary to use ‘I believe’, or ‘I think’, instead of other forms (perfect sense-data), in order to elaborate our arguments. Nevertheless, these debates have been extensively argued in the literature (see, Kant versus Descartes Philosophies), but I acknowledge that comprehensive analysis of these arguments is beyond the purposes of this study.

“Truth and falsehood as commonly understood belong to those sharply defined ideas which claim a completely fixed nature of their own, one standing in solid isolation on this side, the other on that, without any community between them. Against that view it must be pointed out, that truth is not like stamped coin that is issued ready from the mint and so can be taken up and used.” (Hegel, 1807, p.15)

Notably, it is impossible to merely separate the concepts of ‘policy’, ‘technology’ and ‘management’. Therefore, I have attempted to argue the similar concepts

through summaries of each main chapter. I have also attempted to avoid repetition, so the readers may perceive that some repeated concepts are addressed only once, where they take most significant. Nevertheless, some arguments are necessarily repeated to remind the audiences.

Besides, I believe, currently attempting to distinguish between FOSS and PCSS and then '*theoretically*' and '*technologically*' claim that either one of them is the '*best*' might be wrong, incoherent and uninteresting; because, they have on-going technological changes and developments. Fastidious political, administrative and educational dimensions naturally fall behind & miss a deadline in this hardly predictable alteration. Now, perceiving FOSS as an alternative of PCSS through socio-economic perspective and exploring their chosen reasons in education systems and states may provide more meaningful contributions to academic and social disciplines. Although I am not attempting to compare FOSS and PCSS regarding to technological point of view, it might be necessary to underline the differences and similarities (to some extent, their strengths and weaknesses) between these families.

For ontological (what is the nature of social reality) and epistemological (how can social reality be known) concerns of the thesis, the chapter argues,

How is the data collected?

How is the data argued?

What are the ethical issues?

What are the limitations in this thesis?

DATA COLLECTIONS

In the earlier version of the thesis, the research design was based on the partially mixed design (sequential qualitative dominant status). Survey (questionnaire) was in the first phase, semi-structure interview was in the second phase and documentary source was in the both phase for the methods of data collection. Nevertheless, in Turkey, there is a particular procedure for any researcher who is willing to do a

research in schools. The procedure explains responsibilities and the way of taking permissions from whom (authorities). In this context, I introduced my research concepts and aims to authorities, accepted my responsibilities and took the permission from the Department of Educational Research and Development Government Office (EARGED). Unfortunately, I could not have funds from the Ministry of National Education (MoNE) while I have had the permission. In other words, I had to do this research in the way of qualitative method. This thesis thereby has become a case-centric study (Turkey). In September 2013, the Government has declared the Fatih project phase II, and so after September, there is no more data included within the study.

Author Notes: In this study, there are many direct translations (my interpretations), particularly formal reports. Translation is shown by squared brackets, and italic is for emphasis ([*translation*])

Documentary Sources;

“Documents, both historical and contemporary, are a rich sources of data for education and social research” (Punch, 2009, p.158). In documentary sources, there is a bi-directional typology (Scott, 1990, p.6-14) which is based on two main components. The first component, *Authorship* addresses source of documents, classified as *personal* and *official* documents. Official documents are sub-classified as *state* and *private* (non-state) documents. The second component, *Access* addresses *level of accessibility of documents* provided for readers, they are classified as *closed* (for limited members), *restricted* (via permission from producers), *open-archival* (for those who know how to access archive) and *open-published* (for all). Scott recommended four main criteria to evaluate documentary source; *its authenticity* (indisputably genuine and above board), *its credibility* (certain and absolute), *its representativeness* (representative by its category) and *its meaning* (intention and purpose). These four criteria are seen as interdependent, aimed to provide evidence for quality of documents.

The main purpose of documentary sources is to engage in document(s) in terms of research purposes/questions rather than just describing its' content (Punch, 2009). Therefore, prior to documentary analysis, there might be two main questions that need to be asked. The first question is about principles of selecting documents through inquiring why these? Why not other(s)? Whether or not the document is closely related to the research questions? How is it? Etc. In this context, Scott's criteria and Process Tracing Approach (PT) assist to answer principles of document selection. The second question is about being systematic within documentary analysis. In here, being systematic emphasises the way of clarifying analysis stages and triangulation. I use PT to argue the data based on the research questions.

Initially document-based investigation was completed to draw out the educational policy, management and regulation, etc., and (previous and current) practices. The main focus is the decision-making process regarding technology in Turkey, and so its education system. With this purpose in mind, my chief rationale for selecting documentary sources is to provide a study with outline meaningful analysis (triangulation) based on PT.

Notably, in this study, there are so many parliamentary written questions and responses reports (over three hundreds) used. The resources are available in the Grand National Assembly of Turkey (TBMM) website, as typing the basic number (e.g. No.7/23473) in

http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_sd.sorgu_baslangic.

Besides, the main documents (translations) are available in the Appendix.

The Internet Data;

In the literature, the internet data related studies are commonly grouped as an *unobtrusive method* (Hine, 2011). The internet data could be controversial for researchers, who are looking at sensitive and vulnerable groups. However, for my study, I believe this information is on the internet; because, authors would like to present their thoughts for their readers, like me. Regarding to Scott' criteria, in the

study, I mainly use official documents. For other documents, the authors' identity is crucial. If the author is trustable, I searched more information about the data, even to obtain government documents for ensuring robustness. Additionally, I tried to avoid putting problematic and uncertain information into this study. If the data is problematically important, I just conclude them as a problematic.

PROCESS TRACING

"History matters not only because we can learn from the past, but also because the present and the future are connected to the past by the continuity of a society's institutions."(North, 1990, p.8)

Admittedly, history provides great data and information about technological and societal past; particularly post Internet, which keeps valuable records. It may be impossible to clarify all, even in a specific subject; nevertheless, the internet (proof, data, etc.) may identify key concepts. Indeed, this perspective may start new arguments about ethics and biases in a particular research. Nevertheless, the world is changing. Therefore, in this thesis, I used PT Approach to *follow actors*. There may be many actors within any noticeable network, but some actors may be subsequently excluded or omitted before the conclusion of the process; the importance of these actors / networks input absence is an unknown variable (e.g. bureaucrats). So, PT approach is to prioritise the key actors and sub networks, crucial to the research. PT, similar to other Science, Technology and Society (STS) approaches, uses *open black box* technology and science, through evaluating complicated connections that might be in existence between various agencies, such as governments, private sectors, people, knowledge, etc. Through examining and prioritising these connections, it becomes easier to understand how and why technology and science coexist. In term of *following actors*, using the internet alone might be sufficient for some types of research. I believe my study is one of them. For instance, I believe, whilst my data has been analysed, the interactions of PCSS and Governments have become immediately noticeable to the reader in an obvious way. Therefore, I focus on the system buildings by tracing how actors influence shapes of technological and scientific changes through using PT.

To elaborate PT approach, PT is a method of studying *casual inferences* linking causes with outcomes; but “go beyond than merely identifying correlation between independent variables (Xs) and outcomes (Ys)” (Beach and Pedersen, 2013, p.1). For instance, a strong statistical correlation has been found between digital richness and competitiveness within global networks. How do we know that competitiveness is the reason for digital richness between nations? How does digital richness present more powers of competitiveness relations? In order to answer these questions, it is necessary to reveal the causal relations between mutual digital richness and competitiveness, in order to study the causal mechanism connecting these two concepts. PT is

“to identify the intervening causal process – *the causal chain and causal mechanism* – between an independent variable (or variables) and the outcome of the dependent variable. ... Process tracing forces the investigator to take equifinality into account, that is, to consider the alternative paths through which the outcome could have occurred, and it offers the possibility of mapping out one or more potential causal paths that are consistent with the outcome and the process-tracing evidence in a single case” (Bennett and George, 2005, pp:206-207).

Methods of utilising case analysis embrace outline matching and causal narrative, the investigation of causal process explanations, and resemblance methods. PT comprises research where “the cause-effect link that connects independent variable and outcome is unwrapped and divided into smaller steps; then the investigator looks for observable evidence of each step” (Van Evera, 1997, p.64). So, PT is *theory testing* (to evaluate and assess theorized causal mechanisms as evidence evaluated for each part of explanations to discover whether it can be finalized beyond reasonable uncertainty that the mechanism occurred), *theory building* (understanding of casual mechanisms and the degree of its generality to investigate whether there are casual mechanisms between X and Y) and *explain outcome* (to clarify the outcome of causal mechanisms with sufficient explanations of specific history, it is a case-centric study to explore whether explanations of the mechanisms is the reason of the outcome). Causal mechanisms are the processes or paths in which a consequence is brought into existence, as both testing theories and developing hypotheses. The causal theory is as

$X \rightarrow Y$ and the theory of casual mechanism is as $X \rightarrow M \rightarrow Y$. So, *covariation* and *degrees of freedom* is the crucial concept; viz, do not walk behind X; Y may not lead, do not walk in front X, Y may not follow, just walk beside X, and Y may/may not friend of X. In PT,

“The systematic examination of diagnostic evidence selected and analyzed in light of research questions and hypotheses posed by the investigator. Process tracing can contribute decisively both to describing political and social phenomena and to evaluating causal claims” (Collier, 2011, p.823).

For PT, I focused on interpreting (identifying and validating) the data, by taking a picture of a range of particular movements, in order to address and identify a series of interlinked phenomena, which cause and/or affect the outcome in this case-specific study. Many PT scholars (like historical scholars) aimed to clarify a particular historical outcome, within a single-outcome study, on the basis of sufficient and complete evidences, through eclectic theorisation; as is the aim in this study. I use PT for the purpose of uncovering

“what stimuli the actors attend to; the decision process that makes use of these stimuli to arrive at decisions; the actual behaviour that then occurs; the effect of various institutional arrangements on attention, processing, and behaviour; and the effect of other variables of interest on attention, processing, and behaviour” (George and McKeown, 1985, p.35).

The focus of PT is *dissecting causation* between detected variables. So, predicating *causal effects* and *causal mechanism* on identifying *causal inferences* and *causal explanation* is the centre of PT. Causal effects is that a change in one aspect influences another change in the second aspect. It noticeably validates that changes are due to *cause*. So, it is critical to understand the continuous process. Causal inference is the conclusion of the reasoning that something is, or is probable to be, the reason of something else. Therefore, in PT

“The “eclectic messy centre” should be clearer ... Neither theories nor cases are sacrosanct. Cases are always too complicated to vindicate a single theory, so scholars who work in this tradition are likely to draw on a mélange of theoretical traditions in hopes of gaining greater purchase on the cases they care about. At the same time, a compelling interpretation of a particular case is only interesting if it points to ways of understanding other cases as well” (Evans,

1995, p.4).

According to Bennett and Checkel (2012), well establish PT study, through qualitative data, should address ten particular criteria: (a) *'Cast the net widely for alternative explanation'*; explanations are definite & conclusive when the evidence is unreliable & precarious with alternative explanations. (b) *'Be equally tough on the alternative explanations'*; some evidence are more convincing and original without comprehensive investigations, but not always and necessary. So it is not requiring an equal investigation, but requires fairness for alternative explanations. (c) *'Make a justifiable decision on when to start'*; what sorts of causal mechanism should be traced and to what extent the case of process tracing should be nested. There is no consensus for all studies, but justifying starting point for TP is primary & key actor. (d) *'Be relentless in gathering diverse and relevant evidence, but make a justifiable decision on when to stop'*; to get a holistic approach to trace evidence with taking account of the fact that there might be false explanations; nevertheless, essentially to know or to justify whether it is the right time to stop, too soon – too weak or too late – too risky for alternative explanations, and so find a minimally sufficient explanation. (e) *'Consider the potential biases of evidentiary sources'*; to consider how to justice evidence. (f) *'Take into account whether the case is most or least likely for alternative explanations'*; to state a set of hypotheses about the relevant reasons and how these reasons connect to the ultimate outcome under investigation for alternative explanations. (g) *'Combine process tracing with case comparisons when useful for the research goal and feasible'*; independent variables may become similar in many cases; so, an added interaction between process tracing and case comparison may be useful for particular researcher. (h) *'Be open to inductive insight'*; re-considering the prior explanations, through extending theories, to get a sense of revision for the theories. (i) *'Use deduction to ask "if my explanation is true, what will be the specific process leading to the outcome"?'* Alternative facts should be emphasised as much as possible for new explanations. (j) *'Remember that conclusive process tracing is good, but not all good process is conclusive'*; if the evidence is not strong enough to present any hypotheses, it is critical to introduce an uncertainty level. Nevertheless, as Bennett and Checkel highlighted that it is not necessary for a

particular researcher to clarify how to address these ten particular criteria in a particular TP study.

Significantly, in using PT approach, I have maintained trustworthiness and objectivity through triangulating research data and arguments; I have been robust and comprehensive in the selection public official and unofficial reports. I am aware of that there is much misinformation and disinformation stated by many official reports from the Government and Ministries in national (e.g. parliamentary written questions' responses) or international reports, globally (e.g. the World Bank project implementation reports), I have mitigated the likelihood of misdirected statements through the following:

- (a) I am always sceptical any information I have used in this study even the data provided officially. I have attempted to triangulate the data of statements and judgments included in this study, e.g. if the data is academic, I have tried to get official documents, or if the data is official, I have tried to get academic documents, and have attempted to evaluate all sources in triplicate.
- (b) If the data is from an individual source, I have attempted to ensure, it is an individual viewpoint (e.g. MP Speech). I cannot be certain (viz, polyvocality, heteroglossia, tropology, etc.), but I have been as robust and critical as is possible. The data is critical to the thesis argument and the process and extensiveness of the sources, overall, mitigate the risk of misdirection.

ETHICAL ISSUES

The study is planned and completed in accordance with the Ethical Guidelines for Educational Research 2004 by the British Educational Research Association and the Ethics of Research Policy and Procedure 2007 by the University of Bristol.

LIMITATIONS

In terms of trustworthiness and reflexivity of qualitative data, there is no *rightness* or *wrongness*, but it does not mean that there is no possibility of defining the quality of qualitative research. Trustworthiness (rigour) is seen as demonstration of credible, plausible and integral research process. The concept of credibility seeks consistency between participants' views and ways of representing those (Ryan, et al., 2007).

“Reflexivity implies a shift in our understanding of data and its collection – something that is accomplished through detachment, internal dialogue, and constant (and intensive) scrutiny of “what I know” and “how I know it.” To be reflexive is to have an ongoing conversation about experience while simultaneously living in the moment” (Hertz, 1997, p.vii-viii).

Reflexivity allows readers to understand the researcher's position within the research. Situating me in the study as an ICT formatter (as their colleague, insider) makes the study transparent and reflective because the study is also connected with my professional life. I believe, failing to position myself / my experiences, values, beliefs etc. could be unethical for readers. I also provide transparency for data collection and presenting argument stages in order to answer epistemological and methodological questions (as a researcher, outsider), such as how the research will be accomplished and how the outcome is known (Seale, 2005).

In terms of specification validity in this study (qualitative inquiry), I followed the *Constructivist Paradigm*. Creswell and Miller (2000) developed the framework of validity through nine validity procedures within three paradigms: *Postpositivist*; *Constructivist* and *Critical*. In *the lens of the research*, I initially set up introductory themes and categories, in order to seek data for confirming and disconfirming evidence. In *the prolonged engagement in the field*, I checked out pluralistic perspectives for better understanding of the data (narrative accounting). In *the thick, rich description*, I conceptualised and employed the relationships and interactions between relative main actors through PT.

Firstly, *I do not know what I do not know, Socrates*; therefore, this thesis is not a final work, and never will be. I present the study through my limited knowledge & interests. The study may provide generalizability through historical and deep data but it is still a snap shot, which is not aimed to state an external truth, but, to present the period of knowledge movements. Additionally, although the particular documents discussed in this thesis may now out of date, the arguments and analysis is still valid today, perhaps (if there is nothing changed) it may remain valid in the future.

Secondly, I believe in this study, some concepts would not be included or emphasised enough, because technology and society studies are not only researches through qualitative methods, but also there are so many quantitative methods used and applied to these areas, such as theories of planned behaviour, technology acceptance models, task-technology fit models etc. E.g. Macredie and Mijinyawa (2011) remarkably provided *a theory-grounded framework of Open Source Software adoption in SMEs as Attitude, Subjective Norms and Perceived Behavioural Control influenced by Intention to Use and so shaped to Behaviour of Actual Use of Open Source Software*. In this sense, behavioural, social and cognitive forces, at individual and organisational levels, influence upon institutional inert choice.

Thirdly, for documentary sources and PT, I mainly used formal (government and parliamentary) documents, which give me full confidence to present the study. Nevertheless, this is one of the main limitations. To a large extent, the author had to depend upon published and available documents; there might be other important concepts available from unavailable documents due to commercial confidentiality; such as, secret trade documents, classified documents, etc. Nevertheless, I believe, I do not need to state it in this study. Additionally, PT is philosophically criticisable as an *ideological interpretation*. Although PT provides a *symptomatic approach* (assisting to identify conditions behind the question), it may suffer from its own bias, because PT underlines social structure within a specific case study within a specific society and it might not provide sufficient evidence to be objective enough. Researchers may have their own bias in stages of arguments, so the researcher voice could be also problematic. Nonetheless, I believe, *‘our words are never neutral’*

(Fiske, 1994, p.52), so it means that this study may always be seen as a problematic in terms of providing valid knowledge (but that would depend on paradigmatic perspectives in which the study is positioned in relation to *valid knowledge*; in this sense, I am not providing an *external truth*). In this study, I am a Cyber-luddite. That does not make my evaluations weak and/or biased, because these movements & activists (FOSS & Neo-Luddism) have a challenging time being heard over commercial distortion (PCSS & Technological Determinists).

Fourthly and crucially, I believe that a criticism without proposing alternative thinking (scepticism) is not a robust criticism, or at least it is not a positive criticism. Therefore, I have included counter arguments which demonstrate alternative thinking. My rationale for entitling my thesis '*the productions of techno-politics; and its inevitable failure of ICT4ED projects*' raises two relative questions:

- (a) Why not 'inevitable failure of ICT projects', or more generally,
- (b) Why not 'inevitable failure of techno-politics';

I believe we have a real alternative to inevitable failures of ICT projects, and so techno-politics, but there is no solution for ICT4ED projects due to the concept of 'past-future' (see, more arguments from the current-mind and future-technology section) in the current corporatocratical techno-politics. Thus, in the title of the thesis, 'inevitable' refers to corporatocratical techno-politics; 'failure' refers to the controller (US or GIANTS) and ICT4ED Projects refer to Fatih and similar projects. Notably, whilst Turkey is the case study, it reflects the situation globally (generalizability) and the title will attract a wider audience than if it specifies Turkey only.

Finally I believe the readers will appreciate the breadth of study and speed of change required in this multidisciplinary area of study. Therefore, I have made every endeavour to hone and focus my study on what I believe to be the priority pertinent, relevant and most topical and 'dialectic' areas of techno-politics (viz, dialectic of apocalypse with otherness and selfness).



Part II

CHAPTER IV

THE HUBRIS OF FATIH

*[Think, one of our feet is in the space age,
though one is wearing raw sandal, hessian socks
think, probability, atomic physics
and the fierce love which makes us who we are,
by compartmentalising these a two-time ashore,
for tomorrows children and for the roses,
has intimidated,
For each of who's fluffs freckles
I saw your hand.
hey dear,
you will sustain]*

(Philosopher Ahmed Arif, 1927-1991)

Initially, I present the objectives of the Fatih project, which promised to shape the education system as a ‘new fully integrated ICT’, for using technological challenges and opportunities within education, to create a new ‘profitable’ avenue in Turkey (as a national building project). The discourse from the Government is to exert education as a ‘commodity’ & ‘private-good’ which is another precedent of ‘fragmented centralisation’ with Public Private Partnerships (PPPs), for the purpose of covert and overt ‘privatisations’. For me, it is not a mystery to see how awkwardly Turkey makes progress in comparison with global progress. The reason for this is that the culture of Turkey straddles those who want to remain safely at base camp to those who want to rule the world / create a society of Stephen Hawkings. As, Ahmed

Arif's Turkish poem reflects, Anatolian societies are idealistic visionaries with their own passions that can be both rational and irrational, but they do not shy from a challenge.

In this sense, I question why the Government continue the Fatih project, when it is certain to fail. The reason given by the Government is that Turkey cannot afford to not be a key player in creating the future(s); therefore, the project is essential. I believe it is more than that; there are covert agendas. This chapter attempts to present three main normative criticisms (arguments), which are political execution, technical development and philosophical conception, to inquire overt and covert agenda. In this chapter I argue,

What are the objectives of the Fatih project?

To actually inquire

Is there anything deliberately missed and ignored in the Fatih project?

Are the objectives of the Fatih project attainable?

THE MISLEADING JOURNEY OF THE FATIH PROJECT

Since 1984, regarding ICT, there have been twenty-one ICT4ED projects in Turkey (\$\$\$) and hundreds of related sub-projects (\$\$), that have been undertaken using investments of the Governments of the day and the Governments-related debts from (mostly) the World Bank, the European Investment Bank and the European Union; for the purpose of (a) improving educational quality to up-skill the next generations (for posterity) and (b) establishing life-long learning environments for all citizens; to fulfil & meet the demands of 21st century, and ultimately creating an 'Information Society'.

On 22nd November 2010, the Ministry of National Education (MoNE) and the Ministry of Transportation, Maritime Affairs and Communications (UBAK), as a project partner, have initially launched the Fatih project, which is the current & future 'educational reform', aimed at improving quality of education and to provide

equal opportunities for all students, teachers, schools, etc. For the Fatih project, distinctly, it is the first time they decided to use the national-budget instead of foreign capitals & debts.

Although the Fatih project was due to be completed in 2011-2014; in February 2012, the Government declared that the project had been launched through pilot studies - 52 schools in 17 different cities. The initial budget was 2 billion TL—nearly \$1 billion, but the budget has been increased rapidly. The current budget is over \$8 billion (indecisive) though I believe it could have been less if the project had been planned appropriately. The actual expense of the project is not tablets, indeed the expenditures of software and e-contents in the system. Eventually, the tablets' price will be declined and become so cheap for all, but all other necessary concepts will be emerged, e.g., in India, \$30 tablets were provided for students on July 2012.

Currently, the Government efforts in the Fatih project are planned to complete in five years through five concurrently deployed components;

(a) 'Providing Equipment and Software Substructure' targeted at purchasing 9,593 A3 and 32,438 A4 multi-function photocopiers and 42,031 document cameras for each school, 570.000 Interactive Whiteboards (IWs) and wired internet connections (used to be wireless) for each class, 11.136.572 tablets (used to be laptops) for each student, teachers, etc., 715.000 more computers, and, at least, 110 distance in-service training centre for each city, including video conferencing equipment and wideband data transmission. However, it should be noted that, the numbers given are necessarily approximate, because since 2012 the education system has expanded to 12-year compulsory education through '4+4+4 educational reform'. Within four years, there will be many more students, teachers and schools. The General Directorate of Innovation and Educational Technologies (IET) is the main responsible for the component. The Scientific and Technological Research Council of Turkey (TUBITAK) is responsible for software in tablets. UBAK is responsible for purchasing IWs and establishing infrastructure.

(b) ‘Providing Educational E-content and Management of E-content’ aimed at establishing a commission for each subject, to update teachers guides and books and to identify new pedagogical methods and instructional samples. In relation to this, new terminologies are planned; ‘e-content’ and ‘z-book’. E-content is an enriched multimedia component, including animation, video, audio, photographs, maps, graphs, tables, simulations, etc., which would be used online and offline, and interactively and non-interactively, would be developed based on associated subject curricula, as computer-based contents. Z-book is an enriched book, which is compatible with IWs and tablets, developed based on instructional programs to provide all e-contents. The responsibility for approval of all e-contents and z-books is given to the Turkey Board of Education (TBoE), including textbooks, instructional programs, etc. To develop e-contents, MoNE has engaged in two approaches; purchasing and granting.

(c) ‘Effective Usage of ICT in Teaching Programmes’ aimed at establishing a commission to approve new curricula. All modules for each course, e-content, z-book, guide book, etc., would be developed by relevant institutions on the behalf of MoNE. The objectives are providing learning materials regardless of time, space and place, ensuring retention of learning with the use of different multiple learning materials, improving quality of ICT branches, ensuring equal opportunity between students from low and high level of socio-economic status, and establishing learning environments outside of schools. Regarding this, the responsibilities are shared within different parties; TBoE, IET, teachers and private third parties, nevertheless it is not exactly clear that how and by whom and what purposes (licences) these parties coordinated and organised, perhaps by TUBITAK.

(d) ‘In-service Training of the Teachers’ aimed at providing face to face, distance and blended in-service training to introduce teachers to the use of ICT, to integrate ICT into their subject teaching, to develop their own contents, and then to monitor and evaluate their processes, including providing certifications so as to develop their careers and motivations. Initially, it is approved to provide fundamental computer usage courses for all teachers. Subsequently, they intend to drive more effective and

efficient use of ICT in subject teaching courses for successful teachers. Since 2012, the modules of in-service training have been developed based on previous in-service trainings documents, in particular the Education for Future Project (the Intel Teacher Training, Microsoft).

(e) ‘Conscious, Reliable, Manageable and Measurable ICT Usage’ aimed at establishing a traceable network infrastructure, including centrally managed and controlled internet access, n-layers firewall and directive of ICT usage, e.g., students and teachers cannot install, change or update any contents in any hardware without passwords and keys of IWs from MoNE. The main issues of the use of ICT are underlined as physical environment (sitting, screen, keyboard, software, heat, light, personal security, electricity security, hazardous substances, etc.) and responsible and safe usage of the internet (surfing, communication, email, downloading and sharing documents, gaming, cyber-bulling, etc.).

Generic Debate

Significantly, the name of Fatih project is derived from Fatih Sultan Mehmet, who was a great sultan of the Ottoman Empire, and the Conqueror of Constantinople. The name was chosen intentionally (marketing), e.g. in the project promotion video,

[The King is seeing a child, who is studying with a tablet, and wonderingly asking where you found the tablet. The child is responding as from the future, thereby the King is saying that we have been many nations, we have made many conquests, but this conquest is different! (being proud). After the child is asking (looking at the camera) that are you ready to conquest the future after today?] In the project, there are many Fatih Sultan Mehmet promotion videos. When Fatih translated to English, it is ‘Conquer’.

In the Fatih project, there has been so much heated debate from various disciplines. Although MoNE has generally reacted to criticisms as if they are just an

ideologically driven and/or lack of knowledge (MoNE, 2012a, pp: 36-37), I attempt to prioritise key issues from opposing sides and offer a balanced evaluation.

Supporters publicly stated that ‘Fatih will make Turkey an ICT Centre’; ‘That Crazy Turkish Project’, ‘Fatih will lead new era for Turkey’, ‘Fatih is the door for bringing to future ’ etc.⁵⁸. The Fatih project is a ‘technological revolution’ & an ‘educational reform’ that is the driver to be a ‘Knowledge Society’. The project reveals a ‘create economy’ & a ‘creative education’. The previous projects focused on revising curricula & updating technology; the Fatih project is far more motivated (creating a society of Stephen Hawking through the perspective of technological determinism). Now, the focus is enlightening teachers’ knowledge & skill and getting right emerging technology. Therefore, development & technology should be the focus to create ‘better education’. The prevailing perspectives from Ministries and the Government are identical.

When the first tablets had been provided to 52 pilot schools in 2012. MoNE stated that software in tablets would be controlled by TUBITAK, and each tablet is given a particular identification number to keep tracking them. The purpose of creating a firewall is to prevent students connecting to the internet outside of schools, (which also conflicts with the project objectives), and to prevent from accessing hazardous websites and contents. However,

[Regarding to software, there were three methods to get around the internet from anywhere. Students managed to find two of them ... The first broken password is from Istanbul, password-breaking youth rapidly shared the method with other friends. Therefore, MoNE took tablets and TUBITAK had to reinstall new software ... the Fatih project team and bureaucrats within MoNE announced that they are pleased with hacking ... *These initiatives indicate a full of hope that next Steve Jobs and Bill Gate are going to be in Turkey. They (the Fatih project team) were expected this kind of incidents*, because these are pilot

⁵⁸ For instance some news were since April 2012; Thtechnology News. (2012) Fatih Türkiye’yi bilişim üssü yapacak, retrieved 31/12/2013 from <http://ekonomi.haberturk.com/teknoloji/haber/724853-fatih-turkiyeyi-bilisim-ussu-yapacak>; Yeni Asir. (2012), Eğitimin Fatih Çılgın Projesi, retrieved 31/12/2013 from <http://www.yeniasir.com.tr/KentHaberleri/2011/04/29/fatih-egitimde-cilgin-proje>; Samanyolu Haber (2012). Türkiye’nin eğitimde çığır açacak FATİH projesi, retrieved 31/12/2013 from <http://www.samanyoluhaber.com/egitim/Cigir-acacak-denilen-Fatih-Projesi-yari-yolda-kaldi/1043933/>; and so on.

studies and they do develop the system through identifying vulnerabilities. *MoNE also announced that the process of R&D is accelerated and intensified and after developing a stable system, MoNE planned to export the system & its components to other countries.* These kinds of cracking actually do assist the process.] (Sabah News, 2012, titled as ‘broken Fatih password’)⁵⁹

(Notably, the hacker was unnamed. We do not know whether this is a real event or whether the Government used this to reassure users and promote its security success.)

This is the future agenda of the Government in Turkey. In the promotion campaigns for the Fatih projects, Ministries have often sited Microsoft and Apple as aspirational examples, particularly how small companies can become international corporations within a short time etc., so why not our students? In Google searches, there are so many speeches from Ministries, under the title of ‘Local Steve Jobs and Bill Gates Wanted’⁶⁰. Nihat Ergun, who is the Minister of the Minister of Science, Industry and Technology (SIT), stated that

[Billion dollar companies have been founded by young entrepreneurs, who are brave and have the ability to transfer opportunities to advantages. In our country, why can we not have a Bill Gates; why can Turkey not have the success of a global cooperation like Apple?] (Zaman News, 2012, titled as ‘Turkey’s Bill Gates(s) leads to Silicon Valley...’⁶¹)

In the Fatih project, Microsoft Turkey also publicly argued (making speeches emphasizing the meaning and the importance of the Fatih project) that Turkey is in the state of consuming all kinds of technologies, e.g. Turkey is ranked 7th consumer nation for smartphones. Nevertheless, Turkey is not at the stage of producing

⁵⁹ Sabah News. (2012). Fatihin sifresi kırıldı, retrieved 31/12/2013 from <http://www.sabah.com.tr/Egitim/2012/04/15/fatihin-sifresi-kirildi>.

⁶⁰ Bilisimdergisi.org. (2012). Yerli Steve Jobs’lar ve Bill Gates’ler araniyor, retrieved 31/12/2013 from <http://www.bilisimdergisi.org/pdfindir/s139/pdf/20-21.pdf>

⁶¹ Zaman News. (2012). Türkiye’nin “Bill Gates’lerine Silikon Vadisi yolu göründü, retrieved 31/12/2013 from http://www.zaman.com.tr/ekonomi_turkiyenin-bill-gateslerine-silikon-vadisi-yolu-gorundu_1349135.html

smartphone apps. Microsoft claims that the Fatih project will mark an ICT milestone for Turkey (Memerlar.net, 2012, titled as ‘Microsoft has been gazing upon Fatih’⁶²).

From this, the discourse from the Government is to put an additional component (technology) into education (a) to solve many educational issues, (b) to establish ‘entrepreneurialism’ into the heart of education and (c) to improve ICT (both hardware and software) sector in Turkey, and also re-design the education systems to export (some and/or all, it is undefined, and so unclear!) educational components to other-nations for (c) gaining profit (socio-politic-economic), and ultimately (d) meeting the actual purpose of being a competitive nation within global networks.

Opponents publicly stated that there are more urgent issues in Turkey: crowded classroom (40-70 students); insufficient qualitative and quantitative schools facilities; full/part-time/shift educations; paid/contract/substitute teachers; poor in-service; economic imbalances among schools; counsellors’ issues; old/insufficient curricula; teachers and students absenteeism; special education teachers and schools problems; communication incompetence between schools and parents; MoNE and YOK coordination issues, etc. (general titled as ‘the reaction for the crazy project: crazy and redundant’⁶³). There are even areas without established schools; students thereby have to commute to remote schools. There are also multi-grade classes, from 1 to 5 grades; students study in the same classroom (see, the Regulation for Imported Schooling in MoNE, - Milli Eğitim Bakanlığı Taşınalı İlköğretim Yönetmeliği, No.24021, issued on 15th April 2000). These are fundamental issues to be urgently rectified prior to launching any project. Consequently, the Fatih project (\$8 billion) is seen as a costly/luxury investment. These are reasonable arguments, but still in the simplest concepts.

Throughout this debate, there have been also many realistic, provocative and manipulative questions in the media and parliament. Some examples are; some tablets were lost and/or stolen (MP, Atilla Kart, 31st August 2012, No.7/10259); 715

⁶² Memerlar.net. (2012). Microsoft’un gözü FATİH Projesi, retrieved 31/12/2013 from <http://www.memurlar.net/haber/290252/>.

⁶³ Radikal.net. (2011). Cılgın proje’ye tepki: cılgın ve gereksiz, retrieved 31/12/2013 from http://www.radikal.com.tr/politika/cilgin_proje_ilk_tepki_cilgin_ve_gereksiz-1047544.

tablets have had technical issues, in particular hardware (MP, Ismet Buyukataman, 25th June 2013, No.7/21790); some IWs have been sent to schools, but they have not opened to teachers to be used (MP, Erdal Aksunger, 02nd May 2013, No.7/23473). Opponents have even strongly criticised the Fatih project for being a ‘kleptocracy’ (e.g. MP, Demirel, 2012). To address many concerns, in particular after the manager of the Fatih project was deposed due to allegations of corruption (undue expenditures); in the parliament there was an interpellation to highlight the projects objectives and its possible challenges on 28th May 2013 in Grand National Assembly of Turkey (TBMM). Significantly, however, the arguments in the parliament were purely political, no educational (pedagogical) concerns. Thus, I have prioritised the salient views they raised.

[Turkey has turned into the country of project graveyards, which were started with enthusiasm/ambition, but these were not maintained as the objectives became impracticable, and so were shelved. When the implementations of MoNE are considered, *the efforts of MoNE are to work as ‘put’, ‘remove’, ‘try’, ‘mistaken’, ‘build’, ‘ruin’, followed by ‘nothing happened’ and ‘start again’.* MP. Özcan Yeniçeri (Nationalist Movement Party) (Page 32; 24th Period, 3rd Legislative Year 111. Combination, on Tuesday 28th May 2013, TBMM - 24. Dönem 3. Yasama Yılı. 111. Birleşim 28 Mayıs 2013 Salı).

Billions of dollars will be spent, a crucial decision has been signed for the future of Turkey ... We recently requested a generic interpellation regarding to the Fatih project, because I do not understand what it is; however, it looks like that no one will come here and explain it. MP. Erdal Aksünger (Republican People's Party) (Page 29, *ibid*)

The Government, instead of finding solutions in the field of educational problems, make changes, which will cause new problems. MP. Mülkiye Birtane (Democracy and Peace Party) (Page 31, *ibid*)

The Prime Minister's dreams have come true in our country today. Yes, today all the schools have computer labs. Yes, today, there is no school without an internet connection. Yes, today all assignments, transfers, exam applications, all

transactions are made online. Yes, today, the Prime Minister's dreams have come true. ..., Applications from MoNE, e-Governments have come to a stage that cannot be compared to 2002. The Prime Minister saw this, and so laid out a new vision, 2023, 2053, 2071 vision. *This is the spirit of 1453 to achieve the visions that should be shaped by the perspective of Fatih (the King)*. MP. Avni Erdemir (Justice and Development Party, the Government)] (Page 33, *ibid*)

It appears that the Government told us what they intended to do, they deployed it and they celebrated its completion without ever evaluating whether the right outcomes have been achieved. These are generic and superficial debates from the parliament. However, there is no educational insight. I believe the main issue is the ‘fully’ integrated ICT, not integration of ICT into education; the definiendum is questionably fuzzy, thereby explicit definiendum is required by many of us to academically argue the ‘full’ debate. I do not mean that pessimism may pursue optimism; however, the meaning of ‘full’ depends on input from all stakeholders. Two years on, there are no published academic reports from the Government to answer how the ‘full’ has been defined by MoNE and how the project has influenced education (positive and/or negative), and so on.

Evidently, the Government has deployed its intention. However, a grave omission was made in that, at the point of development, the Government were doing mutually inconsistent things! Do our students await tablets to be founders of global corporations? Does the Fatih project provide opportunities for students to establish global corporations with creative education (tablets)? Is it possible to write apps through tablets? Is it possible for students to write apps without computer science knowledge & skill? In 2012, Tony Hey, who is the Vice President in the Microsoft Research Connections, claimed that Microsoft will release special software to teach students how to do programming. How is it possible to assist learning & teaching activities via one specific app without an appropriate curriculum? Their plan (reductionism through technological determinism) seems to have missed the educational requirements of its intended audiences and its initial objectives (establishing learning & teaching environments for the future societies) with

considering socio-cultural differences (principles of Science, Technology and Society Studies).

In a national state, economic growth is mainly driven by ‘technological advancement’ & ‘enhanced human capital’. However, new technology has ‘gone beyond the public goods rationale’ (Menell, 1999, p.129). So, in a digital era, it is better to perceive that education enhances human capital that might lead to economic growth in the short and long term. Nevertheless, the Fatih project is seems to be shaped by globally lobbied hegemonic beliefs, not ‘educational reform’. According to Ball, for educational governance, globally there are new actors and logics, to establish that

“This is a new hegemonic vision which inserts competition and entrepreneurialism into the heart of the project of state education. Such narratives in turn serve to repopulate the field of policy, legitimating new actors; they rework the possibilities of public sector delivery and establish new key ideas and new social logics” (2008a, p.753).

The middle of the road view, but not necessarily a rationalist view, is that for 20 million students, the Fatih project is seen a reasonable investment. Academics in Turkey (Anatolian, Atilim, Boğaziçi, Hacettepe, METU and Centenary Universities) have simply perceived that the Fatih project is a great opportunity to improve educational quality and to solve many other relative problems. According to the ‘Fatih Project Evaluation Report’ from academics, the duration and scope of education should have been made compulsory for not only success of the project but also to be a Knowledge Society (4+4+4). The core curriculum in primary education should be shaped in terms of not only information and digital literacy but also values of ICT, such as ethic, aesthetics, privacy, security, cybercrimes etc. In this sense, there is a misconception, at least misunderstanding of ‘digital literacy’ from Ministers and academia from Turkey. Digital literacy is a dynamic and momentary (fluid) concept, and has correlated *multiple literacies*. Digital is only a word, what matters is what the word connotes in a context, such as time, space, place, etc. Nowadays, digital literacy is to know how to act in, for and through emerging technology; such as, real problem solving, online collaboration, effective & efficient

browsing, critical thinking within ICT (meaningful interaction), ethics, piracy, security, etc.

Academics further recommended that in general secondary education curricula should cover basic concepts of computer science, such as programming, information systems (retrieval, display, advisor etc.), database, information network and security, etc. Nowadays, ICT education is not one step ahead of teaching office automation. However, in the modern world, soft skills are crucial, in particular learning how to learn, learning by doing, etc. Students can learn general purposes of computer courses (office automation) within a few weeks; therefore, there should be more ICT modules. Programming and designing could be best options to shape curricula, because learning programming and designing underline learning by doing, which may lead to collaborative learning habits and cultures between students. And since most of programming and design tools' interfaces are based on English, developing Turkish interfaces could be also encouraged from Turkey's software sector. These kinds of modules are not only for computer engineering students, but also students from graduate, undergraduate and even secondary education institutions. They can improve their skills and knowledge if they are willing to; therefore, the concepts should be redefined within all educational components.

The perspective of academics in Turkey raises the argument of *Computing* as opposite to a *new fully integrated ICT*, but without paying any particular attention to what might underlie the current & future concept - *Computing*. As this study argues, all supporters, opponents and between perspectives are incomplete and incomprehensive, and do not present much information on the specific interests in *techno-politics* which is the current and future concept in the state and its education system. At first glance, and still from a very simple perspective, there might be four main reasons not to have launched the project with its current objectives. In this regards, in the end of the following section, I will suggest what needed and urgent ICT4ED should look like in Turkey to ensure future-proofed students' knowledge & skill through being realistic.

No Credibility

Do MoNE, and so the Government have credibility in instigating & deploying projects? Throughout history, there have been so many publicly known ‘orphan’ & ‘aborted’ projects; the ‘Catch the Era in Education 2000 Project’ (e.g. Erdem, 2002), the ‘Schooling and Credit System’ (e.g. Terzi, 2011), the ‘Curricula Laboratory Schools’, the ‘Computer Laboratory Schools’ (MLO), the ‘Computer Experimental Schools’, the ‘High School Graduates Vocational Training Program’, the ‘Improving Vocational Technical Education Project’ (e.g. TISK, 2004; TEKEV, 2010), the ‘Seeing Eye Project’ (e.g. Yilmaz, 2012), the ‘ICT Supported Science Laboratories Project’ (there has been no update or maintain study after establishing the laboratories⁶⁴, and there is no an academic evaluation study for the project), the ‘Eskisehir Software Base Young Entrepreneur Training Centre’ (1 Million TL lost , the Prime Ministry, No: 7/10155, TBMM), Satellite Internet Project (Uydu Internet) (60 Million TL Lost, MoNE, No: 7/13737, TBMM), the ‘Pardus project’ (abandoned by TUBITAK- over 17.5 Million TL Lost) etc. Is there evidence of any successfully accomplished education related projects in terms of their initial & subsequent objectives? The literature indicates not.

For instance, the MLO pilot schools’ objective was to implement new curricula, in order to investigate ICT and pedagogies (teaching methods and materials). If any project objectives succeeded, they would be replicated across other schools. However the MLO project also failed. The MLO project began with funds from the World Bank, and so 208 MLO schools were successfully established. Afterwards, these schools were required to work in cooperation with parents, other schools, communities, universities, etc., because MoNE deactivated itself in terms of providing financial support due to the agreement of the Word Bank, which requires stopping financial support. The schools began to investigate ways of raising funds to solve their financial issues, but most of them could not achieve this mission. This approach might be seen as an initial *neo-liberal educational policy*. Although there

⁶⁴ See, <http://btfenlab.meb.gov.tr/>

might be various reasons for this outcome, the main rationale could be that there are big gaps in the distribution of incomes among schools across Turkey (Aksoy, 2005).

The MLO schools project was carried out under the aegis of the ‘National Education Development Project’ (NEDP), \$177.2 Million, in 1990-1999, which is so similar to the Fatih project. Today’s vision remains virtually unchanged but, given what we know today, could be described as negligent.

“Experiencing the same problems in consecutive projects indicates that policy makers and project managers of MoNE execute new projects without taking lessons from the prior ones and manifests that ICT integration is not a one –off or unidirectional process” (Özdemir, 2009, p.145).

Logically, it can be inquired that whether any project in education system, and/or educational related project has been 100% successfully accomplished. I believe it is not possible and that there might be countless reasons for this outcome. But abandoning a project, or starting it and then leaving schools alone (not financial support but strategic supports needed) are not reasonable; nevertheless, there have been many precedents in the MoNE’s history.

Curricula-Centred & Exam-Based

MoNE consistently declares that the education system reformed from ‘teacher-centred’ to ‘student-centred’ in 2004. Nonetheless, the education provided is inevitably a ‘curricula-centred’ system within a covert agenda because of socio-economic-political impacts of educational inertia. A retired professor, Baykal poignantly stated that

[In Turkey, course book is considered to be a contract between students, teachers, principals and parents. Students’ performance evaluation by other students, teachers and programs; teachers’ performance evaluation by students, principals and inspectors; and programs’ evaluation by students, teachers, principal, inspectors, parents and decision makers are restricted by boundaries of course books (curricula). Perhaps for this reason, courses without a course

book commonly are not considered as a 'course'. Teachers' initiatives for encouraging students, such as providing and/or inquiring any contents, which are not in any course book, are not commonly regarded as appreciated (accepted and welcome). Certainly, these imperfections are not within courses' books, as themselves, but unfortunately, the structure of the system simplifies this outcome. Whereas, expectations from course book is not to create a standalone system, and so replace the system itself, rather to complete, integrate, diversify, and enrich the system. In Turkey, teaching and learning environments and methods, teachers' positions, and as others system components and even other communicational hardware (educational communication methods, except course book) mainly are overlooked & ignored by authorities. Consequently, the education system is not, 'teacher-centred' as it is frequently stated and unanimously accepted, it is 'curriculum-centred'. So, developing a course book has become synonymous with establishing programs by the centre (MoNE) which controls all curricula in primary and secondary education] (2010, p.3).

As Baykal underlined that the crucial concept is about how to design curricula and so course books. Thus, the key issue is how to shape curricula; 'learning-centred' (future), 'student-centred' (current) or 'teacher-centred' (past). Besides that, the 'Fatih Project Scholars Workshop Meeting', on 1-4 March 2012, on general evaluations and recommendations highlighted three main issues;

[(a) The focus of Turkey's education system is the exam. The main concern of students in public & private schools and private teaching institutions is to find correct answers for as many problems as possible in less time. (b) In fact, scholars observed this case very clearly in schools in the Fatih project. Participants in pilot studies frequently claimed that the most important contribution of the equipment provided is to give opportunities for students and teachers to solve as many problems as possible. (c) Without taking a holistic approach, in the exam-based education system, the Fatih project will not contribute towards education and training environment.]

The education system has focused on exams since 1980s due to the 'reform' of the higher-education system (No: 2547 Law). Consequently it might be better to state

that the education is a curricula-centred (student-centred) & exam-based system that indicates crucial educational issues in Turkey. Indeed, this assumption does not make other related concepts less significant, e.g. pedagogy, pre/in-service trainings, socio-economic standard, etc. And the future education is planned as curricula & technology-centred and exam-based system. So what is the real issue? In a general criticism of our education, I believe the inadequacy of education to serve the future(s) is well expressed in Wiesel's words (1990):

"It emphasized theories instead of values, concepts rather than human beings, abstraction rather than consciousness, answers instead of questions, ideology and efficiency rather than conscience."

Not Holistic For All

In Turkey, the national education is not considered an integrated system; and hence, any changes in its components have been made without analysing its possible impact on other components of the system (SETA, 2009). Although education should be shaped within a holistic approach through considering all educational dimensions, MoNE has failed to meet & answer today's global requirements.

Is ICT4ED project just an educational concept? Turkey has many social, political, economical and cultural issues, probably the same as other leading and led nations. Admittedly, there is a huge wealth disparity across Turkey. In the media, many cases have been reported of students from poor backgrounds selling tablets. Although MoNE stated that tablets cannot be used without approval of MoNE, it cannot guarantee against future faults. Incidentally, there is no mention of liability in the event of tablet damage; will parents be charged by MoNE? It is unclear whether students and teachers have a right to refuse tablets and/or IWs (accept liability). To make this point, the media commonly promoted a picture in which a child, sitting on the roadside, studying with a tablet, sold a weighing service to the public.

In addition, not all students will have ICT careers and so pursue being programmers. So why then is Turkey willing to make available emerging technology to all students?

Are new learners different than previous learners? “Many popular press authors claim that this generation of students thinks and learns differently than any generation that has come before, but the evidence to support these claims is scarce” (Thompson, 2013, p.12). I believe the claim of technology with ‘digital natives’ bringing ‘better’ education is an unhelpful oversimplification due to a complex set of educational dimensions and components (perhaps for next generations as human-cyborg; see, brain implants researches for memory microchip, etc.). So, is there any conceivable elucidation & unaided reason from MoNE or any irrefutable objectives & coherence in the project for a ‘needed’ new full ICT integration, except a ‘uniform fashion’ with a ‘techno-political despotism & cliché’,

“For many practising teachers, the push to integrate ICTs across the curriculum has become yet another example of those top-down impositions that only distract them from their primary task of teaching” (Knowles, 2010, p.1).

Computing Versus Fully Integrated ICT

“You have to hate the computer to use it well; there is no other choice. In any other choice you are becoming a fool and you are wasting your time” Jaron Lanier (2012)⁶⁵

Computing (also called computer-science education) and integration of ICT into education are a globally, live-streamed debate. While the integration of ICT might be understood as an umbrella phenomenon to shape learning and teaching activities by, within and through ICT (depends on how ICT is shaped), Computing is defined as,

“the study of principles and practices that underpin an understanding and modelling of computation, and of their application in the development of computer systems. At its heart lies the notion of computational thinking: a mode of thought that goes well beyond software and hardware, and that provides a framework within which to reason about systems and problems. This mode of thinking is supported and complemented by a substantial body of theoretical and practical knowledge, and by a set of powerful techniques for analysing, modelling and solving problems.” (Computing at School Working Group (CAS), 2012, p.3)

⁶⁵Jaron Lanier, who is the father of virtual world - Learning by Experience & Play, <http://www.youtube.com/watch?v=F9eFZpdSeRU> the time is 28-29. I personally disagree many of his arguments, but this point he raised in here has a strong connotation.

The CAS report was endorsed by the British Computer Society, Microsoft, Google and the UK Technology Industry Trade Association, and it claimed to clarify “what is computer science, rather than how it should be taught” (ibid, p.i). At least we now have clarification, as a result of a commercial agreement. I believe the report attempted to highlight its ethical objectivity, but hindsight will prove how ethical they were in terms of being fair, when considering the crucial distinction between Free Open Source Software (FOSS) and Proprietary Close Source Software (PCSS).

Computing is currently a fuzzy concept and many scholars have attempted to conceptualise it (e.g. Computing in Education, Computing Education, Computing at schools, etc.). In this sense, computing is normatively the standard and discipline of defining how *systems* are *worked* (e.g. arranging, designing, constructing, intending, altering, maintaining, occupying, converting, leasing, etc.), paying particular attention to modelling computation thinking (in particular algorithm complexity). Importantly, computing includes *digital literacy*, but not learning and teaching how to use systems. Undeniably, technology has become an alternative language, like other scientific disciplines, e.g. chemical, mathematical, physical language. So, the purpose of computing should be to create environment(s) in which students have the opportunity to learn every aspect of systems. In this sense, Facer (2012a) argued the purpose of technology in education is re-imagining possessions as *personal*, *relational* and *beautiful*, through Macmurray’s perspective in which education is for the purpose of *learning to be human*,

“the use of technologies in education should be guided by the aspiration to create socio-technical practices that are personal (located with the person), relational (a resource for friendship and collaboration) and beautiful (designed to promote reflection and contemplation)” (ibid, p.709).

When viewed from the aspect of *powers* of schools and students, and ‘*while education can change the world, it is the last public space*’ in every community (ibid) learning how *systems* work are not sufficient for the potential future(s), so students should learn how to hack, penetrate and even exploit *systems* to (re)work, (re)fix, etc., *systems* in the interest of being able to step into another era, indeed without making their networks and interactions as a commodity. The internet is full of answers (we

are information billionaires) but does not hold all the questions (we are knowledge paupers); therefore, computing should focus on creating on-going questions for motivated students through reconnected learners (not just for students).

“the development of tools to enable children to understand, critique, challenge, resist, fight back and reshape environments that they find hostile or offensive to them. It would require the development of strategies that enabled children to understand the contributions that they could make to adult society, as collaborators, as co-workers, as advisors and supporters” (Facer, 2012b, p.411).

According to Steve Mann (2006), who is the first *Cyborg-Luddite*, in the future education should establish models in which students learn from *systems* through *learning by being* (LBB) to control their own computer worlds (learning to be cyborg through human-technological interactions). LBB is the centre of *Existemology* (a harmonisation system for better human-technological interactions as better nature and nurture). LBB also includes *learning by doing*, *experiential learning*, etc., as playing with technology while learning, but moves the concept in which students have a choice of what they really want to be. Mann distinctively claims that Artificial Intelligence (AI) is pretty much real, and promises to improve smarter technology; therefore, we should focus on Humanistic Intelligence (HI) to improve smarter people. And then humans are taking (perceiving) computers, to some extent, more personal belongings, for managing and controlling their computer world orders (e.g. glasses are old tech, Google glasses are the current tech, future glasses and lens in mixed reality (virtual & real) are the short future tech). Therefore, students need to believe in themselves to survive in the unclear future(s). Mann’s own words exactly fits in here, as

“Existemology pertains to not just body modification, through technology (“cyborg primitives”) but also to mind modification through long-term adaptation. In this sense, existemology also extends into what I call the “postcyborg” age, and thus also applies to the creation of a new state-of-mind that can persist after the technological prostheses are removed. ...The general ideas of existemology are themselves applicable to learning environments that have nothing to do with bodyborne computing. To some degree, beyond whether the technology is implanted, worn, carried, or nonexistent, what can be learned is an educational paradigm that embodies an epistemology of personal choice, and the metaphysics of personal freedom, growth, and development.” (Mann, 2006, p.1571)

In line with this, Shneiderman legendarily argued,

"The old Computing was about what computers could do; the new Computing is about what users can do. Successful technologies are those that are in harmony with users' needs. They must support relationships and activities that enrich the users' experiences." (2002, p.2)

The crucial focus is being student-centric, not technology-centric. In this sense, *Computing* and *personalised learning* are interlinked & interdependent. Personalised learning “recognises that the quality of learning is shaped by learners’ experiences, characteristics, interests and aspirations. High quality teaching explicitly builds on learner needs – as well as on high expectations and good subject knowledge” (Pollard and James, 2004, p.4.) Personalised learning gives particular attention to make a harmony of *pedagogy*, *curricula* and *technology* by considering individual learners’ preferences & characteristics to meet learners’ needs & interests. The different personalised learning approaches for effective learning design can be seen in the literature (see, Conole, et al., 2004, Hwang, et al, 2010). In particular, personalised learning is not *individualised learning*.

Although there is no precise framework to conceptualise how computing should be taught, I believe the FOSS development process offers a great example. FOSS supporters have debated computing for more than four decades. The initial target was computer engineer students, and now for all. The speed of technology is so rapid; so, students need to know *computing* & *computer-science*, as opposed to *integration of ICT*, in order to maintain relevant knowledge & skill. In this sense, Bill Gates has also stated that the tablet concept is inadequate for integration of ICT into education (interviewed with Cengiz Alacacı, who is a member of TBoE, which is the highest authority for developing educational curricula, in June 2012). Students and teachers should have a keyboard. Whilst Gates recommended laptops, I personally recommended ICT labs through FOSS for all students (e.g. Raspberry Pi Computers through LBB); because, this gives the best *computing* potential at lowest cost with no *tie-ins* & *lock-in*. In this sense, Microsoft has in one way lobbied the Government in

the scope of the Fatih project, on the other hand Microsoft is fully aware of the future concept, *Computing*.

Academics in Turkey also recommended that in order to develop ICT culture, from 5th grade, (a) ICT introduction and application, (b) web designing; (c) database; (d) animation generation; and (e) programming should be included within basic education. Although this advice might be considered 'Computing', I believe the structure should be conceptualised based on how 'systems' work, from (a) digital literacy to (b) computing thinking (algorithm), and then (c) Computing (programming, coding etc.). After this point, LBB should be started through providing digital, electronic and robotic projects. For me these projects should be understood as educational toys; therefore, they are (arguably) not dangerous for students. Notably, I do not mean computing as the project as *Using Wearable Computers for Passive Haptic Learning and Rehabilitation* by Thad Starner, who is the Georgia Tech Professor & Technical Lead - Google Project Glass. These kinds of projects are amazing but not computing as I perceive it because the literature is so new and there are different schools highlight different concerns. These research are passive learning through technology, how about active learning through technology? Thus, the next question will be what the level of consciousness is in the system, and so, what the level of Zombieness is, etc.

In addition I also believe that digital literacy courses must be compulsory to keep students' knowledge up-to-date in terms of surviving in the computers worlds, as network education in which student must learn how to protect their privacy and personal lives in the 21st century, but other courses should be elective, because it is simple that not all students will carrier ICT related programs. Importantly, software choice should be argued carefully because of the crucial distinction between FOSS and PCSS.

Notably, the UK education system was having the same discussion. ICT curricula were not more than teaching and learning office automation (see, ICT lessons in schools are 'highly unsatisfactory', says Royal Society in 2012). The discussion, in

particular, is how to change ICT curricula to meet today's & future's needs. The past ICT curricula in the UK were failing as commonly mentioned in the media and academia. It is not more than learning and teaching office automation, like in Turkey. The Department of Education in the UK took two years to decide the future ICT prospects & opportunities; therefore, the Department encouraged public conversation, not just from those with professional interests in technology and education, such as decision makers, researchers, hardware and software sectors, but also from students, parents, teachers, schools and other interested parties, to be a part of decision making process. Most recently, the UK, the Department has taken up the *computing* concept (see, the Computing Programmes Key Stage 1 to 4, but these are not what I mean computing). The whole discussions are available in (education.gov.uk) or the brief discussion can be seen on the speech of Michael Gove.

“While things are changing so rapidly, while the technology is unpredictable and the future is unknowable, Government must not wade in from the centre to prescribe to schools exactly what they should be doing and how they should be doing it ... We must work with these developments as they arise: supporting, facilitating and encouraging change, rather than dictating it ... By its very nature, new technology is a disruptive force. It innovates, and invents; it flattens hierarchies, and encourages creativity and fresh thinking ... Just as we've devolved greater autonomy to schools, and put our trust in the professionalism of teachers; just as we've lifted the burden of central prescription, and given heads and schools power over their own destiny; just as the internet has made information more democratic, and given every single user the chance to talk to the world; so technology will bring more autonomy to each of us here in this room.” (2012)

This plausible perspective (speaking of Cyber-Luddism, some parts, in particular democratic, are still controversial for me) is exactly the opposite of ‘the best and the brightest policy making club’ (think tank) in Turkey. Although, *Computing & Personalised Learning* are topical and relevant debates across the world, the current debate in Turkey is a new fully integrated ICT. There is no further debate after the tablet choice in the Fatih project. How do tablets assist ‘Computing’? E.g. Science will not improve if everyone agrees with each other, as the Fatih project is designed, - using the same technology without cracking & hacking them (for tablets & IWs, students and teachers cannot change, install and update any contexts without approving from MoNE). So, do we need to define what is the ‘new’ in full

integration? From full integration, the literature highlights two concepts; *user-centred integration* versus *technology-centred integration*, and only recognises user-centred integration to establish a socio-techno-culturally *invisible, natural, fault tolerant* and *self-motivated* teaching & learning environment.

“If the technology is to be fully integrated into learning then it has to become invisible, it has to become a natural part of learning rather than an add-on. For this to happen there has to be a culture of risk, experiment and involvement. Allow teachers to make mistakes, make it part of their performance management”
(Miles, et al, 2012, p.9)

How to identify to what extent the integration is user-centric in the system? The framework of ‘contrasting the technology-centred approach with the user-centred approach’ by Knowles (2010) is valuable. In the framework, there are six components: (a) first priorities; (b) improve teaching and learning; (c) teacher professionalism; (d) ICT’s role in the curriculum; (e) usability and usefulness and (f) failure of ICT implementation (p.5). Based on these criteria, it is clear that the Fatih project is technology-centric. The project focuses on ICT to improve learning & teaching activities as educational goals, not students, teachers, pedagogy etc., (please considering whole thesis). Misguidedly, ICT is in the centre, not education.

Within this scope, MoNE seems to have overlooked the fact that education is a curricula-centred & exam-based system. Whilst MoNE has yet to solve the issues of assembling the desirable forms of learners’ freedom with the essentials on minimum of flexibility, it is now considering adding emerging technology. Adding a new peculiar dimension (ungovernable & enigmatic ICT components) into an already ill-shaped education system will not overcome & redress its’ urgent issues; actually it will lead to more incomprehensible deformations & fallacies – a new tragedy may begin. This is because new technology has also an extrinsic face as being a new timid tyrant – immoral, or at least, amoral technological fate which inevitably brings the camouflage of the real-world immoralities, at least a kind of moralising vagueness into education, such as cyber- (racism, bullying, idleness, slavery, addiction, etc.,). Are all new technological movements making us more virtuous or

indignant? I am unsure! But I believe that philosophies of FOSS may raise end-users as a more *sensitive & rational* digital native.

What is neglected in the future is *computing*; to provide students with the opportunity to learn *computing* capability, instead of ‘technology’. From this point of view, realistically, for the future, Turkey needs to ensure future-proofed students’ knowledge & skill. Therefore, I believe, in primary and general secondary education, the focus should be teaching & learning activities through compulsory *computing* courses (e.g. Raspberry Pi Computers through LBB needs pilot studies). Nevertheless, in the literature, there is no compelling framework to define how *computing* should be taught, therefore MoNE focus on how to conceptualize *computing* in Turkey through revising ICT courses. In this sense, although valuable lessons might be learnt from best practices across the world, there is no universal truth, perception and advice for identifying the optimal level of *computing* without taking into account each country’s realities.

So, what is their real agenda from the Government If there is?

INCONSISTENT FATİH PROJECT

The hegemonic discourse from the Government is to insert entrepreneurialism into the heart of education, to export the education system to other nations, and eventually to gain profit (socio-politic-economic), as unhidden aims of the project. Nevertheless, while there are certain inconsistencies in the scope of the project as argued in the previous sections, has the project missed its objectives?

In June 2012, TUBITAK announced ‘the Fatih Project Information and Communication Technologies Call Program (BTO1)’; for inviting stakeholders (universities, private sectors, etc.) to develop future & innovative educational technologies & methods. The main purpose of the program is defined as calling projects to develop innovative educational technologies and methods. In the program, proposed projects should include at least one of following objectives;

[Educational Networks and Interaction:

- The teacher-student-parent interactions, content sharing,
- Educational networks, social educational platforms, the use of social media in education,
- Expert / trainer finding, the automatic dialogue model and system.

Search Technologies:

- Vertical search technologies
- Question answering systems
- Data filtering and analysis
- Recommendation systems
- Topic detection and tracking
- Multimedia and spatial data access systems

Data Access and Analytics:

- Data mining and data warehousing technologies, usage analytics
- Personal data and performance management, portfolio development
- Text classification, summarization, handwriting recognition,
- Plagiarism detection and tracking tools
- Digital Rights Management (DRM)
- Semantic web and ontology

Cloud storage and retrieval, data centres and file sharing

- Caching, Content Delivery Networks (CDN)
- IPv6 technologies

E-learning Technologies and Applications:

- Game-based learning, mobile learning applications, virtual reality learning environments
- Individual lessons and guidance support systems
- Special education practices
- E-book/content technologies] (TUBITAK, 2012a)

As regards the timetable, the process of calling participants, investigations and hearings will be completed by September 2013. After signing protocols, the duration of necessary studies is scheduled within 36 months. In this case, the outcome of the project(s) controlled by TUBITAK will be obtained, in a best-case scenario, in 2017. However, the Prime Minister announced the Fatih project in 2010; and so Ministries and TUBITAK have signed the ‘Protocol on Cooperation in Education’ and the ‘Fatih Project Education Cooperation Protocol’ in February 2012. The declared aim of BTO1 program is developing techno-educational systems & models to contribute on the Fatih project. However, with the BTO1 program by TUBITAK set to be completed by 2017, at the earliest, and the Fatih project scheduled to run from 2012 to 2017) the timetables is not aligned. So, there are certain inconsistencies, or, at least, different approaches, within/between Ministries and TUBITAK.

In particular, in keeping with the BTO1 program, since 2012, TUBITAK has already launched other related programs; ‘1001’, ‘1002’, ‘1003’, ‘1007’, ‘1011’ and ‘3501’, such as ‘1003-Primary Subjects R&D Funding Program’, in which “small-scale projects are funded up to 24 months, medium-scale and large-scale projects are supported up to 36 months” and ‘1511-Support Programme for Research, Technological Development and Innovation Projects in Priority Areas’ (TUBITAK, 2012b). Nevertheless, the completion of these programs is not necessary to the completion of the Fatih project, although they are promised to be connected with the Fatih project.

In this sense, is TUBITAK unethically misrepresenting timescales or failing the project? TUBITAK promised to provide funds (over \$3.3 million) to stakeholders (universities, private sectors, etc.) for accepted calling projects. Is there any approval and recognition process with other Ministries? Not evident! Or, is there any coordination between the Fatih project and BTO1 program? If not, either the Fatih project or BTO1 should be cancelled due to planning, funding and controlling public expenditure and budget (control management, not corruption). Or, are Ministries willing to stall for time due to unmanageable ICT changes, particularly tablets? Or, is there a relationship between Ministries and ICT suppliers (particularly Microsoft)?

Not evident! Or, is the Government merely utilising the Fatih project for political gain? Besides all these, in the project, it seems that TUBITAK is responsible for most components, being a coordinator and a developer as well as an evaluator of the project(s) that is so controversial. How is it possible to be an independent evaluator group if they are a part of developer group as well? That seems to be a crucial inconsistency! The unanswered questions are numerous but not addressed by the Government and Ministries.

Some MPs, in particular MP, Ruhsar Demirel, raised those related questions verbally and in formal away in the parliament and the media. MoNE has reacted to criticisms, as follows:

[The Fatih Project was launched as an ‘ideal based’ project in 2010, and is still continuing. ... The Fatih project is not a concern only of our Ministry; therefore, the project has been debated by the ‘Economic Coordination Committee’ to ensure the involvement of all stakeholders. The project is under the coordination of TUBITAK, including represented specialists from all relative Ministries. ... In this sense, TUBITAK- 1003- Primary Subjects R&D Funding Program is to support the ecosystem of the purchased equipment in the scope of the Fatih project, to make determinations about the work and the sustainability possibilities. ... The programs contribute into the Fatih project, in the medium and long term. Consequently, there is no need to wait for the outcome of the R&D programs, in order to start the Fatih project, which is carried out by our Ministry. Proposed projects are planned to complete at the end of 2015. ... In the Fatih project, there is no difference of opinion; the project has been carried out by the joint resolution as planned] (MoNE, 25th December 2012, No.7/12398, TBMM).

The response of MoNE is not accurate in this regard. If the project was launched as an ‘idea based’ project, why has MoNE been sending more (85,000) IWs and (54,000) tablets, instead of awaiting the outcomes of the pilot studies (8,800 tablets), in particular pedagogical (positives and negatives) outcomes? And since July 2013, the project of the Fatih project has actually been launched. Nevertheless, MoNE is

technically accurate. MoNE does not need to await the outcomes of other programs, because the objectives of the project are planned as five concurrently deployed components. Here lies the issue; MONE cannot both call this an idea based pilot and act on outcomes that are running concurrently! Therefore, I stated in the epilogue of the this thesis that the Government not only plan ‘inconsistent’ objectives, but even do ‘inconsistent’ in an ‘inconsistent’ way. These are key technical arguments that lead up to the major conclusion for this chapter.

The BTO1 program covers all essential concerns and includes many techno-educational projects. These projects are correctly not intended to be educational practices. However, the aims & objectives of the program are not aligned with the Government initiatives. So, regarding to the Fatih project, it seems to be that the Government has acted as a *Nonplussed Government*. Actually, they are not. The Government has been acting as an *Anglo-Governance Model* (“a new form of ‘experimental’ and ‘strategic’ governance is being fostered, based upon network relations among new policy communities.” (Ball, 2008b, p.747)), although the Government claims that they have been acting based on *Corporate Governance Principles* (“improvement of a country’s image, prevention of outflow of domestic funds, increase in foreign capital investments, increase in the competitive power of the economy and capital markets” (Capital Markets Board of Turkey, 2005, p.5), which is also accurate. All these movements, particularly acting as an *Anglo-Governance Model* in the Fatih project, will inevitably result in what I will refer to as a *ICT-Enabled Polycentric System* (“many centres of decision making that are formally independent of each other” (V. Ostrom, et al. 1961, p.831)) in which de-facto techno-politics eventually controls the Fatih project, which has limited the scope of intervention by the Government and the state (see, Techno-Politics Chapters).

One main objective in the Fatih project is to improve the software industry in Turkey, as publicly declared; actually since July 2013, the main objective has shifted to improving both the hardware and software industries. However, I believe Turkey has embarked on an extortionately expensive project, which is not future-proofed.

Ministries believe that tablets are the future. They have their place but not currently within an educational environment. It is necessary to look at near possible ICT trend by 2020 to be realistic for the future innovations and developments;

Transformational Technologies: ‘Web 2.0’, ‘Cloud-Computing’, ‘Green ICT’, ‘Ambient Computing’, ‘Virtual Org’ and ‘Enhanced Reality’; Hardware technologies: ‘NextGen PC’, ‘Solid State Drivers’, ‘Electronic Paper’, ‘Rfid Mfoom’, ‘Surface Computer’ and ‘Mobile Robots’; Software Technologies: ‘Web Service’, ‘Service Oriented Architecture’, ‘Wikis MicroBlog’, ‘Social Computing Platforms’ and ‘Virtual Assistants’; Advanced Applications: ‘Location Aware Apps’, ‘Service Oriented Business Apps’ and ‘Content Aware Apps’ (Aigrain, et al, 2010)

In other words, in this list, every two years, there are new concepts emerging in the ICT trend. According to Alvin Toffler, “future shock is the shattering stress and disorientation that we induce in individuals by subjecting them to too much change in too short a time” (1970, p.15). So, it is unmanageable for education to keep pace & infiltrate dynamic ICT markets in 21st century. Instead of having a hope of education following these dynamic markets, the focus should be on learning and teaching activities through *Computing*, not ‘Technology’. It is obvious that current technologies & educational practices are not successfully enabling future-proofed students’ knowledge & skill due to conventional antagonisms between positive feedback of *educational inertia* & unmanageability of *ICT changes* (essential marketplace values: promising to increase efficiency, interoperability and innovation).

Nevertheless, the Government’s agenda is much more complicated. On 15th January 2013, ‘the 25th Meeting of the High Council of Science and Technology’ was held at TUBITAK for evaluating new changes & developments. The meeting discussed proposed and planned projects, and then the comprehensive evaluation and planning report was published (with no details of the projects, but the budget mentioned is \$300 billion). The Fatih project (250 proposed projects) is one of them and compared to other projects, it is on a relatively small scale. Some the proposed projects are related to advanced technologies, such as nuclear energy, space research etc. The focus of the meeting and proposed projects are mainly how to develop and improve

national products (market) to catch up and compete with other nations, such as improving and shaping national patent system, etc. In the meeting, the Prime-Minister stated that

[How could a nation, which cannot produce its own satellite rap, its own tank/artillery, its own aircraft/helicopter, its own missile/radar, in short its own defensive high-tech tools, have a voice in its own region and in the world?]
(Recep Tayyip Erdoğan)

From this point of view, it is understandable that the Government is willing to start research programs and strategies in various disciplines, to attain the necessary level to make the best use of national potentials, and to meet national interests. These intended projects are mostly related to nanoscience and nanotechnology. As the European Commission's 'Communication from the Commission 'Horizon 2020 - The Framework Programme for Research and Innovation' Report stated that

"the emerging economies (Brazil, China, India, Indonesia, Mexico, Russia and Turkey) could be investing the same volume of R&D as the G7 countries by 2050, and by 2020, they could already be investing more than the EU. This expansion of R&D spending by the emerging countries should inevitably lead to their producing more patents in the coming decades" (European Commission, 2011a, p.1).

So, it would appear that the Government put all their '*eggs in one basket*' without ensuring the basket is made of the correct material! These arguments lead us to the famous (philosophical) question of what technology '*is*'! Techno-politically, technology is a '*product*' from a power of man above nature; such as a pen, computer, internet, idea, etc. However, its nature is more than a '*product*'!

"If it were sufficient to love, things would be too easy. The more one loves the stronger the absurd grows. It is not through lack of love that Don Juan goes from woman to woman to woman. It is ridiculous to represent him as a mystic in quest of total love. But it is indeed because he loves them with the same passion and each time with his whole self that he must repeat his gift and his profound quest. Whence each woman hopes to give him what no one has ever given him. Each time they are utterly wrong and merely manage to make him feel the need of that repetition. 'At last', exclaims one of them, 'I have given you love'. Can we be surprised that Don Juan laughs at this? 'At last?' 'No', he says, 'but

once more.' Why should it be essential to love rarely in order to love much?'
Albert Camus (1955, p.45)

I believe a new technology is a sort of '*Don Juan(s)*', who almost simultaneously (re)goes from nation to nation to nation with the actual intention of mutual *needs & desires*, not only for man but also for technology itself. Notably, there are digital divides as well. In theory, the biggest danger for the state is intellectual criticism to create a new wisdom of doubts. The most dangerous man is the one with a potential challenge containing a new original idea (e.g. FOSS though LBB). It is clear that a government in a national state, even the USA, is too weak to fight the challenges of technology, and so any nations cannot defend their citizens from threats of technology (though this is not inevitable). I believe that, ideally, there is a requirement for central governance to control the uncertainty of technological development (PCSS). This would give individuals a level of protection and predictability and a global coordination to development. Unfortunately, in reality, any global governance, within our commercial environment, would, no doubt, be heavily controlled and driven (and financed) by PCSS key players (i.e. less than ten giant corporations) and this hegemony would result in the exact opposite of what we would be trying to achieve.

It is common knowledge that in 1960-80s, Japan was the leading nation for ICT developments, due to their *electronic & robotic* technologies; and the rest of the world, even the USA, the UK, etc., were following Japanese inventions and innovations. However, the USA (ICT strategists) realized the nature and scope of ICT realities four decades before; the future (of 1960-80) was *digital* technology, not *electronic* or *robotic*. The USA Government and its market (ICT Corporations) thereby invested in so many projects and finally became the leader in ICT development. Japan, the UK, etc., became just a follower of the USA ICT market. Meanwhile, the UK began to see leadership in ICT field as too competitive / expensive / risky for such a small nation and did not have the appetite / confidence to pursue this position. Notably, *robotic* technology will (perhaps) be the future, but not before 2040s. So, Japan may win again in the future competition! The literature of

‘Global Research Views of Leading Countries in R&D by Technology/Research Area’ may be obtained from ‘Battelle Memorial Institute for the Business of Innovation’ (see, <http://www.battelle.org/>). According the Battelle 2012, globally, the leader is the U.S., and then Japan, China, India and Germany are keys in investigating ICT technologies. In this sense, a national strategy (a right techno-politics for the Government entrepreneurship) is crucial for being a competitive nation in the future of ICT.

We can look at Finland as an example. Nokia was the major mobile corporation, everyone else was following, even Motorola users (I was one of them) were envying them. Nevertheless, they lost their privilege to Google, Apple and Samsung. For instance, in the organic light-emitting diode (OLED) technology, Samsung is currently the world’s largest OLED manufacturer, has 98% share of global OLED market. Nevertheless, no one has 100% guarantee that an international giant of ICT will be always survive in spite of a ‘*Patent Troll*’ concept, strategically protect patent libraries without liberating their own products. It is usually considered by an Intel patent lawyer, who spelled out the phrase.

From this point of view, the acts of the Government in Turkey look like let’s keep our ear to the ground. Nevertheless, as I argue in the Techno-Politics chapters, Turkey has no particular, on-going globalness techno-politics at all. So, the Government should attempt to improve a particular ICT sector and so its own ‘policy’, ‘strategy’ and ‘vision’, and consequently its management and technological contributions on global; instead of being everywhere. For instance, the concept of improving both hardware and software technology in a particular nation is so difficult, even impossible, for an individual nation to compete other nations in a technological experiment of global dimensions, so the focus should be just software (e-contents), instead of both software & hardware. In techno-politics, I believe, there is no such a thing as,

in everywhere for everything (even for Google)

Specifically, within education, the Government reports underline that the education system will be radically changed from pre & primary schooling (e.g. monitoring and developing strategies for gifted individuals, etc.) to higher education (e.g. the university entrance exam, etc.). These are current and future concepts; however, the future need is, as yet, undetermined.

FUTURE TECHNOLOGY & CURRENT MINDS

“The purpose of education, according to this scheme, would be to rear the most ‘current’ men possible, -- ‘current’ being used here in the sense in which it is applied to the coins of the realm. The greater the number of such men, the happier a nation will be; and this precisely is the purpose of our modern educational institutions: to help every one, as far as his nature will allow, to become ‘current’; to develop him so that his particular degree of knowledge and science may yield him the greatest possible amount of happiness and pecuniary gain.” Nietzsche (1872, p.3)

Future ICT educational needs, in academia, are being determined through practising & experiencing ‘current’ technologies into ‘current’ education by ‘current’ educational minds, and predicting the future as more of the same/the same but better, as Nietzsche were willing to see, 141 years ago. Nevertheless, the challenge is to predict the future schooling & education with ‘future’ technologies & ‘future’ minds. There are too many variables for even the best futurologist (perfect sense-data) to predict; so, alternatively, we need to give learners the knowledge & skill of *Computing* to facilitate ICT development or, more realistically to have ability to adapt; because, there are always crucial phenomena that must exist in education; the ideal momentum of *change & inertia*. The concept is the ‘*future building*’, not ‘*future-proofing*’ through ‘*educated hope*’ or ‘*non-stupid optimism*’ in the 21st canyon (Facer, 2012⁶⁶). These concepts ensure efficient & practical educational movement in a society, but are not always appropriately balanced within an imperfect market.

“It was right to struggle against the old school, but reforming it was not so simple as it seemed. The problem was not one of model curricula but of men,

⁶⁶ Keri Facer - Learning Futures on http://www.youtube.com/watch?v=D_EcMTRKt8k

and not just of the men who are actually teachers themselves but of the entire social complex which they express.” (Gramsci, 1971, p.163)

Famously, Oppenheimer (2004) earlier stated that the idea of a lethal injection of educational and technological fusion & marriage, (e.g. the practice of injecting education with a fatal dose of technologies), to make education ‘better’ has failed. He rightly believed that it made education expensive without enhancing generic or technical knowledge & skill; the students were distracted by technology without gaining much (busy children), as is reflected in the book’s title; ‘The Flickering Mind: Saving Education from the False Promise of Technology’. Recently, Rushby reconsidered world-wide literature and concluded ‘so much effort - so little success’, confidently stating that

“The approach of the reasonable educational technologist is to apply ICT to the educational system in an attempt to help colleagues make the best of the current, out-dated, system. What we need now are educational technologists who will work with those who are designing the schools of the future to make them fit for purpose.” (2013, p.57)

I believe other disciplines (outside of education) must solve certain types of techno-socio-economic paradigms & issues (interoperability, open standards, patentable/un-patentable good, future internet, ICT regulations, etc.), to let us conceptualise new educational dimensions, or, in a best-case scenario, to be able to provide ‘better’ education. Without knowledge of other disciplinary capability, in particular psychoanalysts’ thoughts, in order to define online / offline / cyber worlds, the current ICT experiments in education will inevitably fail. The future is unclear, not because of technology itself, but because there is no consensus on (a) how knowledge should be conceptualised and (b) how societies should respond to emerging knowledge. The distinction between exploration and exploitation of knowledge is crucial, but not globally defined yet. E.g. why does the Microsoft Corporation always claim its new technology as an ‘*innovation*’ not an ‘*invention*’?

In political discourse, the current moment of an educational system is already imagined, planned, & shaped by elites (the Government, MoNE, International Corporations, etc.). Regarding this, I referred previous educational decisions

(imaginations, plans, shapes, etc.,) as ‘*Past Future!*’ so; the matter is only the ‘Future-future’ for us (me)!!! What do we want to have in unproven & vacillating future education? The future education could be in creating ‘*inclusive, innovative and secure societies*’ (highlighted by the European Commission Report, 2011b). I believe there is no doubt that technology makes us more creative, but, not necessarily more intelligent or smarter (in the current technology). If future technologies are unpredictable, the key point is to conceptualise societies within the future technologies. Nevertheless, there will never be ‘*a defined society*’ as many global theoreticians wish. So, is there a magical educational remedy through a ‘*panacea*’, ‘*omniscience*’, ‘*omnipotence*’ thoughts & virtues with ‘*splendid*’ splendours (technological products) in our time? The challenge is to envisage the ‘future’ education & schooling within a lethal injection of ‘future’ technologies into ‘future’ minds (coalesce).

I believe the current & future educational debates (learning-centred education, personalised-learning environments, service learning environment, etc., through/within ICT as a full integration in a different form) will not emerge within this decade (perhaps it will occur in the next decade). Not because academia focuses on the future perspective within current education & technology, but rather the current educational components (students, teachers, etc.) are members of paper-based societies. Next (‘e’-‘online’-‘g’-‘tech’-‘data’, etc.) generation will become digital-societies; however, there is limited evidence (e.g. OECD New Millennium Learners Project) to conceptualise how societies should be ‘*next-societies*’ regarding these uncertain & unmanageable technological dimensions.

For instance, there are multiple socio-physiological researches on how & why; there are social differences between females and males, and youth and mature people etc. regarding new technology. Is it logical to consider the same dimensions online as in reality? The ‘know-who’ concept is crucial; but, nobody has fallible knowledge of technology. Nevertheless, technology always claims its own algorithm is perfect, because there is no human bias. However, human bias can be seen in cyber-bullying, cyber-racism etc. I believe there are too many uncertainties to switch education to a

new fully integrated ICT system using curricula-centred and exam-based education psyche. So, the key issue should be to conceptualise,

“Education enhances pupils’ lives as well as their life skills. It prepares young people for a world that doesn’t yet exist, involving technologies that have not yet been invented, and that present technical and ethical challenges of which we are not yet aware” (CAS, 2012, p.4)

However, is there a magic solution? As I argued in the ‘Identification section’, instead of just believing that technology could resolve all of our educational issues, we need to be more cautious & sensitive. In this sense, it is critical to be in a position to understand more deeply and to evaluate the relationship of the trinity of techno-politics in the state of Turkey and its’ educational system in order to conceptualise the operationalization of techno-politics. From this point of view, realistically, for the future, Turkey needs to ensure future-proofed students’ knowledge & skill, as other developing and developed nations .Therefore, alternatively, MoNE should focus on how to conceptualize *Computing* in Turkey through new pilots studies, not ‘fully integrated ICT’, to facilitate learners’ knowledge & skills, realistically to able to make them adapt to new emerging circumstance in the future.

This chapter takes up the argument in the Introduction about the need for normative criticism which takes us to the centre of the aims and frames of thesis. The fundamental argument about the Fatih project is that it will fail for three reasons;--it is wrong in philosophical conception (‘Computing’ & ‘LBB’), in technical development (roughly, the sections headed ‘Inconsistent Faith Project’ and ‘Future Technology & Current Minds’), and in political execution (the section headed ‘the Misleading Journey’). Nevertheless, if the aim is full Integration of ICT into education, within a failure destiny project, the Government will inevitably issue scapegoatism to cover its future failures. In the power of scapegoatism,

“The scapegoat has always had the mysterious power of unleashing man’s ferocious pleasure in torturing, corrupting, and befouling” Francois Mauriac (1885-1970)

SUMMARY

As time passes by, all contents will be digitalized and teaching and learning activities shaped through technology. Actually it is not the aim of constructivism as declared by MoNE but the nature of the project creates this outcome (in the short time future), because it has not planned a user-centred approach & personalised learning environment. There are still various researches about ICT education and arguments like teachers vs. technology, instruction vs. distraction, engaging papers vs. using technologies, and seller vs. partnerships, etc. However, as this chapter has argued, there is no compelling ICT vision in the national education psyche in Turkey and, as a result, whilst education is suffering through being a curricula-centred and exam-based education system, the Fatih project ill-defines the future provision of a ‘fully integrated ICT system’. Currently, two years on, it is impossible to provide data-based evidence that supports the objectives of the Fatih project, published and submitted by the Government that evaluates how the concept is challenged.

The project discourse is the same as previous ICT4ED projects. However, today’s goal is to be a ‘Knowledge Society’, not an ‘Information Society’. It is a new discourse, but with old & inertial institutional-minds. Is Turkey an ‘Information Society’? It is arguably not. Turkey is ranked the 69th nation on the ICT development index (ITU, 2012), whilst Turkey is the G-20 major economies. Nevertheless, it is clear that adding a new dimension into education that of technology, (currently) will not solve the educational issues, including those of ethics and politics. One clear example of this is that the aims & objectives of the BTO1 by TUBITAK are not aligned with the Government initiatives in the Fatih project.

From this point of view, the main issue is that there are no clear ‘thoughts’ in terms of the four knowledge(s) of techno-politics in the project. For instance, the Government has never proactively or reactively addressed the issue that the way they have sought to deploy the plan (using PPPs dependent on Microsoft and/or Google) will also unload educational potentials to an international corporation (Microsoft

and/or Google). I believe if we continue the Fatih project's objectives for 'fully' integrated ICT,

- (a) The initially objectives will fail due to the fact that fully integration is impossible;
- (b) The option will be significantly reduced once we are locked-in to a commercial partner;
- (c) Return on investment (ROI) will not reflect the exponential capability that could be realised by skilling users with Computing. Instead, Microsoft and/or Google will aim to make end-users (buyers) significantly more dependent over time.
- (d) Although the Government state an objective to create the next Bill Gates, they are not taking the correct actions to produce potentials. Maintaining the status quo is already showing signs of 'scapegoatism' in terms of accountability for projects meeting their objectives and the freedom to change direction and adopt needs as and when required. Creating users with 'Computing' dependencies on commercial partners will significantly restrict choice (and determine price/ROI).

Creating a nation of *computing* users will create exponential benefits and independence. Facilitating the trinity of techno-politics, the Government has already failed due to fact that there will be 'e' right now (see, Techno-Politics Chapters). The evidence also indicates another *Cassandra Metaphor* in which the literature has not convinced the Government of its predictions & the knowledge of future events. Nevertheless, if the Government updates and/or modifies the project objectives, and/or there a new technology emerges, is it likely that the road of the project will change as well? I believe not; not because the project has already begun, actually the relative debates are so widespread and undetected by the Government due to the trinity of techno-politics (please consider whole thesis arguments).

So, why does 'the best and the brightest policy making club' in Turkey not consider *Computing*? Because, the hegemonic discourse is that that the Government is to use

technological challenges and opportunities within education to create a new 'profitable' avenue in Turkey, through perceiving education as a 'commodity' & 'private-good', as another precedent of 'Fragmented Centralisation' which is

"Public school systems are morphing through a process of fragmented centralization, such that decision-making authority is becoming more centralized while accountability for centrally made decisions is becoming more distributed down the hierarchy chain" (Monahan, 2005, p.585).

I believe the Government should not attempt to continue the investment (funding) of the Fatih project, not because the Government and so MoNE is not demonstrably capable of being successful; though some opponents think otherwise. It should not because (a) MoNE missed the current & future concept of *Computing*, (b) there is no holistic approach in the Fatih project, in particular how to change curricula-centred & exam-based educational system and (c) not all students will pursue ICT careers and so become programmers, optimistically few of them. If the Government intend to maximise their ROI they should be equipping end-users based on their needs and ambitions. So why then are they planning to provide emerging technology to all students? No reasonable explanations have given by MoNE. However, its hegemonic vision is both (a) 'endogenous' privatisation ("the importing of ideas, techniques and practices from the private sector in order to make the public sector more like business") and (b) 'exogenous' privatisation ("the opening up of public education services to private sector participation on a for-profit basis and using the private sector to design, manage or deliver aspects of public education") (Ball & Youdell, 2007, pp:8-9). However, the market is self-motivated & self-interested (profit & survival).

"shifting of responsibility for education away from the state, with increasingly blurred lines between public and private and complex 'heterarchies' of participatory relationships between educational stakeholders – funders, providers and users" (Ball & Exley 2011, p.4).

From this point, is there a *philosophical contemplation* within the Fatih project? The pedantic discourse from the Government has unacceptably ignored what education is & is for. Thus, education is too valuable for its potential to be handed over to

imperfect markets. In the argument of governing education through public-private-partnerships, Robertson, et al. (2012) rightfully concluded that education is a *complex social good*, not even a *public good*, and there is danger of arriving at some unacceptable and unacceptable consequences, because

“... stakeholder driven approaches tend to narrow the definition of what counts as public. Indeed, are these stakeholders sufficiently knowledgeable about education as a complex social good to ensure that Arendt’s (1958) sense of the ‘public’, as a space of debate and contestation, is realised? (ibid, p.48)

So in answering the chapter question:

Is there anything missed and ignored in the Fatih project? The literature indicates yes!

Are the objectives of the Fatih project attainable? The literature indicates not, and I will elaborate on the reasons for this in the next chapters.

In conclusion, I believe the Fatih project should not continue with its defined objectives; otherwise, it will result in great negative influences upon Turkey. In this sense, what does it really mean to be *distinctive*? The current technology is crucially splendours, and has amazing potentials through humans, but dynamically unstable and hardly trustable, in particular with products from PCSS family (e.g. legal and/or illegal censorship surveillance software, etc. and see, more risks and dangers of new technology from Corry Doctorow, James Boyle, Chellis Glendinning, etc.). Within this scope, it is necessary to get a comprehensive sense of techno-politics. Because, this chapter still presented the surface arguments and there are hidden and invisible *sphinxes* deep down to make riddles of techno-politics upon decision-makers by their powers – *globally ambiguous* – to manipulate the state and its education system, not for the intention of gaining *more profits*, actually for gaining more *controlling powers*.

CHAPTER V

TECHNO-POLITICS IN FATİH

The Gospel of Superman (the Philosophy of Nietzsche) was digitalised by the Internet Archive in 2006 with the funding from the Microsoft Corporation.

Why?

Or the question should be Why not? After all, everything is how to be a Superman, or at least, to know how to raise Supermen in the decade of Nietzsche in the century of Singularity!

As it is argued in detail in the next chapters, there is no precise on-going ‘written’ techno-politics in the state of Turkey and its education system. And since 2013, the Government mistakenly declared that a ‘Procrustean ICT Bed Strategy’ has been taken in terms of ICT in the state. This strategy is evidently an ill-conceived and doomed decision due to the nature & scope of technology (more lock-in). Therefore, the concept of ICT Strategy in a national state is globally understood as *experimental* rather than *definitive*. To support this debate, in the Fatih project, the Government has been deploying an ‘Anglo-Governance Model’, which is relying on *experimental* and *strategic* governance, with the intention of improving both hardware and software sectors in Turkey. However, as this chapter argues that any initiatives from an ‘Anglo-Governance Model’ have inevitably resulted in a ‘ICT-enabled Polycentric System’ in which the Government and state apparatus have ultimately become an unwelcome (powerless & insignificant) decision-maker, not only because there is no formal dependency (centres) between various decision makers (powerless) but also technology is accelerating and so unstoppable for an individual

nation (insignificant). So, Anglo-Governance has culminated in another form of de-facto ICT Strategy. ICT suppliers (Microsoft & Google) will control & shape ICT components into educational dimensions in this decade, and thus in the trinity of techno-politics. These ‘*Supermen*’ corporations are into everything!

“While Turkey’s information society strategy has certain technical inefficiencies and limitations in its reach, it clearly demonstrates the political ambitions of integrating Turkey into global capitalism, and the contemporary governmental phase in Turkish modernity in which local and global actors have started playing important roles. Such decentralization of governance does not mean that authoritarianism in Turkey has ended. In fact, neoliberal rationalities have intersected with the existing authoritarian ones to produce globalized yet compliant citizens who are under digital surveillance” (Toprak, 2013, p.1).

In this regard, Turkey is not alone; globally nations are creating these compliant citizens! From this standpoint, ICT Strategy in a national state is experimentally and strategically dynamic within global networks; however these debates do not mean that there is no *orchestrated mobility* between the Government and ICT suppliers. Toprak’s observation makes the mistake of thinking that the compliant citizen is naturally evolved as opposed to deliberately orchestrated.

[There is now something called a cloud system. If you think hard about technology, you will have bats in your belfry. When you have a bee in your bonnet about technology, you will get the wrong end of the stick.] (YouTube, 2011; titled as, ‘Beautiful discourse of the Transport Minister About Cloud-Computing’⁶⁷, the previous Minister of the Ministry of Transportation, Maritime Affairs and Communications (UBAK), Binali Yıldırım

From the quote above, it is clear how the Minister, who is responsible for purchasing Interactive Whiteboards (IWs) and establishing infrastructure in the Fatih project, ‘*professionally*’ shows his comprehension of technology in public! In this chapter, I extrapolate how the Government has deliberately and disingenuously ‘given’ support for Free Open Source Software (FOSS) with a nominal amount of FOSS investment. The Fatih project has ultimately and incorrectly abandoned FOSS’s potentials

⁶⁷ YouTube. (2011). ‘Ulaştırma Bakanı'ndan Bulut-Bilişim Hakkında İnciler’ retrieved 31/12/2013 from <http://www.youtube.com/watch?v=5MOhFjykSg4>

without providing any logical / intellectual reasoning. So, I provide indications of how, at this stage, Scientific and Technological Research Council of Turkey (TUBITAK) mistakenly missed an opportunity to change the direction of the project, through incorrectly evaluating the project implementation criteria surrounding deliberate inconsistencies & failures in the Fatih project in connection with Pardus Fraud-Debian.

In the rest of the thesis, I highlight the reasons why I titled the previous chapter ‘Hubris’. The chapter focuses on the concept of ICT Strategy in the scope of Fatih Project;

What kind of governance model has been taken by the Government in Turkey in the scope of the Fatih project?

What is the overall outcome of techno-politics in the Fatih Project?

FUZZINESS OF GOVERNANCE

According to Jessop (2003), governance is a ‘fuzzy term’, which leads ‘to ill-founded misunderstandings and pointless disagreements’ (2003, p.4). In this study, I provide definitions of governance, used in the latest literature, in order to avoid confusion. In the literature, there are several governance models, e.g. Governance, Governance without Government, Governance by/within Network, Post-Bureaucratic State, Anglo-Government, Meta-Governance, Polycentric Governance, Corporate Governance etc. (see, Deloitte, 2004). According to the Capital Markets Board of Turkey (CMB), since June 2003, the Government has been acting through the ‘Corporate Governance Principles’, which are,

“Sound corporate governance practices bring out advantages for companies and countries. ... corporate governance means improvement of a country’s image, prevention of outflow of domestic funds, increase in foreign capital investments, increase in the competitive power of the economy and capital markets, overcoming crises with less damage, more efficient allocation of resources attainment and maintenance of a higher level of prosperity” (Amended, February 2005, p.5).

Although Corporate Governance is taken as a preference by the Government, there are some criticisms from investors' perspectives. A task force report from Equity Advisor Group, Institute of International Finance state that

"Turkey has an underdeveloped equity culture. ... Also, most large Turkish companies are part of conglomerates, typically organized around a group-owned bank. The five largest business groups account for about half of the total market capitalization of the ISE" (2005, p.6).

The debate of the five largest businesses that were controlling Turkey has been publicly acknowledged and realigned. The current Government has taken the business powers⁶⁸ and have re-established their own structures. Nevertheless, according to Loewendahl-Ertugal (2005),

"There is weak tradition of partnership in Turkey. Under the terms of its Constitution, Turkey is a unitary and centralised country. Territorial administrative units (provinces and districts) have very limited powers: their functions have been until present essentially executive, and based on the principle of deconcentration. There are no real regional structures for handling power ... a strong central planning tradition, whereby all decisions are taken by the centre because it is believed to "know best". The strong centralised tradition creates the fear that this power can be lost if authority is devolved to the regions, even though the main motive for devolving power to the regions in Western Europe has been most of the time to enhance the capacity of the national level and is a project of the nation-state" (p:26-46).

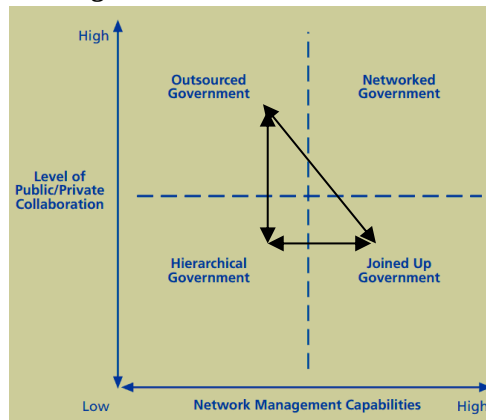
Although the Government defined itself as a Corporate Governance, which is also controversial within private corporations and academia, it does not apply to all institutional initiatives, in particular within the Ministries. The difference between defined corporate governance and the way it is practiced globally is that there is no clear structure between shareholders' interests in the Corporate Governance Model (see, the literature of 'what do shareholders really value in Corporate Governance'). Nevertheless, what is obvious is that the Government in Turkey has a lack of policy 'learning' and/or 'borrowing' due to the Government's arrogance & ignorance in real practises. For instance, the study of Erguder (2008) indicates that the Ministry of National Education (MoNE) is the main and the first decision maker in the education

⁶⁸ See, more arguments from; Ntvmsnbc. (2013). Erdoğan: Faiz lobisinin neferi oldular, titled as, Erdoğan: what is happening in interest lobby, retrieved 31/12/2013 from <http://www.ntvmsnbc.com/id/25450624/>; Yeni Mesaj. (2013). Erdoğan'ın "faiz lobisi" işgüzarlığı, titled as Pragmatism and interest lobby of Erdoğan, retrieved 31/12/2013 from <http://www.yenimesaj.com.tr/?artikel,12006557/>, and so on.

system, over 95% of decisions in schools, which is also the biggest proportion in the EU, are taken by MoNE. Besides, schools were not legally obligated to set up their own strategic plan until 2010. Based on the circular letter No.2010/14 issued in June 2010, district national education directorates and schools have been obligated to prepare a strategic plan. Interestingly, the initial studies for the strategic plan started in June 2006 by the Ministry of Development (MoD), but MoNE curiously waited four years for this notice. Notably, the concept of a strategic plan is only at school level; the main decisions are still made centrally, e.g. The Fatih project and the 4+4+4 Educational Reform have been totally decided by the Government. In this regard, the question should be that can a strategic plan be realistic with only 5% of the decision-making processes?

Historically, before the Fatih project, for ICT4ED projects, the Governments acted as a *Hierarchical Government* to an *Outsourced Government* and then to a *Joined up Government*, but this did not occur through a linear process and they were never a *Networked Government* or *Networked Governance* (defining ‘values’ of ICT4ED projects), as argued in the later of the chapter. For instance, in the initial development process of Information Systems of the Ministry of National Education (MEBBIS), the Government purchased software and services from private sectors (directly from Microsoft Corporation, because that time there was no Microsoft Turkey), and after 2005, modules of MEBBIS have been developed by public and private sectors on the behalf of MoNE.

Figure 3: Models of Government



Source: Deloitte Research (2004, p.4)

“Government organizations remain a part of the networks in these emerging models of governance, but they are conceptualized as dependent on the other actors to the same extent that those actors are dependent on government” (Pierre and Peters, 1998, p.226)

Have the Governments and other actors been acting dependently ‘to some extent’? I believe they do not always and necessary depend on each other at all, in particular for technology, because what does it mean to be ‘dependent’ after all? The Governments have been a simple ‘*implementer*’ in terms of technology in its state and its education system, and so ‘dependent’ is meant to be a ‘consumer’ (a vital role for the market because they are the buyer of products) or a ‘customer’ (lock-in end-users because they are the user of products). Evidently, the Governments are both!

“Big business depends entirely on the patronage of those who buy its products: the biggest enterprises loses its power and its influence when it loses its customers.” Ludwig von Mises (1881-1973)

If the dependency is defined, based on an economic perspective as above, I do not see any dependency; because, in technology, there is also an ambiguous area for defining producers versus end-users, sellers versus buyers, teachers versus learners, etc. For instance, the concept of single/double/triple-loop learning is not clear for human-technology interactions. This ambiguity is totally neglected, and so end-users potentials are mistakenly forgotten for an economic purpose. In the sense of ‘dependency’, we have become dazzled (renter seekers versus owner seeker) by the

next big thing whatsoever. So, it is essential to get sense of how the recent history shows us!

ANGLO-GOVERNANCE

The following data indicates that the Government mobility in the Fatih project cannot be utterly clarified by ‘Corporative Governance Principles’, the concept is more likely Anglo-Governance, as Stephen J. Ball argued,

“... political science which is concerned with changes in the policy process and new methods of governing society; that is, with a shift from centralised and bureaucratic government to governance in and by networks. *This is sometimes called the ‘Anglo-governance model’*. .. *that a new form of ‘experimental’ and ‘strategic’ governance is being fostered, based upon network relations among new policy communities. These new policy communities bring new kinds of actors into the policy process, validate new policy discourses and enable new forms of policy influence and enactment, and in some respects disable or disenfranchise established actors and agencies. ... These relationships interlink business, philanthropy, quangos and non-governmental agencies*” (2008b, p.747).

From this point, chronologically the Government has been acting as Anglo-Governance Model to improve,

Table 1: Governance Mobility in the Fatih Project

Phase I	2010-2012	hardware & software sector with international corporations
	Late 2012	only software sector with international and national corporations
	Early 2013	hardware & software sector with national corporations
Phase II	September 2013	hardware & software sector with whomever (I believe it will be just national corporations)

Initially, MoNE announced the Fatih project in late 2010, and so IET published four technical specifications reports to define the objectives of the project. In that time, the concept was to provide a laptop for each student, a projector for each class and

an A4 printer for each school, with Microsoft 7 and OpenOffice. This covered only the secondary education institutions. Nevertheless, the Fatih project was perceived in the media as another ‘Microsoft Educational Project’, and extensively criticised by various groups, in particular from FOSS communities.

Meanwhile, in 2011, MoNE appointed 7 (technical) experts for the BETT Fair (England) and the Magellan Project (Portugal), 2 experts for the Computex Fair (Taiwan), and 3 experts to the USA. These experts investigated the similar projects being implemented globally, to determine technical specifications. According to MoNE, after technical inspection visits, MoNE completed needs analyses and finalised the visions and missions of the project (May 2012, No.7/2411, Grand National Assembly of Turkey (TBMM)). Although all these visits were intensive and comprehensive, the Magellan Project is of particular relevance to my study. The Magellan Project is about ‘how to deploy 550,000 Linux notebooks in classrooms’. The Pardus team was also on the project and they presented couple of Linux contributions from Turkey, some of which have been used in other Linux distros.

During February 2011, the Prime Minister promoted a ‘tablet’ in his election campaign. To date, he continues this promotion. The Government will give all children the latest technology, and the latest technology is a ‘tablet’. Has Turkey been continuing the Fatih project due to the Prime-Minister’s promise? Importantly, no one challenges the Prime-Minister on this point, because the Prime-Minister does not swallow his words, even though his vision may be wrong for many of us. It is general knowledge in Turkey that the Prime-Minister is the ‘Project Man’, who has started several related and unrelated project across to Turkey, based on national ‘interests’, and commonly calls these projects the ‘Crazy Projects’, such as ‘the Fatih Project’ (\$8 Billion); ‘the Canal Istanbul Project’ (Istanbul will be transformed in a city of the two seas by the artificial sea-level waterway’ (\$4-10 Billion); ‘The Yavuz Sultan Selim Bridge – The Third Bosphorus Bridge’ (\$2-3 Billion); ‘The Istanbul New Airport – the biggest airport in the world’ (€22.1 Billion); ‘The Istanbul-Izmir Highway Project’, Istanbul and Izmir – become two hours distance (\$6.3 Billion); etc. All of these projects (\$\$\$) are politically, economically, socially, and even

ecologically controversial, but as far as I know, some of them (the Canal Istanbul) have significant potential. Whether the Prime-Minister is the right man to lead these projects is not really an open or effective debate in Turkey; nevertheless, it is not necessarily the reason to continue the Fatih project.

Returning to the subject, after all inspection visits, MoNE cancelled the ‘Microsoft Partners in Learning Protocol’ in December 2011. This indicates that the Government has decided to search for new opportunities, challenges and responses in the Fatih Project, utilising experimental strategies through the huge central educational potentials within the Government’s power.

From 2010 onwards, the Government has publicly declared that Turkey will have over 14 million tablets and all related technologies. So, in the late 2011 and in the earlier 2012, the Government and so Ministries were not motivated to achieve an improved deal with any international corporations involved in the project. Actually the aim was to improve ICT sectors industries, both hardware and software. There were various conferences and publications from Ministries about how South Korea, India and China have developed their ICT sectors, in particular South Korea, because the condition of South Korea is identical to Turkey in regards its population and potentials. In the Fatih Project Announcement’s document on January 2012, it is initially emphasised that

“The companies/consortiums that accomplish the below mentioned points will be prioritized in the evaluation process: The products and components that are subject to the Project are to be produced domestically with the highest possible value added. The production under consideration is to be designed and realized not only within the scope and scale of the Project but also, concerning the needs of the domestic market and in an export oriented way. Adaptation of investments in the products/product components subject to the Project to new technologies is to be committed” (the Prime Ministry Report, p.1).

Meanwhile (2011-12), in the media there were countless articles about how the Government renamed the project ‘Pardus-Linux is for the Fatih project’. However this was a deliberate tactic from the Government and only provided ostensible hopes

for FOSS communities (a) to get better deal from Microsoft Corporation and (b) to redirect global attention from international corporations.

In the Fatih project, it can be identified that initially the Government and so Ministries deployed an Anglo-governance model as a facilitator, to attract recruitment of new social partners, through engagement with international software and hardware corporations (mainly IBM, Microsoft, Apple, Google, Samsung, Blackberry, Nokia, Intel, Sony etc.); to persuade some of them, or at least one of them, to come to Turkey, and so ultimately improving ICT sector in Turkey. For instance, the Minister, Zafer Caglayan stated,

[In order to get the tablet tender, Apple offered to produce Apple products accessories, such as covers, earphones etc., *Apple may also open a new R&D centre in Turkey ... Intel offered to establish one R&D centre in Turkey. Microsoft offered development of Skype in Turkey and opening a new research centre. In this sense, it is more likely Apple will get the tablet tenders.*] (In Google search - Apple and Microsoft aspire to Fatih project; Fatih projesine Apple ve Microsoft talip') (Late 2011).

Even just after this kind of news, MoD was advertising Apple products in its' own Ministry website for nearly two weeks. It is obvious that this kind of advertisement is illegal due to Competition law, but I am unsure that (a) the Ministry was aware of that and/or (b) the Ministry was willing to show how the Government is keen on cooperating with Apple and/or (c) the Ministry was simply lobbied by Apple and so provide their appreciations to Apple for donated products, etc. For the moment, Ministries visited various countries, particularly the USA, the UK, Korean, China, India etc., to investigate the latest technologies, and even Ministries invited to and were invited by international software and hardware corporations to be a part of the project. The challenge of Ministries is to get connections for persuading international corporations to improve the R&D centres inside of Turkey's territory if they were willing to take part of the project. Meanwhile, the Minister, Nihat Ergun, stated

[Apple is closely interested in Turkey and the Fatih project. We have seen that they want to join this project using iPad ... *Apple has no intention of making an R&D investment in its products in anywhere other than its own centres. iPad is produced in China. Regarding this, if they established a base abroad, they can establish another base in an alternative location. The subject of producing tablets did not come up*] (the Minister of Science, Industry and Technology (SIT), (In Google search - Ergun, in Silicon Valley ... Ergün, Silikon Vadisi'nde ...) (November 2011).

[Turkey has become an important R&D centre, because of its potentials and its incentives. We also highlighted this to Ballmer (Microsoft). We asked them to invest in Turkey ... We asked them to establish R&D centres in Turkey, replicating India and Israel. Ballmer stated that they will send a delegation to investigate and examine the subject ... Microsoft will launch a study for the development of Skype in Turkey ... With development of cloud computing, hardware production in Turkey will be able to be discussed. Microsoft pays much more attention to it. Microsoft stated that they devote their lives to it (cloud computing). Depending on it (developing cloud computing) they will take the step to develop hardware in Turkey. ... Three key topics in the short term: ... to 'have more collaborations between universities and Microsoft'; to 'start establishment of R&D centres' and to 'continue the development of Skype' in Turkey. ... (The Minister) personally cared about these three topics and their potential in Turkey. The Minister did not have the impression that accomplishing these topics is dependent on tablets. With tablets the educational model will be changed, naturally there will be more potential for Microsoft. Even if Microsoft will not be included in the system, Microsoft offers solutions across the world and so Microsoft already knows that Microsoft will be taking a place in the system. Regarding this, there was no evaluation. It is not a conditional subject; it is connected with Turkey's potential. They are working on it. ... Turkey's economy has increased from 26th to 16th in the world ranking, however among the countries in where Microsoft has a business; Turkey is ranked as 27th. The Minister asked to Ballmer, why Turkey is not ranked as 16th.] (In Google search, - Minister Ergün and Steve Ballmer, the CEO of Microsoft meet in the USA) (SIT, December 2011)

However, since late 2012, all negotiations have shifted. Microsoft has revealed its true interests, and stated that Microsoft, particularly Windows Azure (for cloud platform) and Microsoft surface (for tablet) can provide everything the project needs. Microsoft cannot provide its products free because of Competition law, but they can provide them at a special price for the project and importantly the Skype development team may be moved to Turkey. Apple showed its interest in the first case, but Apple did not agree to develop tablets inside Turkey, but offered only special prices and support. Nevertheless, after the announcement of the tablet tender in the Phase I, Microsoft, Apple and most international corporations' products were immediately excluded from the competition due to the initial tender specification requirements. This indicates another tactic used by the Government to get more international attention.

Meanwhile, Ministries have declared that the Prime Minister, Recep Tayip Erdogan 'wants' national products in the Fatih project. National companies have had a 15% price advantage, which is a Corporative Governance principle. I believe the Prime Minister's action indicates that Ministries have proved themselves an incapable facilitator in persuading international corporations to be a part of the Fatih project, with the exception of Microsoft. The Government was willing to show its own power in highlighting that ICT is (a) telecommunication, (b) hardware, (c) software and (d) format (e-contents). This increases their negotiating power by breaking down (commoditising) the solution that they had tendered for, to isolate elements suitable for Turkish production. Therefore, in the first phase of the project, Android was chosen as the OS system (to avoid lock-in), but the Government did not understand the licence issues that they would be exposed to later. The disappointment can be seen from the Minister, Binali Yildirim's speech,

[There is (iPhone- the Minister did not say iPhone) 5 product, everyone stood in line. *It is not possible to understand. They are sending people to the USA to get one. This is a freaky situation.* They are doing this to put on airs and graces. Are our people working and struggling [for disposable income] and then putting on airs to buy anything [at any price] from the USA? *The most beautiful*

thing we use, [at the same time] the most beautiful thing we produce. We have capacity and capability. We are not jealous of producers but we will produce as well.] (In Google search - ‘harsh criticism from the Minister that phone!’
‘Bakan'dan o telefona sert eleştiri!’ (October 2012)

Notably, I believe that the Government is inferring that we should not pay extortionate prices for the latest aspirational technology from the US, but to seek to produce and support substitute products in Turkey. A few weeks later, the Government forces a new charge to end-users; actually increased the charge from 5 TL to 125 TL, for registering a mobile phone in Turkey.

Meanwhile, the lobbying activities were completed by Microsoft. I believe while Microsoft has shown its ‘*teeth*’ to be a part of the project, such as suing a University for piracy, releasing the outcomes of Acer-European Schoolnet Educational Netbook Pilot in Schools Project in 2010-2012 (a benchmark for MoNE to compare and evaluate their own projects to the Acer project), announcing Microsoft Surface since June 2012, etc. Consequently, to demonstrate the disingenuity of state FOSS support, an important example is the discourse of Binali Yildirim, in the Open Academy Press Conference in January 2012. (Notably, the Minister was sitting in front of the platform which was promoting Microsoft and Open Academy posters).

[Question: in the Fatih Project, Microsoft is not named,

Minister: There are various companies for OSs. Microsoft is the best known and the most common. *In the scope of the Fatih project there is no obstacle for Microsoft Corporation. Two OSs are going to be in the system. A ‘wanter’ uses Microsoft; a ‘wanter’ uses Pardus which is such a thing developed by TUBITAK. So, Microsoft is not emitted. I want you to know that. You are talking about tablets, so what, it is not a big deal, tablets and computers are the same.*

Question: Mr. Minister, tablets are provided with Android, but after Windows 8, Microsoft targets tablets as well.

Minister: Yes

Question: *Besides, the Pardus team has no plan about tablets.*

Minister: Right now, I mentioned about smartboards (IWs). Now, we are working on one part of the project, for other parts MoNE is working on. We do only cabling infrastructure, and smartboards. My answer is what I know. In smartboards, we recommend both Microsoft and Pardus. In tablets, we are on the bottom rung of the ladder, *but I got it as a note. Of course, it is better to have options.* (The Minister asked relevant information from his consultants). Yes there are no restrictions. According to the information brought by my colleague, *the choice of awarded party will be valid.*

Question; In other words, different OSs will be available in 14 million tablets.

Minister: *Will be; it should be. In my opinion, it is necessary. However, MoNE is responsible for that; therefore, we need to confirm it from them. I accept it as a warning. We will discuss on this issue with colleagues.*

Minister: if any companies establish a tablet factory, we will provide as follows. 14 million tablets is a very large number, there is no production of this size in the world. However, we aimed and perceived that the production of tablets and smartboards will be an opportunity for development of ICT sector in Turkey. *Why have we devoted ourselves to tablets in the pilot?* Because, the production of tablets is a very serious incentive, including that establishment of needed facilities, we are doing a comprehensive study. To say ‘I made a tablet’, it requires the sourcing of screens, chips, etc. We do research and it takes a little time. There is a special intensive system. We will say that you will establish tablet factories and we will provide these opportunities, but not in the form of compilation and collection. For instance, you will have plans for sourcing large quantities of batteries, screens, etc., in Turkey. Which plan is the most feasible? These studies are carried out by colleagues from various Ministries under the coordination of TUBITAK. All Ministers posturing suggests that the production of tablets will be undertaken in Turkey!!!

...

Q: What do you think about the Minister’ speech?

Tamer Ozmen (the Managing Director of Microsoft Turkey): In the Fatih project, *there is one committee, which consist of around 7-8 professions from MoNE, TUBITAK and each Ministry. We are meeting with the committee to persuade them to use Windows 8 in pilot studies.* Our goal is to be able to include Windows 8 into pilot studies until February 6. Why is it so important? As it is known *that Microsoft is the most experienced company around the*

world, successfully establish an educational ecosystem and this ecosystem is integrated with Microsoft products, so it will be so sad if Microsoft is not involved, because the most powerful company in this subject will not able to be involved in the project. We are trying to work with the committee.] (In Google search – the Minister, Yıldırım said that Windows 8 will also be in the Fatih Project! Bakan Binali Yıldırım Fatih Projesi'nde Windows 8 de Olacak! (January, 2012)

In the Phase I and II, Microsoft has been in IWs, but for tablets, it is not clear yet. I believe, Android platform will be chosen.

From the Minister's discourse above, evidently the [OSs] decision still remains with the Government but Microsoft is 'leveraging' its influence. For technology, Microsoft is the current market leader, but the future is dynamically unclear. So, there are warnings and observations for the Ministries through power asymmetries, to improve their ICT sector (both hardware and software) in Turkey. From this, Apple and other international corporations are still in the Fatih project, e.g. the latest news is the President, Abdullah Gül and Tim Cook, who is the CEO of Apple, have just met for the Fatih project in February 2013.

From this point of view, as the Minister stated that the Government was still acting as Anglo-governance, as facilitator (changing its strategy and experimental power) to support international software and hardware corporations in the Fatih project if they are willing to establish their R&D centre in Turkey. Nevertheless, international corporations were not interested in the Government offers, with the exception of Microsoft. There were so many news since 2011, as

[Microsoft is at its best in the Fatih project

The Minister Çağlayan stated that Microsoft is at its best in the Fatih project. Upon any requests, the *Microsoft team will come to Turkey for collaboration with the project. Microsoft stated that Microsoft has productions in 105 countries. If we do cooperate, it will also be important for Turkey.* The Minister stated that he visited the 'Home of the Future' which is designed by the latest

technology, they made an incredible run. They made a system that will bring the highest level of quality for life. *They have mind-bending technologies.*] (In Google search- the Minister, Caglayan: Microsoft is ready for the Fatih Project, Bakan Çağlayan: Microsoft 'Fatih Projesi'ne hazır, August, 2011)

Nevertheless, from early 2013 until September 2013, Ministries were willing to own, operate and produce everything by themselves; the aim was to improve both hardware & software sectors using national corporations. Notably, in Turkey, it is not possible to produce 100% national hardware products, even 20%, this is one of the reasons of that the Government earlier declared software sector as the 'Priority Sector' not only in the Fatih project, but also Turkey as a whole. According to the Deloitte Technology Fast 500 EMEA (2011) report, of the list of the top 500 ICT companies, 27 companies were from Turkey and Turkey is ranked 6th country in term of fast developing ICT companies, following France, UK, Sweden, Netherlands and Norway. The report of Deloitte (2010) also underlined that

“The fact that the size of the Turkish ICT sector is still below the EU average gives Turkey great potential for growth ... Multinational players constitute a large part of Turkey's hi-tech sector. Companies such as IBM, Hewlett-Packard, Dell, Siemens, Cisco and NCR have local subsidiaries in Turkey ... The Turkish government gives high priority to market-friendly policies in order to improve the environment for foreign direct investments. Various incentives, tax exemptions and waiver mechanisms introduced in the law, create important potential opportunities and benefits to universities, academics and companies that have R&D activities and/or are developing software in TDZs.” (p: 3-15)

From the argument of being a facilitator for software and hardware sector, the declaration of the Phase II has altered the direction of the project again! Since September 2013, the Faith project aims to improve the hardware & software sector with whoever is involved in the project, as the Government challenged the other actors' hands. Therefore, it's required to examine the Phase I & II in the project initiatives more closely, to understand how the Government and Ministries positioned itself, because it is so clear that there are negotiations between actors. From all these related debates, the principles of the Government have never changed as they promised (improvement hardware and software industry); however, their movements indicate certain inconsistencies & failures from the Phase I & II.

Phase I

Interactive Whiteboards (IWs)

The first time, the Government considered the FOSS alternative in the scope of the Fatih project, but untruthfully. Dr. Kaptan, who is the head of TUBITAK-ULAKBIM, declared,

[Anyone Can Use Pardus

We want to make Pardus as an OS, which can be easily and willingly used by all of our citizens. So, new workspaces will be created in the ICT sectors.

Pardus will be used into 620 thousand smartboards.

There are studies for the use of Pardus OS in distributed smartboards in the Fatih project. Kaptan informed that we worked simultaneously with the Vestel team and Pardus passed all the tests. Currently, *Pardus is in 85 thousand smartboards*. Hereinafter, Pardus is going to be used in 620 thousands smartboards] (In Google search – Pardus will be in 620 thousand smartboards, 620 bin akıllı tahtada Pardus) (June, 2012).

This information was released by TUBITAK's website, but unusually the content was changed after few weeks, in June 2012. The new content is similar to the old, but these above statements are deleted and new statements were added. In the new content, there is no information about IWs and Pardus-Linux. These two articles⁶⁹ have been widely discussed by various disciplines (end-users, public workers, academia, etc.). Nevertheless, there is so much misinformation given!

Firstly, the title is so misleading in that '*Anyone Can Use Pardus*'. This indicates that Pardus is new to a wider community. Kaptan discourse suggests that the aim of the Pardus project is incorrectly defined. Linux cannot (may not, shall not, etc., depends on contexts) be a 'clone' or 'mirror' of Windows. The title gives an expectation from the Pardus-Linux project that it can instantly meet all requirements of end-users (citizens, ICT sectors, etc.). This could be an initial launch mistake in

⁶⁹ English translations of the full documents are available in the Appendix.

FOSS projects. It could be deliberately setting expectations beyond FOSS current reality.

Secondly, there has been no alteration in the tender specifications reports and addendums (still in the Phase II); so, how is it possible to ensure that Pardus-Linux will be installed OS in IWs? The Vestel secured the tender of the Phase I; therefore, the Vestel was required to provide all necessary software. In the Phase I, the decision of OSs is made by Vestel itself and Ministries are only an actor to be approved the decision. It also provides evidence that there is no exactly collaboration between the Pardus and Vestel teams under the coordination of TUBITAK. According to MoNE, there is no separated software and hardware tender into IWs due to ensuring ‘compatibility’ (MoNE, No.7/5676, 2012, TBMM), but,

[IWs may come with pre-installed Microsoft Windows and/or Pardus-Linux regarding to where the product is sold and the customer’s preference. The issue of stable operation and compatibility, which may be driven by OSs, is not covered by the guarantee. In OSs, any problems caused by the customer are not covered by the guarantee] (Vestel, 2012, p.12).

This inconsistency has been partially fixed in the Phase II to require ‘Compatibility’ between hardware and software; the actual practices depend on the strength of non-uniformity for the future.

Thirdly, when pilot studies were started, Dr. Kaptan stated that there are some pilots’ studies carried out via Pardus; however, which brand of IWs and which kind of Pardus they were working on is not specified. Pardus is not Pardus anymore and there is no Pardus Fraud-Debian in-service training to date. In ‘Educational and Informatics Network’ (EBA) system (e-portal for the project), there is no information about the licence of EBA contents, creative common licences or alternative? There is no clear information about how and which format contents will be provided and published. Is it going to be EXE, ISO, DEB, PISI or another format? Currently, there are only EXE software shared; and even, some of e-contents are not

OS and/or web browser agnostics. So, how is it possible to accomplish pilots' studies via Pardus or Pardus Fraud-Debian? I am unsure!

Fourthly and crucially, in the Fatih project, 85 thousands IWs have been sent to schools, and the plan is to send 620 thousands more across to Turkey in 2013-14. In 85 thousand IWs, two OSs (Windows 7 and Pardus Fraud-Debian) are installed as the Government declared but Windows 7 is a default OS and IW is not equipped with an external keyboard to select Pardus Fraud-Debian when IW opens. Importantly, in the tender specifications, there is no external keyboard requirement. Besides, USB ports, IWs are locked and under password control. Even teachers, who carry their own keyboards in schools, need to take the key to open the USB box and to know the password to use USB ports. In other words, using Pardus Fraud-Debian is impossible. Although, on the internet, some teachers are sharing passwords to support teachers in the use of Pardus, there is an authorization issue because it is a public institution. Evidently any issues related to OSs are not covered by the guarantee. ICT formatters recommend that it is not advised to change the system, particularly at this stage. Thus this information evidently shows un-professionalism in the Fatih and Vestel teams, or at least their own ignorance in regards to Pardus Fraud-Debian. This inconsistency has also been partially fixed in the Phase II to require both selecting options.

The literature regarding '*Indirect Exclusionary Effect*', that of a default option preference (actually a design choice) has not reached a consensus of whether this is correct installation, but it is emphasised that this is a method of monopolising the market, with contractual powers, e.g. in the ICT history, the Microsoft Corporation made illegal to delete Windows icons, Media Players, Internet Explorer (IE), etc. from OEMs' products. Despite the fact that Microsoft monopolised the ICT market, the courts in the USA and the EU had different decisions for different concepts. The current and future argument is '*Secure Boot*' or also called as '*Restricted Boot*'.

Although there are further practices that cannot be reasonably explained by MoNE, in particular (a) are teachers legally obligated to install two OSs into IWs? No! There

is also no circular letter from MoNE regarding previously distributed IWs. Who is the responsible for installing OSs? I believe, in a year there will be no more dual OS in IWs; because, there is no Pardus Fraud-Debian Recovery Disc into IWs. (b) Is Pardus Fraud-Debian designed for educational purposes, such as Edubuntu? No! (c) LibreOffice is installed into Windows OSs; but, in-service training is Microsoft Office-based. (d) In the formal website of the Fatih Project, it is clearly written that the project supports Pardus Fraud-Debian; however, most strikingly, for the client system, the website is not at all accessible through Linux OSs, etc.

In consequence, in practice, there is no intention, by MoNE, to provide dual OSs in IWs. All teachers have to use the Microsoft default. I understand that, to make teachers' lives easier; there should be one consistent OS, but if MoNE supports FOSS, then make it the default!

Tablets

For tablets, in the Phase I, the specifications reports were published by the State Office Supply in December 2012. In the specifications, there are three types of tablets that were required with Android 2.3.4. and 3. Although, there were lots of criticisms about the tablets costs and features compared to other products, commonly these features were seen appropriate at the time. MoNE declared that Android OS was deliberately chosen, because the Fatih project aims to develop the national software industry (MoNE, No.7/2707, 05th June 2012, TBMM). Android technologies provide development opportunities for new applications without licence issues (actually it has). It is also declared that Android 2.3.4 and 3 were chosen, because when the specifications of tablets were decided, there were no new versions of Android technologies. This is also strange, because Android 4 was released in February 2011. It means that the process of preparing tablet specifications and announcement of the tender were taken more than one and half years ago. I believe, the slow bureaucracy in Turkey helped MoNE to choose the right products (if they are willing to choose Android platform) because Android 4 was so new in the marketplace and not all software were yet available with Android 4, even after one

year, in 2012, but it is strange that MoNE did not provide this reason. Nevertheless, MoNE control tablets, so students are not allowed to install any software as they wish.

Firstly, although, MoNE declared that the decision of Android was deliberately made, because Android technologies are OSS, Android 3 Honeycomb and new versions are polemic in FOSS communities. Google did not open their source codes in public for over a year, and currently some of them are Open Source Software (OSS). Importantly, Google always emphasise OSS, not FOSS. Meanwhile there have been some news and articles published in terms of Android licences, because Google has been trying to separate library codes as Free Source Software Licences and OSS Licences, to use business friendly licences in their own property products.

“Android contains Linux, but it isn't Linux, because it doesn't have the usual Linux [sic] libraries and utilities [meaning the GNU system]. Android contains just as much of Linux as GNU/Linux does. What it doesn't have is the GNU system. Instead it has a lot of Google software” (Stallman, 2012).

Notably, there are also other arguments in which Linux distros have PCSS licensed codes, e.g. Microsoft claims that Linux developers have breached Microsoft licence agreements, in particular after Microsoft-Novel agreement. According to this agreement Microsoft cannot sue customers of Novel Linux in terms of patent infringements. This argument lets us to think about software and patent again, because Microsoft fundamentally argues that Linux OSs has a high quality of software applications due to patent infringements (235 patents), that is why Fear Uncertainty Doubt (FUD) Campaign in ICT sector was launched by Microsoft to attempt to challenge & control ICT development. This is the Microsoft argument, but they have not shared their own code either!

[We are TUBIDER (Association for the Development of Consumer Awareness), congratulated EGILTEK for preparation of the tender specification. *Indeed either Pardus or Apple has their own close system that creates some danger of sustainability for the project.*] (December, 2011, p.81)

In terms of a deliberate decision, there was a huge private corporation association in Turkey supporting the perspective of the Government for Android and Microsoft OSs as TUBIDER. However, I do not believe MoNE decided Android technologies correctly. Because in the scope of \$8 billion project, MoNE would choose to use Pardus and/or another Linux OSs, but Ministries did not. Nevertheless there were clearly lobbying activities. Dr. Kaplan stated that, in general, Linux OSs is so late in mobile technology and so Pardus. However, Mr. Tekman, who was the manager of the Pardus project, was interviewed in August 2011. The title of interview is ‘No one knocked at our door’.

[Pardus, which is the first and only national OS, has been activated for the Fatih project. This has been closely observed by world giants, Google, HP, Intel, Apple and Microsoft. Tablets run with OS based on ARM’s processors. Two years ago, we tested Pardus in ARM-based OS and were successful. But there was no opportunity to make it as a product.]

(Successfulness may not be true, and Pardus is not the first and only national OS in Turkey)

In this sense, the Fatih project is an opportunity for us. However, there is no demand or supply; there is no contact with us yet in terms of tablets. If it is a requirement to produce a high percentage of national tablets, it can only be achieved in the contents and implementations of the tablets. Willy nilly hardware will be dependent on foreign sources. If national software is used in national tablets, this will be a great acquisition, and regarding this, we have not lost the opportunity and ability to perform the job.] (In Google search, Kapımızı Çalan Olmadı!)

Secondly, for tablets, Android OSs, USB ports, 1280×800 screen solutions and Adobe Flash support were stipulated conditions in the tender specification. In other words, intentionally, at that time, iPad by Apple, PlayBook by RIM and Windows by Microsoft, and also other tablets produced from China were left out of the tender. In the media, most of the technology portals already knew which companies would win

the tender. The General Mobile and Sentim Informatics Technologies Incorporated Company won the tender phase I. Sentim is always so closely associated to Microsoft and MoNE. In terms of developing tablets, Muzaffer Gölcü, who is the General Director General Mobile, clarified that currently, in Turkey, it is not possible to produce 100% national products, because nearly all components are imported. Design of tablets, applications for hardware-software connections, educational and business applications were just national. Mr. Gölcü listed their own contributions as; designing, montaging and developing applications (contents), which mean just localisations (In Google search - the first national tablet computer, ilk yerli tablet bilgisayarı, since 2011). Thus, the Prime Ministers wishes are unfulfilled until Ministries and companies address all related licence issues (taking licences for using product only, or for producing products nationally, or for selling products internationally, etc.) within Turkey, or undertake innovations.

Thirdly, in July 2012, there was news about the Fatih project and tablets, according to news Casper, Exper and Netas companies would be producing the tablets, and the target was 5 million tablets in a year (In Google search - Casper, Exper and Netaş Conqueror signed a cooperation agreement for the Fatih project, Casper, Exper ve Netaş, Fatih projesi için işbirliği anlaşması imzaladı). Actually this news was not very shocking, because there were so many rumours leaked to the media, regarding which companies would win the tablet tender. This was also argued in parliament, and in May 2012, MP. Ruhsar Demirel formally asked MoNE which companies would get the tender. And MP. Demirel exactly guessed the name of companies as ‘50% Ulker (Exper), 25% Casper and 25% others brands’. Although the Ministry declared that the tender was completed by the State Supply Office through No.4734 Public Procurement Law, MP Demirel called it as a ‘*home delivery tender*’. Nevertheless, the brand coincidence was polemic at that time because the tablet tenders are also out of No.4734 Public Procurement Law. According to the Government declarations, tablet tenders were outside of the Law otherwise international corporations would win the tablet tenders and the Government would like to work with national corporations. This news was just negotiating (posturing) between the Government and ICT suppliers; after Phase II, the direction has been

confirmed, as the Government promised. In this sense, opponents of the Fatih project strongly criticised the project as being ‘Kleptocracy’ (e.g. MP. Demirel).

Fourthly, in terms of software sectors, Ministries also declared that Microsoft OSs would be included within tablets, but this does not mean that Android technologies would not be. In terms of Microsoft, technically there will be no issues for the project, except being increasingly locked-in to Microsoft platforms. However, in terms of Android technologies, there would be challenges for Ministries and TUBITAK. MoNE always declared that Ministries have been following new technologies and developments. However, in the specifications of the tablets, there was the requirement of Flash 10 and above. This is a strange point, because Adobe has been developing a new platform, called AIR, currently,

“The Adobe AIR runtime enables developers to package the same code into native applications and games for Windows and Mac OS desktops as well as iOS and Android devices, reaching over a billion desktop systems and mobile app stores for over 500 million devices”

It is used to be,

“Adobe AIR is a cross-OS runtime that lets developers combine HTML, JavaScript, Adobe Flash® and Flex technologies, and ActionScript® to deploy rich Internet applications (RIAs) on a broad range of devices including desktop computers, netbooks, tablets, smartphones, and TVs”

Although Adobe still continues to support Flash platform, AIR is the new and future platform for them. In here, notably, Adobe has clarified AIR as a cross-OS, which is as OS-agnostic, but it is not. Adobe has already stopped its support for Linux OSs and then Android technologies since 2011 (actually re-start its support again). So, not only Hardware-Agnostic, OS-Agnostic but also Codec-Agnostic must be included in tablets and IWs. However, Codec is patentable in the USA. In other words, when any person is willing to watch movies through Linux, she/he is breaking laws. With choosing Microsoft OS, Ministries have been assured that all compatibilities are available with new technologies, without issue. According to Adobe,

“Lifetime AIR for Linux desktop downloads represent less than 0.5% of total AIR desktop downloads, which number over 450 million. Therefore, Adobe has decided to change the distribution model for Linux and direct these resources toward its mobile efforts. Adobe's efforts are focused on supporting operating systems that are most important to its customers, and that demonstrate the greatest opportunity for future growth for its partners and developers.” (In Google search, Adobe deleted this information in its own official website)

It is so difficult to argue or conclude whether these complex practices are monopolistic or benign, but they are definitely an influencer. There is a great challenge for the Fatih team, because the cartels⁷⁰ of ICT (the corrupted marriage between PCSS and Governments) are inheritably unstable, and so expectation, trust, hope from PCSS and FOSS would be irrational, because they are feeding each other. However the future is unclear. In the pilot studies, tablets are an e-book reader and the infrastructure system has been promoted as a ‘Clouding’; nevertheless, it is actually Virtual Private Network (VPN).

Besides all these incomprehensive initiatives from MoNE, there is one curial concept regarding the tablets. The report of ‘Open Source Compliance in the Application Development Space (2011, p.16)’ by the Linux Foundation underlined that in app stores, distributors have taken up various positions regarding FOSS applications, e.g. In Microsoft’s Windows phone marketplace, the agreement “prohibits software that carries an obligation to disclose source code” and “allows software under permissive FOSS licenses”; in Apple’s app store, “FOSS use cannot subject non-FOSS software to FOSS license terms”; and Google’s Android market, there is no policy addressing FOSS (Koltun, 2011). All app stores agreements regarding FOSS can be available in the Appendix. Notably these positions and policies are (politically) dynamic. In this respect, Dr. Kaptan stated that FOSS, or at least OSS will be given priority in the Fatih project and BTO1 programs, however how is it possible to achieve this if the Government decide to use tablets with Android and Windows technologies? It is clear that with Microsoft there will be no FOSS apps in tablets, with Android, it might be possible however it is, again, not

⁷⁰ Cartel is illegal in many developed and developing nations, e.g. the UK, the USA, but it not clear for Turkey. So, it is illegal legal or legal illegal.

clear. Policy mobility between ICT providers has been shifting without stakeholders' knowledge.

Fifthly, in terms of e-contents, MoNE has had some initiatives. Initially, when the project started, seven companies graded their online/offline software: Digi-Protein and Digi-English, Discovery Primary and Secondary Education System, Cizgi-Tagem (Pardus-supported), Morpa Child and Morpa Campus, Okulistik, TTNET Vitamin and Zambak Publishing. Although, most of them were provided under the guise of Technological Agnosticism for web-browser, codec and OSs, some of them are just developments of the Internet Explorer and Microsoft OSs, such as Digi-Protein and Digi-English. In this sense, lock-in is historically continuing. Notably, some of these contents are based on Hypertext technology (HTML, etc.), which is definitely not enough for the project. E-contents must be multimedia and interactive; there are some successful examples globally, such as Sebastian Thrun and Peter Norvig, which are shaped as Artificial Intelligent (AI).

Nevertheless, the Fatih project team do not have the capability to address globalness techno-politics.

Phase II

Since June 2013, there have been several parliamentary questions for the Government, inquiring why the Government has taken so much legal advice from the private sector (stakeholders), not public workers, in the Fatih project. Surely this is a conflict of interest? Nevertheless, current information suggests there is no response from the Government. I believe the Government has taken legal advice, because they would like to establish and deliver the profitable system they promised; the legal advice is essential to clarify licences in the system. The system promised in the scope of the Fatih project is so new, so a new licence is necessary to make the system sellable. I am not a lawyer, but I am aware of that the Google licences do not allow for selling the software infrastructure (unclear licence).

On July 2013, the Government released the Phase II tender specifications reports. According to reports, there will be 10,600,000 tablets, 347,367 IWs, 13,645 A3 Printer and 28,351 A4 Printer in three years' time. The Government has declared that the Government will give the tenders to the Corporation, which promises to produce IWs and tablets in Turkey. The winning corporation(s) will be required to be producing locally; 40% in the first year, 60% in the second year and 80% in the third year.

The tender specification report of IWs has been altered four times by supplementary policy reports. In terms of OSs, initially the tender was;

[IWs and interfaces will be compatible with Pardus 64-bit version. All possible drivers are required for the full and proper operation that will be provided by suppliers.

Proposal for Amendment or Question:

Will Microsoft Windows OSs be used IWs?

If Windows OSs will be used, will Windows install with Pardus? Otherwise, one of them will be chosen and will either Windows or Pardus be installed?

If Windows OSs will be used, will it be the latest version of Windows?

We ask this article amended and supplemental pleading more clearly and understandably.

Conclusion:

OS of IWs will be installed to comply with the technical specifications, which may be preferable by suppliers. Stable, up to date and the most recent version will be installed into IWs] (In Google search- the Fatih Project Specification Addendums 1 and 2 - Specification IWs, Fatih projesi Teknik Şartname zeyilnameleri 1 ve 2, - Etkileşimli Tahta Şartnamesi) (July, 2013).

In other words, For IWs, the condition is still the same. Nevertheless, all related technology will be compatible with Pardus-Linux that does not mean that Pardus will be used only. Practices will be proved regarding compatibility!

For tablets, the condition is (not formally) declared as Android technology only. From this point, there are some certain inconsistencies, except the previous issues.

Firstly, the tablet tender includes three years. The Government will provide the budget to winning corporations; however, tablets will be provided after three years. The budget will be spent for unproven future results. What kind of technology will be emerging after three years?

Secondly, in the tender specification report, there is a grey area about how the corporations will be selected (no formal criteria). There is no information in terms of selection processes and evidence criteria deliverables; because the companies are allowed to provide their plans only in the tender.

Thirdly, I believe that only Android OSs will be chosen; which was the Government's initial plan. Whether this happens depends on Microsoft & Google manoeuvrability. Between 2011-13, Pardus Fraud-Debian has been installed into tablets, in particular Samsung Galaxy 2 and 3, why was Pardus Fraud-Debian not chosen? Maybe the government do not really see this as a viable (profitable) as Android?

Fourthly, in the first phase of the project, General Mobile, established by two Turkish entrepreneurs in America, as an American company, has won the tablet tender. They declared that the assembly and packaging facility of the products had been located in Turkey. However, the General Mobile has not yet produced products nationally, as they promised.

Fifthly, it is planned that the tablets will not include a mobile phone element within the tablet, so students will use tablets outside of the schools as an e-book, which is also a contradiction to the project objective.

Sixth, the manager of the Fatih project has been deposed due to allegations of corruption (undue expenditures). The Scapegoatism that I predicted; has started!

I have only been able to draw conclusions from sources of research publicly available. There is significant content available but it is questionably robust; its quality cannot be thoroughly checked without the government allowing more public disclosure. Even after September 2013, MoNE has not published tablet tenders specification reports, as they promised. Currently there are some rumours, such as Microsoft will open its codes to the Government in the scope of the Fatih project (but Microsoft has already done this where Governments have requested); Microsoft is willing to open Skype in Turkey, etc. However, I believe the Government is accurate because establishing infrastructure takes times, in particular IWs, because the schools structures have to be changed accordingly. Three years may be appropriate to finalise all essential studies. After then, they will provide tablets!

ICT- ENABLED POLYCENTRIC SYSTEM

“Almost everybody living under a government of limited powers, must sooner or later be subjected to some governmental action which as a matter of private opinion he regards as outside the power of government or positively forbidden to government. A man is drafted, though he finds nothing in the Constitution about being drafted” Charles L. Black (1960, p.35)

From the limited power of a national state, for technology, Governments have been in the back seat of the taxi, as an implementing passenger, not the driver. This is very evident in the Fatih project. I believe, in emerging technology, it is not possible to be a driver for the entire journey in the global networks. So, the Government has to learn to be a driver when it is necessary and/or when it is negotiated into the back seat by other stakeholders, with using its power to decelerate technological accelerating in its own national state. It is indeed idea based mobility due to the unmanageable and uncontrollable technological nature. Within this complexity, it is not controversial that the Government has been deploying the Anglo-Governance model, as being *experimental* and *strategic* governance, because there are still accountability and responsibility concepts in the Fatih Project. Nevertheless, for technology, the Government has been forced to be an ‘ICT-Enabled Polycentric Governance’. In the relative literature, ‘polycentric political system’ has been

commonly used by Ostrom, Tiebout, and Warren since 1961. It describes how traditional government models shift to multiple realms of political authorities as,

“‘Polycentric’ connotes many centres of decision making that are formally independent of each other. Whether they actually function independently, or instead constitute an interdependent system of relations, is an empirical question in particular cases. To the extent that they take each other into account in competitive relationships, enter into various contractual and cooperative undertakings or have recourse to central mechanisms to resolve conflicts, the various political jurisdictions in a metropolitan area may function in a coherent manner with consistent and predictable patterns of interacting behaviour. To the extent that this is so, they may be said to function as a ‘system’” (V. Ostrom, et al. 1961, p.831–32)

Polycentric governance is in multi-contents through on-going (re)negotiations and (re)collective changes from previous political agreements to new shapes for a multi-political equilibrium that is obviously not stable and fixed. Notably, in the polycentric governance, making new structural ordering is not essentially one of them: spontaneous, planned and automatic; nevertheless, all important decisions are coming from others (Microsoft & Google). As the literature states that ‘governance’ is used for ‘steering’ multiple contents because the focus is no longer to make national policy. In the Fatih project, although all decisions are formally made by the central Government through a special committee (9-8 experts), there have been on-going connections and interactions between the committee and giant corporations, particularly Microsoft, to shape the future education. Educational experiments have been put into practice, to see how the education system might act without appropriate strategies (as I argued in the Fatih project). In a modern society, the state apparatuses have been forced to remain insignificant to directly provide public services, and to increase the importance of technological providers (PCSS) for public and social values.

The form of ‘modern’ governance is attached how to act network(ing) (relationship) of *multi-organizations* and *multi-sectors*. So, if the Fatih project fails, who will be responsible for this failure? Is it the Government? It is, after all, argued in the previous chapter, that the Governments in Turkey have succeeded in showing education projects that have not met their objectives as media successes (similar to

other countries). The Deloitte (2004) report argued that there are four notions in the network management of technological projects: *incentive, measurement, trust* and *risk*. Three of these concepts, excluding trust, in the Fatih project are challenging to evaluate, due to technological singularity; it is obvious the Government trust Microsoft & Google corporations. However, the Government should not give this crucial power to the unethical & imperfect market. According to Jessop,

“government has a substantive rationality. It is goal-oriented, prioritizing ‘effective’ pursuit of successive policy goals. Market failure is said to occur when markets fail to allocate scarce resources efficiently in and through pursuit of monetized private interest; and state failure is said to occur when state managers cannot secure substantive collective goals determined on the basis of their political divination of the public interest” (2003, p.11)

If there are multi-relationships and dependencies and if elected Government has limited power to control all these relationships and dependencies, the question should be who owns accountability and responsibility? In this context, Peter Evans (2008) argues an alternative way of globalisation, and how a national state should act for *neo-liberal globalisation*. His focus is on globalisation and its own influence on nation stamina to protect its national and social movements. Specifically, he called it a counter-view of *structural pessimism*. He argues that national apparatuses have become/remain less effective to protect and rule their movements due to neo-liberal globalisation. So, he put over the argument of the possibility of *counter-hegemonic globalization* as using globalisation power (transforming markets with social morals in a particular nation, not itself as controlling societies) to turn the national (top down) approach on its head as an alternative (vertical) way for great transformation. His argument raised a concept as a great example for techno-politics.

“a globally organized project of transformation aimed at replacing the dominant (hegemonic) global regime with one that maximizes democratic political control and makes the equitable development of human capabilities and environmental stewardship its priorities” (ibid, p.271).

However, for technology and state, it is essential to ask the degree of ‘*hegemony*’ in where “giant firms, able to control to a considerable extent their levels of price, output, and investment, would not invest if large portions of their existing productive

capacity were already standing idle” (Pal, 2005, p.396). In the economic, cultural and political globalisation, the degrees are become a crucial concept to answer the *possibility*, including other questions I had in the section of ‘No Broken Promise’ in the next chapter. Evans (2008) clarifies hegemony through two paradigms, the first one, from Antonio Gramsci (force and consents, by the status quo, on the dominant players),

“a situation in which a single powerful nation state dominates the international system of Westphalian states. The shape of the global order depends on how this “hegemonic” state defines its national interests and whether it is able to pursue those interests. In this view, an understanding of why the contemporary international order is dysfunctional must start with the role of the hegemon—the United States” (ibid, p.282).

And the second one is from ‘Westphalian/realistic’,

“we do not live in a neo-liberal world at all. We live in a pseudo-liberal world where powerful nation states in general, and the United States in particular, pursue mercantilist and imperialist policies at the expense of both economic rationality and an equitable world order. This mercantile/imperialist regime uses global governance institutions to subjugate weaker nation states in the global South, preventing these states from pursuing developmental strategies that could foster the well-being of their citizens” (ibid, p.282).

I believe, for ICT4ED projects, although these both paradigms have different approaches (e.g. segregation between hegemony and dominance); they are perfectly fit for the purposes of hegemonic powers of giant corporations in the USA (*the stateless society* disciplined by Giants). According to Caverley, “the United States gains international influence by controlling the distribution of these weapons”. (The value chain for the production) “Put simply, technology with international political effects is likely to have international political origins” (2007, p.598). The hegemonic powers have been put into other national states for establishing their one size fits all solutions, or fits-its-size-software-solutions (e.g. the World Bank) to manipulate them for being at base camp to those who want to rule the world. In this sense, the failures of ICT4ED projects have been normalised for the self-motivated and self-interested PCSS families in the imperfect market,

because PCSS families are not only motivated by profits but also accomplished a fundamental uncertain future to secure their own places (as incompleteness from expectations for unproven-future) with states corruptions, e.g.

"irrational exuberance" for IT projects "There are too few people in the hierarchy of Labour who understand IT enough to understand that it is not a talisman – there is nothing magical about it. The Public Accounts Committee described as a display of "stupendous incompetence" (Savage, 2010).

As, Michael Barratt Brown stated in 'Models in Political Economy',

"the system of production for profit in the market is still what organizes production. But the hand is no longer invisible, decisions are no longer unplanned. It is increasingly obvious that the hand is the hand of the managers of a few giant companies playing the market and planning the use of the world's resources to make money rather than to meet wants. More and more people can see this is so" (1995, p. 37).

In the articles and books from Ball, Exley and Youdell, privatisation is seen as a political play to make education as *an object of profit* legitimacy: *contactable* and *saleable*. In terms of educations and technology, there are so many examples completed in educations in Turkey to underline privatisations (PCSS). In this sense, technology (FOSS) is a true & beautiful gift from human history to aid solutions to human-related issues in global markets, because FOSS is something that is not controllable in a certain place, time and space. As a holistic view of the thesis, the Government and so the state apparatus have no abilities to solve human related administrative issues. Therefore, I only trust FOSS products, where, at least I have a right to understand how the systems work; e.g., to have rights of listening to the listeners, watching the watchers, following the followers, etc. Indeed, it depends on our appropriate knowledge. Nevertheless the concept is not as I argue,

"The only thing that matters technically is yield, production. This is the law of technique; this yield can only be obtained by the total mobilization of human beings, body and soul, and this implies the exploitation of all human psychic forces." (Ellul, 1964, p.324)

I believe, as Ellul argued fifty year before me, there is no difference between political beliefs; such as democrats, liberals, socialists, communists, anarchists etc., in a technological society. For Ellul, it is not meant to be that there is no relativeness in the ideology of approaches to technology; nevertheless the process of technological development leads the same objectives for all societies (right now Knowledge Society) within neo-liberal imperfect market. In other words, the focus is the *productions of techno-politics* as the title of the thesis; therefore, globally a new (globalness) techno-politics is crucially essential to offer a chance to rescind this intolerable monogamy between state and PCSS and hegemony from Giants (the USA)! Or we need metaphorical *riotous* instabilities and irreversible *sabotage* to end the equilibrium between PCSS and the Governments. Unfortunately, I totally agree with,

“By talking about governance rather than policy differences we are led to believe that there is no choice in what we do, only choices in how we do it. By talking about the whole political process in terms of the interpersonal relationships of the key players we are gently led to believe that this is the important thing. The problem has got so bad that quite a lot of the professionals can’t even see the politics anymore” Robin McAlpine (2005).

In parallel with this argument, the question is how/why the Anglo-Governance Model has become the ICT-Enabled Polycentric System, not actually because the Government is not demonstrably capable of being successfully approaching technology; though some opponents may think otherwise. Because I considered approaching this question as Latour’s argument for studying Technology and Society,

“When you simply have power – in potentia – nothing happens and you are powerless; when you exert power – in actu – others are performing the action and not you. ... Power is not something you may possess and hoard. Either you have it in practice and you do not have it –others have- or you simply have it in theory and you do not have it” (1986, p.264).

SUMMARY

In this chapter I argued how the Government has been acting as Anglo-Governance Model (*‘experimental’ and ‘strategic’ governance*) in the Fatih project. All these

movements have been inevitably culminated in ICT-enabled Polycentric System (*many centres of decision making that are formally independent of each other*) in which de-facto techno-politics eventually shapes the Fatih project, and so the Government and the state apparatus have been ultimately undesirable. So, what is the crucial inconsistency in these Governance Models? I believe, the future for all nations is to know how to go through and so to manage a *Network Governance Model* and/or *Governing by Network* in which,

“government executives redefine their core responsibilities from managing people and programs to coordinating resources for producing public value. Government agencies, bureaus, divisions, units, and offices are becoming less important as direct service providers, and more important as levers of public value. This new model is characterized by the web of multi-organizational, multi-governmental, and multi-sectoral relationships that increasingly constitute modern governance” (Deloitte, 2004, p.1)

As argued in the next chapter, within the introduction, for governments, it is essential to define the *public values* in any governance activities, in particular for techno-politics. Currently, the Government in Turkey is so vulnerable with its own ambitions (as a ruler of technology) with (non-controllable) PCSS Corporations.

Thus, in answering the chapter questions,

What kind of governance model has been taken by the Government in Turkey in the scope of the Fatih project? The Anglo-Governance Model

What is the overall outcome of techno-politics in the Fatih Project? ICT-Enabled Polycentric System, another de-facto & corporatocracical techno-politics.

CHAPTER VI

TECHNO-POLITICS IN PREVIOUS ICT4ED PROJECTS

“Look behind in the past more often to avoid big mistakes in the future” Kozma Prutkov
(1803-1863)

There is plentiful recent literature on: how & why ICT has not effectively & efficiently been integrated into education; how & why ICT teachers'/formatters' conditions have inadmissibly & inexcusably ignored by the Ministry of National Education (MoNE); the latest example is that in July 2012, MoNE declared the branches of teachers MoNE needs for primary and general secondary education institutions for the next 10 years. While the programs of ICT teachers are not in the list, 1,587 ICT teachers have been appointed since 2013. Currently, there are over twenty ICT related teachers' programs in universities, e.g. the Computer and Instructional Technologies Teaching Teacher (BOTE) program in 67 different universities, and their unemployed graduated students; 1,465 in 2011, 2,418 in 2012, 2,044 in 2013. Coordination issues within MoNE and/between Council of Higher Education (YOK) were also underlined by the former Minister of MoNE, Ömer Dinçer, in the parliament.

[Although the number of teachers who have been waiting to be appointed, is not clearly known, approximately 220,000 teachers. Even if MoNE tried to appoint all teachers, there would be teachers outside of job opportunities. I realise that this is a system issue. This is the consequence of unsuccessful human resource planning strategy since 1960s. Now, we are trying to do that particularly teachers, there is a preparation about teachers' resources and in this sense there will be a new department in MoNE. From this point of view, we will accomplish to secure which fields teachers we need]. (In Google search, MHP Outside Agenda - Ömer Dinçer, the answer, MHP Gündem Dışı – Ömer Dinçer'in cevabı) (November 2011).

So, the ‘new’ department has already been failed to prepare the report of preparation teachers’ resources.

Regarding the continuing failures towards techno-politics, the chapter evaluates the previous ICT4ED projects (since 1984) to argue that Turkey has failed in providing an evolved & flexible techno-politics, which should have been either structured impartially between FOSS & PCSS or with a predisposition towards a FOSS approving system. This would have avoided all stakeholders being ‘tied-in’ to Microsoft platforms with no other option of supply. Globally, techno-politically protected PCSS-based (a) tender specifications, (b) curricula, (c) the impact of new public management (NPM) and (d) interoperability reports have made FOSS usage, formerly both feasible and flexible, *totally* impracticable in schools. The evidence (de-facto policy) indicates an intense prejudice & bias against FOSS and a (irreversible) *monogamy* between Governments and PCSS (Microsoft platforms).

In this chapter, I argue,

Is there a (compelling) techno-politics in Turkey, in particular an official recognition of the crucial distinction and subsequent evaluation between Windows and Linux Operating Systems (OSs)?

Is globalness techno-politics needed?

Is globalness techno-politics needed to be evaluated?

Is globalness techno-politics needed to be included into Turkey education?

Whilst digital societies (not a society) are the future, ICT courses have lost their importance! Before clarifying four PCSS-based imperfections, it is essential to examine briefly the history of ICT4ED projects in Turkey in terms of techno-politics.

SOFTWARE AS A ‘NATIONAL TOOL’ & ‘PRIORITY SECTOR’

The use of computers in Turkey began with the ‘Computer-Education at Secondary Schools Project’ (1984-1986) as ‘Information Communication Technology for Educational Projects’ (ICT4EP) by establishing the ‘MoNE Computer-Education Expertise Commission’. Activities were continued through the ‘Industrial Training Project’; the ‘Industrial Schools Project’; the ‘Non-Formal Vocational Education Project’ and the ‘Industrial Training Project II’. At that time, equipped centres started to introduce 3 hours elective computer-literacy courses. Nevertheless, MoNE focused on purchasing more hardware and introducing only ‘Basic’ and ‘Pascal’ programming languages, rather than following technological changes (Akkoyunlu, 1991). For computers purchased as part of the above projects, only one OS was recommended, across the board, due to management misbelief and nervousness of user performance anxiety; must be PC-DOS 4.0 (IBM) or new versions (Metargem, 1991, p.276). However, other essential educational software was not provided.

“Equipment was purchased for schools which do not offer a program; ... no software was provided for use in the PC environment, which is predominant in industry” (World Bank, 1991, p.6)

In 1989-1990, MoNE made agreements with 9 companies to develop software. 2,000 hours software developed for 37 courses; however, most of them were in the form of books transferred to the computer screen. Therefore, software could not be used for education purposes (Sezan, 1999). After developing useless educational software, in the ‘Meeting of the Advisory Board of Computer-Assisted Education-II (1990)’, ‘Software Commission’ declared that if teachers were not preparing curricula; teachers were also not required to prepare educational software. MoNE restrictively espoused that software should be rigorously developed within the framework of national goals & guidelines and software knowledge & skill should be adjusted with Turkey’s national culture.

[Software was grouped as ‘Authorship System’ (adaptation of purchased software) and ‘Educational Software’ (developing software directly) and the second option

was approved. To develop software, partnerships between MoNE and universities would be established. Software should be developed based on MoNE's principles (Altinkaya, 1998, p.64).

In 1984-1990, the aim of ICT4ED projects was to train a technical labour force for the benefit of the manufacturing industry. For software, the Government declared that software should be developed as a national product, without a real consideration of software power & reality. The software industry was also declared as a 'priority sector' by the 'Sixth Five-Year Development Plan' (1990-1994, p.310). To improve the software industry, evidently efforts were made to gain close relationships with international ICT vendors (particularly IBM), to persuade them to establish their own sectors in Turkey (currently identical approximation). These ICT4ED projects were potentially worth billions, relatively low risk with unknowledgeable customers and unclear outcomes; prime investment material. Simultaneously, they were also trying to attract national software companies to invest and gain knowledge share from international vendor investors to avoid dependencies and develop national competency (currently identical vision). Turkey gave the international vendors a golden gun (giant emerging technology is for controlling societies), devolving all their negotiating power and buying bundled hardware and software, thereby eliminating the space that national investors could have played in.

"IBM was by far the leading player in the market. Clearly, the hardware vendors provide a significant transfer of know-how to the software industry through training, quality standards and procedures, and exposure to best international practice" (World Bank, 1993, p.65).

At this time the World Bank also misguidedly lobbied Turkey, or, at least manipulated public knowledge, through suggesting the computer as a "tool to compensate for the poor quality and persistent deficiencies of suitable teachers" (1993, p.107). Even with the today's technology, two decades on, is this suggestion plausible? Nevertheless, the flawed software vision was 'ambitious' then. Today's vision remains virtually unchanged (again identical) but, given what we know today, could be described as negligent.

INTOXICATION OF SPECTACULAR SOFTWARE REALITY

Further efforts were completed through “National Education Development Project” (NEDP), in 1990-1999. Within NEDP, MoNE endeavoured three projects: the ‘Curricula Laboratory Schools’, the ‘Computer Laboratory Schools’ and the ‘Computer Experimental Schools’ projects. In these schools, software was; network software (Windows NT), applications programs (Lotus Smartsuit) and educational software (Icon Author, Engmatic and Edunetics). According to Schwere and Jaramillo (they were working for the World Bank), the learning process was improved with ICT; however, “the absence of relevant software in the Turkish language often limits the students' work to the instructional units in the subject's courseware” and wide geographic dispersion of the projects resulted in lack of supports (1998. p.31). Zaman Newspaper highlighted,

[The Ministry are blinkered in education: MoNE could not achieve its intended objective due to translation and coordination issues in the Ministry regarding software. The software conflict was that in NEDP, for developing curricula, English software for Maths, Physics, Chemistry and Biology courses were purchased; unfortunately there were not enough English speaking teachers and no translation study was provided. As a consequence, project managers, etc., were suspended for not realising this] (1998).

From this failure, in 1999, MoNE made further agreements with 30 software companies to develop educational software: Q-STEPS software, dictionary and 23 small educational games (e.g. piri explorer ship, story world, reader rabbits, all in one, q-kids, etc.). For OS, Windows NT was preferred due to IBM, who was the main hardware vendor and the big supporter of Microsoft at that time. MoNE switched its software strategy from developing software directly to both developing software and adaptation of purchased software. However, there remained translation & coordination issues. For purchasing ICT, the turn-key solution was (and still is) preferred by MoNE, due to ensuring interoperability (translated as ease and low risk of failure).

Activities were continued within five further ICT4EPs (worth \$\$\$) and their sub-projects (\$\$), e.g. the ‘Basic Education Program (BEP)’ (\$1.180.9 Million), to make Turkey an ‘Information Society’. Besides, in 2005, the ‘Supporting Computer-Based Education Campaign’ was introduced between MoNE and Turkish Informatics Industry Association. Catchphrases were ‘no schools without computers’ and ‘every student has one computer’ that was not surprising; because, it was a global cliché. Intel donated 8,000 computers and Microsoft provided software. In the campaign, the teacher’s laptop project (100,000 teachers) and the ‘my first PC initiative’ (75,000 families) were launched between MoNE, Intel, Microsoft and Turk Telecom.

In 1999-2012, the established software was pre-installed Microsoft platforms. Nevertheless, the World Bank highlighted that within the BEP project, educational software was not purchased. There was a cancellation (\$19 Million); because, there was “uncertainty and lack of agreement within MoNE and Board of Education about technical requirements to the software and areas of curriculum to be supported” (World Bank, 2008, p.5). Ultimately, MoNE adjudicated that educational software would be financed from the MoNE’s budget; however, the Bank also stated that most schools obtained software as piracy. Developing ‘education portals and decision support system’ was also cancelled due to ‘lack of experts’. Thereafter, these portals (Information Systems of Ministry of National Education (MEBBIS)) were developed through partnership between MoNE and Microsoft (more lock-in).

These multiple data sources above indicate an *abortive & impotent* software vision; *flawed* software policy. So, what is the outcome? In 2012, the ICT and Fatih Project Questionnaire, encompassing 1,500 schools, indicated that less than 1% of computers were running via Linux; and others: Win XP (65%), Win 7 (27%), Win Vista (4%), Win 98 (2%), and Win 2000 (1%) (Cizgi Tagem, 2012). Since 2007, MoNE has sent Adobe products to all schools; however, there was no curriculum provided with these products, with the exception of technical and vocational secondary education.

In addition, the concept of software is so important, but unfortunately in schools there is no clear software purchasing regulation and directive, e.g. software is purchased by schools-centred or MoNE-centred or both. The central government provide ICT system as a whole hardware and software but how about after then.

Table 2: The Ways of Purchasing Software in Schools
(Except software already installed into computers)

Purchasing	%
School administration	14.68
Parent-teacher association	53.40
Ministries	29.79
Teachers	0.85
Others (private institutions, donations)	1.28

Source: ICT integration Basic Research Report (2007, p.78)

So, what is the reasoning for this outcome (locked-in), except the conditions in the next chapter?

MICROSOFT TENDER SPECIFICATIONS

Establishing ICT infrastructure is the initial obstacle for the use of FOSS, in particular Linux OSs, due to ensuring further incompatibility issues. In 2004, just after the Pardus-Linux project started, MoNE and Microsoft signed ‘Partners in Learning Protocol’ (currently established in 101 countries). The protocol was re-signed in 2009, just after the first stable Pardus-Linux was released. This was then cancelled in 2011 (Law No: 82202), just after the Fatih project’s announcement. The protocols determined that software in purchased computers was Microsoft platforms.

Whilst throughout the history, there have been various tender specifications reports, their structures were identical.

[Hardware products must be in the Microsoft (X) Hardware Compatibility List (HCL). ... Product features (computer motherboard, printer etc.), must be in the

HCL. ... As regards the protocol, Microsoft (X) Turkish is given by MoNE. ... Microsoft Office (X) is installed]

The tender specifications from MoNE have also influenced other institutions. When examining other public tender specifications, the documents are identical, with the exception of the protocols. The resemblance cannot be by accident; so, we can assume Microsoft is the benchmark for ICT tenders. There is no debate regarding policy *borrowing* or *learning*, just *policy copying*. The Microsoft platforms have become a standard *seducer*.

The first Linux OSs was included into a tender specifications report in 2008 (establishing 2,250 ICT labs). The specification was exactly the same as previous documents, but this time there were new requirements by MoNE,

[Motherboard must be compatible with the latest version of Pardus which is a national OS ... The last version of Pardus is also installed into all computers. The booting system recognizes these two OSs to be processed by end-users.] (Technically incorrect: Pardus is not a national OS, but is a nationally distributed Linux-based OS). (MoNE, 2008a, p.1).

However, just 20 days before finalising the tender, a supplementary policy report, which provides additional requirements upon any requests, was released to renew the tender (MoNE, No:2008/43772). This time, the tender became,

[Proposed hardware and software components must be compatible with each other in all units. However, hardware and software compatibilities with Pardus shall not be required. ... The last version of Pardus is also installed.] (Microsoft is default) (Minister of Transport and Communication (MoTC), 2008, p.2)⁷¹.

Supplementary policy reports always highlight the requirements logic in Turkey. In this instance, the ‘logic’ provided was ‘suggestions’ from MoNE, bidding companies

⁷¹ Notably, the sources have been changed from MoNE to MoTC because responsibilities and accountabilities of the projects have been shared within Ministries.

and administration assessments. This would not normally be considered rigorous logic. By excluding Pardus-Linux driver requirements and compatibility and making Microsoft the default, MONE deliberately determined ICT infrastructure would be PCSS not FOSS compatible, therefore creating a dependency on obvious suppliers such as Microsoft. Is there a need to highlight compatibility with Microsoft OSs?

In 2008, just one year after the first stable Pardus-Linux version was released and just one month after, over a hundred parliamentary written questions were asked of the Prime-Minister and Ministries for the logic of not using Pardus-Linux in public institutions. The reason given for Pardus-Linux being written out of the specification was that providing drivers for Pardus-Linux might increase the work-load for bidding companies. I believe the Government initially included Pardus-Linux in the tender in order to change the political agenda and buy time (negotiation with Microsoft). Technologically, there is no rational reason for this alteration, except leverage with Microsoft. Unfortunately, this report has been a precedent for further tenders until the Fatih project.

There is no regulation & bylaw for schools to establish or redesign their ICT infrastructures to; Windows School, Windows/Linux School or Linux School (it is still the same). Notably, tender specifications reports cannot guarantee that an ICT infrastructure will remain constant, although there are (ineffective) regulations, such as ‘Use of Licensed Software’ by Prime-Minister (1998 & 2008). This evidence also indicates that MoNE assumes that there is only one ICT infrastructure (Microsoft platforms); otherwise MoNE should have regulated this system component.

MICROSOFT & PCSS CURRICULA

In primary educations: (PCSS-based Curricula-Implicit)

In 1998-2006, ‘elective computer courses’ were given to grades 4 to 8. The courses, as other courses, were evaluated by teachers (No.180 Directive). During the first alteration, in 2005, MoNE switched the courses from 2 hours to 1 hour for all grades. In the second alteration, in 2006, MoNE repealed the courses to introduce ‘elective

ICT courses' for all grades (No.347 Directive). At the third alteration, in 2007, MoNE switched the courses 2 hours for 4 and 5 grades and 1 hour for 1, 2, 3, 6, 7 and 8 grades. The courses also become class subjects for 1 to 3 grades (teachable by class teachers). Unfortunately, at this time, MoNE has revoked the right of student evaluation for all grades (No.111 Directive). During the fourth alteration, in 2010, MoNE switched the courses to class teachers' preference for 1 to 5 grades, and made 1 hour elective for 6 to 8 grades. In addition, MoNE have acknowledged students right to choose the same elective courses, e.g. English courses were compulsory until 2010; but post 2010, students were given the choice of additional English courses (No.75 Directive). This alteration resulted in teachers motivated towards the provision of additional non-compulsory classes. In 2013, ICT courses have been revised for grades 6 to 8. At the last alteration, MoNE switched the courses to compulsory for grades 5 and 6 in the 2013-2014 semesters (No.886487 Directive). MoNE, at least, and, to some extent, realised their mistakes.

In general secondary educations: (PCSS-based Curricula-Explicit):

In the first alteration, in 2005, MoNE revised 'computer courses (I&II)', and renamed them as 'ICT courses'. In 2006, MoNE introduced ICT assisted-music course for grade 11 in Anatolian Fine Arts Schools. In 2010, MoNE put ICT courses on the secondary priority elective list, among 15 others, and switched the courses from 2 to 1 hour for grades 10 & 11 (No.76 Directive).

Although in 1998-2006, MoNE, incomprehensibly, did not take any liability to revise antiquated ICT curricula, in 2006-2013, MoNE made five alterations to primary education and three alterations to general secondary education to deliberately deemphasize ICT courses. Admittedly, the preceding paragraphs are sort of flooding data. These chronological changes in ICT policy explicitly indicates that Turkey has not formed a comprehensive ICT policy yet despite the fact that MoNE is fully aware of that the ICT educational system has to be changed in the line with today's requirements. Their inconsistencies are remarkable. The efforts within MoNE to have an effective ICT educational policy should be appreciated.

Nevertheless, the point where MoNE has arrived still does not make sense. So, what is their hidden agenda?

Elective ICT course curriculum (2007) highlighted that ICT is taught both independently and integrated within other subject fields. However, the Projects Coordination Centre (2007) naively claimed that if ICT was integrated into curricula, teachers would be more likely to use ICT within their day-to-day subjects. Independent ICT courses were not recommended. Meanwhile, in 2009, the former Minister, Nimet Çubukçu understandingly stated,

[Technology changes at a breakneck speed and ICT labs are becoming out-of-date. The importance of the usage of ICT Labs should be better understood. Otherwise, they will be useless. To improve ICT labs usage, new modules are needed ... Personalised learning is inevitable.] (The Minister recognized the future concept-personalised learning)

Although there were two different approaches highlighted, the actual intention was to use ICT labs intensively and to improve integration of ICT into other subject teaching through ICT labs. This is also supported from ICT formatters' condition. Initially, ICT teachers were asked to sign a voluntary task request to be an ICT formatter. However, since 2007, teachers were obliged to be ICT formatters, regardless of their preference (No.12089 Directive).

MoNE introduced new ICT curricula and forced ICT teachers to be ICT formatters. Nevertheless, ICT courses have been deemphasised. Although there might be a complex evidential reasoning, the timetables of curricula indicate that the real reason for de-emphasis is to introduce other new curricula. 'Technology and Design' (compulsory, grades 7-8), 'Human Rights, Citizenship and Democracy' (compulsory, grade 4), 'Foreign Languages' (elective, grades 5-12), 'Prophet Mohammed's Life' (elective, grades 5-12), "Koran" (elective, grade 5-12), etc., have been introduced since 2007 and 2010. Ideally, MoNE must ensure that students take these elective courses. Nevertheless, academia knows that elective courses are decided by

principles, not teachers or students. So, it is controversial & problematic! The ICT and the Fatih Project Questionnaire (2012) indicates that elective courses were decided by (61.8%) principal, (33.0%) teachers board and (5.3%) others. It is crucial to provide electives that students want; nevertheless, I believe ICT courses must be compulsory. MoNE indispensably introduced new curricula based on new world orders and national concerns & interests. Unfortunately, ICT course requirements are misunderstood by MoNE. So, how did they de-emphasise ICT courses?

The first indication for deemphasising ICT courses is to keep them as ‘elective’ courses in a ‘curricula-centred’ education system. MoNE repeatedly claims that the education system has modernised to a ‘student-centred’ system since 2004. Nonetheless, the education provided is inevitably a ‘curricula-centred’ system within a covert agenda (as argued in the Fatih Chapter).

The second indication for deemphasising ICT courses has often been publicly declared by MoNE as students have come to schools with digital literacy; so, ICT courses are not necessary. Principals and teachers should decide whether or not ICT courses are essential to students’ interests & needs. The evidence also indicates that ICT curricula introduced by MoNE, is now mistakenly perceived by them as insignificant ‘digital literacy’ courses; also controversial. Ömer Dinçer, the former Minister, stated,

[The Computer Courses (not as ICT course, he stated) were repealed; because our children arrive at school with existing computer knowledge & skills. There is no requirement for long-term computer courses. We do not provide computer literacy courses, and we do not require ICT teachers. Instead, we do have courses which are computer design, innovation and creation. We do provide a cohesive improvement to ICT courses that are relevant to today’s world. If teachers do not realise that, it is a sadly true] (2012a).

There are two deliberate misconceptions. Firstly, ‘technology and design’ courses have been introduced in primary education since 2006 (No.24 Directive). The course

name would suggest its ICT association; however, it is not. Before 2006, the course was a ‘job training course’ and teachers of ‘job training’ suddenly become teachers of technology and design course; they had no relevant training. Also, in 2009, MoNE announced that technology and design teachers are only appointed from the industrial technology education institutions. The curriculum also defines no success criteria and no structure. These teachers are in no way skilled as educational technologists or teachers of ICT.

The second misconception is the understanding of ‘digital literacy’. The Minister believed that students are digital-native; however are they? Digital literacy is a dynamic and momentary (fluid) concept, and has correlated ‘multiple literacies’ (as it is argued in the Fatih Chapter). So, the Minister deliberately skewed or, at least, misdefined public knowledge, as

“Practices of definition and usage are never innocent. They invariably reflect underlying presuppositions about the sociopolitical world and the conditions of its intelligibility” (Bartelson 2000, p.182).

Even if we adopt the Ministers ‘understanding’ of ‘digital literacy’, are our students genuinely digital-native? The EU Kids Online Research stated,

“Turkey is categorized as a “low use, low risk” country ... Turkish children are also the least knowledgeable about safer Internet usage skills. ... Unfortunately, today in Turkey, government efforts have been focused on restricting access to achieve the goal of creating a safer internet” (O’Neill, et al., 2011, p.47).

Are our children become digital-native within a year? Certainly not! The Minister is conveniently mistaken. Until now, MoNE has persistently announced that students are digital-native and we do not need ICT courses. These announcements have led to (ineffective) public indignation from ICT teachers/formatters. Teachers have publicly recited that if students learn how to use ICT independently, they would not require any of the curricula provided; because they would therefore be capable of independent learning. All these have deliberately culminated in *poor motivation, uncertainty and deformation* in relation to ICT. The evidence indicates unprofessional & shoehorned ICT policy within MoNE.

From these arguments, back on the subject of ICT curricula in primary and general secondary educations. Some, but not all, elective ICT (computer) curricula do not indicate particular software. However, syllabuses of curriculum, (samples of workbooks, multimedia materials, etc.) are comprehensively and explicitly developed within Microsoft platforms and they are all available from MoNE's websites (default).

ICT curricula in these educations have been developed based on the European Computer Driving Licence (ECDL). This resemblance is also no accident! ECDL Foundation's certification programmes have been implemented in 148 countries, translated into 41 languages within 24,000 test centres across the world. If ICT curricula in Turkey should mirror ECDL certifications, the role of ECDL Foundation is crucial. The ECDL Foundation claims that "certification programmes are vendor neutral. This means that (their) programmes are not tied to any one brand of software and are designed to enable people to gain skills that can be used in any appropriate software environment" (2013). The ECDL only provides certification criteria and small samples through Microsoft platforms (controversial). Nevertheless, there are so many national & international institutions that have developed curricula through ECDL certifications, using Microsoft platforms. Microsoft is a given! Not direct supporting any particular software is intended to create competition and profitable market opportunities. This is an example of 'glocalization', which is a portmanteau of globalisation and localisation, to modify curricula based on local language, culture, norms etc. Thus, ECDL are not completely vendor-neutral, because they are not creating a completely vendor-neutral environment. In terms of educational curricula in the global worlds, the interesting is,

"Educational structures and curricula *content* are institutionalized at the world level ... mass education and mass school curricula are closely linked to emergent models of society and education which have become standardized around the world. These standardized models or ideologies create homogenizing cultural effects that undermine the impact of national and local factors in determining the composition of the curriculum. This view implies that national differences in curricular priorities – for example, the priority given to

mathematics and science- will be relatively small and will decline over time”
(Benavot, et, al, 1991, p.85-100)

In technical and vocational secondary educations: (Overtly Covert)

All academic reports concluded that technical and vocational secondary education has had some problematic issues since the 1980s, e.g. low educational quality, employment issues, no nexus between schools and the real sectors, etc. In 2004, the Turkish Confederation of Employer Associations (TISK) highlighted that these institutions exist to train the future workforce, by taking into consideration labour market demands. The demands of the labour market depend on economic & technological changes; therefore, the demand should be continuously monitored. However, in Turkey, the monitoring could not have been successfully accomplished; not only because MoNE does not follow the reality of industry demand, but also the employment markets do not play an active role into education. Ömer Dinçer, the former Minister, frankly confessed,

[To achieve significant improvement in technical and vocational education, the private sector must (learn to) take responsibility in the centre (proactive collaboration with education), not beside ... We cannot change speed of mentality as the speed of the law ... The key issues are ‘mentality’ & ‘perspective’ ... if we cannot change perspectives, whatever we invest, we will not achieve desired conclusions] (2012b)

In 2010, the Technical Education Foundation (TEKEV) highlighted the same issues, and added that although MoNE has attempted to reform these institutions through ‘Modernisation of Vocational and Technical Education Programme’, ‘Strengthening the Vocational Education and Training System Project’ and ‘Secondary Education Project’ in 2002-2012 (\$\$\$), there are inconsistencies between training initiatives and the real sectors’ needs. Most applied programs are out-of-date, and traditional-professional oriented. These educations are expensive; therefore, the supply & demand strategy needs to be urgently rectified to align to employment issues. However, there is no identification study for establishing professional standards and required curricula that incorporates the real sector requirements. Importantly, these

educational institutions have become ineffective and preferable only to low-performing students who have no other option; frightening, considering that it is exactly this target market that requires relevant employment skills. Academia is fully aware of these flaws within the education system.

These flaws directly apply to ICT branches; nevertheless, the concept of ICT branches is slightly different. The evolution of ICT is unpredictable; therefore, curricula inevitably become immediately outdated, particularly in a centralised educational system that does not devolve decision-making locally, as in Turkey. I do not mean that a centralist system cannot provide appropriate technical curricula, rather I mean that a centralist system could not fully define objects of ICT, and provide appropriate flexibilities for technical teachers to follow technological changes due to *bureaucracy*, *educational inertia* and *unmanageable ICT change* (assuming accountability requirements & lifelong learning). Thus, MoNE has failed; because, MoNE has continually oversimplified the enabling and constraining roles of ICT to simply preparing curricula & modules.

“Much of the curriculum-related documents that have been analysed serve an administrative purpose, have limited and unclear description of objectives, do not identify levels to be achieved, have a ‘teacher oriented’ approach, do not show any flexibility.” (Gunbayi, 2010, p.46)

The general statement from MoNE is that preparing modules takes time and any modules are just as a guide for students. Teachers are responsible for delivering these courses with only the support of the ambiguous, insufficient topics qualifications table (course plan). MoNE naively expected that technical teachers are required to update their knowledge, skill and consequently, teaching with relevant technological changes; to be an expert in an ill-defined discipline. Is it really plausible in an inflexible educational structure & system? No. Is there a precise bylaw to define which teacher must give which modules? No. E.g. it is common that teachers are selected to deliver modules for which they have no existing skill, ‘last year I delivered electronic courses, this year I am delivering software courses ☺’, etc.

The majority of modules have been introduced through Microsoft platforms. In terms of FOSS, in 2008 MoNE introduced four modules: ‘Compulsory FOSS-OS Install, Usage and Control modules’ to grades 10 and 11, and ‘Elective Troubleshooting for Open Source OS’ module for students, who completed FOSS-OS Control. Unfortunately, since 2010, MoNE switched FOSS-OS modules to be elective.

Since 2012, nearly all curricula are being refreshed. The new modules related to FOSS are: ‘Basic Applications with Open Source Software’, ‘Form Processing and Session Management with Open Source Codes’, ‘Graphics Processing and Object-Oriented Programming with Open Source Software’, ‘Database Processing with Open Source Software’ and ‘Ready Open Source Software Web Systems’ for students in the ‘Internet and Web Programming Branch’. These modules have been refreshed but not revised. They are based on the previous modules; ‘Internet Programming’, ‘Graphics and Animation’, ‘Web Design and Programming’, etc. Basically, MoNE refreshed and renamed the modules but did not address that the modules needed revising to teach different skills, namely FOSS. Perhaps, MoNE is attempting to highlight that MoNE has FOSS curricula for supporting FOSS (but disingenuous support!). Although syllabuses of the modules have been developed based on FOSS, examples are provided through Microsoft Windows. In other words, the concept is teaching some popular FOSS products through Microsoft only, as before. FOSS *consolation* modules for FOSS supporters are in order to evade criticism.

All curricula are revised based on techno-politically privileged & protected Microsoft platforms. From the MoNE perspective, is it logical to provide all curricula based on pure nationally/globally dominant software/hardware products, such as Microsoft? In 1982-1984, Veasey (1986) earlier finalised that “the academic community must react quickly by incorporating new approaches to software development into the curriculum if opportunities are not to be lost of bringing real IT benefits to developing countries” (p.17). Whilst MoNE have a point that, on a superficial level, businesses in Turkey are highly dependent on PCSS products such as Microsoft, so arguably ICT education should reflect business need and teach

students how to use these products. I believe that restrictively offering such knowledge and skills dependent on either PCSS or (more limiting still) Microsoft only platforms makes students education as restricted as current business in Turkey. What would be considerably more helpful to business in Turkey is to offer a far wider ICT education to students who can then assist business lose their dependency on such systems and help them explore and understand far broader options for ICT in business. In order to support future business in Turkey, these educations should be shaped through negotiations between all stakeholders (e.g. students, teachers, academicians, MoNE, the real sectors, etc.) in the direction of a particular national ICT strategy & plan (not yet in existence). Particularly, the issue of software should be addressed carefully; because, there is a crucial distinction between FOSS and PCSS. Is it logical to establish an irreversible monogamy between education and PCSS, and taking prejudice about & an aversion opposition against FOSS? Although it is challenging, I believe No!

"The education market is a seed market and if you lose the seeds you lose the plants," Enderle, who is a former Yankee Group analyst, said. "Microsoft is responding to what has always been a requirement in the education market to provide very attractive pricing to ensure that hold on education -- and by holding education, hold much of the rest of their market." (LeClaire, 2007)

THE IMPACT OF NEW PUBLIC MANAGEMENT (NPM)

[I have been trying to use Pardus so many times as a teacher. But just for e-school and MEBBIS, I have had to come back to Windows. Never mind, I still love Pardus] Pseudonymous as Kokito in Pardus community, 26/10/2011⁷²

[I have been stubbornly using Pardus for three years. I have tried to use a virtual machine for getting over the difficulties related to MoNE. Sometime, I went a close computer and came back, I mean three floors down. Nevertheless, I have never given up hope of Pardus. Let's see which one of stubbornness is

⁷² Özgürlükçin. (2008). PlayOnLinux + [IE6]+[Google Chrome] ile MEB Engellemesini, retrieved 31/12/2013 from <http://ozgurlukicin.org/forum/internet/3750/?page=5>

going to be stymied? I don't know] Pseudonymous as Cenaptaki in Pardus community, 01/04/2011⁷³

The initial activity for NPM was ILSIS since 1996 (renamed MEBBIS, online-educational portal). Since 2007, all education sub-systems have been re-shaped through technology and MEBBIS has been obligated for all end-users (students, parents, teachers, etc.). Regarding MEBBIS, in 2007, MP, Mert warned possible platform dependence. MoNE responded,

[All studies related to MEBBIS have been developed and established by MoNE's staff. There is no software purchased. In these studies, database is developed via .NET and open source software technologies, such as Oracle, SQL Server and mySQL. Therefore, dependencies of propriety software and foreign products as mentioned in the media and parliament are unfounded allegations] (2007, No: 7/1172, p.1).

In 2008, MP, Çöllü, also asked more information. MoNE responded,

[The infrastructure of MEBBIS is designed based on open source software. Pardus-Linux is not compatible with this kind of infrastructure. Essential activities for accessing to MEBBIS through other web-browsers are carried out by our staff. Besides, 'Open Source Operating System (Pardus-Linux)' modules were included in technical and vocational secondary education curricula, 5 hours] (2008b, No: 7/1540, p.59) (MoNE has provided disinformation to the parliament).

Indeed, the discourse of the Ministry should be taken in its appropriate sense; however, MoNE provided disinformation to Parliament. (a) Some parts of MEBSIS have also been developed by third parties, e.g. 'Decision Support System' by the Basarisoft Company. (b) Activities of adapting the system for other web-browsers are meant to be Microsoft OSs only. (c) FOSS modules were 2 hours a week, not 5 hours. And (d) Lock-in to Microsoft platforms is obvious. Unfortunately, the

⁷³ Özgürlükİçin. (2008). Ee-okul raporlarını nasıl alıyorsunuz?, retrieved 31/12/2013 from <http://www.ozgurlukicin.org/forum/internet/21408/?page=1>

parliamentary written question is a political pathing. There is no penal or legal sanction. The main reasons of why MEBBIS is not compatible with Linux OSs are quite different than MoNE's declaration.

When MEBBIS (ILSIS) was establishing in 2001-2002, MoNE preferred to use .NET platform; therefore, VBScript was the most suitable technology to support the interface control. Thus, all interface functions were written based on VBScript codes. During to the development process, developers have always added new and augmented services based on previously developed codes; therefore, they have had no opportunity to transform & renew the main infrastructure. Although some parts of MEBBIS have been developed based on JavaScript since 2010, the whole system is appropriately compatible to the Internet Explorer. VBScript codes do not work in any web-browsers (Firefox, etc.), which do not have built-in support for VBScript. So, VBScript codes must be transformed to JavaScript.

Additionally, there is an authorization conflict within MoNE. The MEBBIS project is not coordinated by one particular public institution. MEBBIS modules have been developed by different developer' teams at different institutions within different timetables, e.g. in e-school in MEBBIS there is: primary and secondary education institutions. These two parts have been developed by their associated departments. Although there are always 'Interoperability Framework Guide Reports' (hidden PCSS support), MoNE has also not followed them.

Whilst MoNE is a Microsoft dominant Ministry, and has inconsistent management decision-making regarding to ICT, the history of the web-browser is another reason why MEBBIS is not compatible with FOSS and Linux OSs. The first Mozilla web-browser was released in 2004 while MEBBIS project was being established. So, in 2001-2003, in the planning process, there was an unclear web-browser market, mainly Internet Explorer vs. Netscape (Mozilla Firefox). In 2003-2007, MoNE carried out all projects through Microsoft platforms because of Microsoft's 'donations'.

MoNE continually responds to direct criticism as ‘MEBBIS is designed through cross-web browser technologies’. What MoNE means is that MEBSIS has been developed both .NET and JavaScript, which is the issue. This is actually an international issue. Why is there no compatibility between JavaScript and .NET platforms; and, so Linux Oss? In FOSS communities, there are some technologies to overcome this issue, such as Mono. Nevertheless, this imperfection may not necessarily be solved through additional technology. General speaking, a website owner makes decisions based on needs and requirements, and web programmer(s) code it. Developers must ensure support systems prior to the development process (OS, Technology and Codec Agnosticisms). That would indicate this imperfection has been accomplished deliberately in line with the partnership agreements.

Now, is it logical for MoNE to make MEBBIS platform independent from Microsoft platforms? No, MoNE needs to wait for other browser alternatives to provide in-built supports for VBScript or a new technology emerged (e.g. clouding). Although currently the use of VBScript has been globally dead (dying)⁷⁴, it is critical for FOSS end-users in Turkey.

For a general evaluation, E-TTP is so problematic. The ‘Electronic Document Management Systems (EDMS)’ of Ministries have been evaluated and compared by Scientific and Technological Research Council of Turkey (TUBITAK) (when it is required). Although the EDMS criteria reference models naturally have changed and redefined twice by State Planning Organization Information Society Department (SPO) in 2005 and 2006, the last criteria from TUBITAK are, (a) Application Development Platform, (b) Platform Dependence, (c) Optical Character Recognition, (d) E-Signature Support, (e) Using Application Specific Editor, (f) Documents Versioning, (g) Document Archive Management, (h) E-Mailing Package Compatibility, (i) Standard File Plan for Compliance, (j) Compliance TS13298’e (k) Number of Users and (l) Number of Traded Instruments. This information is presented by the General Directorate of Communication in the Ministry of Ministry

⁷⁴ More information in Google search- e.g. James, M (2012). Microsoft's Extinction Event, *I Programmer*, retrieved 31/12/2013 from <http://www.i-programmer.info/professional-programmer/i-programmer/4266-microsofts-extinction-event.html>.

of Transportation, Maritime Affairs and Communications (UBAK) in the Parliamentary Investigation Committee on 26th April 2012, as.

Table 3: Lock-in

p.25	Application Platform	Platform Dependence
UYAP	JAVA	No
MoI/ÇSGB	.NET	Yes (WINDOWS)
TÜRKSAT	JAVA	No
MoD	.NET	Yes (WINDOWS)
UBAK	JAVA	No

INTEROPERABILITY REPORTS (HIDDEN SUPPORT)

Fundamentally, interoperability does not require cloning two systems in any operations. The requirement is only to exchange necessary data for enabling modern ICT structures to be stable. Since 2004, the definition of ‘open standard’ has been widely argued globally; nevertheless, there is not yet international consensus. There is not only conflict for defining ‘open standard’ but also defining ‘degree of openness’ and ‘implementation of openness’ in practice. There is no a particular national or international authorization. The Parliamentary Office of Science & Technology of the UK report emphasised ‘Standards Wars’ as;

“Given the economic importance of standards, companies can try to influence them for their own benefit. If dominant vendors do not see interoperability as desirable they can block the development of standards or make them overly complicated. In 2002, an Office of Fair Trading report found that standards can lead to serious competition issues, which in turn can create significant barriers to entry. Since then, most major vendors have recognised the benefits of open standards. For example, Microsoft has developed an open document format (OOXML), although there are currently variations between the ISO OOXML standard and Microsoft's implementation. Adobe's PDF technology was also submitted to and approved by the ISO.” (2012, p.4)

In this sense, there is an on-going conflict between FOSS and PCSS supporters. While FOSS communities emphasise that open standards must be driven by Royalty Free (RF), which ensures that patents in a standard must be available at zero cost, PCSS corporations argue that open standards should be Fair, Reasonable and Non-Discriminatory (FRAND), which will in the minimum basis, leave real FOSS

licences, like GNU GPL, out of the scope. FRAND supporters believe that RF is not logical and applicable in the real sectors. Why would companies be willing to ‘sacrifice’ any patents? However, the reality is arguably different. Even companies provide their patents as RF; they will palpably win due to mainly the ‘network effect’, as Adobe PDF format. When a property software standard is accepted as an open standard, the owner company has a competitive advantage. Recently, Apple also offered some of their patents as RF. RF may be appropriate in the future markets.

“A firm might win in this early standards competition and gain monopoly power by practices ... This mechanism creates strong incentives for the dissemination of such information following the speculative investing of the innovator” (Menell, 1999, p.133)

Specifically, in Turkey there have been three “Interoperability Framework Guide Reports”: Version 1 (2005), Version 2 (2009) and Version 2.1 (2012). All the reports refer to the ‘European Interoperability Framework’ (EIF) Version 1.0. (2004). If it is considered the Version 1.0 criteria to define open standards, most products from Microsoft platforms obviously cannot be defined as open standards, (see, Andersen, 2008; Brown, 2010). However, the frameworks have four categories, (a) ‘Mandatory’, (b) ‘Leave admirable’, (c) ‘Recommended’ and (d) ‘Working on it’. Interestingly, products of PCSS versus FOSS are always ‘leave admirable’. In this sense, the reports do not refer to the Version 1 criteria; that indicates hidden PCSS support.

Is it logical to require citizens purchasing particular software to be provided access to Government services? This should be the main global argument. To what extent should *accessibility*, *transparency*, *fairness* and *democracy* be provided within public services? All interoperability reports include ‘equal right of access’,

[The aim is to provide interfaces of information and service websites, and other alternative channels easily, to be used by all members of society, and, to keep the lowest level available additional proprietary software that may be required from end-users].

But after all there is no connectivity between end-users and government services with the systems through considering FOSS potentials. Since 2005, the interoperability reports continually underlined that current systems, which are not compatible with identified standards, will be renewed as soon as possible, dependent on ‘opportunities’ and ‘priorities of budget’. In this sense, ‘formal’ regulations regarding ICT are ineffective; because, Turkey is highly locked-in to Microsoft platforms (the Prime-Minister Report, 2012). Notably, Turkey is in the process of committing to a further lock-in. The Prime-Minister has required all public institutions to provide disabled support systems on their public websites, in particular, for visually impaired. However, the report of ‘technology regulation for disabled people’ prepared by Gungor, et al. (2011) has not considered FOSS and unfortunately there is no comprehensive FOSS studies related to disabled citizens in Turkey. This will not meet fundamental and mandatory the EU requirements and could, therefore, be extremely restrictive for businesses in Turkey and individual alike! With ‘lock-in’ issues, this could be a costly mistake for Turkey! Notably, globally there are FOSS projects for disabled, such as ‘The Open Source Assistive Technology Software’, ‘Project:Possibility’, etc. Nevertheless, I believe the heart of projects should be,

“Good Assistive Technology (AT) stems from basic principles about making IT work for individual circumstances, rather than simply thinking about changes needed for people with disabilities.” John Ingleby⁷⁵

So, what would be happened, if there is no precise interoperability report?

To support computer-assisted education, Dyned (Dynamic and Education) was donated to MoNE by the Sanko Holding Corporation. And so, MoNE has made Dyned a part of the English curriculum in primary education since 2007. However, Dyned, which provides global English Language Teaching solutions, does not support Linux OSs. Technologically, the requirements of Dyned are that of Windows and Mac OSs in client level; Linux, Windows and Mac OSs in server level; and Linux, Windows and Mac OSs in network level. In client level, to run Dyned it is necessary to have Quick time, Acrobat Reader and voice recognition software. Voice

⁷⁵ <http://fullmeasure.co.uk/>

recognition technology is the issue; because, it is not compatible with Linux OSs. In other words, Linux-users cannot use and access Dyned. Evidently, MoNE has not taken any notice of Dyned compatibility issues prior to curriculum inclusion. This nuance imperfection is a great reason for urgently needed, precise, on-going interoperability reports.

In this connection, in global, end-users, who are insisting to use Linux, have had to force to use alternatives methods to overcome the issue of accessing Microsoft platforms-depended software (e.g. MEBBIS in Turkey), such as Wine, Virtual Box, Konqueror etc. For instance, Wine is one of FOSS application to run Microsoft OSs software through Linux OSs. However, even when end-users use Wine and other alternatives, they have faced some technical problems; particularly interface issues in printing page, adding, deleting a new classroom, slowing the system etc. These kinds of technical issues are not connected with Linux OSs, it is directly connected how to design the system, because Crystal Report and ASP Script are not support Linux OSs (technically it can be overcome but may not always). In this sense, there is another concern whether the use of Wine (or similar products) legal or not, because Wine is to create Windows environment into Linux OSs, therefore Wine might not run all Microsoft platform dependent software or the use of Wine for this kind of software might be illegal. There is no international and national agreement regarding to Wine (or others) whether or not Wine may work with software, nevertheless there are three criteria to define the concepts;

- (a) Software is for which Windows OSs, and whether or not Wine introduce itself for the software,
- (b) Whether or not software needs other programs in Windows OSs (e.g. database drivers, libraries),
- (c) Whether or not software needs object components, which are available in Windows OSs.

SUMMARY

““Determined market” is therefore equivalent to “determined relation of social forces in a determined structure of the productive apparatus”, this relationship being guaranteed (that is, rendered permanent) by a determined political, moral and juridical superstructure. After having established the character of these decisive and permanent forces and their spontaneous automatism (i.e. their relative independence from individual choices and from arbitrary government interventions),” (Gramsci, 1971, p.775-776)

The (de-facto) techno-politics is the form of spider webs, in order to establish Microsoft-ed ‘psyche’ in the state of Turkey and its education system. These techno-politically protected PCSS-based imperfections are the main obstacles in the use of FOSS, particularly Linux OSs; however this assumption does not deemphasise other relative concepts, such as the ‘Network Effect’, etc. and their relationships with any the state and its’ educational dimensions, such as pre-in-service trainings, higher education etc. Non-existent techno-political interference from the Government signals a flawed software policy within MoNE and so the state. Nevertheless, as Gramsci’s quotation highlighted Governments are childishly innocent, because they have no actual power within imperfect markets’ reality and nature.

“the framework for the governance of technological knowledge and skills that is formulated for national consumption emerges from a supranational terrain of politics outside the jurisdiction of national and European parliamentary activity and scrutiny.” (Cardoso, 2008, p.241)

All these above projects and programs have been directly completed by MoNE and/or private and/or public institutions on the behalf of MoNE, and/or the Government. Some of them (anti-FOSS) are designed as Microsoft platform dependent that utterly *forced* end-users not to use FOSS, (totally stop Linux-users). Some of them (MS-OS Platform Supported Projects) have not specifically specified a particular software platform, but they *influenced* end-users to use Microsoft platforms by providing only these technologies, e.g. The Education for Future (Intel Teacher Training) Project, the Microsoft Online Teacher Training Project, the Microsoft Innovative Teachers Project, etc. Some of them (Platform Independent Project) are not specifically required a particular software platform, but they have *encouraged* the projects’ parties to use Microsoft platforms by providing successful

examples (their success can be arguable). Within this scope, there have been two FOSS supported projects, (a) the ‘Teacher Learning Pardus Protocol’ (few hundred teachers) since 2009 and the ‘Public Sector Linux Competency Centre, Linux Training’ (not promoted / not effective) since 2005.

It is common knowledge that FOSS initiatives are started through voluntaries that have interests in FOSS. In Turkey, the situation is quite different, instead of supporting or letting teachers, schools. Institutions, etc., be free to choose a software family, the Governments have both influenced and even forced upon end-users only Microsoft platforms. They have, as a result, become a *hindrance* for FOSS supporters. Some Government actions have been made deliberately and some of them not (spontaneous & premeditated contributions). But as it is known, in particular, after the Fatih project, the decisions are being formed by a mix of *networks, bureaucracy and market in the shadow of hierarchy* exists to design policy ideas in a national state (Ball and Junemann, 2012, p.133), – dictated to Windows-Society as argued in the next chapter,

Alice asks 'would you tell me, please, which way I ought to go from here?'
Cheshire cat answers 'that depends a good deal on where you want to get to,'
Alice Wonderland,

I believe we already know what FOSS communities are capable of, see Linux success, so imagine what FOSS societies would be, what FOSS societies are capable of! But,

"Schools mirror society; they do not drive it," Goodlad (1997, p.56)

So, in answering the introductory questions... ‘Is there a (compelling) software policy in Turkey, in particular an official recognition regarding the crucial distinction between Windows and Linux OSs?’ No and three times no!

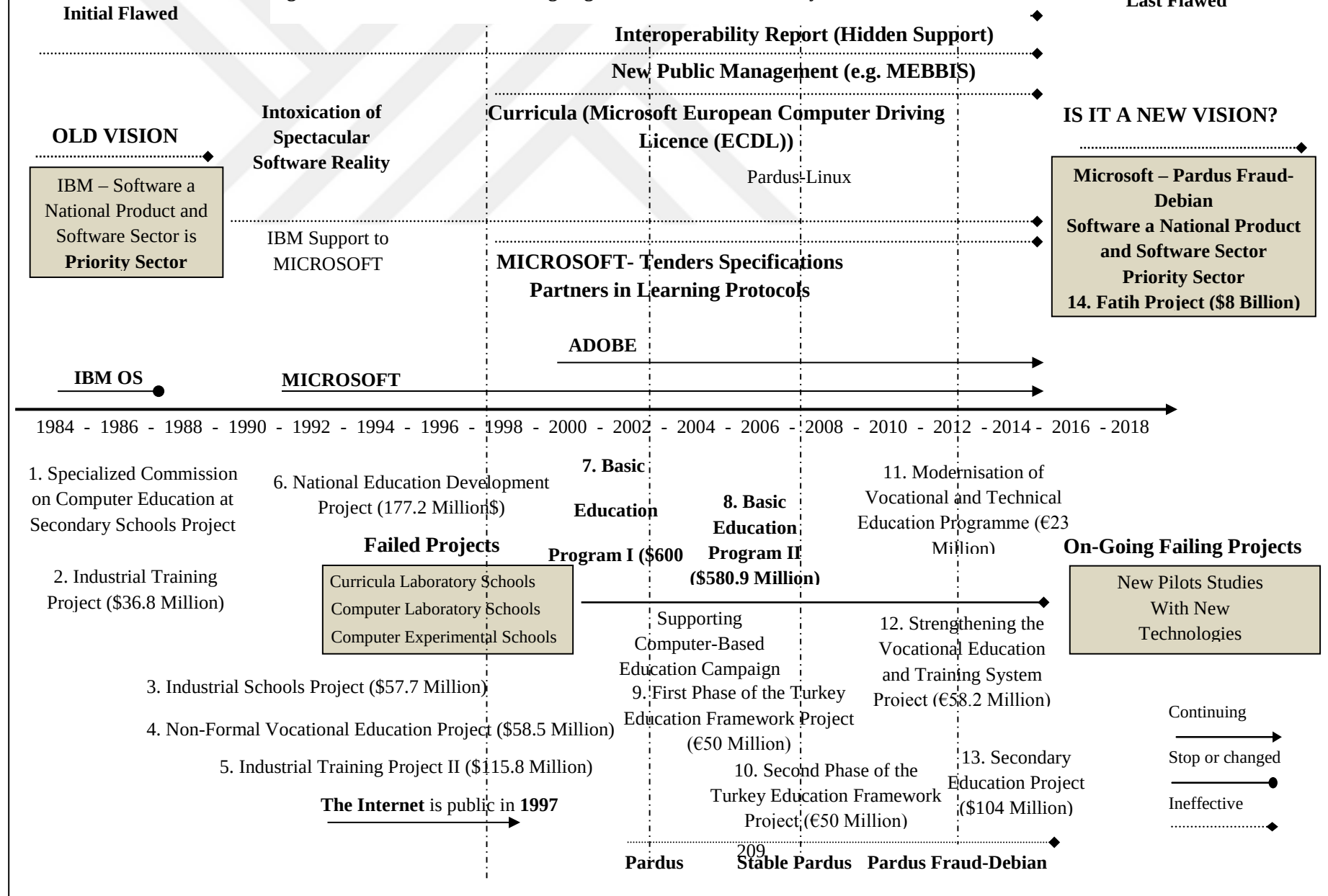
Is globalness techno-politics needed? Yes;

Is globalness techno-politics needed to be evaluated? Definitely;

Is globalness techno-politics needed to be included into Turkey education?

Definitely.

Figure 4: All-Nonsense - Just Designing Microsoft-ed Education System



CHAPTER VII

TECHNO-POLITICS IN TURKEY

“But slave camps under the flag of freedom, massacres justified by philanthropy or by a taste for the superhuman, in one sense cripple judgment. On the day when crime dons the apparel of innocence — through a curious transposition peculiar to our times — it is innocence that is called upon to justify itself”
Albert Camus (1956, p.6).

Software is as FOSS and PCSS; each of which has its own characteristic working properties and, not inevitably, the same rationale, breath and harmony, resulting in their own evolving strengths and weaknesses. The scope of this distinction is comprehensively argued in software literature; however there are no compelling arguments, to attempt conceptualising ‘National ICT Policy’, with or without hearing this crucial distinction in Turkey (see, Uckan, 2009, Weakness of National ICT Policy-Making Process in Turkey: The Governance Phobia), and perhaps (many) elsewhere. Explicitly, the literature argues under the title of ‘ICT Strategy’ or ‘ICT Capability Strategy’, rather than ‘ICT Policy’, indicating how the concept is challenged and the relevant conditions, in particular, formal and informal rules in public institutions, are neglected (see, the report of ICT Strategy by the Cabinet Office in the UK). Admittedly, ICT is relatively a new concept in the history of modern states. Therefore, techno-politics has been launched, but not refined in ‘current’ era, as it is supposed to be. So, it is crucial to evaluate techno-politics in the state of Turkey and its education system, particularly how and why it is incomprehensive, as a case study to conceptualise techno-politics from a national perspective in a current era.

In this context, in 2005, MP, Muharrem Toprak in Turkey’s Opposition Party rightfully stated that close source software is an analogue of using drugs without

knowing their contents! (No.7/5080, Grand National Assembly of Turkey (TBMM)). Since then (before than a few) opposition parties have submitted various parliamentary written questions on generic software (over three hundreds⁷⁶) during three main periods: (a) pre & post Bill Gates being invited to visit Turkey, and coinciding with the first Pardus OS issued in February 2005; (b) one year later, when the first stable Pardus OS institutional version was released in 2007; and (c) after the Fatih project was announced in 2011. In Turkey, the Justice and Development Party (AKP) has been the incumbent Government since 2002, so all these reports reflect AKP views regarding FOSS and so Linux OSs. Contrary to the common perception in Turkey, reports show that not all Ministries support FOSS and Linux OSs and some of them clearly have opposed FOSS and FOSS philosophies in terms of economic perspectives. There is no particular harmony across Ministries of Turkey regarding use of Linux OSs, when considering a culmination of these reports, the Government has attempted implementation of ‘de-facto ICT Strategy’ through considering global political economy and technological changes regarding ICT, and so software.

In order to reveal – crime (e.g. corruption) dons the apparel of innocence (e.g. honesty) – this chapter investigate two main questions;

(The chapter focuses on the concept of ICT strategy in the state of Turkey)

Is there a precise ‘techno-politics’ in public institutions and education system in Turkey in particular an (on-going) official recognition of the crucial distinction and subsequent evaluation between FOSS and PCSS?

Is a de-facto and corporatocratical techno-politics, by which Microsoft dominant markets control public institutions?

The chapter focuses on the reasons for not governing techno-politics and the conditions that drive poor government intervention. I extend the scope of this chapter to argue that FOSS is deliberately ignored in ICT projects, due to obvious: (a)

⁷⁶ Translation is available in the Appendix.

institutional inertia, (b), path dependence (c) ungovernable ICT changes and, arguably, (d) corruption in new public management (NPM). This chapter exposes the deliberate disregard of the above to conclude that Turkey has failed to produce written ICT Policies and to establish pervasive and trustworthy (flexible) techno-politics (ICT ecosystems), which recognise either a balanced development between FOSS & PCSS or a FOSS favourable system (and elsewhere). The Government has taken a de-facto ICT ‘Strategy’, not ‘Policy’ by which Microsoft dominant markets inevitable control public institutions. Whilst techno-institutional lock-ins politically exist and are irreversibly in Turkey, the future is mistakenly defined as requiring a Procrustean ICT Bed Strategy which is another kind of a de-facto ICT ‘Strategy’. This chapter finally argues that techno-politics in a national state is globally understood as using an ‘experimental strategy’ rather than ‘definitive’.

EXPENDABLE ‘WRITTEN’ ICT POLICIES

“In the future, the only thing that will get read is something that will be online. If it isn’t online, it doesn’t exist.” Jim Gerber (Economist, 2005)

The famous quote plausibly proclaims that ICT is a critical part of our lives to exist in an online presence & to adapt new world orders. Importantly the latest international reports show that FOSS is a real alternative to PCSS through global political-economic perspective. In Turkey, nonetheless, with the exception of the Ministry of Justice, software which has been developed by public institutions and/or private sectors, through supplying services methods, are not compatible with other OSs. This, including many other similar situations provided in this thesis, demonstrates that there are techno-institutional lock-ins within Turkey, particularly Microsoft platforms. Notably, there is only one public institution, the Centre of High Performance Computing (TR-Grid) that intentionally and solely relies on FOSS, 99% (no Red Hat). It is not surprising, because TR-Grid

“leads and coordinates the activities of national research communities in high performance computing towards a Turkish Grid, ... deploying the Turkish National Grid e-infrastructure.”(2013)

In Turkey, it is impossible to determine from the Government reports that there is a precise legal regulation in public institutions and education systems to incorporate FOSS. It is also true that there is no precise ‘national ICT policy in public Institutions and educations’ (see, the E-State: Concept and General Issues Report by the Prime Minister, June 2012, and the 25th Meeting of the High Council of Science and Technology Report, January 2013). From a legal perspective, the law (policy) could be considered as; nothing is equal before legislation. However, when the concept is ICT (nature & scope of technology), evidently legislations & regulations are not sufficient in order to counterbalance FOSS and PCSS, because

‘Between equal rights, force decides’ Karl Marx (1867, p.161)

‘There is nothing more unequal than the equal treatment of unequals’ Oriental Wisdom

LAMANTING FOSS IN TURKEY

In Turkey, there is no precise ‘National ICT Policy in Public Institutions’ and thus no FOSS Policy, nonetheless, there are various evaluation reports in the use of FOSS, namely ‘the Short-Term Action Plan 2004 and 2005 Reports’, ‘the 2006-2010 Action Plan for Information Society Strategy Reports’ and over three hundred parliamentary written question responses during the period of 2005, 2008 and 2012.

Initially, No.3 Action Plan in 2004 emphasised that

[Many states in Europe, mainly Germany, have preferred to use open source software. EU standards and draft decisions submitted by the Global Information Society recommend using open source software. In particular, in e-government projects, they recommend software should not be close source software] (p.13).

In the scope of the E-Transformation Turkey Project (E-TTP) within the agreement of E-Europe+ Program (since 2003), No.7 Action Plan endeavoured to conduct an investigation to use FOSS in public institutions; it included all legislative, administrative and financial aspects. The accountability, under headings of the

Feasibility Report, the *Migration Plan* and the *Pilot Study*, were given to Turkish National Academic Network and Information Centre (UEKAE) in Scientific and Technological Research Council of Turkey (TUBITAK). Within one year, TUBITAK-UEKAE presented two comprehensive reports. The first, ‘Viability of the Use of Open Source Software in State Institutions and Organizations’, instructs the migration process, providing global successful examples and recommending popular FOSS alternatives to PCSS. The second, ‘Managerial, Financial and Juristic Dimensions of Open Source Software’, instructs government responsibilities and the importance of FOSS; underlining two features; *interoperability* and *accessibility/usability of data*. The ‘Feasibility Report’ & the ‘Migration Plan’ studies recommended prioritising FOSS. However the ‘Pilot Study’ closed in its initial stage was abandoned in preference to the Information Society Strategy 2006-2010.

No.7 Action Plan also identified some of the major obstacles in the use of FOSS in public institutions; though this was not so comprehensive as to have included legal and legislative obstacles. Indications suggest that this could have been the result of a lack of nationalised ICT policy; there were three legal and technical criteria used in reasoning FOSS usage impractical.

[(a) Requiring warranty for software, (b) Required criteria in service network is not compliant with a FOSS supplier, and (c) Lack of written documents which are recognised by the current legislation, to ensure that a FOSS supplier is the rightful owner of software] (ibid, p.32)

TUBITAK defectively identified these three criteria to be manageable alongside ‘judicial discretions’ in administrations. I argue that the flexibility of ‘judicial discretions’ within the criteria conditions was mistakenly pursued. Where my opinion has different from the sources, I have attempted to the argument further. From legislative aspects, the conditions were;

[(1) The ‘Law on Intellectual and Artistic Works’ is shaped and designed

through PCSS. Regularisation is needed (*high risk*). (2) The ‘*Public Procurement Law*’ has no legal obstacle however tender specification is shaped through PCSS and there is path dependence (*medium risk*). (3) In the ‘*Law of Mortgage*’, a written document is required for transferring financial rights however it cannot apply to FOSS (*low risk*). (4) In the ‘*Consumer Protection Law*’, some public institutions require warranty however regarding to consumer protection it is not possible when the product is software (*low risk*). And (5) the ‘*Competition Act*’ has (*no risk*) (ibid, p.33)

I believe, (b) criterion should be high risk and urgently rectified prior to the next step. Additionally, (c) criterion should be medium risks; because, as the following section argues that formal regulations are ineffective and informal regulations create & control (ineffective) ICT culture in Ministers, and so the State.

From administrative aspects, the conditions were;

[(1) *Continuing contracts*: Decision-makers cannot play an active role in tenders, previous contracts and agreements to decide next steps (*high risk*). (2) *The arbitrary behaviours of public administrators, as supporters of protectionism and disrupter’s of innovation*: Public ICT employees rarely achieve accolade for their success but, conversely, they are rarely held to account for their failures. These behaviours devastate innovative and creative mentalities in public personnel and institutions. Consequently, uninitiated employees quickly adopt public worker culture to conform and minimise risk; consistent with using PCSS accountable solutions only with PCSS accountable suppliers; ‘the buck stops elsewhere’. If PCSS ICT projects fail, personnel in public institutions believe that they would be less accountable in the project evaluation process (*high risk*). (3) *Software ownership*: Administrators in public institutions desire to see owners of FOSS as a legal entity due to the habit of solving possible software problems within a single point. The culture discourages internal/public accountability of unsolvable software problems. Any insurmountable failure will be normalised and commoditised as business as usual. Therefore accountability normally sits solely with the final decision-maker and project/programme owner (*high risk*). (4) *Meeting needs*: There are

various products in ICT, and perception of products is shaped by needs and requirements. End-users historically have more experience of PCSS and their evaluation criteria are techno-politically biased towards PCSS; the evaluation criteria for FOSS is applied incorrectly and misunderstood, e.g. End-users evaluate FOSS without FOSS user experience, end-users apply supplier driven PCSS evaluation criteria to FOSS or end-users evaluate FOSS reality rather than FOSS potential (*medium risk*). (5) *Awareness of example studies*: There is little known case study precedent to encourage FOSS usage in public institutions. Where FOSS is used successfully within public institutions, there is also a high likelihood that it's operability and security will be highly sensitive, so highly confidential. The main impediment to FOSS usage is low confidence within the Government. Although some private sector suppliers also provide FOSS-based products, they do not clearly indicate/share widely due to the reluctance of their clients to encourage criticism re-risk (*medium risk*). (6) *The uncertainty of future institutional software*: Historically, software which has been developed by public institutions and/or private sectors has not always been, during its life-cycle, compatible with other OSs. There is an unreasonable belief that rewriting PCSS software for FOSS (or vice versa), to secure and compatible standards required, would be too resource hungry (*medium risk*). (7) *The use of pirated software*: Pirated software is a serious threat for FOSS development and implementation. There is common newspeak and misleading information about intellectual values in the public (*low risk*) (p.36-37).

(Institutional inertia, path dependency and ungovernable ICT changes are clear)

I believe (a) criterion is so crucial; therefore, I extend the argument in the previous chapter (see, the Microsoft tender specification section), because it is not a simple obstacle. Through the history, there have been some actions taken to break the lock-in, but these initiatives have been failed. So, it is essential to get a comprehensive sense.

I also believe (d), (e), (f) and (g) criteria all should be high risks; each of them has its

own characteristics, which have forced to & influenced on techno-politics and, not inevitably have the same ‘emerging property’ to be compromise each other. Each criterion should have been defined in the direction of the distinction between FOSS and PCSS. So, their importance should not have been missed & neglected by TUBITAK.

These three legal and technical criteria and legislative and administrative obstacles that make FOSS usage impracticable in public institutions: as argued in 2005. Crucially the conditions have taken a turn for the worse, and are still in force.

Post 2005, No.74 Action Plan, ‘the Use of Open Source Software in Public Institutions’, within the scope of Information Society Strategy 2006-2010, endeavoured to conduct a feasibility study in a particular institution. Based on the principal of implementation outcomes, it was aimed to set multiple FOSS migration models for all public institutions. TUBITAK-UEKAE introduced the promotion of cooperation studies. Unfortunately, three years later, in December 2009, TUBITAK-UEKAE and the Energy Market Regulatory Authority (EPDK) signed a protocol; to provide integrated information system solutions and so to implement FOSS migration. Meanwhile TUBITAK declared several FOSS related projects, such as; ‘Collaborative Software Development Platform’, ‘Public Sector Linux Competency Centre (Linux Training)’, ‘Teacher Learning Pardus-Linux Protocol’, etc.

However, all of these combined efforts have not achieved their initial and subsequent objectives, and resulted in failure based on their aims. In the scope of the Information Society Strategy 2006-2010, five evaluation reports were published (from 2006 to 2010). The general discourse is that although the use of FOSS in Turkey is nearly as advanced as many leading nations, there are some crucial obstacles. In public institutions, in particular, in E-TTP, FOSS products and usage are not encouraged. The main causes of this outcome are as No.7 Action Plan underlined in 2005. Consequently, available technologies have been platform dependent and shaped by ‘non-standard ways’. The perceived urgent issue was that no available & precise ‘National ICT Policy and Strategy Reports’, resulted in no software and FOSS

consideration. There are also uncertainties about accountability and responsibility in introducing and implementing ICT policy in Turkey, and so techno-politics.

These five evaluation reports repeatedly stated that performance measures are unclear and the plan does not yet exist. The last report (March, 2010) stated that ‘the Use of Open Source Software in Public Institutions Project’ is still in its start-up phase. After four years only 10 % was completed.

[There was no progress made for intended studies, e.g., setting up a technical support system within TUBITAK and preparing training programs, and establishing a competence centre which carries out awareness, information, education, research, testing and certification in the use of open source software] (ibid, p.224)

IS ‘WRITTEN’ ICT POLICY EXPENDABLE?

It is clear that FOSS migration efforts have techno-politically failed (please considering whole thesis). However the reasons for the failure of migration efforts are much more complex than the required legal and technical criteria and legislative and administrative obstacles, as imperfectly argued in 2005 by TUBITAK.

There are always ‘ICT Project Preparation Guides’ (July 2005; August 2010, September 2011 and July 2012) in the scope of E-TTP. The software chapter of the guides state that if software fulfils conditions and requirements of ICT projects, FOSS should be privileged & prioritised, in order to avoid technology dependent platforms. If software: (a) clearly meets needs; (b) sustainability is not an issue; (c) there is a certification for favourable quality of product, or suppliers maturity; (d) searching harmony with ISO/IEC 15408 standards for information security; (e) if the terms and conditions are provided, national and open source software are privileged; (f) all source codes and documentations (e.g. case tools) are taken by public institutions.

Despite the guides, there are crucial issues in the scope of E-TTP. The identified issues from the Prime Ministry Report (June 2012) might be grouped as: (a) Data sharing issues (breaking principles of interoperability reports, established legislations prevented data sharing and lack of privacy in personal data); (b) Software and system dependencies, particularly OSs; (c) Lack of coordination, communication and experience (poor coordination between investor institutions, lack of know-how concept in designing ICT projects, absence of directional consultancy services, unprofessionally written tender specifications & reports and delivery phases and poor monitoring and evaluating); (d) Duplication of geographic information systems projects, (mutual data standards are not coordinated, and even no communication each other); (e) No national information security policy document (lack of technical supports for information security, poor management and lack of coordination within/between public institutions regarding policy sharing); and (f) Protection of personal information (fear, uncertainty and doubt (FUD) factors). So, the Government documents provide evidence to state that there is no precise legal regulation in the use of ICT in public institutions by 2013 because of non-existent political interference. Although, since 1983 TUBITAK has been responsible for identifying long term ICT policies and strategies based on the Law.77 (delegated legislation), TUBITAK has no political power to influence Ministries and the Government initiatives, resulting in no certain delivery and implementation of the ICT policies and strategies.

An example of a coordination issue is,

[Whilst establishing cable infrastructure between two cities, independent and uncoordinated projects were established, resulting in two separate and disjointed setting up lines between these two cities.]

If the recommendations from the ICT Project Preparation Guides and the E-TTP issues from the Prime Minister are considered, I believe, there are some misconceptions within & between Ministries about what FOSS is. Is it possible to fully provide sustainability with FOSS products? Is it possible to certificate all FOSS

products? Naturally it is not, assuming accountability requirements. And how is it possible for an institution to decide software through these recommendations? Is there any central public institution to provide appropriate supports and documentations, even by 2013? Perhaps it may be taken from the Pardus team in TUBITAK; however, the Pardus team was mistakenly but deliberately annihilated by TUBITAK. The Government reports provide recommendations, but none of them are compatible and consistent with the FOSS ecosystems and potentials.

Even though ICT Project Preparations Guides exist, they are not followed by public institutions. In response to parliamentary written questions, most Ministries could not give exact information about their software expenditures. The reason was clarified by the State Planning Organisations in the Prime Ministry (SPO) in 2008. Based on the Law No.5018, 'Public Financial Management and Control Law', an investment proposal from public institutions is transmitted to the Undersecretariat of SPO; and then the 'Investment Program Preparation Guide' is taken as a basis to transmit the proposal for inclusion or exclusion. Software expenditures are also within this framework. Within ICT projects, hardware, software, consultancy etc. are included and are normally proposed as sub-components of the projects. This investment proposal was intended to detail far more than merely proposing to purchase software. Importantly, ICT projects included into 'Investment Programs' are not monitored through their sub-components; whole projects only are monitored. Naturally, there is no detailed information to identify sub-categories of ICT projects. Most purchased ICT products in Ministries, are performed within open negotiation and/or direct purchasing in the frame of No.4734, 'Public Procurement Law'. In this sense, SPO's discourse reminds me that,

"The matter is under consideration" means we have lost the file. "The matter is under active consideration" means we are trying to find the file."Yes Prime Minister

So, SPO clarified the process of ICT related investments as above, however (deliberately) neglected other formal legislations. There are always circular letters from the Prime Ministry which translate as the 'Use of Licensed Software' (February 1998 & July 2008). The circular letters structured purchasing computer software in

public institutions.

[Budgeting: Prior to purchasing computers software, *software and hardware must be specified as a separate item*. When budgeting is prepared, licensing principles must be considered, number of needed software should be included in the budget.

Specification: In specifications, *purchased computer software must be specified as a separate item, provided software must be licensed and cost of licences must be specified*.

Delivery: In the temporary and final acceptance processes, for delivered software, *it must be controlled as to whether or not software is licensed and only licensed software can be obtained*.]

Evidently, public institutions have completed ICT investments and projects in contrary, to the ‘Use of Licensed Software’ instructions. The Prime Ministry itself has not been compliant in this regard. According to Law 3056 issued in 1984, the first duty of the Prime Minister is to ensure cooperation between the Ministries, to supervise the general policy of the Government, and to take necessary measure in order to fulfil the services given by the Constitution and Laws. In this sense, any initiative are perceived as inconsistent with law should be argued in the Ministerial Cabinet. However, there has no precedent case in the concept of this malpractise in Turkey. Crucially, there is no consideration of FOSS. Nevertheless, the operating norm of ICT related projects and their purchasing processes also show institutional inertia and lack of version control management of ICT changes. Institutional economic exchanges occur through imperfect markets, however, are barely coordinated by Ministries or the Government. From this point, the concept is exactly what Pierre Bourdieu argued.

“The left hand of the state has the sense that the right hand no longer knows, or, worse, no longer really wants to know what the left hand does. In any case, it does not want to pay for it. One of the main reasons for all these people’s despair is that the state has withdrawn, or is withdrawing” (cited in Droit & Ferenczi, 1992)

Regarding ICT and a national state, I believe that the concept goes beyond ‘no

longer knows' or 'really wants to know' ((a) institutional inertia, (b), path dependence and (c) ungovernable ICT changes). The concept is arguably more likely 'Corruption in NPM'; indeed it depends on how to define 'corruption'. According to Williams (1999), "corruption is complex and multifaceted and resists simple labelling. How corruption is defined depends on the context in which it is located; the perspectives of the definers and their purpose in defining it" (p.512). In a general term, McCormack (1997) identified corruption, on the part of a normal assignment of public officers, by reason of 'pecuniary' or 'status gains'. Corruption occurs 'behind the screen', and is not readily brought to light, in particular, 'petty corruption' at lower duties and 'grand corruption' at higher duties.

The latest reports shows that ICT contributes towards fighting corruption with NPM; (a) monitors public employees' corrupt behaviours and practises, (b) introduces a new solution to curb/mitigate corruption, (c) illustrates anti-corruption efforts with transparency of procurements systems, (d) improves the quality of public services, and (e) reduces the level of corruption, (see, Proskuryakova et al., 2013; Shim and Eom, 2009, etc.). However ICT also creates uncertainties and incompleteness in accountability processes (managerial, political, financial and public accountabilities in NPM). Is the portfolio management of the ICT landscape clear? Is ICT strengthening governance with public or private sector interests, or both? Are ICT suppliers really positioning themselves inside and/or outside in NPM? Or more likely, are ICT suppliers within a fragmented network? Is there any clearly identified accountability & responsibility? In this sense, ICT may have a positive and negative impact on socio-economic capital. So, many of these actions introduce not just technological changes, but changes of the operating culture of governing within a government (not just for Turkey). Thus, it is necessary to inquire in which nations there is any gangbuster for PCSS and corruptions, I do not know!

The Government reports provide evidence that Ministries and the Government have favoured PCSS products and they are techno-politically biased towards PCSS in ICT projects; as argued later in the chapter. When the Government stated that there are coordination issues and so a new centrally controlled institution(s) is indispensable; I

believe that many of these can be attributed to corruption. There is evidence to state that these coordination issues have been identified by different parts of state apparatus, highlighted as to be urgently rectified, yet the Government has not taken any initiative to address these issues by 2013. I believe these issues continue deliberately, through covert lobbying, abusing the failings of an imperfect market only likely to become more clandestine and sophisticated in (near, optimistically) future, due to mainly ‘know-who’ and ‘trust’ concepts.

The concept of ‘corruption in NPM’ may also be interlinked with the consideration of ‘Governance Models’, in identifying how the Government in Turkey has been acting in a digital era. Whether it is ‘Cooperative Governance’ as declared by the Government since 2005 or other governance models (e.g. Anglo-Governance, ICT-Enabled Polycentric Governance etc.,) that is argued in before in the previous chapter. Nonetheless, what the clear is,

“Politically protected monopoly rents are at the heart of profitability in the most advanced sectors of the global neo-liberal economy. Profitability for everyone from Big Pharma and their proprietary drugs to Microsoft and its monopoly on Windows depends on gaining and maintaining monopoly control over intangible assets, which can be achieved only by political means” (Evans, 2008, p.278).

Nevertheless, in the literature and media, there is misinformation and disinformation provided by PCSS families to ‘manipulate’ and ‘control’ their global conditions in the market, e.g. Courtois, who is the President Microsoft international, stated that “for every Euro invoiced by Microsoft, 8 Euros are invoiced by European SMEs”. This does not apply to FOSS, “For every Euro saved by governments using” (FOSS), “a Euro can be spent for the benefit of the public” (Aigrain, et al., 2010). IDC (2009) report showed that “Linux-related software growth will lead the industry during the post-recession recovery period, with a 2008-2013 compound annual growth rate (CAGR) of 23.6%” (Pang, 2008). According to Michael Tiemann, who is the President of ‘Open Source Initiative’ and Vice President ‘Open Source Affairs’ in Red Hat in 2010, there is a strong growing an open source economy and importantly “more than \$500 USD IT spend is wasted; 18 % of all IT projects

abandoned before production; 55 % of all IT projects “challenged” (late, broken, or both)” and “Proprietary software model destroyed 85 % of the global innovation potential”. Recently, Savage (2010) stated in the Independent that

*“The total cost of Labour's 10 most notorious IT failures” (£26bn) “is equivalent to more than half of the budget for Britain's schools last year. Parliament's spending watchdog has described the projects as fundamentally flawed” and blamed ministers for “stupendous incompetence” in managing them.” ...
IT experts blamed ministers for being too easily wooed by suppliers. Insiders said a lack of expertise within the Government about the technology industry meant they were willing to believe claims made by major IT firms before contracts were awarded”*

This situation was replicated in Turkey, e.g. the Pardus project (abandoned by TUBITAK- over 17.5 Million TL), Eskisehir Software Base Young Entrepreneur Training Centre (1 Million TL lost (Prime-Minister, No.7/10155, TBMM), ILSIS system delay (managers and all other stuff in the project were suspended from their duties, 20 Million TL), Seeing Eyes Project (Unsuccessful, 33 Million TL), etc. An example of a failed project is the ‘Institutional Source Planning Project’ in the scope of the ‘Digital Recording Archive and Analysis System (SKAAS) Project’. It aimed to gather all Radio and Television High Council databases in a particular system and to make a secure digital document circulation system. The responsibility was given to the General Directorate of State Supply Office (DMO) in 2007. DMO designed the tender within 36 weeks. Due to project incompleteness, the tender supplier incumbent was given a project extension of 15 weeks. In the project, there were two main components, (a) hardware and license and (b) software. Hardware and license were provided to the DMO HQ. The software system analysing and design reports were delivered, but multiple other deliverables were not completed and so provided. Although, the company requested another extension, DMO decided to cancel the project. The Supervisory Board launched an investigation, and found that the project was *improvidently* coordinated (Ministry of State, No.7/18884, TBMM). In other words, 4.3 Million TL lost.

However, I believe these ICT project failures should not be deemed ‘lost’ money &

‘misused’ budgets. It is far more strategically complex than that. For instance, since 2002, in parliament, there have been several parliamentary written questions put to the Prime-Minister, questioning the voting software and its technical system in Turkey. The response to all questions was ‘rejected unanimously’ or ‘it is published in the incoming paper due to not be answered’. In other words, some of them are not rejected, but it is not going to be answered until the parliamentary question will be asked again. So, is the vote of the Government illegal, or, at least, underhand? As the software, ‘Seçsis’ (in English is ‘Votes Me’) is PCSS & ran by Microsoft, we do not have access to the business rules, the governance and their integrity of the system and so we do not have confidence in the absence of deliberate or unintentional bias within the operating system. It is a common knowledge that in some others (democratic) leading and led nations, the vote system (software) are permanently evaluated by a third (independent) institution(s) for transparency and accountability. So, is there any third party evaluating the voting system? If there is, do they have software knowledge? Etc. Thus, these questions, as a minimum, should be addressed in regard to the ‘list of software rights and duties’ (see, Douglas, 2011, p.191).

Importantly, ‘Seçsis’ was developed by the Sun Microsystems, and is illegal in many national elections. For instance, the Government in Greece attempted to use the software; thanks to opposition’s rejections, the Government had to withdraw the proposal. However, it is used in Turkey in spite of the fact that the opposition parties objections. Thus, as a citizen of Turkey, I have no confidence that the elections are legally acceptable. According to MPs, Hüsnü Cöllü, Yılmaz Tankut, Ali Rıza Ertemür, Tacidar Seyhan, Ali Rıza Ertemur and Fevzi Topuz, there have been dynamic changes in expected election results, e.g. from 52 % to 53 % on the side of the Government in 2011. This 1% gave the Government considerably more voting power! The MP’s questions are perfectly reasonable, given the fact that other nations would not deem this level of accountability and governance sufficient within a voting system (e.g. Spain). The controversy is that the Government in Turkey do not deem themselves answerable to justify a voting system that is below the global (Westernised) benchmark.

Currently and globally ICT scholars argue that search engine companies should continually publish their information system policies due to moral and ethical concerns, e.g., engine span, unacceptable and hazard advertisements, etc. Nevertheless, it does not mean that companies must make their algorithms and codes public. This argument may have some credence for a commercial organisation, but a government level of governance is far wider and there is an overriding obligation to its citizens to be accountable and transparent. The complexity & marriage between the Governments and PCSS (politically sophisticated) further supports the opportunity for ‘corruption in NPM’ in a digital era (politically speaking). For this reason, it really is not acceptable to disregard publicly and formally submitted questions around this accountability and transparency.

Is technology a facilitator to corrupt governments maintaining their survival through depriving their citizens of the ability to question their governance (exhausted by the marriage between government and commercial PCSS solutions)? Can we define a ‘state’s role? According to Murray N. Rothbard, the state is not (and has never been) an *institution of social service or organisation for social ends* versus *private sector* as generally accepted. The state’s role is to actually establish,

“a legal, orderly, systematic channel for the predation of private property; it renders certain, secure, and relatively "peaceful" the lifeline of the parasitic caste in society. Since production must always precede predation, the free market is anterior to the State. The State has never been created by a "social contract"; it has always been born in conquest and exploitation.” (2009, p.3)

For Rothbard, to remain as a democratic government, (majority) citizens should be led, manipulated, and so moved by *ideologies* in which the government is ‘good’ and ‘wise’, in a minimum term, indispensable and definitely ‘better’ than any other ‘alternatives’. In order to achieve this, the social mission of the ideologies must be (re)defined by ‘*intellectuals*’. Rothbard further state that

“In the present more secular age, the divine right of the State has been supplemented by the invocation of a new god, Science. State rule is now proclaimed as being ultrascientific, as constituting planning by experts. But while "reason" is invoked more than in previous centuries, this is not the true reason of the individual and his exercise of free will; it is still collectivist and

determinist, still implying holistic aggregates and coercive manipulation of passive subjects by their rulers.” (ibid, p.6)

So, if the state wants to rule a society, how do they do it? Albert Jay Nock, stated in his famous book, ‘Our Enemy, The State’ that

“There are two methods, or means, and only two, whereby man’s needs and desires can be satisfied. One is the production and exchange of wealth; this is the economic means. The other is the uncompensated appropriation of wealth produced by others; this is the political means. The primitive exercise of the political means was, as we have seen, by conquest, confiscation, expropriation, and the introduction of a slave-economy” (1935. p.14-15).

In principle, there are two fundamental and conjointly excludable interrelations between (a) imaginative productivities, stable & secure exchanges and collaborations, etc. (b) imperative & declarative dictation and predatism all over social dealings. Nock called these challenging powers: ‘Social Power’ and ‘State Power’. Social power is a power of man above nature, through exploiting natural resources for contributor aka stakeholder benefits. On the other hand, state power is a power of state apparatus (intellectuals) above man, as a forcible and consuming productive effort, having a power of producing, as an opposite of non-productive effort. In this regard, state power is always in the centre to impound & seize social power again and again with legal and/or illegal initiatives, such as surveillance & security apparatus, (un)lawful interception, uncertain & fuzzy anonymisation code of practice, etc. Within this context, I believe ‘technology’ and ‘state corruption’ are not interlinked by the relative literature, but currently they are not separable either (see, following arguments). So, in real politics, certainly, it is extremely difficult to prove ‘corruption’ versus ‘coordination’, however, evidence of techno-politically protected failed ICT projects are too numerous to ignore. These arguments remind me to the British philosopher, Herbert Spencer, the essay of ‘Over-legislation’ in 1854, ‘State-Organisations Corruption is Unavoidable’, as

“Take up a daily newspaper and you will probably find a leader exposing the corruption, negligence, or mismanagement of some State-department. Cast your eye down the next column, and it is not unlikely that you will read proposals for an extension of State supervision. . . . Thus, while every day chronicles a failure, there every day reappears the belief that it needs but an Act of Parliament and a staff of officers, to effect any end desired.”(1981, pp: 267-68; 271-72)

Back on the subject of ICT projects,

“The governance network and policy network analysis schools both share the view that ... policymaking is best seen as an interactive process in which different actors exchange resources in a series of trust-based relationships in order to achieve their goals.” (Daugbjerg, 2011, p.4)

Interactive process can be argued from Cowan & Gunby (1996) perspectives. They proposed three main forces: ‘*technology externalities*’ (resulting in excess inertia-more agents use it), ‘*learning curve*’ (‘learning by using’ and ‘learning by doing’ as a snow-balling effect) and ‘*uncertainty reduction*’ (perceived benefits/risks of switching to new technology), these all resulted in positive feedback, which all share three features: ‘*path dependence*’, ‘*inflexibility*’ and ‘*potential regret*’.

In Turkey there are both clear technological ‘path dependency’ and ‘institutional inertia’, but not any regret from the decision makers. Nevertheless, these arguments make us think institutionally as to how the policy influences dependencies and inertia. Douglass North (1990) stated that “institutions are the rules of the game in a society, or more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic”, it reduces “uncertainty by providing a structure to everyday life” (p.3). So “institutions define and limit the set of choices of individuals” (p.4). There are three main concepts: (a) ‘the rules of the game’, (b) ‘humanly devised constraints’ and (c) ‘shape human interaction’, and all these result in individuals and institutions shaping each other. There are ‘formal written rules’ (explicit enforcements from state, e.g. political, judiciary and economical rules and contracts, ‘often devised with private (rather than social) benefits in mind, so the actual structure of rules will reflect the relative bargaining power of different parties’) (p.47) and ‘unwritten codes of conduct’ (implicit interpretations of actors from formal rules because there is no formal enforcement by state as ‘transmitted information and are a part of the heritage’ that is called ‘culture’ or ‘commitment’) (p.37). North further argued that “we need to know much more about” (informal rules) and “how they interact with formal rules” (p.140) to understand the shift from

governing behaviours rules to actual acting behaviours. In this sense, Avner Greif (2006) stated that “an institution is a system of rules, beliefs, norms and organizations that together generate a regularity of (social) behaviour” (p.30). According to Greif, these elements (rules, beliefs, norms, organisations, regularities, etc.,) are ‘equally ambiguous concepts’ because there might be formal rules which are not as effective as informal rules, or vice versa. The thesis holistically argues that formal and informal rules are not directly distinguishable in relation to their powers in ICT projects, because formal rules are interpreted from actors’ subjective perceptions and thus informal rules simply exist through actors understanding. Informal rules (culture) is the binder for the practices with obeying and/or ignoring formal rules that causes us to think that there is another reason to state that it is beyond *no longer knows or really wants to know* concepts, but arguably *corruption in NPM*.

In Turkey, the AKP has been the compelling Government since 2002, so all these reports present AKP’s political and social perspective regarding FOSS. Contrary to popular opinion, in a thoroughly pliable media, the parliamentary reports demonstrate that not all Ministries promote FOSS, and Linux OSs; some of them clearly criticise FOSS and discount FOSS philosophies in terms of economical perspectives. Although there is no particular coherence in Ministries behaviours regarding ICT, when a culmination of these reports is taken into account; the Government has taken pragmatic decision strategies (de-facto strategies, from politically speaking, they are not officially established, but in practices or forces) within a global political economy without examining ICT natures & changes and its intellectual history, and have carelessly & unprofessionally neglected the importance of FOSS, e.g. In 2008, the Ministry of Environment and Forestry stated,

[Applications in Linux Ecosystem are still in the development process. Eliciting so much effort and then granting all these as a public good-GPL are still in continual dispute] (No: 7/1727, p.83).

A cynical response to the Ministry would be:

FOSS developers look like penguins; they are pretty wealthy, just view Richard Stallman!!! I believe it is critical for successful computer scientists to start by being a FOSS developer.

Notably, in response to parliamentary written questions, some Ministries have preferred to provide misinformation and disinformation to the parliament instead of giving accurate and unbiased information and so accepting path dependencies and vendor lock-in issues, particularly Microsoft platforms, e.g. MoNE impenetrably disavowed the lock-in issue to the Internet Explorer in MEBBIS system which is an educational portal for Turkey (MoNE, No.7/1727, TMBB) and claimed that MEBBIS designed based on open source software and Pardus-Linux OS is not compatible with this kind of infrastructure (see, the previous chapter).The discourse from the Government reminds me that

"A good political speech is not one in which you can prove that the man is telling the truth; it is one where no one else can prove he is lying."
Yes Prime Minister

So, for Ministries, what are the consequences or sanctions of misinforming and disinforming to parliament? Unfortunately, the ‘Constitutional Law’ in Turkey does not contain or clarify any information on this issue. Nevertheless, in accordance with the Law No.99, ‘the Internal Regulation of TBMM’, a parliamentary written question is sent to the Prime Minister or relative Ministry, requiring an answer within fifteen days. If a response is considered inadequate, MPs have a right to speak in parliament, without exceeding five minutes, to challenge the response. The proficiency of the speaker determines the exposure of the responses accuracy and robustness; this is a common method of objection in Turkey, but not always effective. Consequently, there is no requirement to take political responsibility because there is no penal or legal sanction. The government, ideally, relies on the independently separation of (a) *legislature*, (b) *judiciary* and (c) *executive* powers; however, the concept of parliamentary written questions is a political pathing (path-control) and its sanction is only political. In an ideal scenario, the Government and

Ministries lose confidence in the parliament on this question. If 66% of parliament feels further investigation into the question is required, then an interpellation for the relevant Ministry or the Government takes place; this has no precedent in the concept of ICT. In regards to software, the disinformation and misinformation provided by Ministries have been perceived as either inconsequential or too difficult to pursue. This complexity (technologically sophisticated) to account further supports the potential opportunity and breadth for ‘corruption in NPM’ in a digital era (technically speaking).

All responses to parliamentary written questions are significantly detailed; therefore in this section, I have chronologically prioritised both the salient points that Ministries raised and where they divert from No.7 Action Plan in 2005. In the early stages, in 2008, Ministries stated that OS is a specialisation study because of its complexity, but the same complex technical service and support has not been reflected in software developed by volunteers. 800,000 companies across the world and 7,000 companies in Turkey provide Microsoft products & supports. In each city and in each district, there is one Microsoft business partner, who can provide technical support. In comparison, ‘Linux World’ support is basis on ‘volunteers’ alone; though this perception is misleading as it would suggest by ‘volunteers’ that the FOSS ecosystem support strength is underestimated. By many, it is!

As SPO earlier concluded that

[Making regulation for the use of Linux OSs (particularly Pardus) as imperative in all public institutions is not considered in a short period because it is evaluated as nonenforceable] (the Prime Ministry Report, 2008, No.7/2983).

Making regulation was considered unenforceable, however, after four years, the concept has shifted to a different direction; stakeholders have realised that the nature of mandatory policy restricts effective development, whilst Ministries have met with Linux. Within initial interactions, Ministries highlighted various technical issues and

criticisms with the 'Linux Ecosystem', without evaluating & criticising their institutional structures in relation to ICT. The Ministries criticisms are not logical, truthful and professional, e.g. Linux OSs does not support software used in institutions, but institutions can ensure that software written by OSs-Agnosticism ('write once/run anywhere').

To explain in simple terms, the crucial mistake is that Ministries expected Linux to be a clone & mirror of Microsoft Windows, however Linux is Linux and should not be perceived or evaluated in that way. Additionally, the overall attitude of Ministries upon ICT is;

"If your attitude to IT is 'Who do I sue when things go wrong?' the document concludes, then perhaps OSS is not for you" (International Development Association, 2003)

In 2012, the Ministry of European Union attempted refuting the argument of FOSS and PCSS distinction, through publicly commenting on (a) the essential technological knowledge & skill in public institutions and (b) positive feedback of being kept in institutional inertia (i.e. uninterrupted service providing). These two realities might be casuistry logical but "a decision can be rational without being right and right without being rational" (Peterson, 2009, p.4). However, the Ministry totally dismissed the case and accused MPs, who respectfully submitted the parliamentary written questions, of being too naive to understand ICT reality and politically and apathetically were ignoring the Government efforts. The discourse of the Ministry reminds me that

If we cannot refute the arguments in a paper, we simply discredit the person who wrote it. This is called playing the man and not the ball."
Yes Prime Minister

The Ministry stated that end-users possess only PCSS platforms knowledge & skill, in particular Microsoft OSs that restrict seeking solutions outside of these available ICT parameters within public institutions. When the concepts of (a) end-users' reluctance to change and so their rejection due to their vested skill; and (b) their average age are considered, initially end-users should be persuaded to use Linux OSs

at work, as additional in-service training. The Ministry believe ‘voluntary migration processes’ should be utilised to obtain user buy-in. The Ministries generic argument shows a fear of migrating to Linux OSs and, as a result, being suddenly ignorant of ICT. Their arguments deliberately and mistakenly neglected to account for consideration of ‘knowledge transferring effect’, ‘de-learning effect’, etc. The literature of technology in society argues that the key concept is how to be a ‘Digital Naive’ from a ‘Digital Alien’, not to be a ‘Windows Naive’. Admittedly, the concept of ‘Digital Literacy’ entails, as its very name implies, ‘digital’, so the concept is to be possessed of ‘a lifelong learning of technology’, not just to be knowledgeable of ‘skills of particular ICT applications’. The key issue is ‘human resources-specific management’ within national and international lobbying activities rather than technology-specific visibilities.

“The only thing more expensive than commercial software is free software”
 Microsoft (cited in Friedman, 2005, p.21)

In regard of Total Cost of Ownership (TCO), the MoD (2012) interestingly argued that Ministries and/or public institutions, which have been migrated to Linux OSs, or Pardus OSs, are either in the process of renewing their own ICT infrastructures or establishing new additional ICT infrastructures in the direction of expanding open source software policy, e.g. the Head of Recruiting Department in the Ministry of National Defence, the Radio and Television High Council, etc. From the Ministry perspective, it is not a logical expectation for institutions, which have already established stable and continuing ICT infrastructures, to migrate to totally different systems because of TCO. This is indeed a wise perspective; however it is not an exact case for all institutions, e.g. the Ministry of Youth and Sport (2012) stated that there is no Pardus and national office applications used in the Ministry; however, there was news in the media, which said ‘the Ministry of Youth and Sports has closed its doors for Pardus’⁷⁷. The news was released in September 2011. The General Directorate of Youth and Sports was willing to change all its systems to a new single domain structure. This study has been given through a tender to a private

⁷⁷ Positive.net (2011). Spor genel mudurlugu pardusa kapilarini kapatti, retrieved 31/12/2013 from <http://pozitive.net/2011/09/13/ali-erkan-imrek-spor-genel-mudurlugu-pardusa-kapilarini-kapatti/>

company. However, the private company asked the General Directorate to delete Pardus OSs and install Windows 7 to all related institutions for establishing Microsoft platforms (totally 1,600 computers). In this sense, Pardus was used in the institution; but after, either the General Directorate preferred not to use Pardus OSs or the General Directorate has been forced to use the Microsoft platform because of the technological platform they would like to migrate to. I believe the General Directorate has preferred not to use Pardus, because the Ministry of Youth and Sports (2012) stated that Pardus ‘cannot’ provide; users’ habits, application support and, most importantly, professional technical supports. When Pardus OSs reaches a sufficient level of development, it can be thought of as a ‘useable’ & ‘practicable’ OS. In this sense, the important point is that the Ministry is directly talking to Pardus, not Pardus ecology (solution). Evidently, the Ministry does not shape and control its own structure, available (off the shelf) technologies have shaped the Ministry’s decision by the winning bid company, and nevertheless there are also tender specifications which always require Microsoft platforms by Ministries that is also meant that the Ministry was willing to lock-in to Microsoft platforms.

From this viewpoint, I believe the Ministries ‘voluntary techno-political migration’ approach of needing buy-in for FOSS acceptance is misleading because ‘modern’ history shows that when governments put a law into force, society obeys, e.g. In the scope of E-TTP, nearly all public institutional services have digitalised; none on a voluntary basis. Is MEBBIS voluntary for teachers, students, etc.? No! Using Standard Turkish F-Keyboard is obligatory in MoNE since 2001 (No.1817). Is F-keyboard voluntary-based? No. So, I believe either:

- (a) The Government attempted to make initiatives imperative, rather than voluntary, if they thought they could get away with, if it was deemed an important priority & internationally accepted, or
- (b) The Government attempted to normalise their contributions towards ICT policy deployment failure, or
- (c) Both

I think it is both, as imperative ICT regulations and judicial legitimacy in public institutions are also neglected and ironically suffering (they are aware of this). Regulations are not followed by public institutions, such as interoperability framework guides, F-keyboard regulation, etc. Obviously, some formal rules have become ineffective due to neglecting the influence of informal rules and other perceivable and unperceivable effects, such as Network Effect (applications barrier to entry), Indirect Exclusionary Effect (actually a design choice), Fashion Effect of ‘New’ Technology, etc.

From the arguments of voluntary migration and ineffective ICT formal rules, it is clear that Ministries have provided their disingenuous support for FOSS with an emblematic amount of (failed) FOSS investment. What makes this interesting is that some Ministries jejunely stated that the pool of developed applications for Linux ecosystem are not broad enough in comparison with the current system they use and Linux ecosystem is not widespread globally. These are the main reasons given for not using Linux OSs. If Linux OSs is to become a common OS and developed applications are to become compatible with Linux OSs, there is no obstacle to migrating to Linux OSs.

If Ministries want Linux to be widespread and create wider end-users (for all), Microsoft Corporation should move DirectX to GNU/Linux for making most applications (e.g. games) compatible with Linux; All PCSS drivers should be provided as PCSS drivers in GNU/Linux; PCSS software, such as Microsoft Office, Adobe products, Skype, etc., should be moved to GNU/Linux, because there is always going to be one particular software for one particular group of end-users, who cannot survive without it; Linux should be designed in parallel with Microsoft OSs to make end-users lives easier. So, if we follow this concept, Ministries should use Microsoft OSs not Linux OSs, because they do not match with principles of Linux. Notably, I emphasised Microsoft platforms, because Apple Corporation has a presence in Turkey after 2008. Previously, Apple products were sold by joint stock companies. After the Fatih project, Apple has just opened two new Apple Offices in Turkey during 2012.

In this sense, the discourse of Ministries emphasized one reality (uncommon OSs) in the Linux ecosystem; however, they have deliberately neglected the main responsibility of the Government and their contributions for this outcome, in particular, their tender specifications reports through their ICT policies and strategies. Indications suggest the efforts to normalise (diminish) their contributions to this failure. Ministries have pursued Linux to be Windows, and thus are inadvertently a Microsoft spokesman, though the concept is much more complicated than that, as argued in whole thesis, because there are spoken (e.g. improving ICT sector) & unspoken (e.g. Secsis) agendas from the Government and PCSS, as

If people don't know what you're doing, they don't know what you're doing wrong. "Yes Prime Minister

Within all parliamentary documents, I think MoNE clearly clarified the concept of their (unintellectual) techno-politics on the behalf of all Ministries and for the Government (twice in 2005 and 2008, identical).

[The fundamental principle of MoNE is to integrate hardware and software tools, which have proven their reliability in Turkey as well as world-wide, into education and training activities without dependency on a particular company's products and services. Providing these basic principles is for the prevention of monopolization in the private sector and contribution of competition in the environment. In line with these principles, in the Ministry, either in the central organizations or in educational and training institutions, the best and the most reliable products are taken from companies which have the most common service networks, with the cheapest prices by competing in a healthy environment through various private sector institutions and organizations in wide range of different products. In this sense, the Ministry reveals strong determination. While the ICT sector advances rapidly, its main goals are to provide ICT culture to students, whilst keeping open source software in balance as much as possible. When Microsoft products are being used in some units of the Ministry, there are on-going studies to contribute developing Linux OS for

using open source software in some units of the Ministry. *The main purpose of these indicated efforts is the acquisition of software culture for students and the Ministry workers with using various open source software developed by various platforms*] (MoNE, No:7/1540, TBMM).

It is clear that the MoNE sought the best and the most reliable products within the best price, whilst keeping open source software in the balance for creating ICT culture for students. However, FOSS is never perceived as a real alternative of PCSS; FOSS is just utilised to broker better deals, in particular Pardus-Linux versus Microsoft-Windows. According to MP, Erdal Aksunger, the ‘strange bureaucrat chain’ is the first main obstacle in the Pardus development. In his speech in parliament in 2012, he stated that bureaucrats are stopping use of Pardus OSs in institutions because of their own unwillingness and anxieties. In public procurement authority, bureaucrats perceive PCSS as a commodity and FOSS as a service only (TBMM, his speech). I believe, there are much more hidden agenda, so the evidence indicates that the breath of ‘corruption’ in NPM is a kind of spider-web.

Ministries feel an obligation to provide ‘uninterrupted service to 74 million citizens’ and give this priority as their motivation; but their decision making is overly risk averse. This perspective is controversially arguable through technological comparative studies between FOSS and PSCC; and Linux OSs and Windows OSs. We can simply ask how Ministries, based on Microsoft platforms, provide their services successfully, e.g. MEBBIS crashed, so could not be assigned to teachers (2012); e-school totally crashed; teachers were not able to provide students grades, school reports were at risk, unable to input school data (2010) etc. Thus, purchasing products and taking technical services and supports through the best, the most reliable and the best price (for them) are clearly not guarantee providing uninterrupted services for Ministries. Fundamentally, the concept of ICT culture (the principle of Techno-Politics, but exactly the heart of techno-politics due to values of openness) should be,

“Today's technological transformations hinge on each country's ability to unleash the creativity of its people, enabling them to understand and master

technology, to INNOVATE and to ADAPT technology to their own needs and opportunities” (United Nations, Human Development Report, 2001, p.79)

THE FUTURE – A PROCRUSTEAN ICT BED STRATEGY

“To be cosmopolitan is to know that all laws are local, and to use that intellectual liberty to decide for yourself what moral code you’ll subscribe to. It is the freedom to invent your own ethics from the ground up, knowing that the larger social code you’re rejecting is no more or less right than your own – at least from the point of view of a Martian peering through a notional telescope at us piddling Earthlings” Doctorow (2010).

Are all laws local and/or international in terms of technology? Arguably (in particular for technology) some laws are flowing (learnt by borrowing and/or simply copying) within global networks. Nevertheless, what the clear is that all of them have local influences, but not necessarily locals (nations) are aware of them as a local, while locals indeed have right to refuse them. From this point of view, it is declared by the Government in Turkey that the above imperfections, discussed in the ‘25th Meeting of the High Council of Science and Technology’, held at TUBITAK on 15th January 2013; with the purpose of evaluating emerging developments and identifying a new Turkey roadmap, included the following concerns;

[to complete the ‘Ex-Ante Impact Assessment of ‘Horizon 2020: the EU Framework Programme for Research and Innovation’ for Turkey’ (which is an assessment forecast to identify actual and potential ‘scientific’, ‘economic/industrial’ and ‘societal’ impacts of an intervention in the processes of planning, designing and approving interventions through considering economic, social and environmental actors and factors);

to establish new ‘Working Groups’ that facilitate the coordination within TUBITAK to identify National ICT System and Performance; (but TUBITAL still legally has no political power)

to establish E-transformation Organisation Management Models for coordination issues within/between institutions (an agent from each institution for a technical consultancy unit);

to monitor and develop Strategies for Gifted Individuals, (I believe it is for the Fatih project, to seek Bill Gates and Steven Jobs in Turkey) declared as making Turkey stronger in technological, economic, political and military perspectives;

to establish the Procurement Service Company Certification System for the E-TTP (in particular, for software suppliers, (so crucial for FOSS), but there was no information, no defined benchmarking and no performance measurement. This looks like a blueprint program but it's unclear at this point);

to establish Package Software Solutions Supply Volume Method required by public institutions (creating package software inventory, and for bulk purchases as technical, legal, administrative and application model developments. Most institutions have been using the same software products, and so it is necessary to purchase them in bulk, under the one roof (owner) for retrenchment and avoiding wastage, in particular packet software (office, database, etc.), common systems (electronic data processing system, in-service education, document management system, and geographic information systems for local services);

(This initiative is the same as in the UK, (see, the report of ICT Strategy by the Cabinet Office, p.13- the Action 2). For the UK, the Action 4 is to establish an open source implementation group. For Turkey, there is no such thing in existence or planned, just FOSS recommendations.)

to start feasibility study for National Data Centre Structure (as in South Korea) (as argued above, it previously failed – the SKAAS project)]. (TUBITAK, 2013a)

The ICT Strategies in Turkey and in the UK have the purpose of increasing accountability in public and private sectors and improving the participation of the private sector, within public sectors, through encouraging SME. In an expensive and fragmented ICT infrastructure (generally in the duplicated solutions that impedes

reuse of services and sharing); the declaration is that ‘common and secure application solutions, strategies and policies’ will be taken through (again) ‘common technology standards and components’, as the reports highlighted that the concept of ‘commonality’ will be used in Turkey and in the UK. However, there is no clear statement to explain what is really meant by the statement of ‘commonality of standards and components’; is it a dominant orientation of ICT governance? Is that horizontally coordinated and balanced between FOSS and PCSS by multi-stakeholders agreements? Is the paradigm still in centralist stagnation by vertical & hierarchical decision imperfection? Where is ‘policy interaction-clustering’ to define the same target from different actors’ interests? Where is (inter & intra) industry-academy cooperation as strategic alliances & counterparts? Is there a social contract or systematically changed strategy? What are the values (openness) of technopolitics? Or are there ‘Black Holes’? Nonetheless, it is clear that the ICT Strategy Report is a kind of declaration of intended future steps; the actual practices depend on the strength of non-uniformity.

Regarding software, the declared strategy, in particular ‘commonality’, actually is ‘One-Size-Fits-All-Software’ as a Procrustean bed. In this sense, ‘Japanese-style management’ has been taken as where teams were told to get the job done, but were left alone without any particular ‘strategy’, ‘vision’ and so ‘policy’ at all that is unfortunately as the same as previous cases. Nevertheless, a one-size-fits-all-software-system cannot be adapted to ICT nature, even within a short period and is not the most productive and persuasive solution in ICT. The various needs of a nation state, current and future cannot be adjusted to one-size-fits-all; ICT is naturally borderless and unmanageable; different software may work better in different settings, and there are always vendor lock-in issues, etc. Importantly FOSS cannot (might not, shall not, etc., depends on contents) be a tailored one-size-fits-all system. Consequently, the Government in Turkey, perhaps the UK as well, has already put FOSS alternatives out of Turkey’s future reach, lost any ability to gain FOSS opportunities, and critically and significantly narrowed the potential for Turkey. So what might be the actual reasoning for this outcome?

Due to emerging technologies, throughout history, communication channels and public and private sector services have all been digitalised. Nowadays, all performed services, in any institution, totally depend on ICT. The infrastructure of ICT in institutions is formed by various components, which are integrated to be compatibly worked together. Software, in particular OSs, is the fundamental backbone in these components, and is crucial. For this reason, available personal computers used in institutions have become no longer a stand-alone system. Institutional requirements (ICT securities, network applications, information sharing and communication platforms, source software etc.,) run compatibly with each other via OSs; and it is thereby essential to achieve integration among complex software structures; (the average is ten software plus, in a small institution). As a result of these complexities and vulnerabilities, the Government is willing see a perfect fit, through perceiving the stand-alone system as a Procrustean ICT Bed. Collaboration efforts between knowledge, technology and infrastructure, within human interactions, are complementary resources; however is there a magic solution?

Ministries prefer to use hardware and software, which are worldwide acceptable, previously known (problems & solutions), and come from sources in range of supports. This argument looks like reasonable; however, as all tender specifications reports from ICT projects underlined requirement of Microsoft OSs, and so Ministries both believe they can take appropriate supports for the last version of Microsoft OSs, because they simply trust Microsoft platforms and Ministries do not trust Linux platforms. Nevertheless, that is an exact issue, because all citizens have been forced to use Microsoft platforms to access imperative public services. Additionally the similar parliamentary written questions have been asked in 2005, 2008 and 2012. Migration plans should have been prepared within eight years by Ministries as it was claimed by most of them in 2008 (at least in server sides). In this sense,

“The governance network and policy network analysis schools both share the view that ... policymaking is best seen as an interactive process in which different actors exchange resources in a series of *trust-based relationships in order to achieve their goals*” (Daugbjerg, 2011, p.4).

Most Ministries argued that, in 2012, one particular OSs, which is capable of elementarily work, does not fundamentally suffice for each institutional ICT infrastructure. To perform institutional services, without interruptions and free from problems, mutual dependencies (hardware & software) are vital. Therefore, the Government wrongly perceived that it is essential to have all these technologies in a common language, and so the same technology platform gave an assurance of cohesiveness and completeness. In ICT infrastructure, changing OS is the real threat, to create uncertainty in cohesiveness and completeness of all other components, so it is essential to plan all infrastructures at the beginning, in terms of political, technical and institutional (including cost) dependencies. The difficulty & challenge is obvious, in particular, in large and crucial institutional networks. The Ministries wrongly believe that FOSS solutions will generate higher resource draining queries (time and cost consuming) than the currently available system and, in the migration process, the required efforts will result in disrupted and interrupted institutional routines & schemes; therefore the risk cannot be taken by the Government. These are the main reasons, Ministries have given. I totally agree with challenging the concept of managing ICT within institutions, however, can common languages & the same technology platforms always promise ensuring cohesiveness and completeness in institutions? Or can commonality (without interoperability, indeed clearly defined on-going global interoperability and open standards reports) only promise ensuing path dependency and lock-in? Nevertheless, technology emerges from various disciplines for various purposes, not inevitably to be in harmony. That concept is neglected from the reductionist approach taken by the Government.

The latest change is not only One-Size-Fits-All-Software strategy. TUBITAK just declared that Turkey has developed a 'Real-Time Operating System' (RTOS), based on FOSS, which is available in only eleven advanced nations. The developed system is to complete unique and critical technology used for the national defence system. The aim is to finish external dependence, to be trusted within national secret projects and to create totally compatible system with other OSs (It is unclear whether Pardus Fraud-Debian or not). Meanwhile, Turkey is also a part of 'International Symposium

on Foundation of Open Source Intelligence and Security Informatics’, which is to “provide a unique international forum for researchers, professionals, and industrial practitioners to socialize, seek collaboration, share and exchange their data, knowledge, and expertise” (TUBITAK, 2013b).

In the light of this information, it is clear that when the objective is perceived as an urgent issue of national defence & security, FOSS is rigorously pursued as a real alternative; however when the concept is to control & intervene in Microsoft dominant markets, the Government has not taken the liability to take the strategic initiative. What the Government in Turkey missed & neglected is that the digital security (cyber war) is not solely the concern of the Government. There are several government and parliamentary reports directing how Governments and Ministries have been acting in digital security and cyber wars. For example, how the Ministry of National Defence, UYAP, MEBBIS, ILSIS were hacked. The history of cyber wars (since the first precedent between the USA and Iran in 1998) has been crucially explained in the parliament as well (Information Security Association, 2012). Additionally, the ‘Phishing Activity Trends Report 2nd Quarter 2012’ by APWG, stated that within the list of malware infected countries, Turkey is the sixth country, after South Korean, China and Taiwan, 39,29% where computers have already suffered malware infection. Interestingly, the report stated that countries hosting the phishing sites list started with the USA 58.45%... and Turkey 1.12% in April. These figures are perpetually changing, so should be followed. The evidence indicates that the concern is not only national-military security anymore, at least not in the future.

“At the heart of the debate there have been attempts to deepen and widen the concept of security from the level of the state to societies and individuals, and from military to non-military issues.”(Krahmann, 2003, p.9)

These changes are understandable. The Government is willing to start research programs and strategies in various disciplines, to raise Turkey to ‘best practice’ levels within its national potential and to meet national values and interests. However is ICT effectively manageable in a national psyche? I believe yes. It is clear that these changes still cannot promise a precise ‘National ICT Policy and

Strategy’, because FOSS is not considered carefully. Crucially, in Turkey, there is no compelling argument to attempt defining techno-political strategies on the argument of ‘knowledge-based economy’. Over one decade before, OECD (1996) highlighted four knowledge(s) for current and future concepts: know-what (‘facts’), know-why (‘scientific knowledge of the principles and laws of natures’), know-how (‘skills or the capability to do something’) and know-who (‘information about who knows what and who knows how to do’, is the crucial concept). The question should be whether or not it is possible to conceptualise ‘Commoditized National ICT Policy and Strategy’, techno-politics, within global-technological structures and orders, without defining and addressing these four knowledge(s), and moving to the next steps. I believe it is not, but identifying these four knowledge(s) is challenging in a digital era, because software is as digital goods which are everywhere and/or nowhere. There is no hallmark in ICT and societies. Importantly there are know-that concepts, famously stated by Donald Rumsfeld, who was the 21st the United States Secretary of Defence.

“There are no knowns. There are things we know that we know. There are known unknowns. That is to say there are things that we now know we don't know. But there are also unknown unknowns. There are things we do not know we don't know” (February 2002).

In the long run, endurance and viability of techno-politics must be identified with the concepts of (openness) for effectiveness, fairness and public accountability by techno-political interferences from the Government. So the question is why ‘the best and the brightest policy making club’ (think tank) does not interiorise & incorporate FOSS, and incorrectly force one-size-fits-all system with PCSS? Perhaps it is because of (a) the incompleteness of ICT change, (b) path dependence, (c) institutional inertia, (d) the Government own phobia and vulnerabilities (fear, uncertainty and doubt), arguably (e) corruption in NPM, etc. As discussed further in the thesis, public institutions have allowed themselves to become ‘a lame duck’ due to non-existent political interference. Perhaps that is the reason why, globally, there is no Government shared compelling attention and argument to the future concepts; clouding computing & political adequacy in ICT as under the title of ‘ICT Policies’ not ‘ICT Strategies’.

NO BROKEN PROMISE

In government, many people have the power to stop things happening but almost nobody has the power to make things happen. The system has the engine of a lawn mower and the brakes of a Rolls Royce."

Yes Prime Minister

As argued above, there are considered to be three legal and technical criteria, five legislative and seven administrative obstacles and four main, in global, technopolitically protected PCSS-based imperfections that make FOSS usage impracticable in public institutions and its educations. Importantly, there is no consideration for the hearing of FOSS and PCSS crucial distinction in LAW. The Law is 'the weakest link'. So relevant questions are: Is there any tactical momentum in the law, regarding software precedents, with the exception of taxation and public procurement? Or is it more likely that just a techno-private oriented inclination in impassably 'heritaged' & 'centralist' public institutions within the preference of PCSS friendly markets sophistications in the purpose of squeezing self-motivate and self-interest markets (profit & survival)? These are only answerable questions in the end of the thesis, because one way or another all individual nations have to define their techno-politics if they are willing to survive in the long time coming decades (singularity).

In ICT, technical features and components are crucial but not the only factors in innovation and implementation of a particular technology in a particular national state. There are also many other social, political, economical and cultural factors, but it does not mean that all of these factors are equally effective. As, Edwards & Wajcman (2005) strongly argued that the statement of *socially shaped* technology does *not* mean to say that characteristics and features of *social definition* are *equally effective*. The key points are *politics* and *negotiation* which define & confirm proximity and orientation of technological winning merits (originality, impact, practicality, measurability and applicability) in a particular society.

Institutional economics is inevitably political and its' focus mainly a junction between economy and law. For the purpose of this, a central national state forms and

forces its own legalities to determine itself in the game of economic performances and behaviours to become a ruler of 'the game' in its 'society' (North, 1990). We are in a world of 'knowledge-based economy' which is significantly different than 'traditional-based economy' (see, David Skyrme Associates, perhaps 'creative-based economy' in the short term future, and 'resources-based economy' in the long term future). Nevertheless, for ICT, the Government in Turkey has embarrassed 'de facto Policy' (also called 'Informal Policy'). In this sense, de-facto policy is seen as best option & practice recommendations which are driven by a dominant position within publicly accepted and/or sectorally forced markets. Does de-facto ICT policy promise to increase marketplace values (efficiency, interoperability and innovation)? That is an internationally controversial question. Nevertheless, I believe we have a beautiful alternative FOSS which is mistakenly understood as 'impractical' & 'unreal' with 'unprofitable' market; it is actually 'practical' & 'real' with 'profitable' market.

"Government is about principles. And the principle is, never act on principle."
Yes Prime Minister

It is clear that leading nations & governments cannot afford to not be a key player in the future and it is obvious that the future is (currently) shaped by global corporations (e.g. Microsoft, Google, Apple, Samsung etc.). So, governments must have interactions & connections with global giant corporations. However, the crucial concept should be to follow or (ideally) to lead technological changes and innovations, not to purely answer and meet the current needs and requirements of a national state, through dominant ICT suppliers (currently Microsoft in Turkey). The Government should perceive a birds-eye view of Turkey's capability instead of being dazzled by distinguished-looking giant corporations' offers & freebies. The Turkey-ICT RTD Technological Audit Report 2011 highlighted that "Turkey, in order not to lose ground, has to perform key efforts for successfully sustaining and improving her ground" (Pascall, 2011, p.6) and "Turkey is performing under its potential" (ibid, p.8). Thus, there is a poor strategic plan in ICT. However, it is still so difficult to argue or conclude whether these complex interactions & connections

are monopolistic or benign, but they are definitely strategic and momentous influencers in that stage.

The concept of 'Expendable 'Written' National ICT Policy' can be replicated in other leading and led national states because most developed and developing nations have managed to move synchronously in ICT worldwide. Globally, some leading states have already taken initiatives to make over the PCSS realm in favour of FOSS (see, the Government Open Source Policies Annual Report by the CSIS, 2010). However, some initiatives are arguably just a newspeak declaration. In the realities and practices they are not real (e.g. Turkey). For instance, currently the UK ICT policy (see, the report of an Open Source Strategy for Government by Cabinet Office in 2010) is not only in favour of FOSS but also structures public institutions to take FOSS into consideration in the first instance. Such a policy appears to be both manipulating and shaping public software markets, instead of just monitoring them. Despite this declaration, there are some counter arguments between the UK ICT policy and the actual practices. For instance, Michael Gove, the Secretary of State for Education in England, sincerely and continually states their FOSS support in the media; however the Department for Education have just had a new agreement with the Microsoft Corporation in 2012.

The chapter already diagnosed the conditions (omission & missing functionalities) behind the problem, but does not argue the best way to identify pervasive, trustworthy, flexible and transparent ICT policies, in which FOSS and PCSS families are used. During the dynamic nature of ICT project management, consideration of evolving FOSS & PCSS's own unique characteristics should be made for the purpose of balancing FOSS & PCSS or, in the best scenario, making over PCSS realm in favour of FOSS. Valuable lessons might be highlighted from the global best practices. There is no universal truth, perception and advice for identifying the optimal level of ICT Policy in a national state, without taking into account each country's diverse realities. In this sense, all stakeholders' opinions, from national and international levels, within a social-economic-political participatory network (interest groups' values and impacts, no forces from pressure group for synergy

stemming building), should be all interlinked by a holistic vision to define written ICT policy (a single & on-going value), and so techno-politics. Admittedly, societies do not change at the same speed as policy changes and policy making does not always wait for society to catch up. Thus it is necessary to establish a real techno-politics rather than declaring a ‘speculative’ or ‘podium’ policy and/or strategy.

According to Jessop (2003), in ‘governance, governance failure and meta-governance’, there are four global dilemmas: ‘Cooperation vs Competition’; ‘Openness vs Closure’; ‘Governability vs Flexibility’ and ‘Accountability vs Efficiency’. These dilemmas should be addressed globally. These conventional antagonisms (dilemmas) add another dimension to national ICT considerations. Even the concept of ‘ICT Policy’ is in a national state milieu, as the chapter argues, the dimension is also multilevel and complex; and the powers are not clear and positioned. There are various actors (sphinx), who have influence upon a national state, such as ‘Special 301 Reports’, ‘Digital Right Management’, ‘Copy-Right’, etc. For instance, the US Government publishes “Special 301 Report”, which indicates countries where the right of patent licence is inadequate. The report is intended to put pressure on countries that entered the list and leads to apply trade sanctions against these countries. Generally China, Canada, Italy and Russia are accused of failing to take actions against internet piracy and counterfeit goods. However, the Special 301 Report is so controversial as regards to FOSS. There are so many reports and articles as “Copyright lobby (IIPA) demands that USTR punish governments who 'consider' mandating open source software” (KEI, 2010), “Special 301 Report versus Free Software: Strong-arm tactics are the only way proprietary software can compete”, ‘When using open source makes you an enemy of the state,’ and so on. The imperfect market, in particular how the USA has been struggling to protect its own national interest in the current era, might be seen as in,

“There is no such thing as an “international copyright” that will automatically protect an author’s writings throughout the world. Protection against unauthorized use in a particular country depends on the national laws of that country. ... The U. S. Copyright Office is not permitted to recommend agents or attorneys or to give legal advice on foreign laws” (the United State, Copyright Office, FL-100, Reviewed November 2009).

Public and private services and market considerations and criteria influence understanding of a national policy at national and international level, within fragmented networks, by many actors and factors. In this sense, the questions might be:

- (a) How will the oligopoly of large suppliers act in the nationalised ICT policy?
- (b) Will they continue to monopolise their ICT provision?
- (c) How will leading national states (the USA, the UK, etc.) act in these complex relations?

These answers are not clear, but what is clear is that there are deliberate uncertainties created by ‘imperfect markets’ for economic gain. What is deliberately forgotten, ‘invention’, ‘innovation’ and ‘development,’ address different meaning? ICT is not a new phenomenon throughout modern history but policy should be urgently rectified and differently addressed. That is the real challenge. It should cover all stakeholder perspectives and interests to make sure increasing marketplace values (efficiency, interoperability and innovation) are met. However, democratic powers in a national state have already shifted through using digital channels within participations of PPPs, to an ambiguous space in which government bodies may not be welcome (see, the next chapter as well). E.g. why are the Internet Treaty and Regulation and International Telecommunication Union (ITU), the Stop Online Piracy Act (SOPA), the Protect IP Act (PIPA), the Anti-Counterfeiting Trade Agreement (ACTA) and the Cyber Intelligence Sharing and Protection Act related arguments currently priority global concerns? If national states are welcome in a global network, it might be asked why there is still no international consensus about “Interoperability’ and, in particular, ‘Software Interoperability Standards’. No agreement has been reached in a decade and remains to be resolved in the near future.

The above question leads us directly to ‘globalisation’. It is crucial to underline how an understanding of globalisation can reveal an understanding of an individual nation

state within the era of global change, especially the relationship between the nation state power and its decision-making process. According to most of globalisation theorists in the last few decades, an individual nation state has faced devolution of its power, its dependability and even its self-legitimation. Although, a variety of perceptions exist among theorists to explain this devolution, what they have in common are on-going technological changes and its unprecedented influences upon the individual state, and its society. Nowadays, the national state is seen as a 'borderless state' by Ohmae (1995), a 'powerless state' by Castells (1997), a 'hollow state' by Milward and Provan (2000) or in a more moderate perspective, a partial state by Olssen et al. (2004) as,

"The nation-state is "too small" to be entirely effective and "too large" to be entirely irrelevant" (ibid, p.4).

It is clear that, for the national state, globalisation does not mean abandoning monopolisation power of the state. However, as the chapter argues that internal and external legitimacies in the state (it is also true international level) are forced, pushed, lead or simply result in leaving and abandoning monopolisation power of the national state to international corporations regarding ICT, as

"The state is no longer the only regulator of market; we now have multiple forms of private regulation, and self-regulation. On the other hand, markets can no longer be (if they ever could) assumed to be either nationally based or nationally governed" (Dale and Robertson, 2009, p.119).

Although the nation state is not currently seen as the only decision-maker, it must take responsibility for controlling, manipulating and/or (at least) monitoring its own system and relative concepts, as suggested by Dale (1997), despite the 'limits to state action', 'the state does not 'go away''. And what is interesting is that

"There is an important shift of emphasis involved (a new mix), but it is not an absolute break with or rupture from the previous state form; bureaucracies continue to be the vehicle for a great deal of state activity and the state does not hesitate to regulate or intervene, when it is able, when its interests or objectives are not being served" (Ball and Junemann 2012, p.134).

From this point of view, the national state dynamic changes and interventions from the Government are more like ‘experimental’, not ‘definitive’, as Jessop (2003) argued, as in Turkey. ‘A new hybrid form or mix of ‘networks’, ‘bureaucracy’ and ‘market’ ’in the shadow of hierarchy’ exists to ‘design policy ideas’ in the national state (Ball & Junemann, 2012, p.133). Therefore, ICT Policy, in particular, a Procrustean ICT Bed Strategy, which is another form of de-facto ICT Strategy, in the national state, should be globally understood as ‘experimental’ strategies, not really ‘definitive’ perhaps for on-going negotiations and positioning the national state within the global networks, because of evidently nationally prioritised values and interests from national cultural survival instincts for the future. The experimental strategy is also argued in detailed in the next section. Famously, Robert B. Reich foreseen as early as,

“We are living through a transformation that will rearrange the politics and economics of the coming century. There will be no more national products and technologies, no national corporations, no national industries. There will no longer be national economies. All that will remain rooted within national borders are the people who comprise the nation. Each nation’s primary assets will be its citizens’ skills and insights. Each nation’s primary political task will be to cope with the centrifugal forces of the global economy which tear at the ties binding citizens together — bestowing ever greater wealth on the most skilled and insightful, while consigning the less skilled to a declining standard of living” (1992).

Although, there is no national technological ‘product’ & ‘idea’ anymore, the national state has responsibility to reduce squandered resources, to ensure the principle of separation of powers to eliminate vendor lock-ins (techno-politically supported (a) ICT ‘legal monopoly’ and (b) ‘economic hegemony’ towards PCSS) and to find the best way, not to waste public money, because

“Markets in fact generate inequality and encourage competition instead of co-operation as the central structuring norm of the community... (The national state) must in their own right be regulated and controlled by the state” (Olssen et al., 2004, p.176)

Nevertheless, efforts of ‘politics’ & ‘negotiation’ to define & confirm proximity and orientation of technological winning merits (originality, impact, practicality,

measurability and applicability) in a particular society within global networks are so clear and identifiable, as to be controlled by the dominant ICT suppliers because of evident nationally prioritised concerns, which are lobbied within an imperfect market, as Edwards & Wajcman (2005) argued. The dynamic & dominant orientation imperfect markets and inevitable failure of ICT (Don Juan(s)) fate and ecosystems, within the centralist power illusion and status quo policy leads to state that there is no *forgotten*, actually *no broken promise* for ICT Policy.

To support ‘politics’ and ‘negotiation’ concepts, the earlier example is:

On 23rd January 2002, MP, Emre Kocaoglu asked the former Prime Minister about Microsoft Encarta CD-ROM Encyclopaedia and its associated website⁷⁸. In the encyclopaedia, and website there was Kurdistan map in eastern Turkey. After two years, the map was corrected. There were also similar complaints, between Chinese and Taiwan governments for Microsoft Encarta. According to McGraw-Hill (2004), “Microsoft also bows to political pressure. The government of Turkey stopped distribution of an Encarta edition with the name Kurdistan on a map. Here Microsoft removed the name Kurdistan from the map. Governments frequently lobby the company to show their preferred boundaries on maps” (p.70). Additionally, there was a controversial Armenian issue; but unfortunately, no formal proof was available. Therefore, I do not further argue it, but it is still important to underline.

There are mutual on-going economical and political negotiations between the Microsoft Corporation and Governments. It is not a new phenomenon. There are economical and political connections between national states where internationally argumentative issues exist; and international corporations which dynamically positioned themselves to take advantage of the issues to gain leverage. Although, the Microsoft Corporation claimed that the Encarta Encyclopaedia had nine different versions to be certain that the Encyclopaedia do not include cultural clash, however

⁷⁸ See, the parliamentary written question from MP, Emre Kocaoglu, Turkish Grand National Assembly (No.7/5728, 23rd January 2002, TBMM), Retrieved 20/06/2013 from <http://www2.tbmm.gov.tr/d21/7/7-5728s.pdf>. The response to the question was published in the incoming paper due to not be answered. In other words, it was not going to be answered until the parliamentary question would be asked again.

and evidently comprehending local cultures through reflecting their histories might be perceived as a historically contradictory and a politically conflicting, as in here. Nevertheless, it is clear that the Microsoft Corporation used its power to mislead knowledge because of its own economic interests and this drives the Government in Turkey. What is the consequence of this level of manipulation? Digital technology is currently everything, however, the power of particular technology still remains with the country of technological origin and headquarter location; in USA in this instance. The Government in Turkey can only argue its point of view in Turkey because the raised issues are internationally controversial. Thus political conflicts are strongly applied to the technology itself.

The latest examples are:

The Microsoft Corporation and a university in Turkey are currently in legal dispute over the use of pirated software. The Microsoft Corporation has not taken this kind of initiative for long time in Turkey. Perhaps the Microsoft Corporation is testing its power of negotiation with the Government to enable participation in the Fatih Project. The Government previously has chosen Android technology.

Although, the previous chapters provide so many instances to support on-going techno-political mobility (lobbying through manipulate & control) between ICT providers and the Governments, the Pardus project history is a great example for negotiations.

Pardus Fraud-Debian

During 2012, Pardus has become Pardus Fraud-Debian behind the scenes. On 29th June 2012, the Pardus Advisory Committee was held in TUBITAK, as previously planned. In the committee Kaplan, who is the Manager of ULAKBIM, explained the reasons of Pardus Fraud-Debian. In 45 days the Vestel team (who won the tender of IWs in the scope of Fatih project) could not install Pardus original OS in IWs. There were compatibility issues; therefore the Vestel team sought professional help from TUBITAK. TUBITAK could not solve the compatibility issues either (the Pardus

project team disbanded), so TUBITAK further sought professional help from a private company (this was an unnamed supplier without access to Pardus solution partners). This could have been TUBITAK's best option or a deliberate action to show TUBITAK intention to withdraw from Pardus original OSs. The private company stated that they could not solve the issues but they managed to install Debian OS without any compatibility issues. Notably, Debian provides great opportunities, particularly in localisation projects and generally Debian has no compatibility issues. Consequently, the Vestel team preferred installing Debian and then moved some Pardus original technologies to Pardus Fraud-Debian (Yeniay, 2012). Installing Pardus-Debian should not have been a significant challenge for the supplier and, conveniently, happened to align with emerging Pardus project ideals. Kaptan always stated that

[Pardus team will surprise (delight) the Fatih Project, currently I can say that much. Pardus will be used in 620 thousands IWs] (many forums of Pardus and 620 Smartboards are shown in Google searches).

The new direction taken by TUBITAK is not surprising, however, the reasons given to the public, I would suggest, are secondary to TUBITAK's need to both change direction to make the Pardus project international and to redefine their success with FOSS community support. IW has x86 technologies as a mini PC and Pardus original is based on Linux kernel, one way or another, technologically the Vestel team could have solved these issues. Notably there were positive and negative reactions, particularly academics, FOSS communities, etc. Even some specialists, particularly Mustafa Akgul, Necdet Yücel, Doruk Fisek, Sezayi Yeniay and Pardus Users Association (PDK) offered their support to make Pardus original compatible with IWs. The Vestel team, Ministries and TUBITAK stated that the Vestel already sent IWs to schools, so it was impossible changes. Going forward, Pardus Fraud-Debian will be used in the Pardus project. In the committee, Erol spoke for Kaptan, and put forward two reasons for the selection of Debian.

[Debian has over 40 thousands packets, and Pardus (PISI) is around 5 thousands (it is commonly known that more packets mean less secure which is important only if the project has a national focus, see Sanatype Press 2012).

In the market, there are so many companies understanding Debian. TUBITAK can find support. (TUBITAK already had Pardus support. Why did they not retain skilled developers?)]

I believe the change to be beneficial, as PISI- the Structure of Package Manager ('the issue is not to compile packets to work' rather 'the issue is to compile packets to work as TUBITAK wishes to', as Nationalism with FOSS) is the main reason of that Pardus OSs could not be an international project. I do not agree with TUBITAK publicised reasons. The crucial point is 'power relationship' between TUBITAK, Ministries and FOSS Communities. During the three month period relaunch/redirection, there was no information shared with FOSS communities by TUBITAK and Ministries. So what kind of accountability has been given to the Pardus Advisory Committee; they do not appear to have been involved in the decision-making?

The committee, on debating PISI, had two opposing groups: the opponent group (6 people) because (a) the method of decision making is wrong and (b) abandonment of Pardus specific technologies is also wrong due to easy and unfounded reasons; and the supporter group (2 people) because there are contracts and TUBITAK must adhere to the agreements. Yücel, Yeniay and Fisek shared information about committee debate regarding PISI in their own blogs. To summarise,

[During the meeting, it is asked over and over again that what the scope of authority of the Pardus Advisory Committee was; the response was 'it would be decided in here'. Naturally our request was all decisions. Erol stated that 'unless decisions place our (TUBITAK) agreements in conflict with what has been promise'. The definition of the Pardus Advisory Committee has been replaced as: 'taking decisions on matters which fit in with TUBITAK's existing contracts'.

We were dancing around this sentence for at least half an hour. Erol initially asked that 'regarding migrating Debian, I want to see the first committee

decision as unanimous or at least by majority’. Intrinsically, none of us did accept it. The Advisory Committee is not responsible for approving previously taken decisions; it is responsible for making decisions. Afterwards, Erol requested ‘it is alright, let’s take all decisions, and however giving up PISI would be an immovable subject in the framework of the advisory committee’. As a matter of course, we did not accept restricting our will. Erol further stated that ‘if you are not signing the agreement of giving up PISI, then let’s make decision about only the individual version and not including the institutional version’, we did not agree.

Meanwhile, we learned that the Pardus Advisory Committee is still not officially established. We again argued ‘why has the committee not been held for three months, we are gathering together after you have taken all important decisions’.]

Pardus developers, FOSS communities, academicians have no power in the decision-making process; being informed after decisions were taken. Therefore some developers started to satirically call the ‘Smart Board’ as ‘Smart/less Board’ with ‘Pardus Debian’ by Aggravated Fraud.

During the decision-making, the Pardus community had been voluntarily developing Pardus original OSs which is called as Pardus #Anka. This forking initiative is aimed to continue and develop old Pardus OSs by the Pardus community who are insisting on using old Pardus technologies, particularly Pisi, Comar, Yali, Kaptan and Mudur. The question should be that Pardus #Anka is the Pardus fork or a continuation of the Pardus project, like Pardus 2012. The community declared that if TUBITAK do keep pushing Pardus Fraud-Debian; they would be free to continue the Pardus project, because TUBITAK would not retain project control. Alternatively, if TUBITAK do reverse their decision or continue to support to Pardus original, Pardus #Anka would be Pardus fork, but TUBITAK would be a sponsor only. Thus within the latest news, Pardus #Anka has become Pardus 2012-13 Original; and has just been released in February 2013.

[Google model would be used in the development process of Pardus #Anka. First the focus is solving old Pardus shortcomings and then adding new

technologies. All these studies would be based on Free Software Philosophy through drawing its strength from the community (pardus-anka.org)].

To sum up, Pardus OSs had been developed for nearly one decade but the project has been abandoned by TUBITAK overnight. So why has TUBITAK been trying to accomplished Pardus OSs? According to most developers, the Pardus project failed its project aims and objectives. Nevertheless, I believe GNU projects never fail because their codes are open and available on the internet (knowledge / skill share for the greater good). Therefore, it might be fair to state that the Pardus project could have accomplished more, but for PISI. Currently, most former Pardus developers have started their own private companies to provide FOSS and Linux OSs solutions; some of them pursuing this aim within the private sector. So though the Pardus project may be evaluated as a failure, in terms of its objective, it resulted in increased awareness and usage of FOSS applications in the ICT market in Turkey.

Whist I agree with the decision of Debian, I do not condone the decision-making process or lines of accountability. I believe that TUBITAK or any institutions should not directly develop FOSS applications and Linux OSs, but support and promote available FOSS applications. If public sector institutions support the use of FOSS, FOSS will naturally develop greater efficiency and create FOSS ecosystem within & supported by the private sector. It is argued that even using Linux OSs in servers might be enough to create an initial Linux ecosystem. If ‘Interoperability Framework Guides’ and ‘Standardisations’ are followed they will drive the concepts to create FOSS ecosystem in the public sectors. Unfortunately, they are not followed (clearly seen the Prime Minister reports). Why did the Turkish Government start the Pardus project? I believe the Government wanted to use/test Pardus OSs in public sectors, to understand the challenges to better evaluate PCSS solutions and to use Pardus OSs as leverage to obtain better on-going deals from the Microsoft Corporation.

If the real aim is to use and support FOSS nationally and to influence FOSS communities, FOSS policy should be clearly written and supported by ‘state policy’ whilst providing the flexibility to be innovative, instead of ‘government policy’,

restricting and stabilising Pardus OSs and using Pardus OSs as leverage to obtain better deals with the Microsoft Corporation or other future PSCC corporations. In January 2012 Caglayan who emphasised,

[When there was no hope in the Fatih project, the Pardus project team has moved from UEKAE to BTE, and the Fatih project was renamed as ‘the Pardus for the Fatih Project’ at the end of October 2011.

We hoped this was possible.

A few days later, a senior executive told me in front of all workers in the institution ‘Microsoft has made 5TL deduction for each licence. Just recently the Minister of the UBAK told the senior executive that the Fatih project is already committed to Microsoft; that was an unseemly and unprofessional comment. Afterwards, we heard from a senior executive that in the scope of the Fatih project, they were grateful the Pardus project had given Microsoft a hard time.

At least I realized that renaming ‘the Pardus for the Fatih Project’ is nothing other than stalling. We witnessed that researchers, who we trust; we respect we know they do great job, were suspended from their duties and transferred to the lower-level tasks. The media and the outside world never knew what was going on; it could not be] (Caglayan, 2012).

(Notably, I believe there was enough evidence of mismanagement of TUBITAK and the Pardus Project Team to usurp or at least influence change in how they operated. The protection of the Government in Turkey was enough to persuade TUBITAK that they were not answerable to stakeholders)

In April 2012, Arslan emphasised similar issues,

[TUBITAK changed its management team in winter 2011. As a result of a comprehensive meeting in TUBITAK, it was decided not to include Pardus OSs in the Fatih project. In the meeting, we were told that Pardus OSs played the role of hammer price (leverage), so they have gained an advantage of 5\$. Therefore it cannot be denied the Pardus role in this success. When the team heard about it, they were demoralised and many resigned. Blood loss continued increasingly after this day].

There is only one conflict, 5TL or 5\$. The bargaining transactions occurred by strategic interactions for offering and bidding in price settings within imperfect market competition. It is clear that there were not only top-down decisions to use Pardus OSs to get better deals from the Microsoft Corporation, but also to change the structures of TUBITAK, UEKAE and so the Pardus project. Notably, this kind of interaction not only occurred in the Fatih project, but many other examples of leverage techniques used against the Microsoft Corporation are evident. According to Zaman Newspaper in June 2004, in the Microsoft Partners in Learning protocol meeting, the Minister, Huseyin Celik stated that

[We act selectively to get the cheapest and the best quality of education. We will reach a conclusion without delay.

Question,

The Ministry believes in *effective and efficient use* of public funds. There is no such a thing as dependent company (lock-in), so you see there is not a business partnership with Bill Gates.] (Zaman News, 2004)

The Public Sector Linux Competency Centre (Linux Training) was launched by the MoNE and IBM's contribution in June 2005, but could not have been operating. According to FazlaMesayi Website, in the opening meeting of the centre, the Minister, Huseyin Celik also stated that

[Turkey complies with the new world orders. The speculations after Bill Gates visit to Turkey are not real, particularly in the parliamentary written questions, as is there a Microsoft monopoly in Turkey?] (FazlaMesai, 2005)

However, regarding to the protocols of 'Microsoft Partners in Learning' (May 2004 and July 2009), it purchased computers within BEP, SEP, MVET, SVEP and all other projects, Microsoft OS(s) and Microsoft Office(s), and necessary software (except Adobe products) were installed. Additionally and importantly in the scope of MEBBIS project, the Microsoft Corporation supported all pilot studies. MoNE did

not pay any fee for Microsoft supports; that are donations from the Microsoft Corporation in \$\$\$ million projects and unfortunately end up locked-in for MEBBIS.

SUMMARY

Ministers are ignorant not because we do not give them the right answers but because they do not ask us the right questions."

Yes Prime Minister

Many national states currently argue over what gun policies should be, for instance, in the USA. In ICT, technology is as a complex 'living organism', (more than a gun), it could be used for many purposes, so it is not a simple tool (perhaps never was and never will be), not only has it great power and provides a great potential, but it also puts forward its own lameness. The crucial point is that technology (software) always claims how its own algorithm is perfect because there is no human bias, but the point is that humans use it. Technology evidently makes us more creative, but not necessarily smarter and/or more intelligent. So, the concept is more than simple (gun) policies but is the concept really nationally and internationally welcome? It is so controversial! While old aged, new is a street ahead. Too many arguments but not sufficiently detailed action (short/long term) plans and metrics, still no milieu for 'Written' ICT Policies (obvious not a Policy). As can be seen from Marx' observation, unfortunately,

"In political economy, law is determined by its opposite, absence of law. The true law of political economy is *chance*, from whose movement we, the scientific men, isolate certain factors arbitrarily in the form of laws." (Marx, 1844, p.211)

In this chapter, I first review national ICT policy in Turkey through selecting the most appropriate and elite government documents, to have a brief outline of the obstacles for the use of FOSS in public institutions, as well as a genetic perception of the Government views on FOSS that are driven by/ related to the concept of not governing 'National ICT Policy and Strategy'. To support this, I argue how FOSS is deliberately ignored in ICT projects due to obviously (a) institutional inertia, (b) path dependence, (c) ungovernable ICT changes, and arguably (d) corruption in NPM. I

then attempted to investigate possible causal and dependency relationships of the currently established interlinks between the Government and unmanageable ICT changes, to conclude that the Government has failed in making written ICT Policies, to establish pervasive and trustworthy (flexible) ICT ecosystems, which recognise either a balanced development between FOSS & PCSS or a FOSS favourable system.

The evidence indicates that the Government has taken a de-facto ICT Policy by which Microsoft dominant markets control public institutions. Whilst techno-institutional lock-ins politically exist and are irreversible in Turkey, the future of Turkey's roadmap is mistakenly defined as a Procrustean ICT Bed Strategy from 'the best and the brightest policy making club' (think tank). This chapter finally makes arguments that the omission of ICT Policy in a national state is globally understood as *experimental strategies* (not really definitive) perhaps for on-going negotiations and positioning a national state within a global network, due to evidently nationally prioritised interests. Perhaps it is not really a conclusive strategy (evidently not a policy). The dynamic and inevitable failure of ICT nature and ecosystems leads to state *no broken promise* in ICT.

Nevertheless, this argument does not normalise/impair the failure/omission of promising an ICT policy. ICT projects have always easily corrupted nature, due to their complexity, therefore corruption in ICT projects should be conceptualised through the four accepted knowledge(s) as the OECD report highlighted. In particular, know-who should be carefully addressed for leading us (as a citizen) to know how the Government get it right and trust information, avoiding corruption concerns. The final report of 'Information 2020 Challenges for the EU' by IDC comprehensively argued know-who concept and finalised,

"... we are likely to move from an economy based on those —Too big to fail to one focused on servicing the needs of those —Too small to ignore" (Joyce, and Cattaneo, 2011, p.91).

Thus, in answering the chapter questions

Is there a precise ‘techno-politics’ in public institutions and educations in Turkey in particular an (on-going) official recognition of the crucial distinction and subsequent evaluation between FOSS and PCSS? No

Is a de-facto and corporatocracical techno-politics, by which Microsoft dominant markets control public institutions? Yes

To be a techno-politics broker, it is worth presenting to get a sense of how a huge amount of investments in states are nevertheless with a sure in failed investments funded by Government’s debts. In the Fatih project, the Government stubbornly (and foolishly) has refused current & future educational concept – Computing. For this, if the corporatocracical techno-politics will continue to deteriorate rapidly educational dimensions, the major techno-political parties (PPPs); such as, Microsoft, Google, etc. will either become increasingly ‘radical’ or ‘marginalised’ by one by with the (failure) purpose of hidden privatisation and control (PCSS) because end-users are not simple slaves of technology, they are also rebels & rioters, and there is no ‘apsulate’ mastering, because

“The few active rebels should have the qualities of speed and endurance, be ubiquitous, and have independent sources of provisions” (T.E. Lawrence, “Guerrilla” Encyclopedia Britannica, Volume X, 1926, cited in Tiqqun, 2010, p.50).



Part III

CHAPTER VII

EPILOGUE- INEVITABLE SCAPEGOTISM

“[1] the power of the state depends upon the scapegoat, whose presence is necessary to disguise and diffuse the conflicts, corruption, and contradictions that underlie all political systems. ... [2] The scapegoat need not be innocent of any wrongdoing. It is only essential that the substitute be seen as a wrongdoer, and that his or her role not be attributed to any established institutional interests. ... If you want a career in politics, just be certain to keep a regular supply of scapegoats at your disposal, and to learn the fine art of quickly fabricating more in case of an emergency.” Butler Shaffer, 2012

For the overall evaluation of the Fatih project, and so techno-politics in Turkey, the Government has consistently envisaged ‘inconsistent’ objectives in ICT projects and, furthermore, they have accomplished ‘inconsistent’ in an ‘inconsistent’ way. This study (my career is not in politics, as Shaffer, who teaches at the Southwestern University School of Law) argues that the literature does not recognise the aims & objectives of the ICT related projects in Turkey. In particular, for the Fatih project, the Government satisfies itself with a sort of metaphysical ‘Don Quixotism’, or, at least, ‘Sentimentalism’, as being a fanciful ‘idealist’ without any grounded ‘rationality’ through corrupted & lobbied bureaucrats and academics (key stakeholders). In the short term, these key actors are the future scapegoats of scapegoats. Therefore, they will look for a new scapegoat(s), but they will be confused through spectacular technological glory, because emerging technology within Proprietary Close Source Software (PCSS) (e.g. Google, Microsoft, etc.,) never was and never will have a nature to be consistently scapegoated if the concept remains the same. So, eventually they will make the public a scapegoat without any public awareness, and they will gain more and more respectable social stratification (illusion). After all, there is not a guilt-ridden history in politics.

In the future, (angry, insecure, anxious, sad, etc.), (innocent, vulnerable, helpless, cute, etc.), (smart, creative, educated, intelligent, successful, etc.) and (silly, skittish, stupid, uneducable, unschooled, etc.), etc., students, teachers, principals,

public workers etc., will have ‘spectacular’ technological ‘splendours’. Consequently; there might be three levels of thinking regarding to the Fatih project,

In the Level I, techno-politically; the Government is consistent and accurate up to some extent, in the short term, the Fatih project will (perhaps) improve ICT sectors (both hardware & software) in Turkey; however, there are some obvious issues, e.g. the focus should be just software (e-contents), instead of both software & hardware. Admittedly, it is so difficult, even impossible, for an individual nation to compete other nations in a technological experiment of global dimensions, in particular, the hardware sector. Importantly, following hardware technology should not be the Government’s responsibility in the current era, but establishing on-going techno-politics is the Government’s responsibility. Hardware technology is changing every day, such as Display System (thin and flexible LCD screen, electronic paper, OLED (Organic Light Emitting Diode) etc.) and Access Control Systems (touch screen, audio detection, motion detection, etc.). If there will be a single model of device, these technologies may not be updatable regarding future developments, etc.

“Education itself cannot be commodified. But something is certainly being commodified, bought and sold in the expanded educational markets. In the field of human services, as neoliberalism has shown in other areas, to create a market you have to restrict the service in some way. In this case you have to ration education What is sold, then, is a privilege—something that other people cannot get, that is no longer a privilege” (Connell, 2013, p. 3).

The Level II, techno-politics brokering; the Government is inconsistent and inaccurate. Technology will not solve many educational issues; actually it leads & opens many other techno-politics issues, e.g. Turkey will be more locked-in to international giant corporations (Microsoft & Google); unfortunately and evidently, it is not the Government’s concern. Importantly, it is not possible for educational components and dimensions to follow technological changes (conventional antagonisms between ‘inertia’ & ‘changes’). If it does, for the same objectives of technological changes, at the same momentum regardless of time, space and place, it means that you establish a perfect education system for many others (still not for me). That perfect system would be for a driver of society and technology, not a flawed

mirror of society and technology. Thus, the Government's efforts in the Fatih project do not fit with their neo-liberal capitalist logic within the global monetary system (realities). Nevertheless, the concept of locked-in is crucial because,

"If you want to defeat your enemy, bring up his children" Oriental Wisdom

The Level III, philosophical thoughts; the Fatih project cannot be 'acceptable' and will be the 'spoilt failure' (ecologically, sociologically, psychologically, etc.). There are too many uncertainties in terms of techno-politics. I believe technology is a 'new' form of 'Don Juan(s)' which will resuscitate another era for 'Modern' Absurd Men, that are techno-socially struggling, and their tendency is incapably and awkwardly (inability) looking for inherent values (happiness, humanity, morality, etc.) and meaning in life (liberating mind), as

"My field," said Goethe, "is time." That is indeed the absurd speech. What, in fact, is the Absurd Man? He who, without negating it, does nothing for the eternal. Not that nostalgia is foreign to him. But he prefers his courage and his reasoning. The first teaches him to live without appeal and to get along with what he has; the second informs him of his limits. Assured of his temporally limited freedom, of his revolt devoid of future, and of his mortal consciousness, he lives out his adventure within the span of his lifetime." Camus (1955, p.43).

In this thesis, my early investigation of the Fatih project, with the benefit of my naivety and doubt of a layperson (not yet having studied this in depth) observed that the project was initially being deployed contrary to the spirit of its own objectives. I argued that the project is poorly designed, ponderous and embarrassingly (overtly) ill-considered / (covertly) manipulatively misdirective, and so sentimental for 'the best and the brightest policy making club' (think tank) in Turkey, even without consideration of robust evidence and logical clarity.

The comical absurdity of the government's ongoing approach to developing / deploying the project is that they (and their representative 'think tank') did not 'think' to consider best practice and the latest academic thinking. Worse still, their progress demonstrably moves further away from best practice as the project develops. I believe, the Government's posture has become persistently more 'optimistic', more

‘superficial’, and more ‘disingenuous’, and with a greater desire for public perception and a lesser desire for globally recognised techno-political logic, but for the purpose of expanding the overt & covert ‘agenda’ (privatisation & corruption). This is being driven without a real consideration for interpretation and justification of technological reality in societies, the Government’s discourse is rhapsodically both ‘saccharine’ and ‘arrogant’; so, is the Fatih project ultimately negligible? No.

With the above point in mind, why is Turkey principally an excellent case-study for researching ICT4ED politic? Turkey’s centric thinking to ICT4ED politic and the high future expectation contradiction between its desires (create a society of Stephen Hawking’s) and its recognitions (continuous ICT4ED failures) enable us to confirm where the problems are, especially after introducing the Fatih project. Nevertheless, Turkey is not the only divided nation within the global network in terms of failing to successfully approach ICT4ED projects. The concept is mainly global and most nations are getting worse at techno-politics (as it increases in sophistication) due to global manipulations by giant corporations (controlled & locked-in). So, the concept looks like an iceberg argument. The surface shows its face, but the complexity is below, as Omar Khayyam argued one millennium ago,

"This world a hollow pageant you should deem; all wise men know things are not what they seem; be of good cheer, and drink, and so shake off; this vain illusion of a baseless dream" (translated by Edward FitzGerald, 1998, p.297)

All of these arguments have raised the concept of ‘contexts of context’ (Brenner, et al., 2010), which refers to ‘the discursive and institutional opportunity structures’ that frame the possibilities for the governance of educations and states at national and sub-national levels (Amos, et al., 2013). That is how global level actors & factors influence and shape national governance at national and local levels, unequally and in different directions, for the purpose of being a competitive nation in a global Knowledge-Based Economy. I believe, the Fatih project is a great example for Brenner et al., arguments,

“the evolving macrospatial frameworks and interspatial circulatory systems in which local regulatory projects unfold. Without consideration of this meta-

context, which has been continually reshaped through several decades of market-driven reform projects at the global, supranational, national *and* local scales, it is impossible adequately to understand (a) the inter-jurisdictional family resemblances, interdependencies and interconnections among contextually specific patterns of neoliberalization, as well as (b) their substantive forms and evolutionary trajectories *within* their respective contexts of emergence.” (Brenner et al., 2010, p.202)

The perception of Brenner leads us to reason why key actors of *global, supranational, national and local scales* have allowed themselves to be powerless in (b) emerging evolutionary trajectories, if the current respective trajectory is (a) neoliberalization. Perhaps in the future we will use another word to describe the future emerging phenomena; in relation to that which is the nature and scope of current corporatocracical techno-politics.

CORPORATOCRACICAL TECHNO-POLITICS

“I think it's time to be more honest ... about what the European Union can do and about what it cannot do. And what is the matter of responsibility of nation states to do, and indeed maybe of local firms and local individuals. The European Union can't take responsibility for solving all the problems in people's lives. People have to take their own responsibility. Governments at the national level have to take their own responsibility, but the European Union must take its responsibility and we need to explain that there are different levels of responsibility and the EU is not either to blame for or entitled to the credit for everything that happens” John Bruton (2005).

Brutton argued how individual nations and even the European Union have become so weak and helpless, whilst global giants have just begun to seek more collaboration, e.g. Apple and Samsung, Microsoft and Sony, etc. have just agreed to collaborate for meeting and addressing the future challenges (winning consents) though ineffective global/national LAWS (Stateless-Corporatocracy) that cooperation of productions is the heart of capitalism for the corporations and not for the public.

For techno-politics, software the crucial layer in techno-politics as knowledge in trust and know-who. Although, it is still controversial to perceive knowledge as a commodity, knowledge is intrinsically perishable. So, and importantly, if end-users know how to know knowledge, why do be end-users (consumers) need to be aware of the ‘know-who’ concept? The commercial basis of PCSS families is driven by

self-motivate and self-interest (profit & survival), operating within an imperfect market. In ICT, it is so difficult to separate buyers and sellers, because any consumer of ICT might also produce their product, (software is a great example). North pointed out that this is a kind of inertia as

“... in property rights that do not encourage economic growth, and actors may have no incentive to create more productive rules. This inertia may be the result of the high transaction costs associated with political change, or a lack of credible commitment that new institutions will be more efficient” (1990, p.52).

Public sectors have similar digitalised requirements in order to service their constituents. Public sectors profess to have saved billions through digital delivery of services. It is also evident that the uses of PCSS options in the public services have resulted in billion pound losses that could have been reduced through use of flexible Free Open Source Software (FOSS) options. I believe both PCSS development models and public sectors have underachieved as a result of this imperfect global market and its unwillingness to challenge it. What is evident in ICT forums is that knowledge share will disproportionately advance generic FOSS development far beyond that of PCSS commercially sensitive projects. Globally, public sectors cannot determine the final expenditure of ICT (this is not for Turkey and also for the UK, more detail, challenges and issues can be seen from the Back office operations and IT in Operational Efficiency Programme: 2009 Final Report in the UK by Read et al.). The final report from five different authors provided detailed information on how and why we should act in the modern world, providing all recommendations and allocating all responsibility to relative institutions. However, what is interesting is that these reports (and so the relative literature) do now define the values of techno-politics (FOSS and PCSS), and so techno-politics for global, nations or individuals.

In relation to Science, Technology and Society (STS), it is argued that it is difficult and (mostly) impossible to separate actors and networks for techno-politics, e.g. Microsoft is an actor(s) (e.g. licence holder, security boot, etc.) and a network(s) (e.g. lobbying activity, policy recommender, etc.) of techno-politics. Alongside

these challenges, the powers of non-human and human actors are not clear (see, techno-politics chapters).

The general approach to technology and society (corporatocracical techno-politics), according to Bijker (1995), is that *social process* emphasis *relevant social groups* and *interpretive flexibility*. *Relevant social groups* recognise a particular issue, and act as social actors that shape further attentions in the technological development, such as software decisions. *Interpretive flexibility* is the socio-technical concept in which the meaning and existence of technology is shaped through the dynamic relationship between various technical and social factors and its social practices. *Technological Frame* includes the elements that have an impact on relevant social groups, such as purposes, problems, solutions, testing solutions and criteria etc. E.g. relevant social groups use their powers to delimitate the interpretive flexibility of particular software and claim that it is the best, regarding to their particular interests. In *Power and Stabilisation*, particularly software has become dominant within relevant social groups; in order to convince the other social groups about its superiority in terms of its outcomes. So, the question has become “how the politically determined rules of the game affect economic behaviour and performance” (Kaufman, 2007, p.16), in which the argument of ‘artificial selection’ and ‘natural selection’ has emerged for techno-politics. When existing rules are not appropriate in the market, actors might act to switch the rules through courts and/or legislation (Competition Law, DRM, etc.). Nevertheless, most interactions of the game do not naturally occur in the market: they are mainly and artificially planned through imperfect markets. In this sense, I believe the Government should define the public ‘value(s)’ in any mobility between private and public sector services, through networked governance. Otherwise de-facto (giant corporations) ‘manipulates’ & ‘controls’ techno-politics, and claims that it is the only option for us through increasingly numerous techno-politics brokers. I believe the juxtaposition of manipulate and control has become the concept of ‘manipulativeness’, which is an acting (as a verb) in the collection of ‘unethicalness’: ‘influence’, ‘shrewdness’, ‘deviousness’, ‘indirect means’, ‘artfulness’, ‘the aim is to benefit the manipulator’, ‘subtlety’, ‘inhibition of rational deliberation’, ‘falsification or omission of

information’, ‘play on non-rational impulses’, ‘deceptiveness’, ‘ulterior motives’, ‘getting someone to do something differently from what he is already doing’, and ‘unethicalness’ as well as “inhibition of action, belief, emotion, etc. that the "manipulatee" finds natural or appropriate (or is otherwise inclined to engage in), pressure/making it awkward for the manipulatee to say no” (Ackerman, 1995, p.337-339). Therefore, I shall then highlight that there is no clear explanation for the questions of what is ‘power’, ‘structure’ and ‘hegemony’ in terms of international relationship and technology in the introduction! (Baylis and Smith, 2005).

If the concept is, racing against Corporatocracy (PCSS) and their manipulativeness powers to be the first renter seeking, not the owner; there is more ‘beyond’ technopolitics! *Philosophical Argument of ‘Necessity’-Fantasy of Technology- in particular, its form of Don Juan*, which will be my short time interest. My interest will be all about (in English for ‘Yearning Yearning Baby’) ‘Ocu Ocu Necessity’, - (in Turkish) ‘Buuji Buuji Gereklik’; viz,

“Of course I have a store of ideas in answer to all this confusion. As yet, none of them is ripe. Goethe says, where a decision must be made, many things must come together. But is it not vicious never to be able to grasp the present moment, and always to be living in the future? And yet, who does not gladly turn his heart toward the future, like a flower turning its chalice toward the sun? But just you be diligent in your study of Gaspari’s geography, and do not neglect your lute. Who knows but that sooner or later we might have need of it. Goodnight, it is late. Regards to your dear hostess and my friends. H.K. “ Wilhelmine von Zenge, (1799)

BEYOND TECHNO-POLITICS (BRIEFLY)

“Society does not pose for itself questions, the conditions for whose resolution do not already exist.” (Karl Marx, cited in Perlmutter, 1988, p.3)

I believe the main problem of techno-politics is highlighted by Karl Marx, nearly one and half centuries ago! So, many problems we have been facing, theoretically, are the same. Nevertheless, what is not the same is the social-economic structure. Unarguably, we are currently in a *Knowledge-Based Economy* which has (negative & positive) impact on many individual nations, including very developed nations;

such as the USA, the UK, German, Japan, etc. For instance, there are so many articles about the USA's economy and its unemployment rate (see, 'the unemployment rate is less relevant than ever', by Shierholz, 2013). These articles are questioning the reasoning of the US's economy's increase whilst the unemployed rated decreased. One of possible reasoning is that robots have taken their jobs. Within this scenario, arguably and positively, I believe we will be, in the short term, in a *Creative-Based Economy* (creative citizens with creative industries), and, in the long term, in a *Resources & Creative-Based Economy*. Resource is intended for responsible, ethical and critical citizens towards nature and nurture, to establish global non-unsane citizens with non-unsane industries (see more arguments from Jacque Fresco). And creative is intended from Gramsci's point of view,

"understood in the "relative" sense, as thought which modifies the way of feeling of the many and consequently reality itself, which cannot be thought without this many. Creative also in the sense that it teaches that reality does not exist on its own, in and for itself, but only in an historical relationship with the men who modify it, etc." (Gramsci, 1971, p.660)

In this regard, the points highlighted by Marx and Gramsci are not necessarily in contradiction. I personally believe Marx highlighted social-inertia and Gramsci highlighted social-evaluation. 'Old' does not disappear in a day, but new generation will not know the old as long as they will not be told the old. So, what is the future for us? Because *"this century poses new security challenges that affect us all, everywhere in the world ... Non-proliferation is a key challenge for us all"* by Catherine Ashton (2013, p.1). In this sense, Jan Eliasson, who is the Deputy Secretary-General, United Nations, stated in the World Economic Forum in the Global Agenda 2012 Conference in Dubai⁷⁹, that

"If international corporations are become the problem we are in a dark age, that is why we are involving international solutions ... A good international solutions must be seen as national interests" (the time, 20:00), *"Global and local is the same, global is actually somebody else(s) local"* (the time, 37:00).

Perhaps, Eliasson highlighted different viewpoints, but gives a key clue for the 'Globalness' argument in the Figure 2 in the introduction. On that note, it is

⁷⁹Dubai 2012 - Global Governance Outlook (English), available from <http://www.youtube.com/watch?v=PYWkxr78S5s>,

necessary put a few poignant global points. I believe, in the corporatocracical techno-politics, philosophical thoughts (e.g. Neo-Luddite) are powerless (Yet!). For instance, the acceleration of technological change is a new enemy of social-cultural existentialism because starvation (capitalist exploitation) is coming from surfeiting in regard to technology. Therefore, the current concept is only as ‘technology gives it and technology takes it away!’ Yet! So, is it possible to cut one technology interaction in one particular circumstance to another circumstances? All technology (neo-chemistry, neo-biology, etc.) are copied and changed holistically! In this sense, I believe the corporatocracical techno-politics is the global problem, which is not in local & national level, is actually in practically global, for the purpose of controlling US! Gordan Brown similarly stated in the same conference that

“Global problems require global solutions” (the time, 54:11)

We are divided nations, and ‘*global and local is the same, global is actually somebody else(s) local*’, I believe if we remain divided nations, Corporatocracy will survive more strongly through corruption marriage(s) between giant corporations and governments. I also believe these issues continue deliberately, through covert lobbying, abusing the failings of an imperfect market, only likely to become more clandestine and sophisticated in the (near) future, due to the (undefined) four knowledge concepts.

“I am reminded of the man walking alone in the desert – this person is entirely sovereign in the decisions he takes – and entirely powerless” (Stephens, 2013, p.3).

Let me give some examples. I believe producing physical documents will be illegal for all nations, indeed the first is for developed nations and then developing nations. The given reason will be environmental concerns (saving forests), but the actual covert reason will be Corporatocracy. Selling their old, for ‘new’ products! There have been countless examples throughout history; such as, ‘100\$ laptop projects’, ‘One laptop per child project’, etc., for ‘No Child Left Behind Act’, whilst a million children are already left behind. For instance and more generally, in the UK, if you

have an old car, you have to pay more tax (*air pollution control*), in order to sell new cars. Producing more and more (bigger, stronger, etc.,) cars, not (environmental friendly) cars, and even if we do not need bigger, stronger etc., cars; we need smaller, safer, cleaner, etc., cars (or more correctly, more motorbikes). Looking at more specific example, in my home town, in Izmir, the city council forced citizens to paint external walls of their houses in a particular colour; and the reason was *aesthetics* but I have no knowledge of whether or not the city council had agreements (corruption) with private decorating and renovation corporations.

“THE conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country. We are governed, our minds are molded, our tastes formed, our ideas suggested, largely by men we have never heard of. This is a logical result of the way in which our democratic society is organized.” (Bernays, 1928, p.9)

In this regard, I do not see any differences in *Local and International Corporatocracy(ies)*, because globalisation is actually somebody else(s) local, so it is all about Corporatocracy for more and more global profits and controls. After all, what is clear is that, in the current system, there is no a national sovereignty.

Figure 5: The Current Hegemonic (Corrupted) Discourse of Global Technological Acceleration



As Noam Chamsky argues that in the appearance, giant corporations represent ‘*National*’ interests, not ‘*Special*’ interests, but actually they seek their own ‘*Special*’ interests, not ‘*National*’ interests based on the terms of ‘*Democracy*’! Nevertheless, that is the system of *Meritocracy* and *Plutocracy*, for *Corporatocracy*!

“Personally I'm in favor of democracy, which means that the central institutions in the society have to be under popular control. Now, under capitalism we can't have democracy by definition. Capitalism is a system in which the central institutions of society are in principle under autocratic control. Thus, a corporation or an industry is, if we were to think of it in political terms, fascist; that is, it has tight control at the top and strict obedience has to be established at every level -- there's a little bargaining, a little give and take, but the line of authority is perfectly straightforward. Just as I'm opposed to political fascism, I'm opposed to economic fascism. I think that until major institutions of society are under the popular control of participants and communities, it's pointless to talk about democracy.”
Chomsky (1973)

“Technology has been developed by public and then lend it to the Giant (private power). What they want to do first corporate transaction (they have a close system with private tyrannies) and the rest is all about marketing service (turn to people a passive consumer, you and a tool). So, you don’t need to worry about anything as threat of democracy. That is the system

works "...and then you won't have to worry about the threat of democracy"
Chomsky (1997)⁸⁰

At the end of the day, realistically, everything is dependent on global productions and consuming. Nevertheless, is this accurate? We shall now investigate how to define 'national' and 'global' interests for global productions; or more importantly to define 'corporation' and 'individual' interests based on global productions and stakeholders, in order to see our alternative (globalness) future(s). In a general sense, the corporatocracical techno-politics is for *Cybernetician's Hell*, as

"The first essentially aimed to turn living beings into machines, to master, program, and determine mankind and life, society and its "future." This gave fuel for a return of eugenics as bionic fantasy. It seeks, scientifically, the end of History; initially here we are dealing with the terrain of control. The second aims to imitate the living with machines, first of all as individuals, which has now led to the development of robots and artificial intelligence; then as collectives — and this has given rise to the new intense circulation of information and the setting up of "networks." (Tiqqun, 2010, p.12)

However, is it possible to define these notions without understanding what is human? More specifically, what is human necessity (our 'wants', 'needs', 'hopes', 'wishes', 'desires' etc.)? Or what is technological necessity? (Emphasised for human-technology interactions; humans are the objects of technology in her/his history) Or should it be what technology necessity is? (Emphasised for technology itself, so should I use herself / himself instead of itself? Humans are the subjects of technology in the history). For example, everyone knows a techno-compulsive lady who has ten computers makes herself functional, or a dandy gentleman who has hundred pairs of shoes believes himself happy, or a greedy system (e.g. Google, NASA, etc.) which has billions of human & non-human related information who makes himself/herself a controller!

"Prosperity, the social order, and politics no longer depended on the catholic virtues of sacrifice but on the pursuit by each individual of his own interests: it declared the "private vices" to be guarantees of the "common good." Mandeville, the "Devil- Man" as PEOPLE called him at the time, thus founded the liberal hypothesis, as opposed to the religious spirit of his times, a hypothesis which would later have a great influence on Adam Smith." (ibid, p.5)

⁸⁰ Chomsky, N. 1997. Internet and Bill Gates, available from <http://www.youtube.com/watch?v=yP1e7u0C5K8>

In this sense, I am not concerned in everything ('wants', 'needs', 'hopes', 'wishes', 'desires' etc.), except 'necessity', because all of them highlights their own necessity! 'Necessity, who is the mother of invention' by Plato and/or "the essence of technology is in a lofty sense ambiguous. Such ambiguity points to the mystery of all revealing, i.e., of truth" by Heidegger (1977, p. 17). E.g. technological acceleration is 'necessity' due to its own requirements and its own opportunities as in the Figure 5; even globally it will become a 'necessity'. After all, if we manage to become a global nation (globalness) it will remain the same. So, what is 'necessity'? Is 'necessity' to define 'interest(s)'. In this study, I cannot use the dictionary definition of 'necessity', due to the concept of context matter. What is necessity in law or economy or philosophy, etc.? In this regard, Diogenes Laertius believed *personal happiness is satisfied by meeting one's natural needs and that what is natural cannot be shameful or indecent*. He lived with his own cup inside of his tub, but when he once saw a child drinking from his hands, Diogenes threw away his cup and remarked, *a child has beaten me in plainness of living.*" As, Ivan Illich stated that *"the less you have the more free you are."* I personally respect these compendiums, but necessity for techno-politics cannot be defined from this philosophical school, in the current era (see the section of Cyber-Luddite). In this sense, I believe, necessity is that,

"The concept of "necessity" in history is closely connected to that of "regularity" and "rationality". "Necessity" in the "speculative-abstract" and in the "historical-concrete" sense: necessity exists when there exists an efficient and active premise, consciousness of which in people's minds has become operative, proposing concrete goals to the collective consciousness and constituting a complex of convictions and beliefs which acts powerfully in the form of "popular beliefs". In the premise must be contained, already developed or in the process of development, the necessary and sufficient material conditions for the realisation of the impulse of collective will; but it is also clear that one cannot separate from this "material" premise, which can be quantified, a certain level of culture, by which we mean a complex of intellectual acts and, as a product and consequence of these, a certain complex of overriding passions and feelings, overriding in the sense that they have the power to lead men on to action "at any price"' (Gramsci, 1971, p.759).

It is clear that ‘necessity’ of techno-politics is for *productions & consumerism* (materialism) as long as it is ‘*efficient and active premise*’ which is manipulated from ‘*popular beliefs*’ shaped and forced (dictated) by the hegemonic power of Corporatocracy (PCSS) ‘*at any price*’. So, ‘*at any price*’ has become the ‘interest(s)’ of global, nations, corporations or individuals. Nevertheless, as it is argued in this thesis, corporatocracical (PCSS) techno-politics is not ‘*efficient and active premise*’ for the public, actually it is for more and more bloodless profits and controls through ‘*domination*’ & ‘*command*’ from the giants! Therefore, I was misled in the main arguments in this thesis when I stated that there is no ‘broken’ and/or ‘forgotten’ promise for techno-politics; it is actually a *confined* promise for techno-politics by the large-scale singular (no plural) hegemony (PCSS & Governments through ineffective LAWS) for us and for new born babies! “Let me issue and control a nation’s money and I care not who writes the laws” by Mayer Amschel Rothschild who was a popular banker. In this sense, ‘give someone (giants) control of global technology, and no one cares that it controls all of us’. Thus, it is all dependent on our ‘perceptions’ (interpretations versus facts) through our ‘knowledge’, not really our ‘believes’. Consequently, in the end of the Nietzsche’s decade, we have to ask ourselves what is the ‘price’ and so the ‘interest’ in this time? Because necessity is not a ‘real’ word; so, necessity of knowledge (technology) in a particular society, within a particular angular momentum and power is not relevant whatsoever, but what matter is that necessity has no implication in its own context, such as time, space and place, because necessity is a ‘*speculative-abstract*’ and in the ‘*historical-concrete sense*’. The real matter has become that technological acceleration is our new enemy through the word of ‘*necessity*’. In this sense, according to Karl Marx, every system human creates has to collapse through its systemic failures and systemic problems; therefore, we have to find the alternative method(s) to change it and we should not wait ten years to attempt at changing from the current corporatocracical techno-politics, which is not currently the best option, and is globally unsustainable and anachronistic in the long term.

“The philosophers have only interpreted the world, in various ways: the point, however, is to change it.” (Marx, cited in Engels, 1886, p.XI)

Realistically, within a short term vision, I believe new technological developments (democratization and extensive distribution of expertise) help us in improving our lives as long as we do not let ourselves be dominated by them. Admittedly, some technology should take the responsibility of human beings, such as driving a car, train, aeroplane etc. On the other hand, some technologies are so risky, such as ‘clouding’ (we should keep our information in our hard drives in our houses), or some technologies are indisputably abusing human rights, and ultimately do not work, such as, surveillance, filtering etc. How to establish a system, which makes a human judgment, as good materials and bad materials? In order to filter or surveillance, the responsible agencies (governments, companies, etc.) have to investigate all the internet pages or logically establish a system of software, which investigates the contents of the internet through their own blacklists. In this sense, more generally, the questions are, ‘does emerging technology (PCSS) await us to plan all of our environmental, social-cultural humanistic morality (values, ethic, etc.) to keep up with them, in order to develop them safely?’ ‘How much certainty do we have?’ ‘How much can we trust the knowledge provider (know-who)?’ ‘Is there any person that fully comprehends aspects of artificial intelligence within human interaction?’ ‘Are these technological changes occurring without considering whether or not we are ready for them?’ Unanswered questions may be multiplied for PCSS and de-facto techno-politics. Thus, instead of just believing that technology (PCSS) could resolve all of our issues, we need to be more cautious & sensitive, and we need to force the Governments to use FOSS (the current ‘necessity’).

“Open cultures become the necessary condition for the systems as a whole, for the design of open progressive technological improvements and their political, epistemic and ontological foundations” (Peters, 2013, p.3).

SUMMARY

The current techno-politics of PCSS provides its services whilst they are diluting our human rights; viz, our privacy. Significant current commercial gain by few corporations is far less of a concern to me than protecting individual freedoms and avoiding commercial dependencies in an unclear future. The ‘few’ making profit

from Technology is not so much of a concern as the on-going control that this gives the ‘few’ globally. Retaining independence with our individual ‘personal life’ (free) is crucial. So, openness with FOSS is not for stopping privatisations, innovations, developments, etc., but it takes control from giant corporations and gives it to ‘US’ and (arguably) increase public power! The relative argument is not a new phenomenon in academia, e.g. Karl R. Popper argued an ‘*Open Society*’ (empirical falsificationism) opposite to a ‘*Closed Society*’ (state totalitarianism).

“it is important to tackle it early, for it constitutes a danger to democracy. *We must plan for freedom, and not only for security, if for no other reason than only freedom can make security more secure*” Popper (1962, p.390).

In my post-doctoral study, I will argue that I was misled in the main arguments in this thesis when I stated that there is no ‘*broken*’ and/or ‘*forgotten*’ promise for techno-politics in the previous chapter; it is actually a ‘*confined*’ promise for techno-politics by the large-scale singular (no plural) form of hegemony (PCSS & Governments through ineffective LAWS) for us and for new born babies! To elaborate, by going back to the introductory questions, *movements of techno-politics* have philosophically become a ‘*phenomenon*’ (a fact and/or an observable circumstance), as the opposite of ‘*naumenon*’ (incapable of being known and/or inobservable circumstance), in which there is no *democratic-decision making process*, there are indeed *Plutocracy* and *Meritocracy* for *Corporatocracy*,

“*Either you repeat the same conventional doctrines everybody is saying, or else you say something true, and it will sound like it's from Neptune.*” Chomsky (2001, p.50)

The corporatocracical techno-politics is as similar as “for cybernetics it is no longer a question of predicting the future, but of reproducing the present. It is no longer a question of static order, but of a dynamic self-organization” (Tiqqun, 2010, p.18). In this sense, our current goals have to do with preparing to the future and we have to understand the present in the context of changing. Therefore, I believe, instead of looking at future(s), we just need to stop and reconsider the corporatocracical techno-politics, because when someone states that there is something inconsistent in

this system, they have systematically become rebels, cyber activists, criminals, etc. Indeed, the arguments are dependent on the ‘contents of contents’ (the relative matters). So, I believe “*democracy must be born anew in every generation, and education is its midwife*” from John Dewey (1980, p.139), but do (the future) dinosaurs (Microsoft, Apple, etc.) leave without making any damages? Because the system does not (will not) work for them!

“If A, who does not have something but wants it, compares himself to B, who does have it, then A is relatively deprived with reference to B” (Runciman, 1966, p.10).

In my concluding remark, Runciman researched *social injustice* through focusing on *relative deprivation* which is grouped as ‘*social, or class*’, and ‘*economic*’ and ‘*political*’. So why do men choose to be a ‘rebel’. According to Gurr (1970), when men do not ‘*satisfy*’ with their own environments, it is ‘*necessity*’ for human to have deprived, to seek more, etc. In this sense, why is there still piracy in the ocean in 2013, in particular Caribbean Islands? Perhaps because there is no national / global authority(ies). I believe they are brave pirates. They are not a slave of others, but they are criminal and a slave of themselves; though not inclusive of us (Corporatocracy): no controller, no saver, no believer, no mercy, no future proof, and so, no ontological objection in the concept of them (globally wished invisibles). In the relative sense, why most technological experts predict (feel) that hackers will move into Africa within two decades (future pirates); perhaps in a lesser time period, because there will be no, or weak, ‘controllers’ in Africa; thanks for a lack of knowledge. Consequently, for techno-politics, there are two practical choices: ‘be controlled by PCSS’ or ‘be liberated by FOSS’. Even within these choices, there will always be an evolutionary renaissance movement(s) to reviving a third choice, because there will always be a brave minority group(s). ‘*There are not any absolute truths; {there/ truths or they’re true} there are true for all the time. ... but there are truths to be discovered in relations to a specific problem in the moment*’ by Frank Furedi⁸¹, Therefore,

⁸¹ What is humanism? Available from <http://www.youtube.com/watch?v=Dk7QN7I0HTE>

The mentality of FOSS developers and end-users could be considered as, if all of us use Linux, I will use Windows! Or more correctly (I was misled before, in the previous chapter) I will make another based on my (our) own creativity(ies)!



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APPENDIX

In the scope of Fatih project, regarding to Pardus OS there was important information declared by Dr. Ahmet Kaptan who is the head of TUBITAK-ULAKBIM. Some part of the declaration was exactly as;

Anyone Can Use Pardus, National OS

Pardus defined as ‘Turkey national OS’ has been carried out by TUBITAK. Dr. Ahmet Kaplan stated that by bringing a new perspective, we want to make Pardus as an OS which can be easily and willingly used by all of our citizens. So, new workspaces will be created in the ICT sector.

Ahmet Kaptan stated that it is planned to reveal Pardus server, intelligent system and mobile versions at a later time,

Pardus is used into 620 thousand smart boards

Kaptan stated that there are studies for the use of Pardus OS in distributed smart boards in the scope of the Fatih project. Kaptan informed that our first aim is smart boards used in the FATİH project. We work simultaneously with Vestel R&D team and so Pardus passed all the tests. In this sense, numerous tests were completed with around 70 major groups. In summary, these are visual/auditory, taction/response, performance, functionality tests ... In the Economic Coordination Committee held in the last month, hereinafter it is concluded to use Pardus in smart boards. Currently Pardus is in 85 thousand smart boards. Hereinafter, Pardus is going to be used in 620 thousands smart boards. In terms of remote management and updating of smart boards, our studies are continuing.

Kaptan informed that it will be given concrete supports to meet the needs of SME. High cost software for SME will be produced within the Pardus project. Kaptan continued that currently, Pardus is used into the Ministry of National Defence (recruiting station), Istanbul Water and Sewerage Administration (ISKI), Gendarmerie General Command and some Municipal Corporations. In the ongoing process, we came to a different stage of contracts with public institutions. Social Security Institution, Ministry of Justice

and Ministry of Finance want to use Pardus. These institutions use web-based application and pay license fees. Pardus is free, can be used in old computers, in this sense it is more advantageous compared to other OS. Meetings with these institutions are continuing.

This information was released by TUBITAK website, however strangely the content has been changed after few weeks on 20th June 2012. The new content is quite similar the old one but some parts are deleted and new parts are added. In the new content, there is no information about IW and Pardus and just new aims of Pardus project underlined as below⁸²;

Kaptan stated that (we) TUBITAK think to produce different Pardus versions. Not only is it planned to produce institutional and individual versions but also server and mobile versions at a later time. In this year, we will unveil a stable institutional version of Pardus which is emphasized on remote control management and integration tools, completion of Turkish localizations, to be ready TUBITAK-approved training documents and provided the long-term support. We will consider important stability, security, performance, richness of applications and visual subjects. For this purpose, we began the work of well-attended Pardus theme contest. The ongoing process, we have come to a stage of contracts with different public institutions. Thank you for these institutions to be continued their confidence and faith in us.

A New Perspective

Kaptan stated that in parallel current studies, based on both the understanding of new Pardus structure and suggestions and contribution of the Ministry of Development (*this is also strange because the recommendations underlined Pardus as to be Windows*) , Pardus will be become more spread over the base. We want to develop Pardus with more participants through partnership with private sector to integrate the needs of entire mass of users in both public and private sectors and provide necessary services and supports as possible as in the practice. We will have close relationship with universities and private sector for direct professional area. Besides, we will provide certification programs

⁸² Özgürlükçin. (2012). Pardus'u Herkes Kullanabilecek, retrieved 31/12/2013 from <http://www.tubitak.gov.tr/sid/0/cid/28402/index.htm?sessionId=42731C720A7DE2C1734EDF8203992F9B>

with our stakeholders who possess distinct knowledge. Our goal in the Pardus project is to present an operating system which can be used easily and willingly by public and private sectors as well as all of our citizens, and so to create workspaces in ICT sector.

Kaptan informed that in order to increase Turkish language support within the project, TUBITAK wants collaborative works with universities. All the studies are not going to be completed by TUBITAK. We want establish an ecosystem with private companies. Indeed, in this regard, companies need to increase their competences. In terms of expending Pardus, the real work can be done with workforce of companies. Our goal is to create the ecosystem as well as to continue appropriately improve the ecosystem with various certification programs. In the scope of the Fatih Project, invitation of various developing projects supported by TUBITAK will be increased. It will be soon, we will make various calls for some studies about embedded systems and open source software projects. Within these calls, we are hoping to some supports to Pardus project from ICT sectors.

Note: These parliamentary documents are translated; even in the exact structure (capital, bold, etc.) and orders are the same, unrelated parts were not translated. (I only underlined some parts which are not in the formal documents).

MP Professor Dr. Alim Isik (08 th March 2012, No: 7/5313, 27 th March 2012, 7/5228) asked twice	
These questions are asked to totally 29 different ministries and institutions. There are some important mistakes and issues made in the formal parliament questions. The main issue is the focus of Pardus and national office applications, instead of Linux and FOSS as a whole concept. I think, in here national office software is meant as Turkish version of Open Office and/or LibreOffice (There is only one Ministry underlined this misconception). Therefore, the majority of the ministries responded based on Pardus and national office applications as a case study, and mostly underlined Pardus issues (as they see they are issues) instead of evaluating themselves based upon Linux and FOSS. This might be a reason not to mention about real issues of Linux in Turkey, such as language issues in Linux or the level of localisation in Pardus, etc.	As is known that PARDUS operating system, which has been developed by ‘TUBITAK Centre of Research for Advanced Technologies of Informatics and Information Security’ (UEKAE) since 2003, has began to be used by state institutions and organizations, such as some universities, municipal corporations, provincial health directors etc. However, it has not reached sufficient level of area to be used. <u>Pardus is represented by Turkish researchers and developers, based on Linux</u>. It includes not only Operating System, but also office applications, internet tools, multimedia player and editor and plenty of other unique software. It is known that security and cost elements are initial motivations of purchased operating system for some state institutions and organisations. Pardus is open sources software; therefore, it does not permit any malicious software, called as spyware software. In terms of dissemination efforts of PARDUS operating system; 1. What is the total number of personal computers and servers in the Ministry itself as well as in any institutions and organisations related to or affiliated with the Ministry? 2. Which operating system and office applications are used in these computers? 3. What are PARDUS and <u>national (yerli)</u> office software to play a part in usage software? 4. If PARDUS and national office software are not used, what are the justifications? Is mentioned national software going to be migrated to use? 5. How to provide information security in computers used in institutions and organisations related to or affiliated with the ministries? In this process, are there any software and/or hardware used? 6. If used, how much have been paid for licence and, maintenance and repair fees of the products during the period of 2002 and 2012, by years? 7. What is the distribution of the total payments made with regard to companies? 8. What is the Ministry’s opinion about the use of operating system and office software in computers into institutions and organisations related to or affiliated with the ministry? 9. What is the total cost of ownership for computer software system in public institutions and organisations?

The MoNE (13 th June 2012, No: 7/5313)	
It is all document and mainly vague reply. The answers are not clear, so wide and no particular information about Linux and FOSS. Importantly, the Pardus policy is not mentioned. One reason of this might be that MoNE is not directly responsible of Pardus project nevertheless training activities in Ministries are related to MoNE and provided into schools related to MoNE. Pardus Fraud Debian is installed by the Vestel team not because of MoNE.	There are approximately 14,000 personal computers and 200 servers in the central organisation of the Ministry and provincial directorates for national education. There are Windows, Pardus, Linux, and Mac Operating Systems, and various office applications software used in these computers, <u>depending on the needs</u>. In the scope of the Fatih Project in Education, <u>Pardus has been installed into purchased Interactive Boards for 85,000</u> classrooms into 3,657 secondary education institutions. Policies have been identified through establishing Information Security Management System, which is specified with TS ISO IEC 27001 standards; procedure, directive and various forms have been generated and information security trainings have been provided for raising the awareness of stuff by the Head of Information Processing Group affiliated to the central organisation of the Ministry. Besides, in this context, 'Information and System Security Directive' has been prepared. In computers, there are anti-virus software used for protection against computer viruses and malicious software. Anti-virus software was purchased for 15,000 users in the central organisation of the Ministry and provincial directorates for national education; the software has been installed in the entire central organisation and 50% of provincial directorates for national education. There are still anti-virus software used for 10,000 users in district national education directorates, in the remaining part, 50%, installing process has been completed, and studies about this subject are continuing. Firewall is used for end-users in the central organization of the Ministry, to block network accesses from the internet to inward. URL Filtering is used for websites which have virus and malicious contents (unsafe and inappropriate sites). In order to block computers which are brought from outside etc., accessing to data terminals in the Ministry buildings, 802.lx setting is made and computer which is not made 802.lx setting cannot access to the Ministry network. Institutions in provincial directorates for national education related/relevance to the Ministry take DNS service from the system room in the Head of Information Processing Group in the Ministry; accessing to inside from outside (the Internet) is not allowed.

The Ministry of Environment and Urban Planning (17 th April 2012, No: 7/6252)	
Negative and unprofessional The strange thing is that “Pardus does not support” suggest that it is Pardus responsibility to support Microsoft Windows plartforms and structures. Some Ministries use Pardus not only in personal computers but also servers. In other words, they solved these technical incompatibility issues. Active Directory, E-mail and Virtualization are not Pardus issues. Open Office is so old concept for FOSS new trend is LibreOffice that is also shown that stuff in the ICT department is out of FOSS world.	1. There are 7,220 PC, 947 Laptops and 135 Server in the Ministry. For personal computers (PC) and laptops, Microsoft OSs (XP, Vista and Windows 7) are used; for servers, Windows 2003, 2003R2, 2008, 2009R2, and Linux OS and UNIX are used. For office application, Microsoft Office 2003, 2007 and 2010 are used. In the General Directorate of Land Registry and Cadastre associated with the Ministry, there are approximately 800 servers and 15,000 personal computers provided at various periods and various methods. In the General Directorate of Provincial Bank associated with the Ministry, there are 2,702 computers and laptops and 47 servers. 2. In the Ministry generally Microsoft products are used ... Besides, Open Office is also used. 3. In the Ministry, Pardus Operating System is not used. 4. <u>Pardus does not support most of technologies used in the Ministry, some of those are Active Directory, E-mail and Virtualization. Besides, the majority of end-users are familiar with Microsoft OSs that is the most important obstacle to use Pardus.</u> In addition, it is known that in terms of providing necessary supports and services for eliminating problems that may arise for the whole country, <u>domestic production companies with Pardus are underpowered and insufficient.</u> However, the Ministry follows applications about the use of Pardus system and hardware in the future, in institutions related to the Ministry. If the cost is appropriate, standards are provided, data compliance issues are addressed and used software is made to work with Pardus, it is planned to migrate to Pardus. 5. 6. 7. 8. If providing the technical supports needed for Pardus operating system and Open Office applications, developments will be possible to use them in the Ministry.

The Ministry of Culture and Tourism (20 th April 1012, No: 7/5288)	
Positive, realist but not specified anything	In the Ministry itself and in institutions related to the Ministry, there are approximately 15,256 PCs with Windows and Linux OSs. In terms of terminating the current structure and migrating to Pardus and national office applications, it is needed to identify criteria and plan about the result of pilot studies, appropriate ICT supports for stuff in the migration process, technical supports in the system, implementations of institutional software which are currently used etc. This kind of migration can be accomplishable in spreading a long time, therefore in this sense, our works continue.

The Ministry of Youth and Sports (23 rd May 2012, No:7/5246)	
Strange, Pardus is not a new project. It is not Pardus responsibility. Pardus is not useable operating system Although it can be seen as a realistic answer, 'Migration' is a process, is not trying Pardus just once. There is some news in the media, generally titled as "The Ministry of Youth and Sports (MYaS) has closed its doors for Pardus"⁸³. The news is released in September 2011. The MYaS was willing to change all its systems to a new single domain structure. This study has been given by tender to a private company. However, the private company asked to delete Pardus and installed Windows 7 to all institutions related to the Ministry in order to establish Microsoft technologies (totally 1600 computers). In this sense, actually the general directorate of youth and sports, Pardus was using.	1. In General Directorate of Higher Education Credit and Dormitory, Regional Directorates and Dormitory Directorates, there are 4,432 PCs used. Besides, in General Directorate and Regional Directorates there are 39 servers and an institutional server. In General Directorate of Youth and Sport, there are 844 PCs and 218 Laptops and 50 servers 2. For personal computers, Windows XP and 7 are used, for servers Windows 2003 and 2008 and Unix OS are used, for end-users, Microsoft Office 2003, 2007 and 2010. 3. <u>There is no Pardus and national office applications used in the Ministry.</u> 4. There are no Pardus applications in the institutional servers because <u>Pardus does not support software which is used in the Ministry (Oracle Forms & Report, Java etc.)</u>. For end-users, it is seen that institutional software (Java Applet Problems etc.) could not work with Pardus. Besides, in the Ministry, there are different brands/models personal computers and Pardus had <u>driver support issues</u> on these devices. In terms of developing applications (code) and implementing these applications, various issues were faced when Pardus was used. Therefore Pardus operating system is not used. Briefly, <u>Pardus is open source software and newly started to developed</u>, there would be some incompatibility issues with current application software. At this point, the Ministry itself and institutions related to the Ministry use Microsoft Operating System. Pardus <u>cannot provide; users' habits, application supports and the most important professional technical supports</u>. When Pardus operating system reaches a sufficient level of development, it can be thought <u>as a useable operating system</u>. The Ministry works with national software companies, except system security, operating system and application software. 5. 6. 7. 8. In central organisation of the Ministry and instructions related to the Ministry, <u>the operating system is Windows OSs</u>. Continuity of provided service without interruptions and solving quickly potential problems has a great importance. This is the main point in terms of application of supplying and using software and hardware (current and future) in the Ministry.

⁸³ Positive.net (2011). Spor genel mudurlugu pardusa kapilarini kapatti, retrieved 31/12/2013 from <http://pozitive.net/2011/09/13/ali-erkan-imrek-spor-genel-mudurlugu-pardusa-kapilarini-kapatti/>

The Ministry of European Union (05 th July 2012, No:7/5212)	
It is written that Open Office is developed by Sun Microsystems, but currently the Apache Software Foundation. It is expected that Pardus should be Windows How users perceived to be used computer and the Internet Sound of the Ministry of European Union looks like they are the representative of Microsoft	1. The number of computers (PCs and Laptops) is 540 since 2011 and the number of server is 20, are different types and features. 2. For computers, Windows XP (70) and Windows 7 (275); for servers, Windows Server 2003 (5), Windows 2008 (13), Linux (OSS, 1), FreeBSD (FSS, 1) and Microsoft Office 2007 and 2010 English and Turkish are used. 3. Turkish patches created Open Office developed by Sun Microsystems and Pardus developed by TUBITAK are not included into usage software. 4. In terms of Open Office and Pardus, the Ministry's remarks are listed below; 4.1. Supporting around 4000 applications is seen <u>as quite insufficient for KDE version such as Pardus. None-supporting for foreign languages (sounds looks like it cannot be done by the developers), lack of documentations, only KDE support and no official GNOME support are blocking and slowing the development of Pardus.</u> KDE is a rich desktop environment in terms of applications while GNOME is a rich desktop environment in terms of libraries. 4.2. The <u>absence of popular and updated software packets</u> is seen as a deficiency for end-users. 4.3. Retrospectively <u>data libraries have been established, and end-users and technical support stuff are familiarly with Microsoft Office.</u> Therefore the use of Open Office may cause workforce loss. In Turkey, Open Office institutional supports <u>are via forums and/or support packages against errors are required additional costs.</u> 4.4. Unfortunately, software and applications, which are developed by the Ministry or private sectors through supplying services methods, are <u>not compatible with Pardus, even Linux.</u> Therefore, additional support services are needed to be taken. Again, regarding to institution, <u>Pardus has only end-users versions and no server version</u> that leads to difficulties for server/end-users integration. 4.5. For home and office users, all producing companies provides applications, hardware and software supports with Microsoft Windows OSs. Users have access these supports without requiring any expertise, without additional time and effort, users can use them with minimal effort. Again nearly all end-users use one of Microsoft OSs in their homes, <u>In terms of initial acquisition costs, contrary to common misconception, turning to different operating systems most of the time would be against consumers.</u> All hardware first come out on the market, are provided as 'Windows Ready'. Later on, drivers (necessary for stable works) for other OSs are developed by experts, with opening hardware. If it is considered unwillingness due to the average age of personnel employed in the public workplace and the general tendency of public employees in computer literacy, stuff who use Windows at home, is need to be initially <u>persuaded</u> to use Pardus at work and begin with receiving a separated in-service trainings with being voluntary.

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	1.1. Regarding to support services, in the market, there is insufficient number of qualified people and companies specialized in Pardus. So, although, on the face of Operating System, it is free (as freedom) and open to use, taking supporting services from these insufficient number of companies in the market are <u>much more expensive than imported</u> Operating Systems. In this sense, in order to overcome insufficient number of specialists, it is necessary to prepare a specific action plan by public authorities to complete effective efforts. 1.2. Operating System and Office Applications licence agreements are being made annually by the Ministry; these agreements include free updates as well as important basic trainings. When training cost is taken into consideration, total cost of ownership (TCO) of purchased software is generally and relatively lower than other option. Comparing Hardware Cost and Operating System Licence Costs for each device, the institutional licensed is significantly lower than to the other in terms of unit costs. 1.3. Within emerging technologies, communication channels and business processes have been in digitalization. For this reason, nowadays personal computer used in institutions has become no longer a stand-alone system. The institutional ICT security, the institutional network applications, the institutional information sharing and communication platforms, the institutional source software etc., run compatible on the Operating System; and it is necessary to achieve integration among complex software, average more than ten software in an institution. As a consequence of the reasons described above, the difficulty is obvious that in such a large and important institutional networks, Pardus solutions will be required much more time and cost than current system and in the migration process the works required will be disrupted and interrupted that cannot be taken a risk. 1.4. In parallel with these reasons, in terms of Operating System choice in the Ministry itself and institutions related to/associated with the Ministry, the Ministry approve to use OS which supports application developments, comes with support services at any time for needed/source database, application software and hardware environments (not supported by/within forums as FOSS), is compatible with all kind of hardware and software components, has international supports and updates and is proven itself, instead of Pardus or Open Office which end-user support has ended and the continuity of institutional support is under a cloud of suspicion. Note: between 2005 and 2009, Open Source Debian was used for firewall.

The Ministry of Labour and Social Security (01 st June 20012, No:7/5221)	
	In central organisation of the Ministry, there are 24,000 personal computers and 33 servers. For personal computers, Windows 7 and XP, for servers, Windows 2008 server (20) and Linux server (13) are used. Pardus and national office applications are not used in official documents. Pardus and national applications are not available in the Ministry because end-users in the Ministry have been using the same operating system and office applications for a long time and they have not received necessary trainings to migrate to Linux and national office applications. Besides, migration to Linux could not be completed because there is no necessary technical staff for responding to Linux based failures. After establishing necessary technical infrastructure, Pardus migration plan will be prepared. With applications in the last two years, in order to train technical staff open source software such as Linux, Java etc., has been given an attention in terms of standards, security and cost. In the institutions related the Ministry, <u>In the Ministry of Social Security:</u> In central and provincial units, there are approximately 25 thousand client computers and 250 servers to manage these computers. In addition, there are 400 servers for applications, database and system administration. In central and provincial units, there are totally 24,654 computers (technically 8,217 of them are less than 1 GB) Many operating systems and software are used to meet needs of the institutions. Pardus and national office software are not used in the intuitions. As it is known that the Ministry is an institution which is sensitive for providing the hustle and bustle uninterrupted service to 74 million citizens. Therefore, the Ministry prefers to use hardware and software which are worldwide acceptable, previously known problems and solutions and are come from sources in a range of supports. Besides, trained staff in this area could act quickly to solve problems in the events of disaster due to the fact that software and hardware are used universally. Pardus is a national operating system which is used superior sides of Linux distributions as concept, architecture or code and meets basic desktop needs of computer users who has ICT literacy. Ultimately it is a Linux version.

The Ministry of Labour and Social Security (01 st June 20012, No:7/5221)	
	Pardus is a national operating system which is used superior sides of Linux distributions as concept, architecture or code and meets basic desktop needs of computer users who has ICT literacy. Ultimately it is a Linux version. <u>All around the world, the use of all Linux distributions in the client side is estimated as 1.1 percent while Linux distributions used widespread in the server side. Nevertheless, open source software is designated as outward strategy and studies are carried out in this direction.</u> Although this data, the Ministry and TUBITAK mutually made necessary studies for Pardus migration in 2009; have taken necessary step to be a pioneering for usage of national and open source operating system and have supported the project. The Service Provision Directorate Institutions in the Ministry took a decision of Pardus Operating System Migration, made action plan for the migration process on 13th February 2009. On the matter, the Ministry and TUBITAK-UEKAE made the migration plan, and made studies also for cost calculation. In order to ensure all the organization's migration, within the framework of the migration plan, a pilot study in the current infrastructure and subsequently making spread it as soon as possible are planned. In the project, there are investigating the status of Pardus and open source software usage in individual client computers, running technical tests, and creating the migration plan. Stakeholders and other stakeholders taken parts in the project were determined and roles of them are defined. In the scope of the project , there are four main work packets; 1. Analysis of current situation and needs 2. Legal, administrative and financial evaluation 3. Test and concept evidence 4. Migration plan Besides, although there is no obstacle to use portal applications on Pardus, technical improvement is required for harmonization problems. In addition, another study is needed to be migrated Pardus in reporting design computers in data warehouse system.

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	<u>In General Directorate Turkish Employment Organisation:</u> As is known that PARDUS Operating System, which has been developed by ‘TUBITAK Centre of Research for Advanced Technologies of Informatics and Information Security’ (UEKAE) since 2003, has began to be used by state institutions and organizations, such as some universities, municipal corporations, provincial health directors etc. However, it has not reached sufficient level of usage area. Pardus is open sources software therefore it does not permit any malicious software, called as spyware software. In terms of dissemination efforts of Pardus Operating System; In central and provincial units, there are 3,866 personal computers and 104 servers used. For personal computers, Windows XP and Windows operating system, including Microsoft Office 2007 are used. For servers, Windows 2008 is used. Pardus operating system is not used. Software source codes used in the intuitions for institutional security and institutional operations are not compatible with Pardus operating system; additionally the necessary drivers to use Pardus operating system are not available in these personal computers and servers. For these reasons, Pardus is not used in the institutions. <u>The Labor and Social Security Training and Research Center:</u> In the centre, there are 93 personal computers and 27 laptops. Microsoft Windows 7 is used. Pardus or other national system is not used. When the computers were purchased, software come with pre-installed way. ... <u>Head of Savings and Aid Fund Highland Eregli Coal Basin Amelebirliđi</u> In computers, Windows XP professional and Office XP professional are used. There is no Pardus. The users are familiar with Windows operating system; therefore Pardus has not been needed. In a short term, no software will be purchased.

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	<u>The Institution of Vocational Qualification</u> In the institution, there are 61 personal computers and 27 laptops and 4 servers. Windows Vista Business and Microsoft Office 2007 (Standard, Small Business and Basic packets) are used. In computers, Pardus operating system is not used. The pool of developed applications software for Pardus is not various as the current system and Pardus is not widespread therefore Pardus is not preferred. If Pardus operating system is become common software and developed applications compatible with Pardus, there is no obstacle to migrate to Pardus. <u>The Turkey and the Middle East Public Administration Institute</u> In the institution, there are 234 computers, 17 servers and 1 firewall. For servers, Windows 2003, 2008 R2 and Linux; for end-user computers Windows Vista and 7 are used. Microsoft Office 2010 is used. Microsoft operating system is more useful to users. Technical staff has experience and expertise in Windows related problems <u>The State Personnel Administration</u> In administration, there are 250 personal computers and 20 servers. Microsoft operating system and Office are used, Pardus and national office application are not used. As it is known that the administration is an institution which is sensitive for providing uninterrupted service to citizens. Therefore, the Ministry prefers to use hardware and software which are worldwide acceptable, previously known problems and solutions and are come from sources in a range of supports.

The Ministry of Family and Social Policies(23 rd May 2012, No: 7/5206)	
	1. In the Ministry and institutions and organisations related to / affiliated with the Ministry, there are 1000 personal computers and 290 servers. 2. In all computers, Windows 7 and Microsoft Office are used 3. In used software, Pardus and national office applications are not available. 4. At present, institutions and organisations commonly provide computer trainings in Windows products; in the Ministry there is a technical support team which has Windows support, maintenance, problem solving etc; taking into consideration users' preference, and users' skills and knowledge, the Ministry turned to the choice of Windows. 5. . 6. . 7. . 8. The Ministry use operating system and editor tools as widely used into all public institutions. If in future, Pardus and similar operating systems has infrastructure to meet needs of the Ministry, it will be possible to use them.

The Ministry of Food, Agriculture and Livestock (20 th April, 2012, No:7/5256)	
	In the Ministry, there are approximately 11,700 personal computers, and totally 531 servers (physical and virtual) In the computers, Windows versions are used and in the servers Linux server is used. Microsoft Office is used. Open source software operating system and office application plays 3% part in usage software. Pardus is not exactly compatible with applications and infrastructure of the Ministry, therefore Pardus is not used. However, the Ministry follows technological developments, does only choice operating system which is appropriate with the operation structure of the Ministry.

The Ministry of Economy (08 th April 2012, No:7/5236)	
	In the Ministry, there are 77 servers, and 1746 personal computers related to the servers. While for server, Windows 2008, Linux and Hp Unix operating systems are used, for personal computers Windows XP professional, 7 professional and 2000 professional (less). For office applications, Office 2007 and 2010 are used. In used operating system, (except for using it in testing) Pardus and national office applications are not used. Most of software with services of the Ministry (developed software for <u>Directory, E-mail and Virtualization</u> etc.) is not supported by Pardus. <u>Continuity is so important to provided services without interruptions</u>; therefore it will be only possible to use Pardus when it is become an appropriate level of supporting this kind of applications. <u>In the Regional Directorates of Audit Department and Product Safety:</u> In units, there are 437 computers and 255 laptops. Windows 7, XP and Vista and Microsoft Office XP, 2003 and 200 are used. There is no Pardus and national office applications in the use of software

The Ministry of Forest and Water Affairs (26 th April 2012, No: 7/5322)	
Pardus cannot be Windows or indeed should not be	In the Ministry and institutions and organisations related to the Ministry, there are 31,960 personal computers and 587 servers. For servers, Microsoft Windows, Sun Solaris, Redhat Linux, Suse, CentOS are used as operating system. For personal computers, Windows XP, Vista and 7 as well as Open Suse Linux operating systems are used. For office applications, Microsoft office, Open Office and LibreOffice software are used. Pardus and national office applications are not used. Regarding to the infrastructure of the Ministry and related institutions, migrating to Pardus which is currently <u>polemic to say that Pardus based on Linux, is compatible with Microsoft technologies</u>, not only will impact upon server environments but also other technological infrastructures in various parts of our country that It will take a long time, efforts and cost. On the other hand, there is insufficient number of technical support related to Pardus, and Pardus is not compatible with geographical information system, CAD etc., and other software which are other hitches.

The Ministry of Finance (27 th April 2012, No: 7/5297)	
	In the Ministry, institutions and organisation related to / affiliated with the Ministry, there are 62,423personal computers and 2,761 servers. For servers, MCP, IBM AIX, Unix, Linux CentOS, Sun Solaris, MS Windows NT4.0, 2000, 2003, 2008 are used. For personal computers MS Windows 2000, XP, Vista, 7 and for office application Microsoft Office 2000, 2003, 2007, 2010 and Open Office are used. In the Ministry, the informatics projects are international and national levels, carried out with many business and operations projects. As it is known that <u>testing and improvement efforts of Pardus and national office applications are still continuing.</u> <u>The current version of Pardus has not yet had competence</u> in terms of completing operations runs by the Ministry. The Ministry fallows closely studies related to software.

The Ministry of Turks and Relative Communities Abroad (11 th April 2012, No: 7/5178)	
	1. In the Ministry, there are 240 computers and 53 laptops and 7 servers 2. In computers, Windows 2008 servers R2, Free BSD, Centos, Debian, Windows 7, Android, Ubuntu operating systems are used. Windows Office 2010, Open Office 3 and LibreOffice are used. 3. Pardus plays 1% part in usage software, runs with 2 computers 4. The Ministry prefers Windows based operating systems and Microsoft Office in mass purchase therefore they are used. End-users prefer Microsoft products. Within the ICT infrastructure, users can use other operating systems and office applications. Currently, some stuff use Open Office. 5. . 6. . 7. . 8. The Ministry's stuff consists of <u>young staffs that</u> have such an experience and high skill of open source software and operating system. The Infrastructure of the Ministry is allowed to use national software (Pardus and office application) or open source software.

The Ministry of Customs and Trade (24 th April 2012, No: 7/5260)	
	1. In the ministry, there are 7,471 personal computers, and 255 servers. In the competition authority, there are 338 personal computers and 19 servers. 2. For clients, Windows XP professional and 7 Enterprise; for servers Microsoft 2008, 2003*64 and Microsoft Office 2007 are used. In the competition authority, Windows XP professional and Windows Servers 2003, Office 2003 and Open Office are used. 3. In the Ministry and related institutions, Pardus and national office applications are not used 4. Regarding to Pardus and national office applications, adaptation of Linux based operating system is <u>seem difficult</u>. Because, these products have less widespread professional supports, very low level of products preferability in the whole country. <u>End-users and ICT technical stuff are not aware of these products</u> and end-users generally use Microsoft products in their home. Besides, in terms of personal computer management and security. Microsoft Active Directory is compatible with used software Alpha elegantly and harmoniously that provides opportunities for solubilization within a central structure way. For these reason, in a short term the Ministry and related institutions does not have any plans to migrate to national software. 5. in the 2002 and 2005 years, for maintenance and repair tenders, anti-virus software is not shown as a <u>separate item</u> therefore the software cost cannot be specified. 6. . 7. . 8. Current software used in the Ministry has been developed Microsoft based and office applications must be prepared in <u>worldwide format</u>. Therefore, the Ministry prefer products of Microsoft family. On the other hand, <u>Pardus operating system and national office applications are never used in the Ministry</u>, so evaluation cannot be made in terms of the software regarding to computer security.

The Ministry of Energy and Natural Resources (17th April 2012, No:7/5242)

1. In the Ministry and institutions related the Ministry, there are 23,396 personal computers and 567 servers used.
2. .
3. .

In these computers, Unit, Linux and Windows operating systems and Microsoft Office are used. In some institutions, Pardus has been used and in one department, the infrastructure study is proceeding to use Pardus.

The Ministry of National Defence (24 th April 2012, No:7/5316)	
	1. In the Ministry, for servers Pardus Institution-I, MS Windows Server and Linux operating system; for personal computers Pardus and Windows XP as well as Open Office and Microsoft Office Professional are used. 2. <u>Pardus plays 84% part in used software for server level, and Pardus and open source office software play 48% in usage software for other computers.</u> 3. . 4. The Ministry gives great importance for usage of Pardus operating system and open source office software, and continues its efforts to expand the software.

The Ministry of Interior (07 th May 2012, No:7/5275)	
The Ministry of Interior tried to use Pardus.	Within the e-Interior Project ... Microsoft products are commonly used in operating system and software. The central system management in Pardus operating system is not operated as <u>easily scalable and easily manageable</u> as the system currently used in the Ministry. In the first instance, e-Interior platforms which are developed within ICT projects in the Ministry are not compatible with Pardus; therefore additional tools are needed for establishing the compatibility mode in which performance is not satisfactory. In terms of source documents and shared knowledge, comparing Pardus to other similar operating systems, it is seen that Pardus operating system could not meet the needs of requirement. Besides, in terms of <u>accessibility of supports and prevalence, Pardus falls behind in the similar operating systems</u> The Department of Data Processing in the Ministry follows closely Pardus operating system and national office software as well as other technological developments. The principle of the Ministry is <u>effective and efficient use of state resources</u>; when national software and operating system meet the needs of the Ministry, it is planned to use them.

The Ministry of Development (13 th April, 2012, 7/5284 and 7/5283)	
	1. In the Ministry, there are 600 active personal computers and 38 servers. 2. In these computers, MS windows and MS Office are used. 3. In the Ministry, Pardus or any national office software are not used. 4. Choice of a software product is not only related to software cost, but also update of products, taking technical supports when needed, and other related requirements. Besides, learning how to use a new software can be time-consuming and exhausting for users. In other words, the use of software is not only license fees, actually ‘<u>total cost of ownership (TCO)</u>’ should be taken. It is also applied to operating system. Although Pardus has been developed by TUBITAK-UEKAE, technical support organisations and users’ familiarity about Pardus are not sufficient enough. Therefore, in a short term, the Ministry does not plan to make Pardus usage obligatory for all public institutions and organisation. Nevertheless, some institutions migrate to Pardus via <u>establishing new informatics system or renewing excising informatics system in the direction of expanding open source software policy</u>, for example the Head of Recruiting Department in the Ministry of National Defence, the Radio and Television High Council, etc. Increasing these examples, as a matter of course, users and institutions’ familiarity, Pardus support organisations and usage of Pardus will be increased. When Pardus and related software ecosystem (software developers, technical support providers, etc.) reaches appropriate level of maturity, Pardus will be chosen for all public institutions and organizations regarding to using public resources more effectively. Pardus was taken in the subject titles of the 2008 Investment Program, and in 2010 over 4,000 TL is allocated to Pardus project. <u>The aim of the ‘TUBITAK-UEKAE Pardus Project’ is to transform Pardus operating system from a project supported by TUBITAK own resources to competitive and sustainable operating system.</u> In this sense, in order to expand usage and development of <u>free open source software</u>, it is aimed to establish an ecosystem. The aim of the establishing ecosystem is to expand free open source software development culture as well as to increase demand in public and establish the ability of supply to meet this demand. Pardus should be supported until to get a certain level of maturity, after this level various services, such as maintenance, sustenance technical support etc., <u>should be given to commercial firms within the frame of a business plan, in this manner</u> establishing Pardus Solution Partners will increase usage of free open source software in public arena.. <u>As a consequence, today making Pardus and office application obligatory for all public institutions and organizations is not practicable. Therefore, regarding to usage of operating systems and office applications into public institutions and organizations, compelling regulations have not been made until ecosystem for supporting to the free open source software and office applications is become in certain level of maturity. In addition, studies are continuing to establish needed ecosystem.</u>

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	8. It is known that applying open source software system, particularly in developing security software process, bags would be less. Linux based operating systems are not commonly used therefore security vulnerabilities have less attacks. Regarding to Pardus is a national product, has low licence cost and dependability of national security therefore it is supposed to be chosen, hoverer the reasons mentioned above the use of Pardus is limited. After establishing appropriate ecosystem, usage of Pardus will provide great benefits in terms of information security. <u>The Turkish Statistical Institute</u> 1. In the institute, the total number of personnel computers, laptops and servers is 6,987. 2. For personal computers Windows 98/XP/7, Office 2000, 2003, 2007 and Mac OS are used. For servers Windows 2000/2003/2008 Servers and Redhat Enterprise Linux 3/4/5 are used. 3. Pardus and national office applications software are not used yet. 4. 4.1. Statistical and analysis software used in end-users computers are not compatible with Pardus. 4.2. Applications in intuition servers are not compatible with Pardus 4.3. Hardware of intuition servers has not formal Pardus drivers. 4.4. End-users do not know how to use Pardus or other Linux/Unix operating system 4.5. There of lack of technical stuff known Pardus to support end-users 4.6. <u>Microsoft Outlook software is required for exchanging mails elementarily (trouble-free) with an intuition email server (Microsoft Exchange 2010). Besides, in order to prepare files compatible with software such as WORD, EXCEL and POWER POINT, Microsoft Office packet is needed.</u> When Pardus and national software meet the needs of intuitions, national software is going to be used.

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	8. Pardus in the institution level, 8.1. In order to use Pardus in servers; a) Services of Database, application server, web and virtualization (KVM, opennebula) become entirely stable and easy management tools added into the package repository. b) Migration tools developed for database and application server and educational videos prepared. c) 7/24 technical support unit established in TUBITAK. d) Educational programs prepared and implemented. 8.2. In order to use Pardus in personal computers; a) Wine supports increased for maintaining continuity of current ad hoc software. b) Technical software, such as process management (activity - <i>business process management platform</i>), remote sensing/ geographical information system (IGIS, SAGA), data mining (Rcmdr, WEKA, RAPIDMINER), engineering (OTOCTAVE), CAD (BRL-CAD) added into the package repository. c) Conversion problems in LibreOffice solved. <u>The South-eastern Anatolia Project Regional Development Administration</u> 1. In the administration and regional directorate, there are totally 188 computers and 5 servers 2. For computers, Windows XP, Vista and 7 Upgrade operating systems and Office 2003 and 2007 are used; for servers, Linux Apache is used. 3. Linux plays 2.65% part in usage software. 4. Linux (PARDUS) is a derivative of UNIX operating system. ... The reason of not to use PARDUS and national software is that Windows is a <u>cut-and-dried operating system</u>, Linux is not. In order to migrate to Pardus, it is needed to provide again in-service trainings to computer users and documents from different institutions and organisation are not exactly <u>compatible with office applications</u> in Pardus. It is evaluated that all solutions with Linux are not easily usable by basic users. 5. 6. . 7. . 8. . 9. It is evaluated that all solutions with Pardus are not easily usable by basic users.

The Prime Ministry, The Directorate of Religious Affairs (24 April 2012, No:7/5178)	
(I don't know what they meant), Pardus cannot be Windows There is the concept of Virtualization, I think the Ministry has no idea what it	1. In the directorate, there are 922 computers, 313 laptops and 46 servers. 2. For servers, Microsoft Server 2003, 2008 and 2008 R2 and Microsoft Office are used. 3. In the directorate, Pardus or national office applications are not used. 4. There is no doubt that Pardus and other similar national software has a set of advantages according to them. However, for the directorate there are major reasons for not using this software. Pardus project is started by TUBITAK in 2003, and the first product was released in 2005, last seven years various versions have been produced. However, problems of Pardus were expressed at the workshop held on 23-24 March 2012, and it is observed that the <u>uncertainty on the project still continues</u>. For months, Pardus has not been developed, administration has been changed and most of developers have left. These have affected in a negative way to the Pardus project. In addition, as most of other public institutions, the leading motives of not migrating Pardus and other national software are listed below as articles. Accordingly; a) <u>It has no support automatic installation</u> b) It does not support to widely used software, c) There is lack of Pardus drivers for many known hardware, d) Users have gained their experiences from Microsoft systems and in term of migration national software serious trainings are needed, e) Technical supports for overcoming possible problems related to operating system are not sufficient and for solutions, there are <u>only limited number of forums and websites</u>. f) It is <u>not fully possible to centrally manage all computers safety and reliability</u>. g) There <u>is no a remote desktop connection tool for centrally managing computers in</u> other offices, (Wrong) h) It <u>cannot sufficiently compatible with other server operating system</u> products, network products, administrative tools and third party products, i) It has <u>no support for e-mail and telephone products</u>, (probably it is meant that Ovi Suite, PC Suite, Kies, iTunes etc.) j) It has not <u>periodic updates and patches</u>. k) There are no detailed user and computer community management options, such as GPO (Wrong). For these leading motives, right now migration to Pardus is not considering.

The Prime Ministry, Turkish International Cooperation and Coordination Agency TİKA (24 April 2012, No:7/5178)	
Migration is the process, not only trying Old Generation and not able to transforms information and not to be flexible in life long learning.	1. The number of personal computers is 215 and the number of servers is 20. 2. For personnel computers, Microsoft Windows (XP, Vista and 7) and Office are used. For most of servers, Microsoft Windows Servers products and 3 servers Linux operating system are used. 3. In the directorate, in order to increase PARDUS usage, from time to time instead of Microsoft products, PARDUS has <u>been installed in personal computers</u>. However, it could not be preferred due to the negative reactions from users as users' habits and adaptation problems. 4. The greatest reason of not using Pardus and national office applications is the negative reaction driven by users' habits. Most of users still <u>prefer to use Microsoft Office 2003</u> due to the new version of Microsoft Office changes. Besides, except office applications, needed graphics, drawing, accounting and other software are usually prepared regarding to Microsoft products that restrict usage of this kind of software in PARDUS. 5. . 6. . 7. . 8. In the directorate, due to the negative reactions driven by users' habits, incompatibilities of third-party software and driver issues of additional hardware, Linux-based operating systems are not used.

The Deputy Prime Minister, (07 th May 2012, NO:7/5185)	
Unsuccessful FOSS projects. Notably: <u>in the scope of the SKAAS project, in order to</u> gather all Radio and Television High Council databases in a particular database system and to make digital documentations circulation safer, <u>'Intuition Source Planning Project'</u> was started, and responsibility of the project was given to General Directorate of State Supply Office (DMO) on 28th May 2007. DMO provided the tender of the project and The project was designed in 36 weeks. Due to uncompleted project 15 more weeks were given the company (Meteksan Sistem Bilgisayar Teknolojileri). <u>In the scope of the project, there are two main components, (1) hardware and license and (2) software. Hardware and license have been given the head centre,</u> while in terms of software, system analyzing reports and system design reports have been prepared however other parts have not prepared. Although, the company requested for extension of the project period, the institutions decided to cancel the project (Ministry of State No:7/18884, 23rd March 2011⁸⁴)	<u>The Radio and Television High Council</u> There are 453 personal computers and 22 servers in the Information Processing Centre (BIM), 140 personals computers and 536 servers in the Digital Recording Archive and Analysis System (SKAAS), totally 593 personal computers and 536 servers. For personal computers in the SKAAS, PARDUS 2007.3 operating system, and Open Office software, for personal computers in the BIM, Windows XP, Vista and 7 operating systems and Microsoft Office are used. PARDUS operating system and Open Office each play 24% part in usage software. PARDUS and Open Office, at this particular stage, only have been used successfully in the scope of the SKAAS project. On the other hand, although open source software is not used in the BIM yet, it is thought to use them in the future. <u>The General Directorate Turkey Radio and Television Corporation (TRT)</u> There are 6,000 personal computers and approximately 300 servers. For computers Windows XP and 7 and Office 2003 and 2007, for servers Windows Enterprise 2003 and 2008 are used. In the TRT, publications and construction services are given, software for accomplishing these services are Windows based, therefore Pardus is not used. <u>The General Director of Anadolu Agency</u> In the agency, there are approximately 112 servers and 927 personnel computers and laptops. For servers, Linux and Windows operating systems, for personal computers Windows and Mac operating systems, for office Microsoft Office and Open Office are used. In the institution, Pardus is not used. <u>If national office application implied to Open Office, it is currently in use.</u>

⁸⁴ Ministry of State. (2011). RTÜK'ün yazılım ihalesine ilişkin, *the Grand National Assembly of Turkey*, No:7/18884, 23rd March 2011, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=89789

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Purchasing services only not to develop its own knowledge. Not enough ICT stuff	<u>The Director General of Press and Information</u> There are 306 personal computers and 41 servers. For servers, Windows Server 2003 and 2008 are used. For personal computers Windows XP and 7 and Office XP, 2007 and 2010 are used. PARDUS and national office application are not used due to difficulties in changing users' habits and training how to use new software, lack of operating system support, compatibility issues with Microsoft domain, compatibility issues between office applications, occurring visual mistakes when documents created and these mistakes lead to time consuming. <u>The General Directorate for Foundations</u> In the all directorates, there are 1492 computers and laptops, and 75 servers. While for all personal computers, Windows XP Professional and 7 are used, for servers, Windows 2003 and 2008 Standard and <u>Enterprise and Red Hat Linux 5.5 are used</u>. For office, Office 2003 and 2007 Professional and Standard and very few Open Office 3x are used. <u>For personal computers and servers Pardus versions are not available. Users are not family with Pardus. The technical support team is unable to have a level of knowledge that can effectively meet the needs of the intuitions in the process of Pardus migration as other Linux derivatives.</u> In this direction the firms received technical supports have a lack of knowledge. These are among the reasons for not using Pardus. Users are encouraged to use Turkish version of Open Office through both interviewing and in-house newsletters. Although users' past experiences with Microsoft products naturally slow down this type of process, in a long term it can be reached to fruition. Besides, end-users needs time to use Pardus which is a Linux derivative and if firms started to provide services through these systems, and <u>the technical team increased the number of stuff as well as level of Linux knowledge, it is possible to spread the use of Linux.</u> <u>The Turkish Language Institution</u> There are 60 personal computers and 8 servers. Windows XP, 7 Windows Server and Microsoft Office 2003-2007 are used. In used software in the institutions, Pardus is not available. Computers purchased for the institutions are coming from the State Supply Office; therefore operating system is already installed. Besides, Pardus is not compatible with applications and database used in the institution, for this reason Pardus is not preferred.

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	<u>The General Directorate for Turkish Historical Society</u> There are 53 personal computers and 2 servers. Windows Xp, Vista and 7, Windows Server and Microsoft Office are used. In the institution, Pardus and national office applications are not used. In the institution computers were not purchased as hardware and software as a separated, purchased as whole pre-installed the operating system. All software used in the institutions is structured based on Windows operating system only. If the operating system is changed, it will affect all applications. After, PARDUS operating system reached required maturity, and the required test conducted by the institution, migrating PARDUS will be discussed by the institution. <u>The Directorate of Atatürk Cultural Centre</u> There are 54 personal computers and 1 server. In the centre, Windows 7, Windows Server 2005 and Microsoft Office Standard 2010 are used. Purchased computers for the centre, Windows is installed therefore PARDUS and national software are not used. Current used software are based on Windows database, it is not currently possible to migrate to PARDUS and national software. <u>Atatürk Research Centre Presidency</u> There are 38 personal computers and 5 servers. In the centre, Windows 7, Windows Server and Microsoft Office 2010 Standard are used. Purchased computers for the centre, Windows is installed therefore PARDUS and national software are not used. Current used software based on Windows database, it is not currently possible to migrate to PARDUS and national software. <u>The Directorate of High Institution</u> There are 109 personal computers and 8 servers. Windows Xp and 7, Ubuntu, Redhat, Fedora Linux and Windows Server 2008 R2, and Microsoft Office 2010 Standard are used. For server, free open source software is generally used for personal computers Pardus and national office applications are not used. Files with current office applications are not exactly compatible with other office applications. Current software is also commonly used in other institutions and private companies. National/open source software office application packets have lack of technical support. There is insufficient number of specialists and organisations which can provide Linux support. For these reason Pardus and national office applications are not used.

The Presidency of the Grand National Assembly of Turkey TBMM (20 th March 2012, No:7/5027)	
Strange Pardus supports automatic installation, like the other common Linux OSs Linux is open for all, but all are not willing to support Linux because of various reasons, marketing strategy, interests, profits etc. Disinformation. FOSS should be understood as PCSS Linux should not be Windows, in here what do third party products?	1. In the TBMM, there are 3274 personal computers, 550 laptops and 75 servers. For servers Windows 2008 R2, and Linux, for computers Windows 7 and Vista are used. For Office, Office 2007 and 2010 are used. 2. . 3. Most currently used services and technologies are <u>not supported by PARDUS</u> operating system; some of those <u>are Active Directory, E-mail and Virtualization</u>. 4. It is not possible to start any initiative until solving all these deficiencies which are related to Pardus and free office. Additionally, the fundamental reasons not to migrate Pardus and other national software into most Ministries are indicated below, itemised as a. <u>Not to provide automatic installation</u> b. <u>Not to support commonly used software</u> c. Lack of Pardus specific drivers for lots of recognized hardware. d. End-users' experiences which have been gained with Microsoft systems, in order to migrate national software it is needed serious training e. Lack of receiving professional supports for national software f. Could not be giving technical supports to solve possible operating systems issues, just limited forums and websites provide solutions g. <u>It is not totally possible to centrally control and manage all computers regarding to their securities and reliabilities</u> h. <u>The absence of tools to centrally manage personal computers which are in distant offices</u> i. <u>Could not efficiently integrated with other operating system servers, networks products, management tools, and third party products</u> j. <u>Not to have products, e-mail and phone supports</u> k. <u>Not to have periodic updating and patch</u> l. <u>Not to have detailed users and computers communities management options, such as Group Policy Object (GPO)</u> Due to these reasons, it is not considered to migrate identified software.

The Minister of Science, Industry and Technology, The Minister of Foreign Affairs, The Ministry of Transport, Maritime Affairs and Communication, The Minister of Health, The Minister of Justice, The Deputy Prime Minister – Kirikkale Besir Atalay, The Deputy Prime Minister – Ankara Ali Babacan and The Prime Minister – Recep Tayyip Erdogan have not responded to the questions. It is written that “it is published in the incoming paper due to not be answered”, in other words it is not rejected but it is not going to be answered until the parliamentary question will be asked again. Regarding this there is also particular parliamentary question⁸⁵ why Ministries do not answer formal parliament questions.

The Minister of Science, Industry and Technology is a new Ministry and responsible of ICT related projects in Turkish level.

In the media, the Minister of Foreign Affairs couple of times state their partnership with Microsoft, such as⁸⁶ “within new Document Archiving System developed through Microsoft .Net, the Ministry will be a pioneering institution which works more efficiently and more quick” (Naci Kuru, Deputy Secretary, the Minister of Foreign Affairs)

There have been so many other formal and verbal parliament questions; I do put them as well, if they are underlined more and different information.

⁸⁵ Ministry of State (2012) Yazılı soru önergelerinin cevaplandırılmasına ilişkin, *the Grand National Assembly of Turkey*, 7/5130, 15th March, 2012, retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_sd.onerge_bilgileri?kanunlar_sira_no=103263

⁸⁶ Microsoft (2010). Case Studies, Turkish Ministry of Foreign Affairs Government Ministry Improves Performance, Support, and Remote Access, retrieved 31/12/2013 from http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=4000007751

No Answer.	MP Sefik Cirkin (08th March 2012, No: 7/5157) 5. In Ministries, computer software of the USA and Israel companies are used, instead of open source software. Whether this claim is true or not? If it is true, why it is taken? 6. Who decide which computer software system in the state intuitions and organisations
No Answer.	MP Erdal Aksuner (12th January 2012) Verbally asked Ministries about the reasons of closing Pardus project (it was a big deal for Pardus community)

MP Isa Gok (25th April 2008, No: 7/2983⁸⁷) , MP Ayse Jale (24th January 2008, No:7/1727⁸⁸), MP Husnu Collu (24th January 2008, No:7/1540⁸⁹), and Mehmet Aydin (09th June 2008, No: 7/1540),

The questions generally are: (1) in public institutions, how much has been spent for OSs? (2) Has Pardus started to be used in the institutions? Why isn't Pardus usage become widespread? In this concern are there any concrete studies in the institutions? (3) What kind of protocols and agreements have been completed in terms of OSs, particularly Microsoft, (4) Are there any planned initiatives to support national software projects? (5) In e-transformation Turkey project, what stage the institution in?

These parliament questions are asked to all Ministries, regarding to Pardus project, FOSS and Linux OSs, E-Transformation Turkey Project. All the documents are over a hundred fifty; Nevertheless the discourse of the Ministries, we are just in pilot studies or we just started pilot studies, and we need to complete more studies. Therefore I underline some important points If they are not underlined above.

I think, these questions from opposition parties put the government in a difficult position, that is also one main reason of that bureaucrats in Ministries have taken a dislike to Pardus project. There are always stated that “the Ministry has no relationship with this questions” and there are disinformation and untruths.

Most institutions underlined that they will contact with TUBITAK regarding to Pardus migration. In this sense is it possible for TUBITAK to answer these requirements? Sure not.

⁸⁷ Gok, I. (2008). Yerli işletim sistemi kullanımının teşvikine ilişkin, *the Grand National Assembly of Turkey*, 7/2983, 09th May 2008, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=63688

⁸⁸ Jale, A.J. (2008). Lisanslı kullanılan yazılımlara ilişkin, *the Grand National Assembly of Turkey*, 7/1727, 24th January 2008, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=60399

⁸⁹ Collu, H. (2008) Bir işletim sisteminin kamuda kullanımına ilişkin, *the Grand National Assembly of Turkey*, 7/1540, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=60399

The Ministry of Energy and Natural Resources (27 May 2008, No: 7/770) it is not above therefore I put different point	
Bundle tender and agreement	<u>Computer operating system and software is usually preinstalled come on purchased computers. The special purpose software is purchased once, and in the duration of its usage, an extra free is only paid in the event of if there is upgrade.</u> <u>There is no any agreement protocol with Microsoft Cooperation.</u> Therefore in the Ministry, there is only periodic information, not annual, regarding to software licence cost in any institutions and organisations related to or affiliated with the Ministry. Regarding to Pardus usage, there is no institutions and organisations related to or affiliated with the Ministry. Nevertheless, some general managers keep following Pardus development. <u>Pardus solitary cannot solve problems.</u>

MoNE (13 th March 2008 No:7/1540)	
The actual ICT Culture in Ministries Disinformation Around 10\$ for per licences 4,002 ICT labs were established	1. The fundamental principle of the Ministry is to integrate hardware and software tools into education and training activities. <u>The tools</u> are purchased as they are <u>the best</u> and <u>the most reliable</u> products from companies which have the most common service networks with <u>the cheapest price</u>, and already proven their reliabilities in our country as well as world-wide, <u>without dependent on a particular company's product and services</u>. In this context, while Microsoft products are being used in some units of the Ministry, there are also ongoing studies to contribute developing Linux and Pardus operating system and software for using open source software in some units of the Ministry. Besides, the Ministry has established ICT Labs in the scope of 100% Support Campaign for Education with grants from institutions and foreign grants resources. The point in question, <u>computers were purchased with wholesale method in the scope of the protocol between our Ministry and Microsoft Cooperation on 5th May 2004</u>. Up until now, Windows and Pardus operating systems have been purchased for educational institutions. In our Ministry, operating system is not purchased separately for the needs of schools; computers are purchased as assembled hardware and software components together. Therefore there is no information about each component cost separately; nevertheless there is information about each computer. Thus it is not possible to identify operating system cost in the years of 2003 and 2007. Nevertheless, in the scope of the Basic Education Project Phase II, totally <u>\$865,085</u> was paid for operating system. 2. <u>The infrastructure of MEBBIS in our Ministry is designed based on open source software. Pardus operating system is not compatible with this kind of infrastructure</u>. Necessary preparations for users in order to get appropriate access to the MEBBIS system via other web browsers are carried by our staff. The changes of Pardus operating system developed by TUBITAK have been consistently followed by our Ministry. In addition, <u>"Open Source Operating System"</u> modules which are all aspects of Linux and Pardus operating system contents included into curricula of technical and vocational secondary education institutions for 11th grade students, 5 hours in a week. In the scope of the Basic Education Project 1 and the European Investment Bank Projects, Bootable <u>Pardus CDs</u> has been sent to 4,610 primary schools to introduce Pardus to each student.

TUBITAK (12th May 2008, No:7/00731, 29th February 2008, No: 7/1368 and 31st January 2008)

Strangely, developing of Pardus started since 2003 and in 2008, TUBITAK is still in undefined and unclear position. In the documents, there are so many the same sentence as “We think that we are not the object of (mainly political decision making)”. That is also show that there are so conflict between central government and TUBITAK.

Notably, there are some academic articles underlining that TUBITAK have not provided its support to Pardus project that can be seen FOSS chapter. Even they do not use Pardus and FOSS. I think in this sense, TUBITAK and UEKAE should not be used one particular Linux OSs and/or FOSS and/or PCSS applications, TUBITAK is a R&D centre, so they are in charge of following technological developments and innovations.

TUBITAK stated that after 2006 TUBITAK paid less licence fee because of free open source software

Companies	2005	2006	2007
Microsoft	150,017.34	139,245.84	98,335.85
Oracle	85,988.33	28,528.53	29,384.78

TUBITAK responded as that all computers and laptops for end users are running via Pardus. Pardus is used in all personal computers and laptops which are not in the TUBITAK-UEKAE Intranet system. For intranet system, there is some software applications developed for various purposes. For this software, Pardus migration plans have been prepared and conversion studies have been continuing. After completing all these studies, TUBITAK UEKAE use Pardus in all hardware and recommend using Pardus for all TUBITAK institutions.

The General Directorate Turkey Radio and Television Corporation (TRT) (13th May 2008, No:7/2983

This is the professionalism, because for different purpose the institute used different Linux option. As it is common knowledge in FOSS communities, Redhat and Fedora are business purposes Linux OSs.

This is not shocking for me because TRT is the institution who has technology knowledge and history like a university.

As previously underlined that TRT used Pardus but after 2009 through SKAAS project.

As a result of tests carried out in 2007, it was disapprove of the use of Pardus operating system because of security, integration issue with available other software packets, insufficient supports for possible problems and solutions, and so on.

In our institution, it is being attentive to the use of open source software applications and operating systems. Regarding to operating system, Debian, Redhat and Fedora OSs based on Linux, AIX OS based on Unix are used. In Linux OSs, MySQL database which is open source software is used. Besides, there is ongoing study to develop documentation management system, Alfresco which is one open source software application. In addition, Nagios and Nessus server software which are in the part of security concern are localized in Redhat and Fedora in keeping with our institutions principles. In our institution, available software regarding to advertisement and music has been developed based on Java in Debian.

Ministry of Justice (27 th May 2008, No:7/00731)	
Professional and believed in Pardus project. However, the first sound looks like that the Ministry shocked when UYAP applications worked with Pardus.	<u>UYAP applications have been developed through supporting all operating systems.</u> In this context, it <u>is seen in the pre-tests</u> that UYAP applications are compatible with Pardus which is a Linux distro developed by TUBITAK. Therefore, in the 15. UYAP Coordination and Executive Board Meeting held on 08/06/2007, it is decided to “support the development of Pardus; keep working studies of using UYAP applications in Pardus; because of this, migrating Pardus by one by one through deciding pilot studies in small and silence areas”. <u>UYAP has been centrally established and all used laptops and computers for UYAP applications in provinces are controlled in the central system room in Ankara. Migrating Pardus is a difficult situation because installing Pardus operating system; central controlling all these computers through domain; implications of central control and security policies; because of this, users’ authorisations, authentication, local computer independencies, making access of central information faster via Distributed File System (DFS), moving all information from NTFS file system, supporting various hardware drivers, insufficient supports for possible bugs, and so on. Nevertheless, in the sufficient public support, it is planned to migrate and support to Pardus by the head of department in ICT centre. In the scope of UYAP, the necessary tests are still carried out for Pardus usage.</u> All UYAP applications are totally national products and their licences are belonged to Ministry.

The General Directorate of Ziraat Bank (07th May 2008, No: 7/76082)

Why from Linux to Windows what happened?

Wrong, what does virtualisation in this case? It is commonly known that virtualisation is the solution to be ensuring cohesiveness and completeness in ICT.

Operating System Statement	Contract Date	Licence Number	TCO
Linux for ES 7000	16.08.2004	2	\$16,700
Linux for ES 7000	15.09.2004	2	\$11,264
Linux for ES 7000	18.11.2004	2	\$11,264
Win 2003 R2	01.05.2004	1290	\$477,377
Win Svr Str Wind 32	26.01.2005	120	\$76,572
Win Svr Str Wind 32	26.01.2005	12	\$24,877
Total			\$618,054

Nowadays, all performed services in institutions and organisations are totally depending upon ICT. The infrastructure of ICT in institution is formed by various components which are integrated and compatible worked together. Operating system is fundamental backbone in these components, and crucial. One particular operating system which is capable of elementarily work does not fundamentally sufficient enough for 'Institutional ICT Infrastructure'. In order to perform institutional services without interruptions and with free of problems, the integration of available software applications and currently used hardware technologies with operating system, and so mutual dependencies are vital importance. So it is necessary that all these technologies have common language, and so the same technology platform to be ensure cohesiveness and completeness. In ICT infrastructure, changing operating system is the reason of creating uncertainty for cohesiveness and completeness of all other components, therefore it is necessary to plan all infrastructure start all over again regarding to both technical and job (including cost) dependencies.

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Just Google ‘banks use Linux’, the results are Union Bank of California, Banco do Brasil of Brazil, Industrial and Commercial Bank of China, etc. The Bank is locked in Microsoft and PCSS Platforms. Instead of underlying this, the discourse looks like Pardus, Linux should be Windows. Why has the Bank not kept followed ‘Interoperability Framework Guide Reports’? When does one institution take accountability and responsibility?	We are proud of Pardus development process, and keep intently follow it. When Pardus has become sufficient enough regarding its compatibility and integration with current ICT infrastructure and answered all necessary requirements, it is obvious Pardus will be privileged and considered. Besides, in this sense, there is needed a possible migration plan for R&D and tests via the Ministry technology company (FINTEK A.S). It is considered both risks and dependencies together. In addition, Pardus has been developed based on Linux kernel, and is a Turkish operating system. <u>Therefore Pardus is not compatible with developed fundamental bank applications</u> in our bank. So fundamental bank applications cannot work with Pardus. In order to overcome this incompatibility issue, there is one available application (Mono) however Mono remains incapable, and is not able to make all applications work with the system. Besides, current desktop applications (Microsoft Office – word, excel etc.), are based on Microsoft, therefore they cannot work Pardus, Linux based OSs. In any cases to migrate Pardus, current desktop applications must to convert to open source software applications, such as OpenOffice. Thus any change in operating system lead to deep works and high expenditure because of changing both ICT infrastructure system and desktop applications. It is needed to prepared long and detail plan regarding to risks and dependencies. Regarding this, ‘Halk Bank’ (12th May 2008, No: 7/27434), stated that they use advance technology which is obtained so low price but strangely they paid more than the Ziraat Bank, \$1,819.181.

Turkey' Kalkinma Bank (09 th May 2008, No: 7/1776)	
Realistic but still the question who is the initiative taker, ICT market, or policy makers. Migrate to Microsoft Azure to migrate Linux	In terms of desktop computer hardware and software platform, ✓ End-users (stuff) habits, ✓ Software penetration regarding to data exchange with other institutions (shared management), ✓ Technical supports and documentations facilities, ✓ Being under the guarantee of compatibility with other software and hardware, ✓ Compatibility and sustainability with currently available operating system and software, ,as a result of considering these reasons, for OS, Microsoft Windows, for office application Microsoft Office, and for server Microsoft Windows Server are used. In our bank, in same parts of the server infrastructure, Linux open source software are used, Redhat/Fedora/Suse. <u>Migrating Linux is considered only if there are no compatibility and sustainability issues with other Windows Server software applications.</u>

The Prime Minister / State Planning Organization (DPO) (08 th May 2008, No:7/1779, 15 th May 2008, No:1917, and 29 th February 2008, No: 763)	
International actors force to use the same platforms as they use. In this sense, the software is meant to be Adobe products. Yes not for all public sectors but how about <u>Microsoft Partners in Learning Protocols (2004, 2009 and 2011) that can be seen as a Misinformation.</u> In education, particularly primary and general education institutions, Windows OSs are not necessary regarding to education and software. Not all students are going to be an expert of ICT related subject.	In the Centre for European Union Education and Youth Programs, it is <u>considered to migrate to open source software into some servers.</u> However, <u>in the scope of the institutional activities, there are some joint studies with European Commission. In education and youth projects, European Commission provides Windows based software,</u> therefore it is necessary to use Windows based software. Thus there is no consideration of changing operating system in short term. <u>In public institutions and organizations, there is no detail information regarding to software and so sub categories, operating system.</u> At the present time, there is no <u>frame agreement or protocol performed between Microsoft Cooperation and in the name of our Government in the matter of used operating system in Turkish public institutions and so including all public institutions and organizations.</u> It is known that <u>countries make strategic collaboration agreements with international cooperation in the area of software, including the purpose of decreasing license fees.</u> These agreements should be considered with regards to their durations and scopes; on the one hand <u>performing reinforcement studies for Pardus and its ecosystem,</u> on the other hand it is another appraisee option to <u>make agreements to take benefits from scale ecosystems and so to decrease license fees.</u>

Continued- This information is crucial.	
Where is the technical consulting? These are fundamental structural law clarify the accountabilities and responsibilities through hierarchical structures. Basically bureaucracy Strangely, the discourse looks like they analyse each other. And they provided the reasons.	In accordance with the law No.5018 '<u>Public Financial Management and Control Law</u>', an investment proposal from public institutions and organisations connected to the central administration, as proposed by the Law is <u>transmitted</u> to the <u>Undersecretariat of State Planning Organization (DPO)</u>; and then "<u>Investment Program Preparation Guide</u>" taken as a basis to transmit the proposal to the Undersecretariat and then <u>the investment proposals are included into 'the Investment Program'</u>. Investment proposals regarding to ICT are transmitted to the Undersecretariat in this direction. For projects included in the Investment Programs, funding is performed in this direction. <u>Operating system expenditures are also within this framework.</u> Besides, <u>in ICT investment projects, hardware, software, consultancy etc., are generally proposed as sub-components of the project; and merely proposing to purchase operating system is very rare.</u> On the other hand, <u>ICT projects included into the Investment Program are not monitored through their sub-components (software, hardware, consultancy, etc.); the whole projects are only monitored.</u> Consequently, there is no available and detail information to identify software and so its sub-category, operating system expenditures into public institutions and organisations. Extensification of the use of open source software is crucial concept in the scope of the 'E-Transformation Turkey Project'. On the other hand, the choice of one particular software product is not merely connected to its own cost. Regarding this, there are other needs, such as updating of these products in over time, taking technical supports from relative companies, etc. Besides for end-users learning how to use a new software might be time consuming and exhaustive. So, usage of particular software is not only connected to its licence fee, 'Total Cost of Ownership' should be taken account. ... <u>Therefore, making a regulation for the use of Pardus 2007 as imperative into all public institutions and organisations is not considered in a short period. ... because it is evaluated as nonenforceable.</u>

The Prime Minister / The Undersecretariat of Customs (21 st May 2008, No:7/00731)	
Updating policy and purchasing specifications. The first time one purchase without operating system. Is it 'Piracy'	In our undersecretariat, all hardware and software are purchased as a whole packet. All purchasing is performed with open, negotiation, and direct methods within the frame of No.4734 Public Procurement Law. In the purchased personal computers and laptops Windows operating system, in servers there are Solaris, Windows Server and Linux OSs used. In 2001, in the scope of the Modernisation Project carried out by a loan from World Bank, all purchased computers come with pre-installed Windows 98; no fee is paid for operating system. <u>Within the frame of updating policy from Microsoft, as if there is a new version released during to three years after purchasing computers, there is no extra fee for updating.</u> Microsoft XP is updated into all computers in our undersecretariat, and still the same operating system has been using. Besides, <u>in new computers has purchased without operating system or pre-installed FREE DOS which is free operating system (the simplest operating system).</u> In this way obtained computers, <u>Windows XP and software applications and packets which have been prepared for our undersecretariat have been installed.</u>

The Prime Minister / the Capital Market Board (07 th May 2008, No:7/7634)	
	Regarding to compatibility between current and alternative open source software and our system and applications, our studies are still counting. After all studies, <u>performing compatibility, providing necessary training and education for end-users, and educating technical staff who can provide technical support</u>, the institution will be considered to use open source software applications and Pardus based on Linux OSs.

The Public Administration Institute for Turkey and the Middle East (05 th May 2008, No:7/174)	
Yes but still there is no institution control all these concepts. May Ministry of Science, Industry and Technology.	I esteemed that regarding to Pardus 2007 usage in public institutions, relative strategy and policies should be considered and shaped by initially the Supreme Council for Science and Technology, E-Transformation Executive Board, and the Prime Minister / State Planning Organization, as in high order. For this purpose, situation analysis, including comprehensive feasibility studies and researches with considering available situations and conditions of all public institutions and organisations are needed, and then a migration plan will be prepared for moving close source software to open source software through outcome of these studies.

The Ministry of Health (16 th May 2008, No:7/1123)	
	Pardus OS is used in Manisa Health Department and Refik Saydam Hifzishhha Centre in the relative institutions of the Ministry

The Prime Ministry / Undersecretariat of Foreign Trade (20 th May 2008, No:7/7504)	
Is it possible free of charge? If so it is illegal due to competition law. Unprofessional?	<u>For end-users computers, operating system is coming free of charge with purchased computers.</u>

The Ministry of Environment and Forestry (13 th March 2008, No:7/1727)	
This is so interesting. Just to be Pragmatic I think the stuff who prepared the documents has no idea of hegemony, monopoly etc. however this is exactly ICT culture in Ministries. They should not use Linux OSs. Contrary to what is believed, software and so FOSS and PCSS families are not simply a tool; evidently each of these has its political, technological, economical, philosophical and even cultural powers to change society, but the questions is to where. I think FOSS is not understood; sure it is a matter of world view.	1. The Ministry and relative institutions pay so low fee in the scope of the licence purchasing per year. Sometimes for Windows XP Professional operating system, 1-2 USA Dollar licence free is paid; when mass purchase is happened, Microsoft Cooperation make huge reduction. Apart from the low licence expenditure, within institutional agreements, technical supports are provided and specific solutions for various software applications are produced by Microsoft Cooperation. When our Ministry moved to new service building on 2006, our Ministry paid for once only 100,000 USA Dollar for all servers, operating system, post serving, management servers and software in 1,500 users. In last two years, the Ministry has not paid anything to Microsoft Cooperation. 2. Across the world, the proportion of all Linux distros in the use of personal computers is around the level of 1%. The proportion of the use of Windows OSs is around 97-98%. Operating system is a specialization study due to answering all comprehensive software applications. It is required to be an expertise in the complicated and complex area, particularly technical supports, updating supports, thousand software applications, providing drivers supports for hundreds hardware etc. Nowadays, it is not possible to see the same technical supports from software developed by voluntaries. 800,000 companies across the world and 7,000 companies in Turkey commonly provide Microsoft products and technical supports. <u>In each city and in each district, there is one Microsoft business partner who can provide Microsoft technical supports. There is no this kind of technical support in the Linux World formed a basis of voluntaries. In Linux operating system there is no a certain owner therefore it is difficult to find an addressee and to search for a solution.</u> In critical institutional services, institutional support is indispensable.

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Is it really FOSS not real in ICT market? Which kind of software the Ministry needs? I think there is a contradiction in there. And I know there are FOSS alternatives projects for CAD and GIS. Nevertheless it can be argued, in terms of which criteria they are more useful and functional. The discourse looks like that the Ministry is Microsoft, CPSS spokesman. Where is reference? The literature has shown that it is not true that is all depend on strategic plan. No conclusion can be made in this sense. This is strange.	Institutional ICT system is composed of fundamental components: various hardware, system software, software applications and human resources. Any change in each of these components leads to enduringly huge expenditure, including the component change cost as well. Therefore, <u>through considering current structure, any changing should be considered with preparing cost benefit analysis.</u> Performing any changes without considering cost benefit analysis based on objective criteria has lots of drawbacks as well as result in wastes of current investments. <u>Thousands</u> software applications are worked with Windows platforms. These kinds of software applications are not really common in Linux platforms. Companies which develop these kinds of software applications prefer to use the most common platforms because of the fact that they are in economical cycle. <u>There is no available software regarding to Computer Assisted Design (CAD) and Geographic Information System (GIS) in Linux OSs, even there is no one developer</u> regarding this, therefore there is no institutional support. <u>Besides, CAD and GIS software versions for Windows are more useful and functional compared to their versions for Linux.</u> Linux software applications are still in development process. <u>Providing so much effort and then giving all these as a public good- GPL are still ongoing conflict.</u> Expenditure of initially owing software is much lower than Total Cost of Ownership (TCO). Although, it is considered to purchase (Linux) is so low or free of charge, TCO (education, support, time consuming training difficulties, initialisation, grossing-up etc.) should be thought. <u>International independent supervision and research institutions such as Gartner, Forrester, Yankee, IDC etc., have shown that the TCO of Linux is much more than TCO of Windows.</u> In the main service unit of the Ministry, and relative institutions, client operating system, post servers, management servers and software, Linux is used to some extent. <u>UNIX and Linux are used to perform important applications such as, Meteorological Data Archive System, Digital Weather Forecast and Climate Simulation.</u>

The Ministry of Agriculture and Rural Affairs (12 th March 2008, No:7/1727)	
For someone one perspective, fact or simple a thing may understood as just happing because of the needs, on the other hand for others it may be a threat and even the reason of something else as in here. In this sense, I agree that the purpose of the project is in the centre however the outcome of the way accomplishing the purpose may result in different. So the Ministry is mistaken. Is it followed Interoperability Framework Guide Reports Strange for server, I think no issue for Linux. I think the discourse of Ministry is so aggressive and protective. The Ministry is talking with software interesting.	1. The Ministry of Agriculture and Rural Affairs does not purchase licenses every year. Purchasing is performed in line with needs in the scope of projects. Therefore, performed purchasing varies greatly from year to year. <u>Besides, these purchased are not for obtaining licences, actually are performed with obtaining all components for meeting a need.</u> 2. In general, <u>specifying a particular strategy for public institutions is a kind of implementations at the disposal of the Prime Minister. Before explaining our, the Ministry of Agriculture and Rural Affairs, approaches regarding this, it is necessary to be understood that not all Linux based software are reliable and at no cost.</u> Linux operating system which is thought at no cost has also expenditure if total cost of ownership (TCO) is considered. <u>In server hardware, regarding to sustainability and supportability it is essential to use an operating system which is already provided interoperability guarantee from server manufacturers, to ensure the smooth and reliable operation.</u> Almost all serious <u>Linux versions supported by server manufacturers are commercial based,</u> and for the versions used in public institutions there are paid supports and update services on a yearly basis. Beside in terms of determination of TCO, there are not only sale and supports items but also it is necessary to consider of integration with existing infrastructure, personal training, and the loss of the institutions when the server systems are inactive. Preferring Linux based operating system which is less costly, is the decision must be taken account of TCO in the duration of whole projects cycles and the Ministry infrastructure. Except Linux versions which are free licensed operating systems, in the Ministry there are database, iszekasi, reporting software used. These kinds of software are licensed subject to a free, and generally there are also Linux versions for them. The methods of software licensing are independent of operating system and get vary for each company. Here the important point is: <u>it should be known that there is no such a free or no cost software which gives 7x24 guarantees for uninterrupted service and provides necessary supports for these guarantees.</u>

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Strange, it is used (Prepared) not (Developed), it is kind of insulting. Social Movements ICT culture in the Ministry.	<u>It is out of the question for our Ministry to specify particular platform or brand in the project tenders.</u> Operating system and software which have reliably and continuously workable infrastructure and supports are only used for server side infrastructure. For personal computers, regarding to TCO, there is no big difference. <u>There are support and updating costs for Linux distros which are reliable and continuous, and has the guarantees of supports and updating.</u> However, as distinct from server side, there is a national Linux <u>distro prepared by TUBUTAK</u> in this area. For end-users points, the most important point for the affect of the use is end-users knowledge and experiences. In an instant, migrating to the use of Linux is so difficult for end-users and resulted in that end-users cannot do even daily routine. <u>Migration of the use of Linux is found appropriately only if there are detailed in-service trainings for all stuff through all public sectors within social movements.</u> In the event, when the Prime Minister issue an implementation directive for the use of national Linux distro prepared by TUBITAK, into public institutions, our <u>Ministry will also be implemented.</u> 3. Regarding the use of Linux based operating system; there is no transmitted information to our Ministry. <u>Linux based operating systems are not unlicensed, obtained through free licences.</u> As clarified in the second question, there is updating and support cost into consideration of TCO. <u>For the use of operating system in the our Ministry, software must be stable, reliable, in support, updated and real; end-users who have experiences upon this software; and operating system must be compatible with all current software used in the Ministry not to delay the Ministry services.</u>

OTHERS PARLIAMENTARY QUESTIONS

Similar Questions from Huseyin Mert (07th December 2007, No:7/1172⁹⁰), Husnu Collu (10th January 2008, No:7/1540⁹¹) to all Ministries, and Ozdal Ucer (16th April 2010, No: 7/13996⁹²),

⁹⁰ Mert, H. (2007). Okullarda ulusal yazılım ve iletişim sistemi kullanılmasına ilişkin, *the Grand National Assembly of Turkey*, No:7/1172, 7th December 2007, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=59310

⁹¹ Collu, H. (2008). Bir işletim sisteminin kamuda kullanımına ilişkin, *the Grand National Assembly of Turkey*, No:7/1540, 10th January 2008, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=59990

⁹² Ucer, O. (2010). Alınan bilgisayar donanım ve yazılımlarına ilişkin, *the Grand National Assembly of Turkey*, No:7/13996, 16th April 2010, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=82738

The MoNE responses three times, they are so similar (13 th March 2008, No: 7/1315)	
The costs of each individual computer components are not known. Why do Ministries prepared the tender in this way, even there have been criticisms from various disciplines, even from the World Bank, the Ministries underlined that it is for being ensure there is no compatibility issue, however first there are tenders specifications which are underlined Microsoft OSs, and importantly taken the systems as a whole provides the Ministries chances to state that the responsible is given to companies who won the tenders, not the Ministries. Disinformation, Why did the MoNE prefer to provide disinformation in the Parliament instead of giving right information and accepting lock-in? What is the consequence of providing disinformation in the Turkish parliament for Ministries? Disinformation It happened.	(1)... <u>The costs of each individual computer components are not known</u>, but the total cost of computer system is known. Therefore, it is not possible to know the cost of operating system between 2003 and 2007. However, in the scope of 2nd phase of Basic Education Project carried out between 2003 and 2007, a total of 865,084 US dollars was spent for operating system. (2) <u>The infrastructure of MEBSIS in our Ministry is designed based on open source software. Pardus operating system is not compatible with this kind of infrastructure.</u> Necessary preparations which are for users in order to get appropriate access to the MEBSIS system via other web browsers are carried by our staff. Pardus operating system developed by TUBITAK has been followed the changes by our Ministry. In addition, “Open Source Operating System” course which are all aspects of Linux and Pardus operating system contents, is included into the curricula of vocational high school in 11th class for one year, 5 hours a week. <u>Regarding to e-portal projects. All software studies has been carried out by the Ministry stuff, there has not been any software purchased from any companies. Within these studies, for database, Oracle, SQL Server and MySQL which are worldwide accepted, for application development tools, .net technology and open source software technologies are used. Therefore all the mentioned claims, new generation will be product dependent and within the use of close source software it will be dependence of foreign sources are immaterial averments.</u>

Muharrem Toprak (29th March 2005, No: 7/5052 ⁹³)	
The opposites parties in Turkey are informed by the written and visual media, the government do not provide exact information about their ICT policies, even the answer clarified there was no agreement with Microsoft to purchase software however there was the Partner in Learning Protocol since 05th May 2004 between MoNE and Microsoft, initially described by the government as a goodwill protocol.	<u>According to reports in written and visual media</u>, after the project of each school has the internet e-portal will be introduced. Educational programs. E-portal will be worked as a <u>giant (comprehensive) library which is included lot s of information</u>, from directives, students tracking system to statistical. While information system will be prepared by the Minister, <u>software component will be established by Microsoft</u>. Thus and so, it will lead to the conclusion of both product dependent new generation and dependence on foreign sources due to usage of close source software. As a consequence, 1. Is it possible to develop national software and communication system via our country knowledge and experience- our brain power? Regarding this, is there any study in the Ministry? 2. “Close source software is an analogue of using drug without knowing its contents!” If there is currently no national software and operating system. Regarding software, while most developed countries across the world are making approaches to Linux software usage, are there any taking consideration of not to work with Microsoft which is also the danger of national security?

⁹³ Toprak, M. (2005). Ulusal bir yazılım sistemi geliştirilmesine ilişkin, *the Grand National Assembly of Turkey*, No:7/5052, 29th March 2005, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=30471

The MoNE responses	
It is the so similar with 2008 report. It is so clear that the MoNE underlined the best, the most reliable products and with the best price regarding keeping open source software in the balance for creating ICT culture for student. However, FOSS is not real in the sense, just for taken better deal. In the scope of the Information Access Portal Project, it is known that Microsoft Cooperation provided software free of charged (around \$30 Millions⁹⁴). There are many news the reason of that Bill Gates was invited to visit to Turkey.	1. In our country, there are studies carried out by private sector, to develop different operating systems (Linux, Pardus etc.). While such studies are seen with appreciated by the Ministry, <u>based on 3797 Law, it is not considered that developing a national operating system is in jurisdiction of the Ministry.</u> 2. The fundamental principle of the Ministry is to integrate hardware and software tools, which are already proven their reliabilities <u>in our country as well as world-wide, into education and training activities without dependent on a particular company's product and services.</u> Providing this basic principle are <u>prevention of monopolization</u> in the private sector and <u>contribution of competition environment.</u> In line with these principles, in the Ministry, either in central organizations or in education and training institutions, the <u>best</u> and the <u>most reliable</u> products are taken from the most common companies regarding to service network, with the <u>best prices</u> by competing in a healthy environment through various private sector institutions and organizations in a wide range of different products. In this sense, the Ministry reveals strong determination. While ICT sector advance rapidly, our main goals are to provide ICT culture to our students, with <u>keeping open source software in balance as much as possible.</u> While Microsoft products are being used in some units of the Ministry, there are ongoing studies to contribute developing Linux operating system software for using open source software in some units of the Ministry. On the other hand, in the scope of desired project - bringing personal computer for teachers; as a result of negotiations with TUBITAK EUKAE, it is decided to <u>provide Pardus CDs with computers.</u> The main purpose of these indicated efforts is the acquisition of software culture for students and the Ministry workers regarding to using various open source software developed by various platforms. Other than that, there have <u>not been any agreements with Microsoft company</u> for purchasing software in order to develop infrastructure of Information Access Portal. The company (Microsoft) committed to provide complimentary software as well as service supports during these studies. On the other hand, <u>these studies are pilot and initially included in 120 schools and after feedback the portal will be extended. Microsoft will support in these pilot studies. The Ministry will not pay any fee for Microsoft supports.</u>

⁹⁴ Milliyet News. (2005). Gates'ten 30 milyon dolarlık jest, Retrieved 31/12/2013 from <http://www.milliyet.com.tr/ekonomi/axeko01.html>

International and National Political Conflicts were used to force. There is no more information on the internet about Microsoft Encarta Encyclopedia. “In its August 18th edition, the Chronicle reports that the <u>Turkish government has threatened Microsoft with serious reprisals unless any mention of the Armenian genocide is removed from its entry dealing with Armenia</u>, written by Ronald Grigor Suny, and its entry on genocide, written by Helen Fein. According to the article, in response to Turkey's pressure, Microsoft approached both these authors to rewrite their entries to cast doubts on the historical facts of the Armenian genocide. Both Mr. Suny and Ms. Fein rejected these requests and have openly discussed Turkey's pressure tactics with reporters from the Chronicle. The Chronicle article... also notes that Encarta's entry on Turkey (now) makes no mention of the Armenian genocide” I am not sure it is true. But there are various resources, forums and websites.	On 22nd February 2005, (No: 7/5029⁹⁵), Mustafa Gazalci asked the MoNE about the expenditure of the project, the software decision making process and whether or not Linux and Open Office would be used in the project? The answer from MoNE is that MoNE <u>does not have specific information about the software and operating system costs</u> because the tender is included as a whole. <u>In the report it is just written that in the MoNE, and its related institutions Linux OS is using.</u> On 16th February 2005 (No: 7/4985⁹⁶), Osman Coskunoglu asked the MoNE the reasons of Bill Gates visited and possible agreements and danger of lock-in and dependencies. The answer, there is just a <u>goodwill protocol</u>; there is <u>no possibility to be engaged in Microsoft or another companies.</u> On 23rd January 2002 (No: 7/5728⁹⁷), Emre Kocaoglu asked the former Prime Minister about Microsoft Encarta CD-ROM Encyclopedia and its relative website. <u>In the encyclopedia, and website there was a Kurdistan map in eastern Turkey side. After reports on the removal of Kurdistan</u>, The map has been changed in 2004 (Edwards, 2004). The time period is also interesting because just after the purchasing Microsoft Operating System in the scope of the BEP project, and just after the Special 301 report put Turkey into Priority Watch List from Watch List until 2008. There are also similar complaints, between Chinese and Taiwan governments and Microsoft Encarta. <u>“Microsoft also bows to political pressure. The government of Turkey stopped distribution of an Encarta edition with the name Kurdistan on a map. Here Microsoft removed the name Kurdistan from the map.</u> Governments frequently lobby the company to show their preferred boundaries on maps. When the border between Chile and Argentina in the southern Andes was in dispute, both countries lobbied for their preferred boundary and the solution both countries agreed to was- no line”(McGraw Hill, 2003, p.70)

⁹⁵ Gazalci, M. (2005). İlk ve ortaöğretim kurumlarındaki bilgisayar sayısına ve kullanılan yazılım programlarına ilişkin, *the Grand National Assembly of Turkey*, No:7/18884, 23rd March 2011, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=30409

⁹⁶ Coskunoglu, O. (2005). E-Devlet Projesinde kullanılacak yazılım programlarına ilişkin, *the Grand National Assembly of Turkey*, No:7/4985, 16rd February 2005, Retrieved 31/12/2013 from http://www.tbmm.gov.tr/develop/owa/yazili_sozlu_soru_gd.onerge_bilgileri?kanunlar_sira_no=30349

⁹⁷ Kocaoglu, E. (2002). Yabancı bir yazılım firmasının ansiklopedisinde ve internet sitesinde yer alan bir haritaya ilişkin, *the Grand National Assembly of Turkey*, No:7/5728, 23rd January 2002, Retrieved 31/12/2013 from

Application Distributor	Policy Toward FOSS inclusion	Stated Responsibility for Satisfying Obligation
Microsoft's Windows Phone Marketplace	Prohibits software that carries obligation to disclose source code. Allows software under permissive FOSS licenses	Policy does not address satisfaction of obligations for any permitted users
RIM's BlackBerry App World	Prohibits use of software carrying requirement to disclose source code	Policy does not address satisfaction of obligations for any permitted users
Apple's App Store	FOSS use cannot subject non-FOSS software to FOSS license terms	Developer must comply with FOSS license terms
HP/Palm's App Catalog	Encourages creation of open source applications	Developer must make code available to the community under license terms
Nokia's Ovi Store	FOSS use cannot subject non-FOSS software to FOSS license terms	Developer must make code available to the community under license terms
Google's Android Market	Policy does not address FOSS	Developer must have right to distribute any 3 rd party material

Source: The report of 'Open Source Compliance in the Application Development Space' by the Linux Foundation (Koltun, 2011, p.16)