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Governmentality and the information society: ICT
policy practices in Greece under the influence of the
European Union

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Declaration

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Abstract

The perceived socio-economic significance of Information and Communication Technology (ICT) has dramatically expanded the domains in which this cluster of technologies is being discussed and acted upon. Action to promote the 'information society' has made its way into government policy. National technology policy and action cannot however be adequately understood solely as the calculation of needs according to the development aspirations of the country concerned. Instead it needs to be placed in the intersection of simultaneous efforts by national and international organisations to shape technological developments. This research examines the nature of the efforts made to promote ICT innovation through national policies and programmes in the midst of international and regional influences.

The thesis involves the historical analysis of the policies for ICT diffusion in Greece within the context of the European efforts to promote the information society. It examines how the Greek state undertook to implement a large-scale ICT programme, in the backdrop of hesitant attempts at modernisation and technological innovation. The research traces the emergence of the ICT programme and the European visions which framed it, and explores the discourses and practices through which it came to materialise.

The research is theoretically informed by Foucault's ideas on governmentality, focusing on the government and self-government of conduct. The study explores the discourses sustained through the European and Greek policies on the information society. Practices of funding, monitoring and reporting are also scrutinised to understand the forms of discipline and contestation they gave rise to. Through this theoretical analysis, the research engages in a context-sensitive examination of the taken-for-granted relationship between policies and their implementation.

The main contribution of the thesis lies in illuminating the often neglected role of international and regional organisations in shaping technological agendas, and the material practices which allow them to operate effectively across distances.

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1.CHAPTER ONE – INTRODUCTION

1.1. Conceptual framing of the thesis

The statement that ICT is implicated in sweeping socio-economic changes, both in industrialised and many developing countries, is increasingly considered incontestable. As the cost of hardware, software and network connectivity decreases, and their capabilities increase, ICTs become thoroughly tied to most aspects of economies and societies. The entanglement of ICT within modern processes of life and work has led to the intensification and acceleration of informational flows, which now extend, to varying degrees, to most parts of the world. Informational networks are fast becoming the backbone of economic and social life. Information, in particular codified and abstract information (Tsoukas 1997), and the technologies for its processing and exchange are fundamental to a host of human activities.

Accounts commenting on the importance of ICT for the pervasive socio-economic changes which are currently observed have been numerous, although not all have postulated the same kind of relation between them. There are different interpretations of the degree to which such socio-economic changes are driven by technological innovation, enabled or triggered by it (Ellul 1964, Winner 1977, Giddens 1990, Beck 2000, Castells 2000a, Castells 2000b, Kumar 2005). Most commentators further implicate ICT in processes of economic, cultural and political globalisation, highlighting the multiple ways in which such processes rest on ICTs for their reproduction, whilst simultaneously sustaining the conditions for the global diffusion of ICTs. A tripartite relation seems to emerge between globalisation, ICT

and large-scale socio-economic change, even though there is little consensus on the kind of relation stipulated between technology and society¹.

A frequent point of criticism against accounts of ICT-enabled socio-economic change concerns their technologically deterministic underpinnings. Technological determinism is evident in the assumption that specific technologies constitute optimal or necessary technical artifacts. It is also evident in the assumption that ICT brings about similar societal effects irrespectively of the context of use (Avgerou 2002, Sassen 2002, Wajcman 2002, Smith 2006). Smith and Marx explain it as such:

In each case, a complex event is made to seem the inescapable yet plausible result of a technological innovation. Many of these statements carry the further implication that the social consequences of our technical ingenuity are far-reaching, cumulative, mutually reinforcing and irreversible (Smith & Marx 1994, p.xi)

Despite the critique on technological determinism, it is clear that specific technological innovations have gained great power and influence, to the extent of appearing as, although not necessarily being, self-promoting, at least to those with limited capacity or will to influence their direction (Winner 2001). There is a need, then, to raise and address key questions about the social and political processes through which technological innovations are implicated in socio-economic change. A shift away from a naive technological determinism requires an effort to examine the political and social processes through which technologies, ICT in particular, are linked to specific societal effects, and are made to appear determining, self-sustaining and unstoppable.

The need to acknowledge and subject to scrutiny the political processes through which socio-economic transformation through ICT is enacted is further necessitated by the proliferation of discourses on ICT and development, growth or competitiveness. Such discourses unfold around notions and visions of the

¹ Kumar (2005) provides a great exploration of theories of globalisation, post-modernity and the information society.

information society and economy, the knowledge economy, or the network society. Such discourses have become widespread and influential through their enunciation by prominent personalities, such as Al Gore (1996), and powerful organisations such as the European Union, the OECD, the World Bank, and the United Nations (see also Klein 2004, OECD 2009, UNDP 2009, infoDev 2010, ITU 2010). The information society thus came to be the dominant way of conceptualising the future of nations. The momentum of the information society, further integrated in programmes of economic and humanitarian assistance, and structural reform, spread quickly around the world. As a result developing and, increasingly, least developed countries have created plans and policies for the information society. As Moore pointedly observed in 1998,

[t]oday, just about every country of significance has produced some form of information policy or is making an attempt to position itself as an information society (Moore 1998b, p.149)

This trend has kept growing.

Such plans and strategies exude a great deal of optimism and confidence with regards to the potential of ICT to foster or drive changes in society. Such optimism has occasionally been misread as outright technological determinism.

These metanarratives about the information age can themselves help to constitute that which they purport to describe and analyse. Technologically deterministic understandings of the economy play an increasingly important role in political discourse. Governments anywhere legitimate much of their policy in terms of a technological imperative. (Wajcman 2002, p.348)

This is, nonetheless, a narrow and rather superficial take on the political discourses on ICT and socio-economic change. Specifically, it fails to recognise that beyond the appeal and take-up of the 'technological imperative' as a rhetorical device, innovation is carried out and sustained on the basis of institutions and material practices. This institutional and material basis also provides the medium for the transformation of technical inventions to innovation. It is well accepted that innovation does not naturally result from scientific technological inventions. Indeed, there is a realisation within academia and practitioners that ICT-enabled socio-

economic change is subject to institutional effects, mainly from research and development, the market and governments (Nelson 1993, Fagerberg, Mowery *et al.* 2005, Freeman 2008).

The role of governments in relation to ICT innovation has been highlighted in related discourses on ICT policy in the 1980s. A well researched example is the Ministry of Information Technology and Innovation (MITI) in Japan, and its continuing efforts to steer ICT innovation so as to bring about specific changes in the fabric of the Japanese economy (Chalmers 1982, Freeman 1987, Morris-Suzuki 1994, Callon 1995). Other government programmes have been both influential in practice and well studied in academia, such as the ESPRIT programme in the European Union (Mytelka 1991, Assimakopoulos & Macdonald 1999, Pohoryles 2002), and the Alvey programme in the UK (Land 1983, Hobday 1988, Land 1990). Even in the USA, which epitomises the faith in the power of the market to innovate under minimal state intervention, research has revealed the role of state in fostering close relationships between universities and the market, funding research, as well as subsidising military technologies (Mowery & Rosenberg 1995, also Coopey 2004 includes a number of chapters on the technology policies of the EU, the UK and the USA among others, Brown 2007, Fuchs 2010).

Such research has developed within the broader stream of systems of innovation, which is discussed in the following chapter. It has contributed to the creation of a consensus that governments have an important role to play regarding the steering of ICT-driven socio-economic change. Indeed, enabling desirable ICT-driven socio-economic outcomes, and constituting the mechanisms for achieving them, means designating ICT or the information society as areas for policy making and action.

The information systems field has created a wealth of knowledge on how ICT contributes to transformation and economic benefits at the organisational level. In particular, its cumulative research output has sensitised researchers to the open-endedness of efforts to bring about ICT-enabled change within formal organisations, whether private businesses or government departments. This has entailed a growing

realisation of the need to be attentive to the structural, historically-formed elements of the context in which innovation takes place, and the local improvisations through which it emerges (Keen 1981, Zuboff 1988, Robey & Boudreau 1999, Avgerou 2001, Heracleus & Barrett 2001, Ciborra 2002, Orlikowski 2002, Markus 2004, McGrath 2006).

The information systems field has, however, devoted little attention to understanding the way ICT comes to contribute to socio-economic change at the macro level (national, regional, global). This omission has been noted by some commentators. For example, Walsham (2000) points out the limited literature discussing ICT-enabled change at levels beyond the organisational, whilst Avgerou (2003b) argues that the information systems literature has failed to adequately explore the process of information systems innovation and its ramifications for interventions at the societal level. On the other hand, Orlikowski and Iacono (2002) stress the need to extend the sociotechnical enquiry to unpack the notion of the 'digital economy', but fail to find a way around the formal organisation as the unit of analysis. With the exception of the seminal article by King, Gurbaxani *et al.* (1994), who point to the role of government policy in information systems innovation, information systems research has not engaged with questions regarding managing ICT-enabled innovation at higher levels of organising than the formal organisation. Perhaps, most explicitly of all, Galliers (2003) calls for a broadening of the scope of information systems research away from organisations and individuals to take into account pertinent issues of societal, policy and ethical nature.

There are dangers in drawing our boundaries too closely to organizational entities and making this the locus of all our study. [...] There are clearly wider and deeply ethical issues that demand our attention. For example in relation to societal issues associated with IT, there is a considerable research agenda confronting us with respect to the so-called "digital divide" (NTIA 1999, DTI 2000). Indeed more broadly speaking, there is an emerging agenda associated with IT and globalization (Castells 2001, Walsham 2001); and IT in the developing world (Avgerou 2002) and the associated issues of culture and diversity (Beardon & Whitehouse 1993). Thus, I believe it is reasonable to argue that an appropriate locus of IS study is more broadly based than organizations or individuals. Societal, policy and ethical concerns might reasonably be included within the ambit of the IS field (Galliers 2003, p.342)

This omission of the information systems field is important for three reasons. Firstly, there is an expanding trend towards innovations which are not dependent on the formal organisation for their creation and continuation, but which are enacted upon at different levels of organising. An example of this is the prevalence of social networks, which unsettle the dominance of formal organisations in controlling the diffusion of innovation. Another example is the emergence of international regimes of regulation of global competition, among others on ICT innovation. Secondly, efforts made at higher levels of organising to generate desired changes in societies and economies through ICT innovations create the institutional environment in which formal organisations operate. Such efforts operate in different ways, as visions, directions of legitimate and desirable productive activity, or, mundanely, as material and financial incentives, to constitute a formative context for formal organisations. For example, the study of the implementation of an e-government information system may differ significantly seen within the context of a national drive towards diffusion of the Internet, or within the context of pan-European co-ordination and data sharing. Thirdly, there appears to be a striking discrepancy between the breadth and scope of activity to steer and manage ICT-enabled changes at the societal level which can be observed in real life, and the research attention paid to such efforts. The prolificacy of programmes to steer and manage information systems innovation at a societal level by various authorities and their wide-ranging effects have not been met with an adequate analytic response, within the research tradition of information systems.

This research is intended to address this gap. I am interested in understanding how governments attempt to steer ICT-enabled socio-economic change. This leads me to examine relevant policy making: ICT policy, more specifically the types of efforts aimed to diffuse the use of technologies across society, often referred to as information society policy. Building on the process research stream of the information systems field, rather than on outcomes, my focus is on issues regarding how government decision-making and action intended to promote ICT enabled-change are formed and come to exert influence on ICT-enabled change.

The most visible mechanisms are the institutional structures and techniques of policy making and implementation, which constitute the research object of the policy analysis literature. However, drawing from existing literature on information systems implementation at the organisational level from information systems studies, and in society at large from science and technology studies, I am led to cast this research in a broader frame whereby the technical/rational policy making techniques, actions and outcomes are only one component of a more complex picture of sense making, identity constitution and power relations. This broader frame is enabled by the choice of governmentality as a theoretical approach, as is discussed later in this chapter.

1.2. The case researched

The selection of the case was driven by two related considerations. Firstly, case selection was driven by the need to bring into the spotlight the international dimension of ICT policy in its multiple facets. These pertain not merely to the role of international organisations in reproducing a technological vision, but also to the active constitution of discourses as to how ICT-enabled socio-economic change happens and who is tasked with it, the launching of programmes of action, and even the production of regulation.

In these respects the choice of the European Union as a case for study is fitting. Against the backdrop of a global momentum of ICT and the Internet, the European Commission aspired to constitute the European region as a global competitive player with regards to ICT innovation. These aspirations led to the creation of successive policies and action plans promoting specific types of ICT innovation, such as broadband infrastructures, e-government and the expansion of e-commerce. Not only did these priorities emerge as a solution to Europe's declining productivity, they also formed part of the solution for the closer integration of the European Union and the struggle to overcome regional disparities among member states. Such

technological solutions could form the basis for the catch-up of peripheral and less developed populations and economies.

In such a study, there is a palpable risk of placing too much emphasis on the purely discursive constitution of notions of the information society. This is especially so, given the distance between the international organisation, the Commission in this case, and the European population on which change is sought, which limits its ability to make obvious material interventions. Analyses of the discursive constitution of European technological rhetoric have been done before, predominantly within culture and media studies (Mosco 1998, De Miranda & Kristiansen 2000, Garnham 2000, Goodwin & Spittle 2002, Mosco 2004, Thompson 2004), but have been proven limited (McKee 2009). Avoiding a discussion which limits itself only to the discursive analysis of strategies and utterances was, thus, the second consideration. The risk was averted by examining the practices and processes through which the Commission sought to overcome the distance with the populations it attempts to influence, by 'working through' the national authorities, in order to 'govern at a distance'.

The case was thus complemented by investigating the Greek state's efforts to provide a direction and actively manage ICT-enabled socio-economic change. The narrative demonstrates a long history of attempts to centrally spur and facilitate ICT-enabled changes in the Greek society and economy, through policies and large-scale programmes of action, with varying degrees of effectiveness. Thus, the domain of research was formed out of the loosely delineated space of interplay between national (Greek) priorities and international (European) demands, which could be researched on a longitudinal basis through the policies drafted, the institutions established, and the programmes implemented. The focus of the study is in particular on the point of interaction between the European and the Greek efforts to steer and enable the desired societal changes through the diffusion of ICT innovation. Therefore, the research outlook consciously adopts a broader, multi-level perspective to allow the study of modern systems of governance of ICT and innovation through the mobilisation around the information society.

This thesis narrates events and discourses, which took place during the two previous decades. This period was characterised by a degree of economic prosperity in Europe, and overarching optimism worldwide about the potential of ICT to do good and enable desirable reforms in societies and economies. It is in this context that the thesis examines two decades of policies, action plans and programmes by the European Union and their intersection with the Greek government's attempts to harvest the developmental potential of ICT. Drawing on the observation that notions and visions of the information society have gained great political saliency and become priorities of national policy on their own right, this research sets out to examine the nature of these efforts and the specific ways in which they formed part of a more globalised web.

1.3. Theoretical underpinnings

A Foucauldian perspective was selected as the analytical frame for the study. More specifically, the thesis drew heavily on Foucault's later writings and lectures on the government of self and others. In this work, Foucault analysed government in non-essentialist terms (Jessop 2007), as a product of specific processes and discourses. Governing involves more than the enforcement of the law and the sovereign power of the state. In modern societies, it involves the governing of individuals through their own needs, desires and aspirations, implying the active agency of both a governing state framing the types of desired actions, and an actor who subscribes to the pre-framed mode of behaviour and acts on it. Research emphasis lies in governing, rather than government, i.e. in the everyday practices that render individuals, mindsets and material arrangements governable, rather than on the institutions of government itself. Nonetheless, for the sovereign state to act on the desires of its subjects a host of agencies and actors closer to the individual are required to convey the message of the desired conduct. In such multi-layered contexts as the ones created through the rise in prominence of supra-national institutions, the range of mediating agencies of government expands dramatically in order to reach the population.

Studies of governmentality have provided promising ground for critical research in political science, international studies, cultural studies, management and elsewhere. Research in governmentality has however found little footing in studies of technology, apart from a few interdisciplinary works (Ong 1999, Ong 2000, Barry 2001, Bunnell & Coe 2005, Inda 2005, Ong 2005). The lens of governmentality offers a number of distinct benefits for this thesis. Firstly, it successfully addresses issues of scale. For example, structures and institutions which could otherwise be considered as external forces at the macro level, such as the European Union in relation to the administration of a member state, can be investigated as locales which manage to make their effects felt further. Secondly, the relational approach to power corresponds well with the case at hand, where manifestations of power do not always follow the lines of authority. The more sophisticated conception of power as a kind of regulated or managed freedom, i.e. an ability to be free in specific ways, reflects an attitude to power as something that can be productive, as well as restrictive.

The analysis reveals that the European Union operates as a source of legitimising discourses, visions of the future, and acceptable ways of being modern in given conditions. All these elements create an enabling and simultaneously constraining environment in which national decisions for ICT are taken. Greek policy makers receive particular images of an information society (of how ICT should be appropriated within a modern society), funds earmarked for particular types of information systems, and administrative and monitoring procedures to guide the implementation.

As the ICT programmes move lower down the administrative hierarchy towards implementation and are acted upon by a range of local actors, their legitimacy is eroded. What prevails is a range of subjugated discourses about the role of public funding in civil life and the marginality of ICT within the experiences and aspirations of particular locales.

This research was conducted as a typical rather than a unique case, although the particularities are acknowledged and discussed. It can be seen as a typical example of

a country which does not lie in the innovating end of the technological spectrum, and which is called to act in accordance with the global impetus and other international demands. More often than not, Greece is researched as a unique case. For example, Featherstone and Papadimitriou (2008) examine the limits of European influence in domestic politics. They argue that Greece is a unique case within the EU, as it exhibits a distinct combination of a pro-European stance of the political elites and the public opinion and strong elements of resistance in the domestic affairs. Although heavily contextualised, this thesis is not interested in the Greek case for any intrinsic reason, only for its capacity to address the research questions through the existence of a dense empirical domain.

The field study produced a single, in-depth, intensive and qualitative case. Semi-structured interviews were conducted with key policy actors in the European Commission and the Greek administration. Moreover, interviews were conducted with administrators, academics, and consultants operating in the ICT industry in Greece. Finally, documentary material constituted a large part of the evidence base. Documents, such as policies and plans, evaluation reports, promotional material, consultants' presentations, news clips etc, were used to shed light on the entire period of study of twenty odd years and to highlight shifts in the accepted ways of thinking and acting in the given conditions. All material was critically analysed through multiple readings in order firstly to create a historical narrative, and secondly to highlight the conditions of intelligibility within which programmes, institutions and policy priorities made sense.

1.4. Aims and contribution

The thesis aims to provide an insightful and in-depth understanding of a phenomenon which has received limited attention in the information systems academic field: the making of national policies and programmes for ICT, as manifestations of the intention to foster innovation through central direction. In particular the context is marked by the emergence of conditions where powerful ICT

visions dominate and are enacted by a variety of agents at different positions of authority and influence. Within this frame, the research question is:

How does the government steering of the diffusion and socio-economic effects of ICT happen?

This question is further elaborated and broken down into sub-questions as the relevant literature is reviewed in the next chapters, and a better understanding of the relevant gaps of the literature and of the theoretical lens of governmentality is gained.

Addressing this question requires an analysis which operates at two levels. At a first level, it traces the two parallel narratives of ICT policies and programmes in Greece and the European Union. At a second level, it attempts to see through these narratives to illuminate the legitimising discourses and truth claims, the mechanisms, procedures and material arrangements, which made particular courses of action thinkable.

Empirically, the thesis re-creates the tale of Greece's efforts to foster ICT innovation through central direction and management for a period of two decades and to demonstrate the strong and varied linkages with the ways the European Commission envisaged and promoted Europe's response to technology. The empirical investigation extends and enriches existing literature, in the information systems field as well as in the related fields of innovation and science and technology studies, which focuses on Europe's reaction to technological developments. It does so by demonstrating, through detailed descriptions, how the European Commission's policies and action plans had concrete effects on the decisions and priorities of a member state, and by analysing the nature of these effects.

The main contribution of the thesis lies in the formulation of a set of substantive conceptual conjunctures on the nature of information society as policy-driven, globally-orientated process of socio-economic change. In particular, I propose that the information society is not merely an emergent, self-propelling phenomenon, but one which is subject to conscious and continuous attempts to steer and direct it. In

this light, the information society can be understood in three inter-related dimensions. It is firstly material, in its implementation through investments, programmes and funds. It is secondly aspirational, insofar as it is inscribed in visions, strategies and policies, and insofar as it works through creating receptive subjects aspiring to a technological future. It is finally deeply embedded in the circulation of power, through existing relations of power and institutional arrangements which serve as the channels through which the information society is diffused.

The contribution of the thesis to the information systems community is two-fold. Firstly, in moving away from the study of technology within the boundaries of the formal organisation, the thesis highlights the benefits of a multi-layered, decentred research approach in dealing with societal and policy questions on ICT. I argue that given the globalised nature of ICT, a multi-layered approach can illuminate the ways in which broader processes come to have material effects on distributed sites where information systems are materialised. Secondly, the thesis sheds light on the policy makers as actors who have received little attention within the information systems field, despite their implication in making important decisions about ICT. My research shows that, through their intermeshing in an intense network of power relations, policy makers are called to strategically engage with the steering of innovation in their realms of authority, whilst simultaneously embracing to varying degrees global technological imperatives.

1.5. The chapters ahead

This last section of the Introduction provides an overview of the thesis, by offering a short summary of the main points and arguments of each chapter.

Chapter 2 provides a review of academic literature. This takes me firstly to the literature of systems of innovation which has been developed within the economics of innovation, and provides the theoretical grounding for the role of governmental action in innovation and the information society. Secondly, reviewing the literature

on ICT policy highlights the relatively little success in creating a theoretically robust body of knowledge on how ICT policy happens. Thirdly, I review the literature on policy making, with a particular focus on competing models of policy activity. This literature suggests that the rational/instrumental model of policy activity, although often uncritically taken for granted, does not offer a productive way of researching substantive policy questions, and points to alternative, more fruitful views on policy. Fourthly, I review the sociological literature on the information society, demonstrating the multiple aspects of the information society, and providing some credit to the criticism that the information society as a concept has limited analytical purchase unless viewed through a genealogical perspective.

Chapter 3 discusses the Foucauldian perspective taken in this study. It starts by introducing the concept of governmentality in the twin way in which it appears in Foucault's lectures, as a distinct way in which modern government manages its population, and more broadly as the way in which subjects are governed through their own needs and aspirations. I analyse related notions of the Foucauldian system of thought such as the aesthetics of existence and the relation of truth to power. I further argue that the concept of technology of government, although ignored by the literature beyond governmentality studies, can be a powerful way to explore the discourses which constitute truth along with the material foundations on which they rest and make their effects felt. I finish the chapter by conducting a review of the literature on governmentality to show the ways in which research on these ideas has progressed and to highlight the missed opportunities for the field of information systems.

Chapter 4 presents the research design, the research goals and questions, as well as the data sources and structure of the field study. I consider the four principles of the genealogical method of enquiry as Foucault explained them in one of his rare methodological texts. I illustrate how they were translated in this study and the advantages they brought to the study of a decentralised phenomenon which escaped easy and ready-made categorisations.

Chapter 5 is divided in four parts, the former two focusing on the context and the latter two on the empirical material itself. The first part engages in a discussion on Greece's relationship with the European Union. The section briefly comments on the history of the Greek membership, the reasons for the continuous support of the political world and the public opinion, and the nature of the financial transfers to the country. The second part provides the frame of reference to better understand these financial transfers in terms of the EU's cohesion policy. The section also discusses the particularities of the Community Support Framework (CSF), the instrument which allows financial assistance to be tied to specific developmental targets. The third section traces the Greek and European narratives of policies and programmes to promote the diffusion of ICT in what came to be crystallised as the information society, from 1985 to 2008. Finally, the fourth part presents the web of institutional actors in the European Commission, the Greek central government, as well as the dispersed sites of implementation, who created, acted on, or implemented the ICT programmes.

Chapter 6 presents the analysis of the case. I argue that the case can be analysed as one in which two prevailing technologies of government shaped the accepted national responses, the technological priorities and the legitimate ways of being modern. On the one hand, I suggest that the information society should be understood as a technology of government which includes not only a shifting array of discourses about what it is and who is legitimate to act on it, but also a range of techniques and procedures, such as the practice of benchmarking, which provide the discourses with material saliency. On the other hand, I argue that the implementation mechanism, called the Community Support Framework, although ignored in the European policy literature, operates not merely as a financing instrument, but decisively as a technology with important effects for the conceptualisation of success and failure, and the constitution of identities. I further suggest that during the period when both technologies of government operated simultaneously they were more effective in bringing to life the desired changes in

behaviours, although they were never completely successful, as the range of practices of contestation which I explore demonstrate.

Chapter 7 discusses the wider ramifications of the study on three fronts, policy, information society, and governmentality. With regards to policy, I contend that the linear-rational model of policy making, much akin to the linear model of software development, is not only insufficient in describing real life situations, but also damaging. This is because its taken-for-grantedness can limit researchers' interpretative horizons, and offer off the peg rationalisations to the participants themselves, distorting the ways they tell their stories. With regards to governmentality, I argue that the existing governmentality literature largely fails to pick up on the point, implicit and explicit in Foucault's work, that we are the subjects of governing regimes at the same time as governing others. This thesis sheds some light on exactly this issue in its exploration of the Greek policy makers, who attempted to bring about the desired changes in the behaviours and aspirations of citizens and businesses, whilst simultaneously being governed by the European directions of what it meant to be modern, strategic national policy makers in conditions of global innovation. Finally, I comment on the information society, and argue that a comprehensive conceptualisation of the information society would be one which can acknowledge its material aspects (investments, programmes of actions, budgets), its aspirational aspects (visions, discourses, identity formation), and the fact that it is embedded on power relations for its perpetuation.

Chapter 8 concludes the thesis. The chapter sums up the main points of the thesis and lays out its empirical and theoretical contributions. I also revisit the question raised in this chapter pertaining to the relative neglect of the topic from the information systems discipline. In light of the overall contributions of the thesis, I seek to show what this research has offered to the stock of knowledge on the social study of information systems. I present the limitations of the study which predominantly pertain to its relatively short timeframe for a study using a Foucauldian historical perspective. Finally, I suggest ways in which further research could fruitfully be pursued.

2.CHAPTER TWO – LITERATURE REVIEW

Intuitively there is a widely held attitude that investment in ICT is something that cannot be avoided in today's globalised conditions. Whether it is the private sector or the state that guides the direction of investment, inaction with regards to ICT is difficult to justify. Modern ICT is increasingly seen as a source of organisational and social innovation, economic growth and employment. Such a view is manifested in its increasing integration into policies promoting welfare and economic growth. It is the potential of ICT to constitute a major driver of innovation and socio-economic change that has increased its political salience, and has been translated in the continuing efforts of governments to foster its diffusion.

The introduction raised several issues which constitute recurrent themes in this thesis. One of them is the surfacing of a 'system of international governance' (Mansell & Wehn 1998). The term refers to the host of international and supra-national organizations, such as the Organisation for Economic Cooperation and Development, the United Nations, the World Bank, the International Monetary Fund, and the European Union, which have embraced ICT for its developmental potential, and have actively promoted its adoption by countries around the world. The other theme which emerged from the Introduction is the flurry of policy-making activity by governments worldwide, in their efforts to steer and orchestrate ICT-enabled change at the societal level. In practice, there is a broad consensus that governments have a role to play in facilitating the conditions which are conducive to ICT innovation and the information society. This belief is strong among practitioners, policy-makers in various levels of government, and scholars within particular disciplines, for example economics of innovation and policy research, despite disagreements regarding the extent and the areas of legitimate government intervention.

Selecting the research domains to include in this review poses a challenge, as it requires the synthesis of contributions across a broad spectrum of academic thought. The driving question of this thesis asks how centralised government steering of ICT-enabled socio-economic change happens. One of the main fields to attempt to address this question is the field of economics, and in particular the school of thought associated with economics of innovation (Freeman 2008), which has pointed to the crucial role of government in fostering conditions conducive to innovation. It is in this direction that this chapter first heads. Parts of the research question have also been addressed by various researchers within the media and information systems field, with significantly narrower frames of enquiry, and with little cumulative output. This fragmented domain of the study of ICT policy is reviewed next. To better ground the review on ICT policy requires a better understanding the nature of policy in general. Thus the review of existing theories of policy making allows for a more solid conceptual grounding of the study. Finally, I review sociological theories on the information society, in order to better capture the conditions of ICT-enabled socio-economic change which are associated with this particular phenomenon.

Specifically, this chapter is divided in four sections. The first section provides a general discussion of the concept of innovation in economic theory, both in neo-classical and in evolutionary economics. Despite the absence of technology from classical economics explanations, the emergence of the economics of innovation has resulted in significant work done on the systems of innovation. The systems of innovation literature not only sees innovation as central in the economy and determined by a variety of other domains, but also explicitly accepts government policy as an appropriate mode of intervention in order to foster conditions conducive to innovation.

The second section examines the existing literature on policies for ICT innovation and the information society, tracing the shifts in discourses over time. It argues that the dynamic content of ICT policy, often discussed under a host of different names, has created a complicated and fragmented picture, which obscures the current state of thought, as well as its historical evolution. More importantly, the fragmentation

has resulted in little accumulation of knowledge, not only on the content of ICT policies themselves, but also on the conditions of their creation. Indeed, in the bulk of the existing literature the emergence of ICT policies is rationalized; intentionality is taken for granted; and little is revealed of the various influences which shape them. It is in exactly these aspects that this thesis differentiates itself, by linking the content of policies with the conditions of their creation and materialisation and with broader concerns.

The third section discusses the foundations of policy making. It reviews the dominant strands of thought in policy analysis, and demonstrates that apart from the rational/instrumental model of policy, there are a number of alternative models, which seek to better reflect the lived praxis of policy makers or to question the values of policy making. As I suggest, however, such alternative models have unfortunately had less impact on neighbouring fields which deal with substantive policy questions. The research domain of ICT policy is a case in point.

The fourth section provides an overview and critical discussion of the information society as a sociological concept. It discusses some of the seminal works of the field in order to map the interpretations which have been developed to investigate the societal changes associated with the information society.

Finally, the concluding section synthesises the various strands of literature that are analysed here and provides the framing for the research question.

2.1. Understanding technological innovation

In the book *Understanding technological innovation*, Flichy (2007) argues that the study of technology in economic and sociological research has been on the one hand deficient, and on the other hand characterised by a blatant technological determinism. In his words “the traditional position of the social sciences is either to ignore technology or to see it as a foregone conclusion” (Flichy 2007, p.3). In the first case, technology is reduced to the means of production, the tool which enables a

particular kind of social organisation of the economy. For example, in macro-studies of economics and sociology, the focus is placed solely on social and economic interactions, whilst technology, often the basis on which these interactions take place, is treated as a constant of minor significance. In the second case, technology becomes an overpowering system of domination which presupposes and configures its own modes of working and living. In this case, not only do we live in thoroughly technological societies, but also technological structures harbour and solidify power inequalities which favour some, but disadvantage others (Eagleton 2003, p.179).

The following section highlights the various ways in which innovation is discussed in the foundation domain of economics. The purpose is to set the stage on which the subsequent discussion will be based, and to provide some clarity on the basic assumptions which receive usually little attention. Such a project has been done before (for example, in management science Gopalakrishnan & Damanpour 1997, and in sociology Flichy 2007), but with purposes which pertained to providing a comprehensive synthesis. On the contrary this section serves as an introduction to how innovation is discussed upon, and how it is thought to diffuse.

2.1.1. Technology in traditional economics

The effect of technological progress on employment was the primary concern of early thinkers of the economy. For Adam Smith, mechanisation and the division of labour was the source of wealth creation (Caton 1985). To the contrary, for Karl Marx technical change was closely linked with unemployment, as machines had the capacity to substitute workers in the production process (MacKenzie 1984, Bimber 1990). Neo-classical economics, however, turned away from technology and technical change, in its preoccupation to understand the free market and the invisible hand that balances it. The quest for general economic equilibrium presupposed a context in which the factors of production (labour, resources and technology) remained stable (Romer 1994). The assumption of stability in the environment and production factors became the cornerstone of both micro and macro-economics in the neo-classical tradition. As a result, technology and technical change became a residual

factor in economic analysis. It was effectively constituted as a domain that was external to and independent of society, and governed by objective laws (Rosenberg 1982).

A notable exception from the neo-classical economics line of thought is the work of Joseph Schumpeter and the field of Schumpeterian economics which he influenced. In Schumpeterian analysis, technical change lies at the heart of economic activity. At the macro level, the upswings and downswings of the economy are linked to the emergence and diffusion of new technological innovations which change the modes of production. At the micro-level, the entrepreneur becomes the centre of economic activity, a mediator between the inventor and the market, who provides the effective and necessary linkage between the realms of technical invention and the economy.

From 1950 onwards, the research interest in economics shifted from modelling points of economic equilibrium to seeking the causes of economic growth which could not be explained from the increase of the factors of production (capital or labour) or the increase in savings. Thus, technology was introduced into economic analysis as an external factor, changes in which shifted the production function.

2.1.2. National systems of innovation - Innovation policy

A distinct field of economics of innovation eventually emerged and sought to provide an explanation of how innovation happens and is sustained in economic systems (Antonelli 2008). More specifically, it sought to investigate why innovation happened in some economic systems better than in others, primarily taking as a unit of analysis the nation state. The term 'system of innovation' was coined to demonstrate the intricate, systematic nature of innovation, which is reliant on a number of different elements for its production and proliferation.

The core puzzle for the systems of innovation literature is the uneven growth rates of nations and the world economy, which seemed to refute the classical economists'

implicit assumptions of a movement towards greater convergence. As economic growth was seen to be to a great extent driven by innovation, the question became one of establishing the reasons why some nations are better in enabling and sustaining innovation than others. Indeed, it is not only that more innovation is being produced in certain contexts, but also that companies are more successful in marketing innovation in certain contexts rather than others.

One of the first observations which sparked research was that the nations which forge ahead faster than others appear to be the ones which are proactive in creating policies for innovation and development. The ensuing research has cast a wide net on the kinds of institutional conditions which influence a nation's ability to create a conducive environment to innovation. Taking stock of the existing systems of innovation literature, Dosi (2008) has argued that five domains of activity, along with the institutions which they entail, play a role in a system of innovation: the generation of scientific knowledge, the development and diffusion of new artifacts and processes of production, the 'economic machine' which enables the production and distribution of goods, the political and legal structure, and the culture and norms. Each of these five domains exhibits its own path-dependent history, which is ingrained in its institutions, and can have varying degrees of fit with the others. The institutions and relations between the five domains create the environment in which inventions are produced and innovations are marketed. Thus, the success of a nation in fostering innovation depends on the degree of congruence, or on the minimisation of the degree of mismatch, between the five domains.

An important implication of this principle is that there exist multiple different successful combinations, rather than one optimal recipe. Not only do different nations exhibit different entrepreneurial cultures and norms of business, but also different historical trajectories make specific options possible, whilst excluding others. This has resulted in research which is case-specific, rather than aiming at the creation of generic models. Such research seeks to understand, for example how the particular institutional forms for the production of basic research may or may not relate well with particular types of businesses and the skills of the workforce, which

again may or may not be supported by the financial institutions or the employment legislation of a country. Such work often has often appeared in edited volumes, where their potential for cross-country comparisons can also be realised (Lundvall 1992, Nelson 1993, Fagerberg, Mowery *et al.* 2005).

Another important contribution which has come out of the systems of innovation literature is a distinct way of exploring technical change and its implications for social change. In a seminar paper, Freeman and Perez (1988) argued that not all technical change was similar or had a similar impact on the economic system. Indeed, some innovations result in small improvements in existing products and processes, some have a great impact on one sector of the economy or industry, whilst others result in a widespread transformation of all sectors of the economy. This last type of innovation constitutes a change in the techno-economic paradigm, although this term downplays its significance for the wider society. In fact, a shift of techno-economic paradigm means that a technology, such as ICT, becomes so widespread that significant structural adjustment is required in order to reduce the mismatch between the institutions of society and the new products and organisational processes which emerge (Freeman & Louçã 2002, Freeman 2007).

The systems of innovation literature recognises government policy as an integral part of a system of innovation. Government policy is reflected in education, training and research, as well as in the creation of legislation and regulatory frameworks for the movement of money and products. Regardless of the degree of state intervention into the operation of the markets, government policy in all areas above would feed into and eventually shape elements of the system of innovation. It is clear from the discussion above that governmental action would be needed in times of crisis of structural adjustment to enable the transition of the wider institutional and social context from one techno-economic paradigm to another.

In this vein, a stream of research has developed which focuses on innovation policy in particular from the perspective of evolutionary economics and institutionalism. Such work takes the explicit view that public policy has a crucial impact on

innovation conditions and the competitiveness of firms, even when it is not specifically recognised as a distinct policy domain or referred to in specific terms. The increasingly globalised conditions create further challenges, as the authority of the nation and its ability to influence the conditions in which innovation takes place is impacted upon by the multiplicity of cross-boundaries linkages (Archibugi, Howells *et al.* 1999, Marklund, Vonortas *et al.* 2009). The global flow of workers, goods and capital, the opportunistic geographical distribution of production, as well as the wealth of international regulating bodies and international organisations limit the nation's capacity to effect change. These globalised conditions have however a differential impact on different countries, with some being cushioned to varying degrees from experiencing the full effects of globalisation.

The innovation policy of the European Union has been the subject of recent academic work (Borras 2003, Conceicao, Heitor *et al.* 2003, Room, Dencik *et al.* 2005, Molle 2009). Research on the innovation policy of the EU increased the years after 2000, with the growing importance of the European information society programme, which will be investigated in more detail in later chapters. Moreover, the continuing efforts to strengthen the European regulatory framework on data protection, privacy, intellectual property rights, and media, signalled the intention to foster a European system of innovation in an attempt to re-establish Europe's competitive position in the world economic system. However, evidence from the literature suggests that, despite the efforts at institution-building, Europe is still too variegated to be considered as one system of innovation (Borras 2004). It is also worth noting that the systems of innovation approach has been deeply appealing within the circles of European policy makers. Not only has the European Union been researched through a systems of innovation lens, but the systems of innovation, as a term but also as a way of explaining and dealing with innovation, has been taken up by policy makers in the EU (Edquist 2005).

Overall, the systems of innovation approach has resulted in the creation of a distinct and fairly cohesive body of knowledge, which highlights the institutional foundations of innovation, as well as the complex nature of its creation and diffusion.

It has also provided a theoretical foundation on which to study public policy as a legitimate response to fostering technological innovation. However, much of the resulting research has been primarily descriptive and has lacked theoretical robustness (Edquist 2005). Moreover, the literature has limited itself to the study of a relatively small number of cases (such as the US, the UK, Japan, Sweden, the Netherlands, Italy, some of the Eastern European countries, as well as the Southeast Asian emerging economies). The case studies record, in their majority, success stories of countries which lie on the upper end of innovation production, or which have demonstrated great abilities to catch up. Less attention has been paid to broadening the focus of the analyses towards contexts which are much less receptive to innovation, or much less competent at producing it.

2.2. ICT policy

Apart from evolutionary economics, the role of government in fostering technology creation and diffusion has been studied in other research traditions as well. This section reviews the literature of ICT policy studied in the tradition of the social study of technology. The term ICT policy is used to refer specifically to research done in the tradition of the social study of technology, as opposed to the term innovation policy which is used in the research tradition of the systems of innovation.

The social study of ICT policy constitutes a fluid and fragmented area of study, mainly because it has been historically preoccupied with a variety of substantive policy issues, as different technological options have become policy priorities in various points in time. Thus, although the study of ICT policy has been of interest to relatively small number of researchers for the past three decades, it is still difficult to find an adequate definition of what it includes and how it should be studied. ICT policy is an umbrella term that is used here broadly in an attempt to map the field of research.

Although research in ICT policy has been taking place for several decades (Land 1983), its focus has normally been the dominant issue of the time. As far back as 1974,

Ithiel de Sola Pool discussed the various questions that communication policy research needed to explore, for example issues of ownership of content and intellectual property rights, questions of state versus private initiative, issues of privacy and transparency, and the role of communications policy for development (de Sola Pool 1974). His argument is that communications policy (at the time preoccupied with the fixed telephone network, radio and cable television) was already taking place and that robust academic research could help with providing better foundations for more solid responses. The development of “national champions” in the production of micro-electronics was the focus of some of the early research (English & Watson Brown 1984, Evans 1992). The shift away from national industries and towards greater privatisation of the economy was mirrored in the widespread emphasis on the liberalisation of telecommunications (Mosco 1988, Dutton 1992, Mansell 1993). Later studies reflected the drive towards the development of national information infrastructures (Kahin & Wilson 1997, Kubicek, Dutton *et al.* 1997, Mosco 1998), and the creation of favourable conditions for software outsourcing (Forbes & Wield 2002, Carmel 2003). Lately, research on ICT policy has turned to the information society and the national attempts to foster the transformation in the society and the economy, and to assist citizens in fully participating in it (Mansell & Wehn 1998, Moore 1998a, Mansell & Streinmueller 2000, Steinmueller 2002, Berleur & Galand 2005, Castells & Cardoso 2005).

In the information systems literature in particular, King, Gurbaxani *et al* (1994) point to the importance of government intervention to facilitate innovation in the production and use of ICT, and to the need to study ICT at the national policy level in order to capture these processes. However, as Walsham (2000) noted, there is a paucity of research conducted at the national level, and this has not been rectified since, at least not in any cumulative way. The literature is categorised in three groups below. Firstly, I discuss studies which take a bird’s view approach and look at national policies at a high level of abstraction. Secondly, I discuss studies which present policies through their implementation in specific projects, and thirdly I discuss critical studies which undertake an ideological critique of ICT policy.

2.2.1. Bird's eye view approach

The first stream of studies approaches ICT policy by conducting macroscopic analyses of broader sets of decisions or policies. A broad scope and perspective of research is assumed, and the emphasis lies on the effects of broader sets of decisions or changes in ICT policy for development objectives, such as economic growth, societal development and cohesion. This research has been particularly preoccupied with policies for the information society through a rather cyclical process: it was with the rise in prominence of the information society as a theoretical construct and political rhetoric that many national policies were formally articulated.

The national strategies on ICT and the information society have been the subject of growing academic attention. Explicit national information society strategies became a common occurrence at the beginning of 1990s, with the emergence of high-visibility policies from the US and Japan. There has been research on the information society strategies of the US (Kahin & Wilson 1997), the UK (Moore 1998a), Sweden (Hall & Loefgren 2004), Denmark (Cronberg 1997, Falch & Henten 2000), the Nordic countries (Henten & Kristensen 2000), Mexico (Silva & Figueroa 2002), Africa (Etta & Edler 2005, Miller 2005), China (Chen, Gao *et al.* 2005), Singapore (Gurbaxani, Kraemer *et al.* 1990), India (Sadagopan & Weckert 2005) etc. These studies have produced a wealth of case studies. This highlights the prevalence of the information society concept and the frequent policy activity around it. There is also the potential to take stock of the different approaches adopted to achieving it. Indeed, the sheer size of this literature makes it difficult to fully trace.

What is, however, worrying is the absence of any authoritative texts among them, signalling a lack of cohesion and cumulative research output. The basic limitation of this type of work is its descriptive character. Typically, such studies would describe one or more national policies, drawing attention to the content and stated intentions, occasionally in juxtaposition with the outcomes and achievements. The descriptive character and limited use of theory has led to the situation where despite the existence of a great deal of specific case studies, there is very little accumulated

knowledge. Indeed, we have very little generalisable understanding about national policies for the information society. For example, who is involved in making them? Through which processes are they created? How is a nation's stage of development reflected in them? The preoccupation with the specifics of the cases, and the lack of theory, either as an analytical lens, or as a direct product of the research, has meant that the gains from this type of literature have been severely curtailed. Notwithstanding some exceptions (Kubicek & Dutton 1997), this stream of research has rarely delved deeper on the conditions of emergence of such policies as products of national decision-making. Kubicek and Dutton (1997) do attempt to turn our attention to the political nature of the creation of such information society strategies and policies. They analyse the social construction of the national information infrastructure rhetoric, demonstrating the conscious and fortuitous choices made in its creation, and the impact it had on policies thereafter.

Modelling and theorising has been the explicit intention of some academic work which approached the issue of the effects of ICT policy from an economic perspective. The aim has been either to create prediction models, or, by adopting a more holistic approach, to understand the effects of broad ICT policy decisions on indigenous capabilities, growth and employment (Tigre & Botelho 2001, Gibbs, Kraemer *et al.* 2003, Kuppusamy & Santhapparaj 2005, Shih, Kraemer *et al.* 2007, Pick & Azari 2008). Such work has resulted in the creation of frameworks which attempt to establish their determinants at the global and national level, thus making explicit the multi-layered environment which influences national ICT policy. However, the tendency to take into consideration short time frames creates limitations in accurately measuring the different types of impacts (Mueller & Lentz 2004). Moreover, questions can be raised as to the contextual sensitivity of such analyses, i.e. whether they can be applied independently of the national context and the variations of institutional conditions that the context implies.

National information society strategies mushroomed at the turn of the century, at around the same time that the information society metaphor was used increasingly worldwide by the United Nations, the World Bank, the ITU and the IMF. Interesting

arguments about the role of international organisations, such as donor agencies and multinational consultancies as determinants of national policies on ICT, have been put forward (Madon 2000, Soeftestad & Sein 2002, Ciborra & Navarra 2005), but their implications have so far remained marginal in further academic debate. More recently, Thompson (2008) has called for a critical and thorough appreciation of the role international organisations and their policies play for the ICT decisions of developing nations. The role of international organizations has also been addressed by a different strand of literature focusing on the political economy of ICT innovation. Mansell and Wehn (1998) argue that a range of international organizations comprise a loosely constructed governance system which sets standards and trade rules, creates visions and influences the agenda for national decision-making. Understanding their roles and their shifting priorities becomes important if we are to “recognise the contours of our new historical terrain” (Castells 2005, p.5), and thus make more sense of the ways in which specific societies pursue their developmental goals through ICT.

2.2.2. Studies on individual projects

The second category of research in the area of ICT policy has as its focal point particular policy initiatives or projects, and aims to identify either the conditions of their creation, or their outcomes. In this stream a considerable amount of research has been done on the area of ICT promotion for Small to Medium Enterprises, ranging from Electronic Data Interchange (Damsgaard & Lyytinen 1998), to broadband connectivity (La Rovere 1998, Mueller & Lentz 2004, Spurge & Roberts 2005) and e-commerce (Buhalis & Deimezi 2003, Gibbs, Kraemer *et al.* 2003). Montealegre (1999) focuses on national projects of Internet adoption and argues that different strategies were effective in different periods of time depending on the maturity of the initiative. On a similar vein, Quereshi (2005), Muir and Oppenheim (2002) and Gil-Garcia (2004) study the effects of government policies on e-government, which has for some time featured very high in the list of priorities of national governments and international bodies alike.

Research in this stream has a rather limited scope and a very narrow domain (usually one policy programme or decision), which creates various limitations. Firstly, it does not allow for interconnections between policies to become obvious. However, the impact of one policy cannot be easily discerned from all other relevant factors that are at play, but are not included in the analysis (Mueller & Lentz 2004). Thus, only tentative conclusions can be reached. Secondly, there is an implicit assumption of a rational, staged process of creation of the policy which accounts and results in its success or failure. This builds a *façade* of rationality as if problems were suddenly discovered, and solutions were rationally developed to address them. There is no attempt to identify interdependencies, historical continuities and discontinuities, or the mechanisms by which specific policy initiatives came to be priorities. Limited attention is paid on other factors of the environment (e.g. broader political processes or projects, mimetic tendencies, elements of the political or professional culture etc.), which may facilitate or inhibit the implementation of a policy decision. Thirdly, the narrow scope of study precludes the examination of outside pressures and incentives for the adoption of particular types of initiatives, an often-encountered phenomenon in ICT policy. Thus, a number of important questions are left unanswered. Having a broader research outlook may instead bring forward different interpretations of the reasons and conditions under which ICT policy is pursued and the effects it has on the socio-economic fabric of society.

2.2.3. Critical studies

A third significant group in this literature consists of studies which take a critical approach to ICT policy. A basic premise is that decisions and policies about ICT are rarely the outcome of rational deliberation, but rather serve other ideological purposes. Ideologies become an integral part of policymaking not only because they provide a useful lens through which a new and uncertain situation can be interpreted, but also because they come bundled with acceptable and legitimate courses of action (North 1990, cited in, Galperin 2004).

Studies in this stream usually take as their object of study a policy document or declaration. Their intention is to uncover the hidden ideological assumptions which are embedded in the policy discourse and which shape the form and goals of policy itself. Such research has examined the discourses reproduced in ICT policies of national governments (Garnham 2000, Selwyn 2002, Diso 2005, Kuppusamy & Santhapparaj 2005, Shin 2007). At the international level, Godin (2005) has critiqued the role of OECD in turning the knowledge society into an easily digested buzzword taken up and consumed by its member-states. Others have sought to deconstruct and challenge the universalistic and technocratic discourses of international development organisations with regards to developing nations' appropriation of ICT (Avgerou 2003a, Thompson 2004, Rooney 2005).

This kind of critique has also been addressed towards the European Union's policies on the information society (Garnham 1997, De Miranda & Kristiansen 2000, Kaitatzi-Whitlock 2000, Goodwin & Spittle 2002). The dominant argument is that, however commonsensical the rhetoric of the EU may appear, it upholds economic facets of the information society and downplays social and cultural considerations, thus leading to the creation of an one-sided new society.

This tradition has produced a number of intriguing studies. However, I would posit that studying policy declarations does not equate to studying ICT policy. In the realm of political science the difference that usually exists between what is stated as policy and what is implemented is a recurring theme (Colebatch & Degeling 1986, Colebatch 2002). Thus, whilst critically assessing the assumptions and ideas behind policy declarations should be part of the ICT policy research project, it cannot be the whole picture. Garnham (2000) argues that since the whole project of the information society functions only as an ideological smokescreen for capitalism, it need not attract research attention. However, ideologies do not exist in a vacuum, nor do they diffuse without active human intervention. Instead, they form part of material arrangements which sustain them and which cannot be disregarded (Galperin 2004, Kumar 2005). Furthermore, as Kumar (2005) points out, capitalism has had many

different ideologies so far, so it is imperative to understand in depth what sort of ideology the information society is, and thus what the character of relevant policy is.

2.3. The making of policy

In the previous section on the studies of ICT policy I raised the concern that there was very little attention paid to how policies were constructed, to their nature as public policies, and to the implications this had for the way that they eventually turned out. This has resulted in overly descriptive and atheoretical accounts. This section seeks to underpin this critique by providing a brief review of the literature in the making of policy. It reflects the belief that the way policy is made has a significant impact on the final outcome.

The initial conceptualisation of policy making as an activity distinct from politics is attributed to Wilson (1887). In his view, policy-making is the triumph of rationality over the intricacies of politics. This perspective, which dominated the field for a long time, culminated in the development of the staged model of policy making, which involves a linear succession between stages, from identifying the problem to evaluating the outcomes of a policy. The core assumption ingrained in much of the academic research and practice of policy is one of instrumental rationality. Lasswell (1951), who is thought of as the founder of the field of policy analysis, was a proponent of the need for a scientific approach to public policy, characterised by an effort to provide optimum solutions to observable and objectively defined, albeit often multi-disciplinary, problems. Following from his work, scholarly research on policy has often been preoccupied with creating better models and theories to assist in the practice of policy. A distinct orientation towards applied research has also meant that a great deal of the policy research has a normative, as well as descriptive, character. Stone (2002) has succinctly referred to this direction of policy research as a 'rationality project', i.e. the conscious attempt to "rescu[e] public policy from the irrationalities and indignities of politics".

The predominant framework of policy-making comprises a set of functions or stages, performed sequentially and in a relatively unequivocal fashion. Each stage aims to reduce uncertainty and ambiguity and promote efficiency. The staged model of policy, and its evolution, the policy cycle, broadly assumes a progression from the identification of a problem and the analysis of alternatives, to the selection of a solution, its implementation in the problem domain and evaluation of outcomes (Sabatier 1999). A significant part of applied research relies implicitly or explicitly on this conceptualisation of the policy activity, including the majority of research published on ICT policy, as I argued above. The aim is to render political and social issues into technical problems to be resolved via administrative and technical means and procedures, free from partisan positions and value-laden conflicts. This technocratic mode of thinking is evident in the implicit premise that policy responds to a specific, proven and documented need, the existence of which can be evidenced, and the solution arrived at through a rigorous and scientific analysis.

Of course, alternative accounts of the policy process abound in the literature². Attention has been given to the incremental nature of policy-making activity, as the outcome of attempts to ‘muddle through’ past commitments, new challenges, and changing sets of opportunities and limitations (Lindblom 1979). The top-down direction of the policy process also has been extensively disputed. An alternative bottom-up approach favours the power of ‘street-level bureaucrats’ who effectively control the policy implementation (Lipsky 1979). Other commentators have upheld the role and capacity of experts, policy communities and issue networks to effectively shape policy (Atkinson & Coleman 1992, Sabatier & Jenkins-Smith 1993). Thus,

² Colebatch (2002) provides a thorough introduction to the debates and literature on policy, with an emphasis on the breadth of theories and frameworks of the policy-making process. Fischer (2003) conducts a comprehensive, in-depth literature review of the field, analysing the epistemological premises of different streams of research, especially with reference to the argumentative turn to policy practices.

alternative theories postulating a less ordered, straight-forward and controlled practice of making policy are well represented in the policy literature.

Researchers have also investigated the ways in which issues are constituted as problems to be addressed by policy. For example, the multiple streams theory (Kingdon 1984, Zahariadis 2003) argues that in any given policy domain there exist three independent, but intersecting, streams, of problems, policies and politics, which merge when a convenient window of opportunity opens. Thus at opportune moments particular considerations rise to the surface as problems, become attached to already known policy solutions, and are supported by rather unstable political configurations. Such an approach upholds the importance of temporality, ambiguity and serendipity, and is in favour of a non-functionalistic approach to decision-making.

More recently, the field has seen a turn towards a more critical understanding of policy as the construction of meaning through notions of framing, discourse and ideology (Fischer & Forester 1993, Rein & Schoen 1994, Fischer 2003). An increasing preoccupation with language and the way it constitutes reality has meant that research has sought to deconstruct policies, rather than narrate their neat construction. The perspectives of Foucault and Habermas are occasionally used in this approach to offer a critical lens through which to examine policy.

The policy theories above question some of the basic assumptions behind the instrumental view of policy, for example the planned progression from one stage to the other, the taken-for-granted means-ends rationale, and the techno-economic rationality which permeates it. However, such theories have found little foothold outside the boundaries of the political science and policy literatures. Thus, a great deal of research taking place into areas of substantive policy questions (such as ICT and the information society) still deal with the issues of policy formulation and implementation as stages which are distinct, albeit linked in terms of chronological and logical progression.

Despite the paucity of academic evidence providing credible support to the policy cycle model, Colebatch insists that the model has gained primacy over the lived experience of the practitioners:

If their experience clashed with the assumptions of the cycle model, the model prevailed: it was the fact that experience did not reflect the model that was the problem. If practitioners found it difficult to state their objectives in unambiguous terms, and were relatively unconcerned with monitoring their achievements, this was seen as a problem with the practitioners rather than with the model. If the experience of the governmental process did not look like the execution of authorised directives, there was a 'problem of implementation' (Colebatch 2005, p.19)

Similarly, Nakamura (1987) argued that the 'textbook' view of policy has become ingrained in the language of academics *and* the living praxis of policy makers. The rational/instrumental model then, which embodies specific assumptions about the nature of legitimate action and authority, has become more than a description or even a prescription; rather, it appears to have become a normalising device, which frames reality both for academics and for policy makers.

This section provided evidence that there are alternative ways of thinking of policy and, thus of approaching the study of substantive policy questions, without reverting to an uncritical embracing of rationalistic assumptions about the nature of policy activity.

2.4. Information society

It has become clear from the previous sections that a great deal of recent research on ICT policy has been under the label of the information society. Policies for the information society have focused on enabling the widest possible diffusion of ICT in the population, and are of a much more decentralised nature than policies on research and development or regulation. Alternatively put, the information society has become a political project by being designated as a distinct policy aim through which other aims of economic growth and social prosperity can be pursued. It is a

political project to be realised through centralised and diffused actions, policies and financial investments.

It is, however, imperative to establish a more robust theoretical grounding on which to consider the policies for the information society. This is what this section achieves by examining the various theories of the information society in the sociological literature. The discussion of the information society as a theoretical construct in the sociological literature seeks to demonstrate, in a cumulative way, the current state of academic thinking. A selective review of the literature is conducted, centred on the writings of influential authors which sought to trace the contours of the information society. I demonstrate the kinds of societal changes associated with it, as well as the areas of criticism. Finally, I move on to show how a project of tracing the societal changes of the sort predicted by the information society literature in specific socio-economic and political contexts is important if we are to fully appreciate the analytical fabric of the term.

The middle of the twentieth century witnessed the emergence of the idea, within the academic community, that conditions of life and work had become sufficiently different from the past to demand a discussion on the kind of society experienced. The academic work that ensued was marked by attempts to construct grand sociological narratives drawing the contours of what was considered to be widespread and deep changes. These changes pertained to the structure and content of work, the organisation of production, the global exchanges of culture, and the ubiquity of ICT as an essential currency and basis of economic and social activity. They were summed up under different headings, such as post-industrialism, post-modernity, network society and others. Among these, the term “information society” has had the greatest impact, as its use has spiralled outside academia and into the realm of the political and everyday use.

The information society is an ill-defined term. In a recent collection of seminal papers on the topic, Mansell understands the information society as “a particular vision of developments arising from the growing use of information and communication

technologies (ICT) in the acquisition, storage and processing of information” (Mansell 2009, p.xxv). The explanation appears to be intentionally broad, in an effort to remain flexible enough to incorporate a range of economic, social and political shifts, which have also evolved through time. This vagueness, however, has been criticised as a sign of analytical weakness. Garnham (2004), for example, argues that:

One of the great ideological advantages of the information society discourse is that in its vagueness of concept and nomenclature it enables many to jump on the bandwagon and find a seemingly comfortable home in its promiscuous warmth (Garnham 2004, p.95)

In a seminal piece of work, Webster (1995), who has been one of the most visible critics of term ‘information society’, traced five distinct threads of research, each one upholding a different aspect of the information society, namely the technological, economic, occupational, spatial or cultural, which are discussed below.

A great deal of research has placed technology at the heart of social change in a particularly deterministic way. Futurists, such as Alvin Toffler (1980) and Yoneji Masuda (1981), were instrumental in spearheading a vision of technology-driven social change, which became particularly influential in policy programmes, for example, in Japan’s national ICT plan (in contrast Mattelart 2003 provides a fascinating discussion of the links between academic discourse and political programmes on the information society). One does not have to look to such overtly optimistic literature to see the attraction of technologically deterministic ideas. For example, a great deal of the IT for development literature sees ICTs as directly and unquestionably leading to the betterment of human conditions, thus creating influential arguments for the spread of PCs and the Internet.

The study of information industries has provided another line of enquiry in tracing the manifestations of the information society. From a historical perspective, Machlup (1962) and Porat (1977) first sought to measure the value of information-generating and information-exchanging activities in the economy. The sheer magnitude and significance of the information industries for national economies itself was constituted as proof for the thesis that the economy had become an information

economy. Subsequent work by information economists has provided further elaboration of the categories of information activities. The criticism, however, that the objective measurement of the value of information activities is impaired by subjective judgements on the kinds of activities designated as information activities worth measuring remains salient. So is the criticism that such a view of the information society does not fully appreciate the increasing informatisation of nearly all aspects of economic activity.

The emphasis on the information industries does not only relate to their economic significance, but also to their implications for occupational distribution. In particular, the increase in white-collar jobs to the detriment of blue-collar, agriculture and manufacturing jobs has been closely linked to the spread of the service economy. This constitutes one of the central theses of Bell's (1973) work on the rise of post-industrialism. The importance of the information workers, according to Bell, does not lie solely on their growing numbers, but also on the fact that they are able to operate effectively within the conditions which prioritise information and theoretical knowledge. Webster (2006) rejects accounts of the manifestation of the information society based on the number of white-collar workers, stressing the fact that such accounts are devoid of any contextual detail on the relative importance of different information jobs, or their position in diverse power networks.

Information society theories which give precedence to the spatial dimension analyse the reconfiguration of space and spatial relations through the development of information networks. The exemplary scholar in this respect is Castells (2000b, 2000a), whose work draws attention to the information flows and the way they restructure geographical space (e.g. emergence of megacities and recasting of space of places as a space of flows), the mode of development (informational instead of industrial) and the holders of power (highly mobile and educated managers and intellectuals instead of industrialists). Much of this work clearly resonates with, and is linked to, the discourses of globalisation, including the compression of time/space through instantaneous communication. In a different direction, the rise of a research programme around the notion of mobility has investigated notions of space, its

constitution through flows of people, products and ideas, and its transformation through diverse technologies, from trains and cars to mobile phones and the Internet (Urry 2000, Green 2002, Urry 2002, Hannam, Sheller *et al.* 2006, Hislop & Axtell 2007, Urry 2007).

Finally, Webster highlights the work done in cultural and media studies which focuses on the proliferation of information messages and cultural exchanges. The widespread availability of media and content has been charged with creating a less meaningful and coherent world, in which the explosion of signs and significations has diminished their power to signify (Poster 1990). The postmodern conception of the information society, in which uniqueness, multiplicity and playfulness become the prevalent mode of development, has been criticised as analytically weak, despite being close to many people's experience.

Much criticism has been voiced around the notion of the information society. Webster's (1995, 2006) main argument is that most theories of the information society seek to demonstrate qualitative changes in the fabric of society through the calculation of quantitative measures. He also finds that the term 'information society' has little analytical purchase, because of its ambivalence and lack of definition, and because of the methodological difficulty in accurately assessing the empirical evidence necessary to prove the related conjectures. Golding (2000) has suggested four points of criticism against the information society, which he called fallacies. Firstly, he argues against the 'fallacy of the postmodern subject', pointing to the fact that the modern conception of identity along the lines of the nation-state still persists to a great degree, and has not been rendered obsolete by the virtual. Rather, post-modern theses of the information society, preoccupied with virtuality, image, and multiple identities still occur within familiar geographical institutions. Secondly, he joins the ranks of theorists who challenge the potential of ICT to promote equality, pointing instead to its unique potential to create new material structures of inequality. Thirdly, he disputes the thesis that the inherent capacity for interactivity of ICT necessarily fosters a redistribution of power, for example from businesses to the consumers or from the state to the citizens. Interactivity, Golding posits instead,

restricts its empowering effects to specific technologically-mediated ways, whilst sitting uncomfortably with other important political institutions, such as the notion of representation. Finally, in contesting the fallacy of wide-spread, diffused and profound change in the experience of time and space in life and work, Golding draws attention on the differential opportunity to experience the compressed time-space according to existing inequalities. Thus, despite the supposed death of distance, there are people to whom locality is still paramount, as they are faced with material impediments restricting their ability to be part of the space of international flows (Bauman 1998). Moreover, modern day technologies can be easily accommodated within pre-existing structures and processes of space and time. An example in case is telework, which has fitted neatly with the traditional position of women within the household, and their role primarily as carers and secondarily as part-time, less secure employees.

A different school of thought originates from the domain of critical media studies. Although hardly a cohesive stream of research, critical media studies tend to emphasise the contingent emergence of the phenomenon of the information society and the discourses and practices around it. In a very interesting book, Mosco (2004) argues that much of the talk on the 'digital' and the information society is indeed little more than rhetoric about a new pervasive technology and shows how similar patterns of discourse emerged with the adoption of electricity, the radio, and the television. He further claims that the haste by which states have appropriated the rhetoric about the 'digital sublime' has little to do with the inherent capacities of digital technologies to help economic growth and development. Instead it may have more to do with the governments' eagerness to stamp their mark on the 'digital sublime' and define it as a legitimate area for intervention, after having ceded many of their functions to the private sector.

What this discussion culminates to is the debate on whether the changes associated with ICT-mediated modes of work and life mark a clear distinction with the past. The broader question is whether we are witnessing the emergence of a distinctly different kind of society, or one in which the continuities are more significant than

the discontinuities. Beyond the unconcealed optimism of the middle of the twentieth century, sociological thought more recently seems to converge on the idea that the information society is emerging within familiar patterns, and presents fewer breaks with the past than originally thought.

It is also interesting to note that sociological thought on the information society has treated it as a predominantly emergent phenomenon. The possibility that the information society may actually emerge as a project with distinct points of origin is not addressed. Thus, this domain of research fails to look at the instances where the information society is constituted as a project, whether political, economic or social, indeed a project which is consciously pursued, through planning and direction, rather than a phenomenon which emerges in a self-nascent fashion.

One last point of consideration has to do with the way in which the information society literature has accounted for power relations. The literature appears to be divided by positions at the two ends of the spectrum. On one end one finds technologically deterministic accounts of democratisation of public life and greater equality. The other end is dominated by socially deterministic accounts of technological repression and near-complete reproduction of existing inequalities. A balanced and nuanced account of how asymmetrical relationships play out in the information society seems to be missing. This point is also raised by Mansell (2009):

The proponents of research in the critical traditions of scholarship on the Information Society have struggled to provide a **theoretically robust account of how the interpretation of asymmetrical relationships within today's information societies perpetuates inequalities and injustices**. Research in the more critical traditions has had relatively little influence on the priorities of those promoting the Information Society vision. This vision continues to be driven strongly by those in a position to make design and other choices regarding the nature and use of technology, including those individuals using the technology in the search of profit and according to the values of global capitalism" (Mansell 2009, p.7, emphasis added)

2.5. Synthesis and conclusion

The above discussion ventured into areas of economics of innovation, information systems, policy, the sociology of the information society, which has led to an interdisciplinary framing of this thesis. Summing up, I discussed the limited role that technology and technical change plays within neo-classical economic thought, juxtaposing it with its centrality in the economics of innovation approach. Work within this field has pointed to the need for purposeful action in order to increase the degree of congruence between the various elements of a system of innovation, including the legislation, the norms and tacit rules, the education and training of the workforce, the installed technological base, the provision of finance, and the industrial structure. The immediate implication of such work is the acceptance of policy as a legitimate response to creating favourable conditions for the fostering of innovation. This thesis starts from the need to theoretically investigate the conditions of creation of government action to steer innovation and socio-economic change. However, it is simultaneously narrower in scope and more detailed in focus than studies in systems of innovation. Its narrower focus is evidenced in the fact that issues such as legislation, education, research and industrial structure are not addressed. Its detailed character is reflected in the effort to grasp the nature, processes and practices implicated in government steering of ICT-enabled societal change.

The review of the literature on ICT policy from a social study of technology perspective highlighted the severe theoretical and methodological weaknesses that it faces. The lack of theoretical robustness has resulted in the build up of case studies of national information society policies, which are atheoretical and overly descriptive. They have not led to the production of a kind of generalisable knowledge which allows us to cumulatively learn something more about the phenomenon. I also argued that the focus of the ICT policy literature on a single level of study, for example the national level, or the level of a project, has hampered its ability to account for significant influences from the environment. Finally, I suggested that

extant literature is dominated by assumptions about the creation of the ICT policies which reflect a deep-seated belief in a means-ends nature of policy, but which have been critiqued as problematic. Addressing these points of criticism, I propose that there is a need to further explore the role of institutional actors in shaping policies for ICT and the information society. I suggest that a closer inspection can reveal a multi-layered and multifaceted phenomenon which opens up questions with regards to the reasons why national strategies and the resulting institutional interventions have risen in importance globally, and more specifically in the European area.

The concise review of the literature on policy brought forward the debates on the nature of policy activity, and highlighted the alternative assumptions on which the study of substantive policy questions could rest. In particular, the argumentative turn to policy stresses the need to critically assess policy claims, priorities and decisions by scrutinising the use of language and tracing the power imbalances and differential capacities of actors to access and influence policy activity.

Finally, reviewing of the sociological literature on the information society has revealed its multifaceted character, leading to questions about the analytical power of the concept of the information society. To this effect, Webster has argued that the time is ripe for a change of direction in studying the information society. Instead of an essentialist approach, one which asserts that, because we live in and through more information and ICT, we have an information society, a more enquiring approach could yield better results. Results which would take into account the manifold use of the concept of the information society and its effects in bringing about specific kinds of changes.

[...] Theodore Roszak's (1986) observation that it is the 'very emptiness' of the word 'information' which paradoxically has allowed it 'to be filled with mesmerizing glamour' merits serious consideration. Indeed, when one encounters writers who insist that more information makes for an information society, it is as well to query just what it is they are counting as information here. Michel Foucault (1980) urged scholars to scrutinize ways in which things get talked about, arguing that examination of the construction of 'discourses' can be illuminating as well as somewhat subversive. A Foucauldian account of the genealogy of 'information', one which looks attentively at variable ways in

which the term is conceived and applied by information theorists, computer scientists, semiologists, librarians, sociologists and economists, would make for an instructive read. Not least, it would lead one to hesitate before making sweeping statements along the lines that 'information' is transforming the very foundations of life as we know it (Webster 2006, p.451)

This thesis responds to the call for a research project which is attentive to the ways in which reality is pursued and constituted, and which in this way unsettles the taken-for-grantedness of sweeping terms such as the information society, by shedding light on the ways they are produced and sustained. Like the research on the systems of innovation, this thesis studies the institutional conditions in which innovation is fostered. Unlike the systems of innovation literature, the thesis seeks to highlight the fact that the domain is not a level playing field, and that power relations create and contain new domains of action, thus influencing the course of innovation in particular contexts. The thesis also takes the view that instead of assuming, and seeking to explain agents' behaviour in terms of a purely economic or instrumental rationality, there is a need to look for the conditions of intelligibility, i.e. the conditions in which particular behaviours towards ICT, innovation and the information society are rendered thinkable, appropriate, legitimate, and intelligible.

This research in effect helps to address the lack of theoretically informed studies which account for the creation of ICT policies. It aims to construct a theoretically informed account of how existing asymmetrical relationships, in the form of the dense nexus of integration into systems of international and supranational governance, come to shape the ways in which the information societies are played out.

In the Preface to Flichy's book *Dynamics of modern communication: the shaping and impact of new communication technologies* (Flichy 1995), Nicholas Garnham argues that the literature has been plagued by a deep-seated technological determinism, which produces on the one hand great hopes for a technological revolution, and on the other, deep disappointments when successive technologies fail to deliver the exaggerated promises that accompanied their arrival. This is not to say that technology does not matter, or that it does not have effects that are planned and

predictable, as well as random and unpredictable. Technological decisions are consciously made by business people and policy-makers alike. In situated and highly contextualised ways, technological paths are occasionally found to correspond to the original intentions and plans, while, on other occasions, they are found to stray away in unintended directions with varying outcomes. A growing body of literature in economics, sociology and policy attempts to understand how technologies develop, and why they follow such different trajectories. This research aims to provide an explanation which is historically and contextually informed. Instead of upholding a view of technology as inevitable progress, this research emphasizes the historically based study of the two-way relationship between technology and the complex economic, social, cultural and political processes of change.

3.CHAPTER THREE – THEORETICAL APPROACH

3.1. Origins of governmentality

Foucault first addresses the question of governmentality in his lectures in the Collège de France in 1977-1978, when he decides to treat the question of “how to be governed, by whom, to what extent, to what ends and by what methods” (Foucault 2007, p.89). He posits his discussion in the context of the emergence of a new kind of state intervention in sixteenth century Europe, which takes on roles of care (health, education, wealth) towards its people. He attributes this change to two factors: the dismantling of feudal arrangements and the resulting centralisation of the state, and the religious questioning following the Reformation, which together create a space for the emergence of a problematic of government. In this temporal coincidence, two changes enable the emergence of this new conception of government. Firstly, the model of the family as the traditional ideal on which government was conceived recedes, and a new object emerges. The population, as an ensemble of families and individuals yet irreducible to them, becomes the reference with regards to which government can be understood. The population, this new object of government intervention, is understood to manifest the collective needs and aspirations. The family, previously the ideal model of government, is subsumed under the population, and simultaneously becomes the intermediary in the state’s efforts to govern the population.

As the ideal of the family as a model for government subsided, the notion of ‘economy’, originally signifying the sound management of the family, was reinterpreted in the context of the governing of the population. The inclusion of economic practices in the government of the population marks for Foucault an important shift in the ends and methods of government. The protection of the territory from intruders becomes only one goal linked to, and within the wider

problematic of, the attempt to improve the condition (health, state, wealth) of the population. The introduction of economy into political practice and the invention of the object of population constitute for Foucault the core of the emergence of a new mode of government, a new governmentality, in which the state

[exercises] supervision and control over its inhabitants, wealth, and the conduct of all and each, as attentive as that of a father's over his household and goods (Foucault 2007, p.95)

Deriving from the analysis of the particular frame of time and space, Foucault uses the notion of governmentality as a generic way of conceptualising a coherent mode of governing a specific object, through specific means and towards specific aims. In his own words, governmentality refers to

the ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument (Foucault 2007, p.108)

What Foucault tries to achieve through the notion of governmentality is to study the modern state from a different conceptual standpoint, not as a solid and homogenous institution, but as a strategic endeavour. To do this, a "triple displacement" (Foucault 2007, p.116) of taken-for-granted positions is required. The first displacement refers to moving the focus of the study away from the institutions of the state. Exploring the internal workings, structure and stated objectives of the institutions of the state is how political science has traditionally attempted to understand the state. Instead, Foucault argues that proceeding from the outside in allows the researcher to understand the global projects directed towards society as a whole and how such projects (and the concomitant relations of power) shape the institutions of the state. The second displacement involves focusing on the actual function (what the institution actually does) instead of the ideal function (what an institution is supposed to do). The third displacement involves challenging the construction of 'objects' through shifting domains of knowledge, instead of accepting them as existing independently of time and space.

Foucault then argues for an anti-essentialist way of studying government which does not *a priori* assume a rational, stated objective, and a time-less functionalist existence of state institutions, but which leaves open the question of what is to be governed and how (Jessop 2007). By performing this conscious shift of outlook, a theoretical movement of “pluralization and decentralization” (Lemke 2007, p.58), Foucault argues that one

attempt[s] to free relations of power from the institution, in order to analyze them from the point of view of technologies; to distinguish them also from the function, so as to take them up within strategic analysis; and to detach them from the privilege of the object, so as to resuscitate them within the perspective of the constitution of fields, domains, and objects of knowledge (Foucault 2007, p.118).

3.2. Care of the self

Pursuing the theme of governmentality further, Foucault moves into the realm of ethics and complicates the discussion on governmentality by expanding the concept to analyse the “conduct of conduct”. Positing his quest in the antiquity, he attempts to explore the ways in which free men attempted to moderate their conduct with regards to their sexual relations, diet and household arrangements (what he calls ‘economics’) so as to “give their existence the most graceful and accomplished form possible” (Foucault 1987, p. 251). Human beings seek to shape their conduct in such a way so that it makes sense within a particular type of morality, a morality which is context- and time-specific and which is attained through constant self-government. A kind of stylization of conduct is required to allow the individuals to make their lives meaningful and coherent according to a specific morality, which Foucault calls aesthetics of existence, or care of the self (Foucault 1990).

Thus governmentality takes on a different, complimentary dimension. It is no longer limited to a particular constellation of technologies of power exercised by the state on its populace for the purpose of maintaining its wellbeing. It also extends to characterise the multiple ways in which human beings conduct themselves in ways which make sense for an overall ethical and complete life experience. Thus the emphasis shifts away from sovereign power and discipline towards ‘technologies of

the self', a series of practices in line with a particular form of rationality or morality which allow individuals to identify ethical ways of being and to work towards conducting themselves accordingly. The focus lies on the particular ways with which human beings (subjects) are being brought to conduct themselves according to specific aims, and through the work of specific tactics and technologies.

Technologies of the self are an important element of the care of the self, as they constitute the ways in which individuals work on their needs, wishes, and bodies in order to attain a certain level of fulfilment according to particular rationale. Foucault explains that

[t]echnologies of the self permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies, souls, thoughts, conducts and ways of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection or immortality (Foucault 1988b, p.18)

The importance of technologies of the self pertains to their non-disciplinary character. Contrary to disciplinary technologies which render individuals the objects of government, technologies of the self require that individuals become the subjects of power effectuating relevant practices without consequences of punishment. Technologies of the self are thoroughly productive: they constitute subjectivities, identities and particular forms of being; they define areas of problematization, i.e. questioning of one's circumstances and life options; and they involve practices (which Foucault conceives of as exercises) which one should undertake in order to better one's life. In the commentary to Foucault's lectures on the *Hermeneutics of the subject*, Frederick Gros succinctly points out that

the care of the self is [...] the opposite to inaction: it is what encourages us to really act, it is what constitutes us as the true subject of our actions. Rather than isolating us from the world, it is what enables us to situate ourselves within it correctly" (Gros 2001, p.538)

Foucault then conceives of governmentality in a combining fashion as the government of self and others. It defines both a mode of relation between the state and the population, exercised through increased use of normalising, individualising and encompassing strategies and techniques, and a way to designate the domain of

relations of one to oneself through modes of exercising and continuous concern for a fulfilling existence.

3.3. Contestation, or counter-conduct

Within a technology of power, individuals are not forever bound into a state of passive subjection. To the contrary, one's desire to conduct oneself otherwise, or to be conducted otherwise, through different means and towards different ends arises as soon as a particular modality and technology of conduct emerges and manifests itself *within* each technology of power. In his lectures on governmentality (Foucault 2007), Foucault uses the word 'counter-conduct' to designate the ways in which subjects attempt to subvert the conditions of their subjectification. His original analysis traces forms of counter-conduct within the ascetic movement in the Middle Ages. In this example, he understands asceticism as form of alternative conduct, which "tend[s] to redistribute, reverse, nullify, and partially or totally discredit" (Foucault 2007, p.204) the arrangement of religious pastoral care of the Church and the relating technologies of governing conduct.

The inelegant word "counter-conduct" which Foucault uses to designate the multiple forms of resistance, may be subtle and subdued, yet can be simultaneously remarkably effective. Foucault is quick to specify that moments of counter-conduct, are distinct from both political and economic revolts, in that they manifest themselves in the way the subjects wish to conduct themselves and be conducted. However, they are intimately linked to the political and the economic conditions of their times and often appear in conjunction with prevalent problems and conflicts. In fact, Foucault argues that practices of counter-conduct never remain autonomous at all, as they are intensified, compounded and made obvious when they are coupled with all the complexity of institutional arrangements, political conflicts, and economic struggles.

The emphasis of the concept of counter-conduct is not on the momentous and visible moments of organised or orchestrated resistance, but on the great array of diffuse practices which result in different life choices, according to an ethic of living and

conduct which is different from the prevalent one. Foucault struggles to find the appropriate word to label his notion of alternative action, as he is keen to highlight the productive nature of conduct, even when it subverts the dominant ways of conduct and self-conduct. It is not about misbehaving, but rather about conducting oneself according to an alternative rationality. He is also anxious to stress the dispersed and subtle moments of non-obedience to an art of government, rather than the grander notions of resistance or overt confrontation. He eventually settles for the awkward term 'counter-conduct' for lack of a word that did not carry other semantic baggage at the time. For the purposes of this study, I use the terms contestation and counter-conduct interchangeably, with a preference to the phrasing 'practices of contestation', which I feel reflects well the case, whilst being sympathetic to the above concerns.

Counter-conduct does not manifest itself as a point of resistance, to an inferior position from the normative conduct, but rather arises as an immediate and constitutive effect of it. In this way, contestation is itself co-constitutive of the field in which a particular technology of power operates. This means that its existence is not one of negation of a technology of power. Foucault points out that practices of contestation have an objective, a consistency, perhaps even a structure and provide a productive alternative to a form of power which attempts to govern the conduct of people. Practices of contestation may produce their own ethics and knowledges, techniques and strategies, "their own spaces and temporalities" (Barry 2001, p.6). Thus moments of counter-conduct can open up their own domains of the political.

3.4. Power/knowledge and truth

The notion of power and its effects is a pertinent concern for Foucault, who attempts to understand how it is exercised within, and through the emergence of, various institutional contexts, and to trace its circulation in times ranging from the antiquity to the modern state. Foucault does not, however, construct a coherent theory of power with a definite number of propositions which can be tested or applied. He sees power as part of the basic fabric of social order, and as such, although it is a

persistent and prevalent concern, it escapes independent theorisation. In what follows then, I explore Foucault's outlook on power and how it comes to bear on his problematisations of the modern state and the government of the self, and thus on this research.

Foucault sees power as forming an integral component of social life. No position outside power exists, as there cannot exist an aspect of social life which is not shaped by power and in which power is not exercised. Moreover, in a connected way, power is not conceived as static, but as relational. Power is not possessed; rather it is exchanged, challenged, imposed and subverted. For Foucault, power in its circulation underpins all social relations and provides the domain of their performance. As such, all human beings have power, or the capacity to exercise and relay it, albeit to differential degrees.

Importantly for this research, Foucault distinguishes three types of power: the judicial, the sovereign and the disciplinary. Each type of power was dominant during a particular socio-political time and context, but they should not be understood as competing or sequential. Instead, they co-exist and complement each other, in this way creating a complex web of institutional power conditions. Foucault argues that the Middle Ages were the era when the judicial power was most prevalent. The judicial power, incarcerated in such institutions as the judicial system, the prisons, and corporal punishment, worked on the body. Its legitimization was drawn from the emergence of a framework of law and the centralised institutions of justice, sustained through a range of tactics and techniques which had as their aim to control the body. The sovereign power pertained to the need of the sovereign to control the territory. The primary aim of sovereign power, which had the army as its main instrument, targeted the government of space and territory, while its preoccupation with the human being was limited to its capacity to provide the necessary resources to accomplish the control of the territory.

Thirdly, Foucault argues that the modern society is primarily based on a different type of power, the disciplinary power, whose emergence he traces to the sixteenth century under the influence of a number of factors (the gradual displacement of

feudalist arrangements by the nascent nation state with defined borders, the increasing stronghold of the Church through such individualising practices as confession, etc). The kind of disciplinary power that Foucault identifies renders the individual as the object of power and attempts to work through its wishes and needs in order to control its conduct. Different types of institutional arrangement are required to bring this project to fruition. In this project, Foucault retraces the emergence of the panopticon as a new architectural form of the prison allowing for constant surveillance and self-monitoring of the prisoners (1979), the repositioning of the asylum as a place where the insane could be separated from the sane (1988a), the institution of the medical gaze (1973), and the professionalization of sexuality becoming an object of education of children, medical experts, and public authorities (1978).

In all these cases, specific technologies of government ensured that human subjects were placed under increasing control in ways which were more or less visible. Tactics of identification, distinction, classification, and individualisation aimed at rendering human beings the subjects of individual scrutiny in an increasing array of the biological facets of life (births, deaths, illness etc.). Simultaneously, tactics of normalisation and totalisation rendered them into broader social issues in which the state had a legitimate stake in intervening. This individualising process was coupled with a totalising one: individuals came to constitute the population, which could be worked on through techniques of normalisation and classification. But how could one gain knowledge on, and thus acquire power over, the population?

Foucault (2007) answers this question by suggesting that it was the establishment of a new kind of science, statistics, which effectively made these techniques possible. The new science of statistics produced a different field of visibility. It was now possible to gather information and to acquire knowledge about the population and the individuals, to scrutinise their behaviour, to shape them according to norms, to separate the ordinary from the extra-ordinary, and the normal from the abnormal. A new domain of knowledge was developed around the new object of the population.

With knowledge came visibility and with visibility came a particular power of the state to intervene.

The above example introduces the intricate relation between power and knowledge in Foucault's works. Knowledge is for Foucault a set of context- and time-specific utterances which are taken to be true by a group of people. There is nothing natural or intransient in the capacity of particular discourses to be held as true and thus constitute a legitimate domain of knowledge. Power relations define the types of knowledges that are held as legitimate in different times and places, and in turn, particular domains of knowledge help solidify specific power arrangements by rendering them legitimate or even commonsensical. This relation is not one of linkage or interconnection, but rather one of co-constitution: domains of knowledge support particular technologies and strategies of power, whilst power relations make certain domains of knowledges attain the status of truth. Thus Foucault attempts to highlight not only the context-specificity of knowledge, but also the contingency of knowledge as truth. There is nothing immanent, intransient or necessary in Foucault's truth. Domains of knowledge rise into visibility as legitimised or widely accepted regimes of truth within assemblages of relevant institutions, strategies and tactics, whilst simultaneously other knowledges are designated into obscurity.

This is where the question of subjugated knowledges emerges in Foucault's work in two ways. Firstly, he identifies as subjugated knowledges "the blocs of historical knowledge which are present but disguised within the body of functionalist and systematizing theory" (Foucault 1980, p. 82), and which academic research should be able to uncover and shed light on. Thus, Foucault attempts to show the historical situatedness of current arrangements as congealed instantiations of past knowledges, and the possibility to gain knowledge about them and challenge the functionalist assumptions of present arrangements through an archaeological analysis.

Secondly, subjugated knowledges refer to the discredited, local, un-codified knowledges which have been defiled as obsolete, naive or mistaken. These knowledges, being incompatible with the dominant regimes of thought, are portrayed as irrelevant and may be effectively rendered illegitimate. Subjugated

knowledges become visible for analysis in moments of struggle or resistance; it is then that they manifest themselves and are rendered accessible to academic study. Foucault argued in 1980 that we are witnessing “an insurrection of subjugated knowledges” (1980, p.81), which arguably he himself fostered throughout his writing career. Foucault suggests that it is these knowledges which critique of the dominant ideological and institutional arrangements should bring to light. Thus critique is of an essentially local nature.

what this essentially local character of criticism indicates in reality is an autonomous, non-centralised kind of theoretical production, one that is to say whose validity is not dependent on the approval of the established regimes of thought (Foucault 1980, p.81)

3.5. Technologies of government

Foucault (1994) identified four types of technologies: technologies of production, technologies of signification, technologies of power and technologies of the self. Technologies of production include the means of production of any given era, for example the tools and associated skills which allow the manipulation of resources in a production process. Technologies of signification, as symbols which offer meaning in a society (Rooney 1997) include language, but also other systems of signs which are used to make sense of other domains, e.g. the system of notes to represent music, or the system of gestures signifying the sign language. Technologies of power (or government) subject the conduct of individuals to scrutiny and control according to certain ends which are considered desirable. Finally, technologies of the self allow individuals to reflect and work on their bodies, thoughts, conduct and way of life so that they can attain a level of happiness, wisdom or fulfilment.

It is important to note that these types of technologies do not exist in isolation. Instead, to a certain extent, they presuppose and influence each other. For example, the factory as a technology of production requires particular technologies of power to make it function (e.g. the conveyor belt, breakdown of activities etc.), as well as the constitution of subjects with particular concerns on their lives. Foucault sums up his

view of governmentality as the “encounter between the technologies of domination of others and those of the self” (1994, p.225).

Indeed, the technologies of government constitute one of the three most important aspects researched in the governmentality literature (the other two being the rationalities and subjects of government). Inda (2005) argues that the technological aspect of government, i.e. the way government takes on a technical and pragmatic form, emerges in two ways in the literature. Firstly, the technological element of government constitutes the domain of programmes, calculations, devices, procedures, mechanisms, instruments and documents that allow the act of governing to have immediate effects. Miller and Rose have described technologies of government as the various means

through which authorities of various sorts have sought to shape, normalize and instrumentalize the conduct, thought, decisions and aspirations of others in order to achieve the objectives they consider desirable (Miller & Rose 1990, p.8).

Dean explains techniques or technologies of government to be:

[...] the diverse and heterogeneous means, mechanisms and instruments, through which governing is accomplished. These concepts emphasize the practical features of government which might include forms of notation, ways of collecting, representing, storing and transporting information, forms of architecture and the division of space, kinds of quantitative and qualitative calculation, types of training and so on. Technologies of government are typically assembled from diverse elements, take part in techno-economic systems, constitute logistical and infrastructural powers, and subsume the moral and political shaping of conduct by performance criteria (Dean 1999, p.212)

This aspect of the technological in government emphasises the subtle and often overlooked ways in which rules of conduct, advice for better life, visions and role models for emulation, and material arrangements are inscribed. It is these inscriptions and technologies that allow the effects of one locale to be felt by another locale ‘at a distance’. This becomes particularly important for the current study as it provides a fruitful framework for explaining what allowed the Greek policy makers

to take particular courses of action with regards to the role of the European Commission in ICT innovation.

Secondly, the technological element in the governmentality literature manifests itself through an emphasis on the programmatic nature of government. Government is programmatic in the sense that social action can only be programmed if it is rendered knowable. Government tends to be translated and materialised in specific programmes, which can range from large programmes of political thought, “the realm of designs put forward by philosophers, political economists, physiocrats and philanthropists” (Rose & Miller 1992, p.181), to specific instances of programmes of action, government publications, and strategies, seeking to configure specific locales towards desirable ends. Thus, reality can be “made thinkable in such a manner as to make it amenable to diagnosis, reform and improvement” (Inda 2005, p.10).

This aspect of technologies of government is particularly important for the domain of ICT and innovation which has been subject to intense problematization and action in various arenas, and which has been scrutinized, dissected and programmed in a range of strategies and action plans.

3.5.1. Disambiguation: ICT, technologies, and technologies of government

Given that this thesis is framed within the field of social study of technology, and given that one of the core theoretical constructs is the technology of government, there is a need to make some explicit clarifications and perhaps associations.

Flichy suggests that the word technology has a slightly different meaning in English and in French:

In French we clearly distinguish technique from technology. As Leroi-Gourhan (1964) put it, a technique is a combination of gesture and tool. It always associates the object or machine with the human being who builds and uses it. Technology, by contrast is the *study and knowledge of techniques*. In English the word ‘technology’ tends to embrace both meanings (Flichy 2007, p.viii, emphasis added)

This highlights to some extent the difference the word technology has in different literatures and research traditions. For example, the information systems literature has mainly understood technology as technique, in Flichy's explanation above, i.e. as the combination of the technical artefact and the way it is being appropriated. In contrast, technology in the context of the systems of innovation literature, which was discussed in the Literature Review, assumes an artefact which is largely taken as given and is considered in the context of economic and production processes, rather than active use. Finally, the previous section on technologies of government explained the meaning of technology for Foucault, which involved the calculations, techniques, tools and procedures which make power effective, along with the discourses and truth claims which allow them to function as true within specific cultural and cognitive settings. As such, technology becomes a slippery term, especially when utilised in a Foucauldian-informed essay about information and communication technologies. In this section, I attempt to disambiguate the use of these terms in this study.

Within the field of information systems, Willcocks (2006) rightly points out that the word technology appears increasingly in Foucault's writings from the 1970s in the form of technologies of power, technologies of the self, disciplinary technologies etc. Foucault does not welcome the technical meaning of the word technology, and often uses the words technology, technique, or *techné* interchangeably. Even though a clear definition of the term is lacking, Foucault is not restricted to a narrow view of technology as hard technology, i.e. the technological artifact, or a well-delineated scientific technology, such as electricity. Instead, his use of the term technology remains quite liberal, in an attempt to encompass a wide array of methods and arrangements of material artifacts and non-material practices that work towards achieving certain aims. For example, Foucault discusses the technologies of the self, i.e. the orchestrated, systematic methods to render oneself the object of ethical government according to an overarching aim in life (Foucault 2001). He also discusses the technologies of power, i.e. the material arrangements which make

certain subjects have differential capacity to successfully circulate, influence or relay power.

Although Foucault is not directly addressing the issue of technology, his entire outlook revolves around the technical means which allow technologies of government, power and self to operate. Thus, the issue of the technical is pertinent to the question of government. Foucault sees government as the “right disposition of things that one arranges so as to lead to a suitable end” (Foucault 2007, p.98). His analyses trace the detailed ways in which discourses become dominant ideologies suppressing alternative worldviews through their embodiment into education and schooling, practices of the state, religious practices, and ethical problematizations. Thus, the technical not only becomes important for government, but in effect forms the basis on which government and self-government is made possible. This has even led to direct comparisons being drawn between conceptions of technology by philosophers of technology such as Ellul (1964) and Innis (1951) and Foucault’s preoccupation with the capillary forms of power and its embeddedness in networks of legitimate systems of thought (Gerrie 2003).

What is more, highlighting technical considerations in the analysis of government opens up new domain of contestation: a domain where technical discourses can be conceived as political discourses. Technical discourses which are often professed by technical committees, consultants or expert advice, can be designated as outside the realm of the political and as such evade political scrutiny. Barry argues that a range of “hybrid politico-technical institutions [...] exist in order to resolve, bypass or defer political disputes” (2001, p.8). This does not mean that technology can or should be reduced to politics. A more fruitful approach may be to appreciate technical discourses as forms of political discourses, opening up new sites of politics, even if such discourses do not always take place in the public political domain.

Concluding then, in this thesis technology is understood more broadly as the combination of tools and knowledges which make specific forms of conduct with regards to ICT innovation legitimate, desirable, or even feasible. Although ICT can itself be analysed as a technology in the Foucauldian sense, this is not the purpose in

this research. As such, references to ICT or information systems are meant to designate the particular technical systems and innovations which were planned and implemented, and generally imagined, discussed, and contested in various ways.

3.6. The subject and the “collective subject”

Traditionally the subject has been associated with the individual person, who is knowledgeable, rational and purposeful. Influenced from a Foucauldian outlook, subjects and action are heavily conditioned by the structural impediments of society at each period of time. The emphasis on the individual is a mixed blessing. On the one hand, it allows us to study the construction of particular identities, ways of legitimately being in specific contexts, in a way that is both grounded on concrete experiences and amenable to theoretical generalizations. On the other hand, the unit of the study is necessarily restricted to the individual, which provides very little room for a discussion of a higher unit of analysis, for example a collection of individuals which find themselves in similar roles and in similar contexts.

In a Foucauldian analysis, this limitation takes on an added dimension, as despite Foucault's preoccupation with issues that characterised whole societies, much of the terminology appears to appeal to the individual subject, e.g. technologies of the self, care of the self etc. Moreover, his work, which mainly appeared in the lectures at the Collège de France on the rationality and art of government, seems to balance precariously between these two competing trends. Governmentality as the conduct of conduct specifically alludes to the individual subject as the locus of governing, but is simultaneously concerned with the role of the state as the governing collective entity, even if it is governing 'at a distance' through its various organs, for example the police which Foucault identifies as a mechanism of security. Similarly, Foucault is not interested in a totalising power which dominates indiscriminately over subjects, but in forms of power that are simultaneously more individualizing in the way they attempt to make each subject the object of their own visibility, and relational in the way they appear to circulate in a field of relations, rather than be possessed. Thus,

although the questions that concern Foucault are of an essentially societal nature, his analyses and terms of reference often engage on the level of the subjectification of the individual.

In this study, the issue of who (individual or collectivity) can be constituted as a subject is made poignant by the existence of two discreet yet intertwined levels of governing. Whereas Foucault's later analyses discussed the relationship between the state (and its mechanisms of security, such as the police) and its subjects (in particular the population), the case under study in this research involves an arrangement which can be described as consisting of two levels of government. At a first level, the European Commission is making policies and strategies which are taken up by the national authorities of member-states (the processes through which this happens and the degree of coercion or wilful assimilation is subject to further investigation). At a second level, the national authorities attempt to govern their populations, in ways that are congruent with their political priorities and the political projects in which they are enmeshed. In such a context the position of the national authorities and administrators as both governed and governing creates further complications and opportunities to create new ways of conceptualising Foucault's original ideas in novel contexts.

How can, for example, the national authorities be studied in their capacities as simultaneously governed and governing in the area of the information society? Is it sufficient to use the organization as the unit of analysis, or is it necessary to explore the process of subjectification at the level of the individual? Existing research has paid little importance to the nature of the subject, however the consensus appears to be one in which collectivities are analytically treated as subjects, thus highlighting the way in which organizations appear to have a will of their own, which can be explored independently from their members. For example, in their study of the governmentalization of Europe, Walters and Haar (2005) discuss the emergence of multiple European spaces to be governed by a central authority (i.e. the instruments of the European Commission). In their discussion of the emergence of the Open Method of Coordination they explore its effects on rendering the Commission (which

as an organization was responsible for establishing and sustaining the OMC as a policy instrument) as the locus of government of national action.

3.7. Critique of governmentality

Studies of governmentality have drawn criticism, which revolves mainly around three points: the lack of criticality, the preoccupation with programmatic intentions at the expense of contestation, the use of pre-configured categories in the place of detailed genealogies. These points are taken here in turn.

The first point of critique is that studies of governmentality are not realising their full potential for resistance, contestation and empowerment, in short for critical engagement. O'Malley, Weir *et al.* (1997) argue that this is due to genealogy not engaging in criticism, but rather in a critique, an exploration of an informed history of the present, rather than an explicit attempt to change it. Wickham (2008) goes as far as to argue that it is this tradition of unengaged 'critique' that risks leading to totalising results. In an effort to move away from the 'unmasking' of ideology and hidden interests and to posit power as productive of subjectivities, genealogy provides "a history of the present that downplays interpretations of history as systematically antagonistic and violent" (O'Malley, Weir *et al.* 1997, p.506). This is indeed a valid point, but one which has to be raised on a case by case basis: persistently and systematically antagonistic relations may be part and parcel of relations with greater degrees of freedom, thus making the call for increased criticism unnecessary.

A second point of criticism raised against governmentality studies is that they are too preoccupied with what is happening 'in the mind of the programmer', rather than with the messy reality of implementation. Studying the rationalities of government or 'mentalities of rule' (Miller & Rose 1990) may lead to a unilateral consideration of the programmatic nature of interventions. This 'discursive governmentality' (Stenson 2005, p.266) has led to a disconnection between the rationalities of government and material practices and social relations on which they rest (McKee 2009).

Complementing the study of the rationalities of government with an investigation of technologies of government does not do much to address the criticism.

To differentiate between rationalities and technologies of government does not mark the clash of programme and reality, the confrontation of the world of discourse and the field of practices. The relations between rationalities and technologies, programs and institutions are much more complex than a simple application or transfer. [...] History is not the achievement of a plan, but what lies "in between" these levels. (Lemke 2002, p.53)

Two points need, however, to be remembered. Firstly, the 'programmer' does not need to (and should not) acquire a privileged position in the analysis; the 'programmer' may be understood as another locale seeking to make its intentions, however correct or not, felt. Rose, O'Malley *et al.* hint to this point by claiming that "blueprints are the empirically real plans and diagrams generated by programmers of various kinds" (2006, p.99). The current analysis also challenges the "image of government as a juggernaut that is somehow willing itself into existence, implementing itself into reality by mysterious means" (Rose, O'Malley *et al.* 2006, p.99). It does so by tracing the origins of the programmatic documents, i.e. the policy makers that created them, along with their uncertainties and ambiguities. This is, however, arguably harder to achieve in programmes which are not formally identifiable in any one text.

Secondly, Foucault's original writings place sufficient importance on the institutional configurations and material practices which emerge out of governmental strategies, and on which strategies rest to have any concrete effects on real life. Thus, the criticism that governmentality studies eschew empirical actuality for political programmes reflects the research priorities of one particular academic field, namely policy studies, which revolve around impacts and effects (McKee 2009). Rather than a question of failure, it is rather a question of different focus. Although Foucault did not study the success or failure of the governmental programmes he traced, i.e. the degree to which they took hold in a population, it does not mean that this cannot be achieved within the context of the theoretical approach (Marston & McDonald 2006).

On the point of the relative neglect of resistance, O'Malley, Weir *et al.* (1997) argue that despite the constitutive role that Foucault accords to contestation and resistance, the literature in governmentality has seen resistance negatively, as the failure of the programmatic intentions. Instead they argue that a more fruitful way would be to see the ways in which contestation produces alternative versions of truth, or seeks (or even manages) to funnel such alternative interpretations into the dominant perceptions of rule. Counteracting this criticism, it has been argued that this is a question of focus of study, and there is nothing which inherently precludes a governmentality analysis from studying how a programme is implemented or taken up by the population (Rose, O'Malley *et al.* 2006). Indeed, although I would argue that an investigation of how (whether, or to what extent) a programme is taken up by the population is not a productive appropriation of governmentality, this thesis does look at aspects of the implementation and allows practices of contestation to stand out.

The last point of criticism has to do with the use of certain terms, for example neo-liberalism, advanced liberalism (Dean 1999, Rose 1999, Miller & Rose 2008) etc, as master categories used simultaneously as an explanation and as an analytical category (both as an explanan and an explanandum) for all sorts of programmes in a variety of settings. These terms were derived out of specific, detailed analyses. Although elements can be traced in most contemporary programmes, their use as ready-made concepts has often resulted in analytical laziness. This analysis avoids the use of ready-made concepts designating specific modalities of government on two accounts. Firstly, these terms were developed out of political programmes taking place in specific settings (mainly North America and some European countries), which bear significant dissimilarities with both the Greek context and the context of the European Commission. In any case, it is not a given that their use is historically and contextually warranted. Secondly, as they are quite high-level generic terms, they did not prove particularly illuminating in an analysis which was much closer to the particular phenomenon under study.

3.8. Governmentality and studies of technology

Despite the abundance of literature drawing from principles of governmentality in a range of domains of social sciences, studies of technology are distinctly underrepresented. This section discusses the limited ways in which technology has been viewed through a governmentality approach. The aim is to see in what ways the notions around governmentality have been utilised in the study of technology, and the kinds of issues they have been called to illuminate.

Some of the research on technology that quotes governmentality is in effect only superficially engaging with the concept. For example, some research has been concerned with the emergence of large scale information infrastructures and the Internet. Discussing the implications of Internet surveillance Mehta and Darier (1998), attempt to move beyond the panopticon metaphor and suggest that the sheer scale of the electronic 'gaze' has led to the governmentalisation of the Internet. They offer as a prominent demonstration of self-regulation of conduct the voluntary monitoring of employee emails by companies. This appears however to be much more closely related to the disciplinary technology of legislation, rather than the self-fashioning of conduct. In a study that has less to do with spatiality and more to do with genealogy, Paltemaa and Vuory (2009) ground China's Internet control policy to the historical attempts of the state to achieve social transformation and political security through the politics of technology, whilst Fraser (2007) produces a discursive, but limited account of the ways in which Canada's Internet policy recasts citizens as 'model users' of technology supporting the creation of a 'model nation'.

One of the most insightful works drawing on principles of governmentality is Barry's *Political Machines* (2001). Barry starts by asserting that we live in a technological society insofar as technology, the problems it poses, the benefits it promises and the social models that it makes available, become political concerns. Tracing technological debates in the European Union around technological standards, measurements and infrastructures, Barry argues that government, in the past

contained within national boundaries, can now be seen to operate in zones which stretch across national boundaries. Such zones, for example the standardisation of measurements and connections, are constituted by the operation of both technical discourses and devices creating complex arrangements across boundaries, with the implication of various agencies, national, supranational and corporate (Barry 2006). The overarching empirical point seems to be that “Europe is having difficulty constituting itself as a political unity, since it cannot manage to build and develop an integrated technological base” (Callon 2004, 121). Interestingly, Barry develops the idea of the demonstration as a reflection of the creation of a public space where ‘the political’ emerges. The failure of technology in its various manifestations (the mapping of genes, the quality of air and water, the patenting of software, or Internet surveillance, the digital divide etc.) to give rise to an impactful event, such as a demonstration, shows that technology in Europe has failed to open up a discursive public arena, in other words has not managed to be included in the active concerns of citizens.

The emergence of technological zones which transcend boundaries appears to co-exist with the creation of zones of differentiated technologies and practices of government within states. Aihwa Ong has traced zones of ‘graduated sovereignty’ (Ong 1999, Ong 2000) where subjects of different rights and obligations are constituted through differentiated governmental practices of life and work (with regards to refugees, illegal workers, low-skill manufacturing workers, and crucially information workers). This work has led to intriguing ways to investigate government policies for the information society through a different light. For example, Bunnell and Coe (2005) consider Malaysia’s Multimedia Super Corridor not only as an economic policy to attract high-tech multinationals in a particular space, but also as a zone of graduated sovereignty, where individuals are expected to take charge of their own development and ‘upgrade’ themselves, where parents are called to nurture the next generation of innovation-driven children with a global outlook, and where spaces for leisure from ‘cerebral’ work defy social norms about moral conduct. The fragmentation of governmental strategies and technologies is linked to

the attempts to provide the conditions most conducive to integrating in the information economy, even if this means that citizens and spaces of different value are created. Similarly, Ong (2005) studies Singapore and Malaysia comparatively and finds that, although at different positions in the world economic exchanges, state-planners in both countries have created subjects of varied worth depending on their capacity to drive innovation and the country's development towards the information society.

Each is a distinctive constellation of specific presences and absences, of social privileges, values and regulation that destabilize ethnic governmentality and promote new ethics of intellectual capital and market agility (Ong 2005, p.339)

These studies have contributed to fascinating analyses in which issues of space and spatiality, novel societal arrangements around a technological future, and programmatic rationalities coalesce. The picture which emerges is one which unsettles the nation-state as the locus of production of unifying governmental technologies for the well-being of the population. Not only is the state not the sole locus of governmental programmes, but the governmental programmes increasingly appear to be of global validity and impetus, and the strategies and technologies to achieve them seem to call for differentiation and fragmentation of the population.

3.9. Conclusion

This chapter presented the main ideas developed by Foucault on governmentality in his later lectures at the Collège de France. Governmentality concerns the government of self and others according to particular rationalities, and through specific discourses, calculations and techniques. Governmentality studies have proliferated in the domains of political science, but also geography and international relations, but have found little footing in studies of technology. This is to a certain extent justified, as governmentality's analytical clout lies on studies conducted at a higher societal level of analysis, which, as was argued in the literature, is not well developed with regards to the study of technology. Not only are there not enough studies addressing issues of technology at the societal level, but the great majority of them

are done in an atheoretical fashion too. It is for this reason that governmentality can hold some promise for a more theoretically-robust approach for the study of technology at the societal level.

4. CHAPTER FOUR – METHODOLOGY AND RESEARCH DESIGN

4.1. Basic beliefs

A paradigm may be viewed as a set of *basic beliefs* (or metaphysics) that deals with ultimates or first principles. It represents a *worldview* that defines, for its holder, the nature of the “world,” the individual’s place in it, and the range of possible relationships to that world and its parts, as for example, cosmologies and theologies do. The beliefs are basic in the sense that they must be accepted simply on faith (however well argued); there is no way to establish their ultimate truthfulness (Guba & Lincoln 1994, p.107, emphasis in the original)

Guba and Lincoln (1994) argue that although basic beliefs have to be accepted on the basis of persuasiveness and utility, rather than proof, it remains important to reflect on one’s basic beliefs (ontological and epistemological) as they have a bearing on the later stages of enquiry and the methodological choices. In this spirit, this section is dedicated to a reflection on my beliefs on the nature of reality, our knowledge of it, and the ways of going about enquiring about it.

I take social reality to be a historical sedimentation of social, political, cultural, economic and ethnic values and materializations, creating conditions which appear to be, for all practical purposes, ‘real’, i.e. natural and immutable (Guba & Lincoln 1994). These conditions not only continuously constrain the individual’s capacity of agency, but actually make up what is understood to be the individual’s agency at any given time. Chia (1995) summarises this point by arguing that

individuals are [...] *reified entities* and are themselves tentative, and precariously balanced but relatively stabilized assemblages of actions and interactions (Chia 1995, p.592).

Change and resistance is co-constitutive, as it is always already manifested within a framework of taken-as-given conditions, leading to contestations which do not (or

cannot) fundamentally un-do the whole range of historically constituted reality, or elevate individuals in a purer, freer state.

As the researcher is already made up (born, schooled, trained etc.) within specific conditions and value systems, knowledge about the world can only be subjective and value mediated, arrived at through the dialectic relationship between a particular researcher and a particular object of study. I take truth not to be of a universal nature; instead it is context- and time-dependent and held in place by being continuously reproduced through systems of thought, morality or domination in various times and locales. Thus, the research activity does not seek to reveal the one and only truth, but rather the multiplicity of ways in which a truth, local and transient, has come to be the accepted way of thinking and doing. I am interested in how truth has come to be 'accomplished', in the sense of "the *coming together* of inscriptional acts and interactions to form a coherent unity" (Chia 1995, p.598) through omnipresent truth games (Scheurich 1997).

Methodologically, the weight is on understanding how things came to be the way they are, with the assumption that they could be otherwise. This does not mean that there is an infinite ability for reversibility or un-doing. Rather, in demonstrating the multiple ways and moments that have contributed to a given state, a space can open up for alternative interpretations and forms of contestation. I believe that individuals can work towards a more informed consciousness, and in this respect academic research provides some waypoints.

In seeking to challenge some of the sedimented nature of taken-for-granted conditions, in order to open up a space for alternative imaginations and possibilities for critique, my research follows a method which is historically informed and preoccupied with the practices and discourses, often inscribed in "the accidents, the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have value to us" (Foucault, in Rabinow 1986, p.81).

4.2. From research goal to research questions

The focus of the study lies on government-led innovation, i.e. in the efforts of governments to foster innovation for socio-economic development. The literature on this issue has been shown to be rather atheoretical, and with limited accumulated knowledge on the core substantive questions of the topic, despite the many case studies. Moreover, the literature has not adequately addressed issues of international pressures and demands. This became vividly felt as my awareness of the literature increased, whilst it proved inadequate to explain the case of Europe and Greece and ICT diffusion, which was researched. Greece exhibited a complex identity as far as its state of development was concerned: decent economic growth during the past decades (despite the recent economic crisis), high degrees of literacy and social mobility, and participation in international bodies, such as the OECD and the EU, co-exist with pre-industrial social structures, highly politicised and personified policy and political activity, and limited technological and innovative capacity (Economides 1995, Mouzelis 1995b, Pettifer 1995, Thomadakis 1995, Tsoukalas 1995, Ioakimidis 2001, Pagoulatos 2001, Lymperaki & Tsakalotos 2002, Pagoulatos 2003, Featherstone & Papadimitriou 2008, Spanou 2008). This did not allow its straight-forward classification along the 'developed/developing' divide and did not do much to illuminate the case.

The research goal then became to explore how interventions of the Greek state to foster ICT innovation and the information society came to be constructed and enacted through the interplay with European visions and mechanisms. The goal was to understand how – through which processes and discourses - the state intervenes to effect changes in the economic and social fabric based on a particular idea of rationalisation through the deployment of ICT. So, the overarching research question was:

How does the government steering of the diffusion and socio-economic effects of ICT happen?

Addressing the gaps which emerged from the review of the literature, and a better understanding of the theoretical perspective, this question is further specified in the following sub-questions:

- a. To what extent is the government steering of ICT-enabled socio-economic change a technical/rational matter of policy implementation?
- b. Given that the information society has emerged as a trend of global scale, how do the mechanisms and technologies of government at the national and international level interact?
- c. What are the features of the construction of the information society as a policy-led socio-economic change?

The questions are primarily of an exploratory nature. Having specified the sub-questions guiding the thesis, this chapter proceeds to discuss issues of research strategy and design.

4.3. Research strategy and design

The selected research strategy for this research was a single case study. Initially, the case was selected as an intrinsic case study (Stake 1995), in the sense that the first questions and source of curiosity arose from my inability to understand the European/Greek case on the basis of the assertions from the existing literature. However, I do not take the case of Greece as unique or extreme case (Yin 2003); to the contrary I see it as a typical case of a country with limited tradition in technological innovation, operating within a broader nexus of international pressures, and where technological innovation was primarily pursued through state intervention.

There were other facilitating factors involved in the case selection, namely the familiarity with the culture and the language, which meant that a level of awareness existed even before the research began. Moreover, the existence of a network of active and dormant connections with people in key positions in Greece meant that

some of the practicalities of research pertaining to access to the field and the required participants were significantly eased.

Case study research as a research strategy has been advised for the kinds of problem situations where “the experience of the actors is important and the context of action is critical” (Benbasat, Goldstein *et al.* 1987). The goal is to provide a rich description of the scene, to illustrate the context in which events occur, and to provide explanations, albeit tentative ones, as to the reasons why events occur in the way they do (Dyer & Wilkins 1991). Stake (1995) argues that thick descriptions, experiential understanding, and multiple realities constitute the basic elements of case study research. A thick description emerges out of an intensive interaction with the field, and an approach of multiple data gathering methods. Thick descriptions also demand a holistic rather than a reductionist approach to observation, i.e. an attention to the particularities, intricacies and idiosyncrasies of the particular case. On top of rich descriptions, what is also required is an active pursuit of the different ways in which participants experience the situation, and thus an attempt to bring to light their different worldviews. Rather than a quest for a single explanation, the researcher seeks to empathise with the participants, and explore how they make sense of and act within their circumstances.

The selection of case study as a research methodology has been criticised on a number of counts, especially when compared to more established methods of research based on large random samples or experiments. Flyvbjerg (2006) summarises the criticism in five main points. First, in conventional wisdom context-independent knowledge is considered more valuable than context-dependent knowledge, and so knowledge drawn from general principles is accepted as inherently better than knowledge drawn from concrete experiences. Second, research from one case is thought to be non-generalisable, and thus unable to promote scientific advancement. Third, case studies are thought appropriate for the initial stages of research, where assumptions can be tested and hypotheses formulated, whilst judged inadequate for hypothesis testing and theory building. Fourth, case study research is criticised on the basis of lack of rigour stemming from an inherent

bias toward verification, i.e. a tendency for researchers to find what they were already looking for. Fifth, case studies are thought to be difficult to summarise and theorise out of. Flyvbjerg, drawing on a Kuhnian analysis, instead suggests that “a discipline without a large number of thoroughly executed case studies is a discipline without systematic production of exemplars, and that a discipline without exemplars is an ineffective one” (Flyvbjerg 2006, p.241). He thus argues that case study research, when well conducted and presented in a way that does justice to the richness of the experience, is a legitimate and valuable research method, which is able to produce the kind of intimate and nuanced knowledge that allows for a better understanding of human affairs.

Moreover, the current study was designed with a historical outlook in mind, as it became clear from very early on that the domain of research (the government-led construction of an information society in Europe and Greece) could not be adequately comprehended without some exploration of its historical constitution in the past two decades. As a result, the study became an attempt to trace a trail of events and the changing conditions under which the state took on the task of making technology-enabled reforms.

According to Yin (2003), the basic distinction between case study research and archival research, which is one method of historical enquiry, has to do with “the *degree* of focus on contemporary versus historical events” (Yin 2003, p.5). The difference between the two methods of study is primarily a question of degree, rather than one of dichotomy. In effect, most case studies make some remarks about the historical background in which the events that form the core of the study have taken place. At the same time, a historical line of enquiry is primarily oriented towards historical events, perhaps bringing forward their implications into the present.

A historical study allows us to see the varied ways which have shaped the conditions of our current existence, and in so doing opens up routes of enquiry which do not presuppose a nomothetic progression to a “natural” state of affairs, but which reveal the often fractured, folded and unpredictable paths that brought about the status

quo. Thus, historical research is fundamentally idiographic, i.e. is preoccupied with the rich details of particular cases, and is thus irrevocably context- and case-dependent (Mason, McKenney *et al.* 1997).

A historical method of enquiry, similar to a case study, draws its data from a number of varied sources, and uses data that is of a varied nature. Mason (1997) argues that primary data can take four general forms: a) written data in public and/or official documents, unpublished documents, personal notes, newspaper clippings etc, b) material data, drawn from artifacts and objects, field visits in offices and work places etc, c) traditional data, in the form of stories which are repeated in secondary literature, and d) eye witness testimonies, which are accounts that the researcher has obtained from face-to-face interactions with the protagonists. For this study, all four types of data have been gathered to different degrees, with the bulk of the data being written data from official publications, and eye witness testimonies.

4.4. Research conducted

A pilot study was conducted in June 2006 in Athens. The purpose of the study was two-fold. Firstly, initial contacts were made with participants in the field and the possibility of further contacts was explored. I was brought in touch with key participants in the policy field early on. Contacts were further made into different areas of the domain as the initial meetings proved fruitful. In total, nine interviews were conducted with participants in different areas of the policy domain, while more possibilities for contacts were established. Secondly, the aim of the discussions was to gain a better understanding of discussants' concerns with regards to the ICT programmes running at the time. A number of the participants had been involved in consecutive ICT programmes for several years, even decades. In these cases, I was particularly interested in hearing their past experiences and memories. (Detailed information on the interviews I conducted, the workshops and conferences I attended for the purposes of data gathering, as well as the types of documents I

collected and the websites I consulted for information can be found in Appendix B – On data sources.)

The pilot study enabled me to get a better idea of a particularly convoluted landscape, fraught with different agencies and projects. It simultaneously highlighted the extent to which the participants brought in different aspects of the EU (funding, rules, monitoring etc.) in their discussions of issues of ICT and information society in Greece. It demonstrated the need to unpack this dense web of agencies, strategies, programmes and Greek – EU relations, in order to allow for a more informed discussion of ICT-enabled development and the information society in Greece.

The main and longest field visit took place from the beginning to mid-2007. In January 2007 I spent a week in Brussels, and conducted interviews with six senior officers within the European Commission³. The participants were from four different directorates of the Commission: Information Society and Media, Regional Development, Enterprise and Industry, and Employment. The interviews varied in terms of the degree of formality. One interview took place in the informal setting of the cafeteria of one of the Commission buildings, whilst another was a much more formal event, which took place in an official meeting room, with much stricter time restrictions. Yet another began as a short chat close to the end of the business day and turned into a three-hour long discussion well into the evening. I also attended a one-day conference held by the e-Business Unit of the Enterprise and Industry Directorate General on the progress of benchmarking for e-business, which gathered a mixed participation of Commission policy makers, consultants and members of the industry.

³ Between the pilot study and the main field visit, I came to the conclusion that the “EU” or “Europe” to which my discussants frequently referred was in fact the European Commission for all purposes relating to ICT in Greece. As a result, my research in Brussels focused on the Commission (its employees, the documents it produced, the events it organised etc.).

From March until June 2007 I visited Athens where I engaged with a wide array of participants in the field. I approached people who worked in different agencies and were involved in different aspects of the process, for example in negotiating with the Commission on issues of ICT innovation, writing ICT strategies, managing the funding, consulting on and implementing the ICT projects, and monitoring and evaluating them. My concern was to adequately map the domain in a way that allowed me to understand the roles and purposes of the institutional actors, the practices that linked them and the discourses they sought to sustain and promote. During the same period, I attended three workshops, where I had the chance to observe a great number of people coming from the administration, the political circles and the industry, and to gather relevant documents, including the presentations, proceedings, leaflets etc. Finally, during that time I systematically examined the websites of the Commission and the Greek state for uploaded information. Indeed, in an effort to set an example of openness of government and wholehearted adoption of the Internet, all European and Greek agencies promoting ICT published a great deal of information online. Sources that were particularly useful for the study were: the complete verbatim proceedings of all annual monitoring committees, spreadsheets of raw and aggregated financial data for the progress of the projects on a biweekly, term and annual basis, the documents of the various strategies and policies, presentations and political statements, as well as analyses, consultancy reports and evaluation reports.

A relation with the field has been kept active all the way through to the late stages of the writing of the thesis by continuously collecting and analysing documents, reports and proceedings as they appeared on the public domain. I further subscribed to online newsletters of the Greek Observatory for the Information society as well as trade publications, for example the monthly e-newsletter of the Federation of Greek ICT companies. Such publications frequently featured contributions and interviews from politicians and European officials, as well as reports on the progress of the ICT programme in Greece and Europe etc.

4.5. Data sources

4.5.1. Interviews

Interviews were initially thought of as the main method of data collection for the study. In total, fifty-two interviews were conducted with participants in the field, some of them with the same participant twice. The interviews lasted from one to three hours, often taking an informal character and resembling more a discussion than an interview. Nearly half of the interviews were conducted in the interviewees' place of work. In most cases, there was an evident need to hold the discussion in private; the discussants often chose to hold the interview in a meeting room if they worked in shared or open-plan offices. The attitude of secrecy was often motivated by the participants' understanding of their positions as highly politicised, or even political. This perception was occasionally justified. A number of discussants held, or had held in the past, posts that were directly linked to the party in power, for example serving as advisors to a political figure, participating in consultative committees, or doing commissioned consulting work. Even when work conditions were not overtly political, the culture of pervasive political interventions in the public administration in Greece meant that most participants could see their work progression as tied to a particular party affiliation, and thus to a greater or lesser extent, political.

An implication of the tendency to secrecy was that the interviews were not tape-recorded. Indeed, when a tape recorder was used in the initial discussions I could observe that although the participants did not openly object to it, they perceived it as a "third observer", frequently glancing at it, as if it acted as a filter to what they were allowed to express. When the tape-recorder was switched off as we reached the end of the discussion, the participants often continued the discussion with a re-ignited zeal, and with what they conceived to be far more controversial comments. Thus, the decision was taken early on in the process to abandon the use of the tape recorder

and revert to taking extensive notes during the interview, which were compiled into a summary very soon after each interview.

A different aspect of the secrecy culture was that a number of participants requested that the interviews be held away from their workplace, usually in public spaces, such as cafes and restaurants. This brought on different opportunities and challenges. On the one hand, the informal environment made for a more relaxed atmosphere and a less inhibited discussion. On the other hand it did not allow me to observe their workplace, and introduced some delays when I requested for further material (for example, documents, white papers, evaluation reports which the participants were usually happy to share with me, frequently emailing them to me as we spoke when we were in their offices). Other challenges included the surrounding noise, interruptions from the waiters, inappropriate lighting etc. Despite the drawbacks, some of these informal discussions in smoky cafes offered a rare glimpse into the more existential problematizations and concerns of individuals faced with conflicting pressures.

As the pool of participants involved people from different parts of the policy field (for example, central policy-making units in Athens and in Brussels, implementation units, research and academic positions etc.), no single question guide was appropriate or encompassing enough to be used in all interviews. As such, extensive preparation preceded each interview, involving three stages. Firstly, I sought to get a better understanding of the organizational unit to which each interviewee belonged and to map the unit in the policy field. Secondly, research on each individual prior to the interview (mostly over the Internet) allowed me to tailor the interview themes around the participant's experiences. It often revealed the intricate career paths that individuals took, moving from one agency to another, from the industry to the administration, or vice versa. They thus brought with them a range of experiences and personal connections which further shaped their roles in the field. Moreover, on-line searches often rendered surprising results by revealing not only the discussant's career positions and progression, but also their personal opinions, attitudes and aspirations. For example, a number of the participants had their own webpages and

blogs on the Internet, or frequently contributed to electronic fora on topics related to ICT, ICT policy, the role of technology in Greek society, ICT and democracy or the civil society etc. Such material informed my understanding of the participants' worldview and the issues that they cared enough to contemplate and write about in their own time in the public domain.

After having a better idea of the participants' position in the overall scheme of things, further work was needed to create a structure for the interview. Depending on the position of the interviewee, I started by asking them to narrate specific events or practices which they experienced or were involved in, and continued by asking them to provide the reasoning behind them. This allowed me to create the backbone of a story and to get an idea of the justifications and rationalisations which enabled the interviewees to make sense of what was going on. Importance was paid to the kinds of concerns they raised and the specific ways they raised them. For example, the absorption of funds, which most of the interviewees reiterated, what kind of problem did they make it out to be, and what was it thought to reflect?

Thus, the questions firstly aimed to be open-ended but of a factual nature, i.e. participants were asked to recite their experiences, focusing on concrete events and practices. Inexorably, the participants included in their narratives their own assessments of the situation, their opinions, and occasionally their feelings. These were noted down, and were treated differently during the analysis.

The questions attempted to re-create a basic storyline to which an overall consensus among the participants was reached. As different interviews helped illuminate parts of the storyline, I was called to look for participants who could shed light on the remaining parts thus reaching a degree of completeness. I took consensus to be achieved when at least three participants agreed on the basic constitutive elements of when an event occurred, under which conditions and what form it took, even if they did not always agree on the details. Further confirmation was sought in documents collected in the field (as explained below).

The interviews often veered off to unanticipated directions. I was often willing to follow the discussants as they brought in different aspects of their memories or experiences. This highlighted what was important to them, the discourses that they upheld and re-produced, and the ways in which their identity as professionals in the field were formed.

4.5.2. Documents

From early on I could see that documents would form a significant part of the material for the study. The pervasive significance of documentary records is widely accepted in the literature (Scott 1990, Atkinson & Coffey 2004). More specifically, since the study revolved around the planned attempts of Greece and the EU to foster ICT innovation in their respective realms, the documents which embodied their programmes of intent and action constituted important elements of the enquiry. Although they were initially thought to be supporting material to the interviews, as the analysis progressed, the documents played a more important role on their own accord.

Documents as research data can be used in different ways (Prior 2004). The first and most straight-forward way documents are used in the research process is as 'resource'. This means that researchers focus on the content of the documents and use it as input in the research enquiry. In this research project, specific documents were instrumental in studying the programmatic nature of government. Studying the content of strategies, policies and programmes of action which were produced either within the Commission or in Greece allowed a glimpse into the ways in which ICT innovation was problematised as an object of government. Such documents constituted primary data, as they were analysed to help explore the ways in which the government of technology and the information society was constructed. The emphasis was on the content of the documents, seeking to understand the discourses that they reflected and helped sustain, the subjectivities they sought to create etc.

Focusing on the language of the documents as the medium of thought and action can however obscure the existence of documents as 'things' originating from, or participating in, various social practices. Prior (2004) suggests that documents in the research process should also be investigated as 'topics': one should ask how they are created, who produces them, and under which social arrangements. This line of enquiry did in fact yield observations which required further investigation. For example, that all the Greek strategies and policy documents of one specific period were written by one and only person; or that the budget for the Information Society programme was deliberately produced and formatted in a way that took advantage of the limited experience of a new cabinet thus obtaining its approval. Questioning the production of documents often highlighted the open-ended, non-deterministic, and occasionally random, process through which they came into existence.

Finally, Prior suggests that we should treat documents as agents in their own right, having their own effects upon their consumption, since "as agents, documents are always open to manipulation by others: as allies, as resources for further action, as opponents to be destroyed, or suppressed" (Prior 2004, p.76). In effect, some documents were analysed as 'material inscriptions', i.e. as relatively stable entities with effects of their own. For example, the charts and league tables comparing Internet penetration across countries in Europe acquired a life and significance of their own, commanding action in specific directions from both the Commission and the Greek policy makers. Similarly, the production of specific documents can have effects which defy their initial purposes, or the distance between the locus of production and where the effects are felt. For example, the production of strategies in the EU level will be shown to trigger the production of strategies in Greece for reasons that go beyond emulation and relate to the assumed identities of rational policy-makers. Thus, emphasis was also placed on the production of the documents, and the effects they seemed to have upon the various layers of their consumption.

4.6. Principles of analysis

I treated the data gathered from all sources as polyvocal (Ball 1994). This means that I 'read' them in through a series of different analytical and interpretative processes. Three processes, to a large extent iterative and incremental, were undertaken during the analysis.

Firstly, I sought to compile, through the gathered material, a narrative of what happened, who did what and when, the important moments in a debate etc. This interpretation concerns the 'how' of policy, the practicalities. It also helps establish a basic storyline, which remains fairly uncontroversial and uncontested among participants. Documents which were analysed through this light involved news paper clippings, evaluation and monitoring reports, documents used in operations etc.

Secondly, data was looked through the light of discourse, i.e. as a way of making legitimised truth claims about the role and implications of ICT innovation in society, the identity of the information society etc. In looking at the data in this way, it became important to understand the institutional context within which something was expressed, for example, the role of the person who said it, and the institution which they represented (e.g. in speeches, in conferences and workshops etc.) or in which they were employed. Data was understood in terms of the discourses they upheld, simultaneously leaving others into obscurity.

Thirdly, the analysis involved the consideration of how different data worked together to create relatively stable and consistent ways of framing the research topic. This process was synthetic, rather than deconstructive, in the sense that it aimed to explore complementarities. In a domain which was punctuated by constant action by a variety of stakeholders, but which exhibited a great degree of inertia, this process sought to investigate the technologies of government, which through discourses, practices, and mechanisms, ordered action and produced persistent effects for practice.

More specifically, I employed principles of historical and genealogical analysis to proceed with the data analysis, which I discuss below.

4.6.1. Historical narrative

I started by forming a historical narrative, rather than by coding the data to pick out themes. This was because my observations often made sense only in light of past events. Thus, the compilation of a large body of data culminated in the creation of stories with a beginning, middle and an end. Mason suggests that “as the account unfolds, it illuminates the events, forces and personalities that brought about the circumstances detailed in the facts” (Mason, McKenney *et al.* 1997, p.315). In this approach, I created three narratives of issues I initially understood as analytically distinct, i.e. a narrative for what happened in the EU with regards to the information society (the policies and action plans created etc.), a narrative for the strategies and policies created in Greece, and a narrative of the ICT programmes in Greece.

These narratives were punctuated by key moments (e.g. the publication of a new policy, or the establishment of an important agency), and appeared to be interlinked, but not in ways that were straight-forward. For example, a policy or strategy did not always precede an ICT programme, which could be thought of as its implementation. Moreover, to adequately understand what was going within one narrative often required me to draw links to another narrative. For example the creation of a monitoring and reporting agency called Observatory for the Information Society in Greece only made sense when related to the Lisbon Agenda and its methods of policy implementation (as I explain in the Analysis).

As a result, a method of analysis was required which was at once able to cope with the small details of my narratives, and flexible enough to allow necessary linkages with elements of the context. The following section analyses the principles of the genealogical method, on which this study was based.

4.6.2. Genealogy

Genealogy is intimately linked to the notion of discourse. The concept of discourse that Foucault uses in his research differs from the way discourse is understood in discourse analysis. For Foucault, discourse is a way “to analyse diverse configurations of assumptions, categories, logics, claims and modes of articulation” (Miller & Rose 1990, p.36). Through its circulation in social settings, discourse constitutes its objects and subjects. Rather than focusing on the ways in which language is uttered in social contexts, the Foucauldian discourse is a way to link what is said or implied with the institutional conditions that allow it to function as true. It provides a way to simultaneously address macro arrangements and their micro manifestations which render each other productive – productive in the sense of being able to produce results, to constitute active subjects and objects of knowledge.

Thus, the method of genealogy refers to researching the origins, and the conditions of possibility and intelligibility of discourses. In seeking to understand the ways in which discourses operate in social settings, the genealogical method produces explorations that “treat discourses as such, with their own distinctiveness and regularity, instead of some underlying ideas or conceptions underlying the discourses” (Alvesson & Skoeldberg 2009, p.251). The emphasis lies in randomness and discontinuity, which does not however preclude the operation of strategies and intentions. Rather, the method assumes that all strategies and intentions are temporarily bound, and can only be partially successful in creating the conditions in which discourses merge or disjoint in order to achieve the desired results. This is a shift away from homogeneity and the linear progression from strategic intentions to implementation. Instead, the genealogical method traces the open-ended ways in which discourses, aided by and inscribed into a multiplicity of material means, on the one hand come to enable strategic political thought to bring about specific effects, whilst on the other also come to challenge and distort it.

Alvesson and Skoeldberg (2009) point out that Foucault's genealogical analyses evolved to study both discursive and non-discursive elements, by drawing attention to institutional formations, such as prisons, psychological institutions, the organization of sexualised bodies etc. However, it would be misguided to conceive of discursive and non-discursive practices as two distinct realms of activity. Instead, although non-discursive practices appear to have a more durable existence, they too are closely implicated in the production and reproduction of particular knowledges and discourses.

What are the principles according to which such a method can be applied in the research of social domains? Foucault, in a rare chapter named Method, puts forward four "methodological imperatives" (1978, p.98): the rule of immanence, the rule of continual variations, the rule of double conditioning and the rule of tactical polyvalence of discourses.

The rule of immanence represents the belief that there can be no domain of human activity which is not constituted under continuous and simultaneous forces of power/knowledge. This means that any domain of human action is always already constituted through the operation of power relations supporting particular versions of truth and knowledge, and vice versa. As there cannot exist a pure power-less knowledge, a genealogical research program needs to proceed from the local centres of power/knowledge to the versions of truth they sustain or challenge, in an "incessant back-and-forth movement of forms of subjugation and schemas of knowledge" (Foucault 1978, p.98). Thus, during the analysis I often started from one piece of data, for example an EU progress report on the Greek information society, or a policy document, and questioned the role it played, the rationalisations it implied, and the effects that it made possible.

The rule of continual variations shifts the researcher's attention to the changes which occur in relations of power/knowledge, as discourses coincide, only to diverge later on, or as their truth claims are challenged by opposing discourses. Rather than seeking to find order and continuity, the emphasis is on the more or less visible

discontinuities which bring about shifts in the accepted and legitimate arrangements of practice. In practice, this meant that when tracing the discourses that dominated the field, for example on the information society, I was particularly attentive to the subtle changes which happened through time, and which led to the creation of institutions in ways not previously thought legitimate.

The rule of double conditioning constitutes Foucault's answer to understanding the relationship between concrete actions and greater political projects.

No "local centre", no "pattern of transformation" could function if, through a series of sequences, it did not eventually enter into an over-all strategy. And inversely, no strategy could achieve comprehensive effects if it did not gain support from precise and tenuous relations serving, not as its point of application or final outcome, but as its prop and anchor point. There is no discontinuity between them, as if one were dealing with two different levels (one microscopic and the other macroscopic) but neither is there homogeneity (as if the one were only the enlarged projection or the miniaturization of the other); rather, one must conceive of the double conditioning of a strategy by the specificity of possible tactics, and of tactics by the strategic envelope that makes them work (Foucault 1978, p.99)

This principle is of great relevance for this research, as it provides a bridge between everyday practices performed by agents and the strategies and programmes. The relation between the macro political projects and the micro actions is neither one of linear 'top-down' enunciation of strategy and its implementation, neither one of 'bottom-up' dispersed actions constituting 'strategy in action'. Rather, each one becomes the irrevocable "anchor point" and support for the other, without which neither would be particularly effective. Research then needs to investigate the technologies of government, embodied in techniques, procedures, tools and technical inscriptions, and sustained by discourses, which allow for the simultaneous interpretation of one level on the other.

This idea is reminiscent of the basic tenet of structuration theory. According to structuration theory, structures are both enabling and constraining of human action (Giddens 1990). Agents through their everyday practice reproduce or transform structures, whilst simultaneously structures find their articulation in human agency,

and could not exist without it. This notion is indeed compatible with Foucault's principle of double conditioning of strategy. Their difference could be understood as one of level of abstraction. Structuration theory is a grand theory aimed at explaining social life in all its aspects. Foucault's works on the other hand are not and do not aspire to be grand theories, focusing instead on deriving some understanding for more specific phenomena. In this case, the principle is a methodological guideline on how to go about researching the programmatic rationalities and their productive articulations at different locales, rather than a general theory of how social life happens.

Finally, according to the rule of the tactic polyvalence of discourses, one should understand discourse as a dynamic element, unfinished, ambiguous and contradictory enough to allow for its appropriation by various actors with varying *wills to power*. Foucault argues that discourses are not neatly divided between dominant and subjugated, included and excluded. Instead, we need to allow in the research project enough room for productive manipulation of discourses for opposing reasons, for dominant discourses to fall into obscurity, and for different discourses to be brought in. Thus methodologically,

we must conceive discourse as a series of discontinuous segments whose tactical function is neither uniform nor stable [...] It is this distribution that we must reconstruct, with the things said and those concealed, the enunciations required and those forbidden, that it comprises; with the variants and different effects – according to who is speaking, his position of power, the institutional context in which he happens to be situated (Foucault 1978, p.100)

This proved particularly important in the analysis, as it drew attention to the multiple opportunities for opposition and subversion. The practices of contestation which I studied revealed the ways in which, however effective the technologies of government were, they were always indeterminate. Indeed, elements of the same discourses were used to destabilise and challenge the efforts for the information society programme, highlighting the fact that contestation neither faded away nor became wholly illegitimate.

4.7. Conclusion

Two important implications of these methodological imperatives can be identified for this research. Firstly, they provide a way to link small practices to the forms of knowledge and truth claims that give them meaning and legitimisation. Inversely, they highlight the dependence of dominant discourses and truth claims on a multiplicity of small practices which produce effects.

Secondly, they provide a more flexible way to cope with the idea of multiple levels. I had to address a range of different levels: the Commission, the Greek policy-makers, the Greek administration, and finally the population, in the name of which (or for the prosperity of which) the whole developmental effort through the diffusion of ICT happened. Instead of understanding each level as being by default 'higher up' than the next, an alternative interpretation was possible: one which saw each level as a different locale which attempted to make its effects felt through the appropriation of discourses and practices. Thus, by whom and how the practice of making ICT programmes in Greece was shaped was not set *a priori* (for example, by postulating the Commission was by default more powerful), but rather emerged through the exploration of the discourses and practices which shaped it.

The next chapter explores the context, the narrative and the institutional actors of the case. The empirical evidence will then be analysed on the basis of the principles just discussed and in light of the theoretical notions discussed in the Theory chapter.

5. CHAPTER FIVE – CONTEXT AND NARRATIVE

5.1. Greece within the European Union

Greece joined the European Union in August 1981, after decades of political instability, including a military regime. The Greek accession was initiated with the establishment of special relations in 1961, but the process was cut short in 1967 with the usurpation of power by the military (Ioakimidis 1996). With the restoration of democracy, membership to the European Community (EC) became one of the most visible and important goals of the new conservative government. In a highly politicised climate, the decision was greatly contested by the socialist party in opposition, as well as parties of the left, which had voiced their intentions to reverse EU membership if they came to power.

The Greek accession to the EU was considered important on the basis of a number of reasons. Firstly, it was understood to contribute to political stability in the country and the region. Secondly, domestically it was thought to be beneficial in bringing the country out of its relative isolation (geographical as well as economic) and enable it to have a say in the political happenings of the region. Finally, it was thought to help the country overcome the financial difficulties that it was facing. The country's economy was based primarily on an antiquated agrarian sector, with a large number of small and very small enterprises operating mainly in the tertiary sector. Traditionally, state-controlled credit was the main driver behind development (Pagoulatos 2003), while the over-blown public sector was utilised politically to mitigate the effects of chronic unemployment (Mouzelis 1995a, Tsoukalas 1995).

When the socialist party came to power in 1982, it pursued a nationalist and anti-European rhetoric which made Greece the 'black sheep' of the EU (Dimitrakopoulos & Passas 2004, p.3). A prominent example is the Greek Memorandum of 1982, which threatened a Greek veto on the Iberian expansion, unless more funding was

funnelled into Greece (Greek Government 1982). Until the late 1980s, whilst pursuing maximization of the economic benefits from membership, the Greek political leadership pursued a nationalist rhetoric for domestic consumption, coupled with a fairly reluctant adjustment to the *acquis communautaire*⁴. By the end of the decade however, the question of the EU and Greece's role and position in it had been normalised and largely de-politicised.

The recent two decades have been marked with a notable pro-European stance from most political parties⁵. Politics around the EU is marked by considerable consensus in the country, even with regards to issues which have proved contentious for other member states, e.g. participation in the Economic Monetary Union, adoption of the EU constitution, the Eastern enlargement etc. What is more, European projects have occasionally been used as flagships for domestic reform. For example, EU influence has marked the economic policies of the 1990s, when fiscal consolidation and economic reforms were pursued in an attempt to meet the Maastricht criteria and join the European Monetary Union. More broadly, fuller participation in the EU and convergence with the other member-states became the dominant concern from the mid 1990s onwards, with the rise to power of Prime Minister Kostas Simitis, who pursued a programme of reform and modernization, with the EU serving as a model to be emulated. In an attempt to point to the co-existence of a strong impetus towards EU-inspired reform side by side with a range of domestic practices for its execution, Spanou suggests that

⁴ The *acquis communautaire* denotes the body of European legislation accumulated over time, which a member state needs to accept and transpose (i.e. incorporate into its own legislation).

⁵ The Greek Communist Party (KKE) still holds a distinctly anti-European stance. It received 7.54% of the votes and twenty-one (21) out of three hundred (300) seats in the Parliament in the national elections of 2009 (Source: Ministry of Interior Website <http://ekloges.ypes.gr/pages/index.html>, visited on 24 November 2009).

Since the 1990s, in fact, a general consensus on the need for “modernisation” and “Europeanisation” has emerged, at the time when international and European pressure was mounting. The reform agenda better reflected outside pressures, despite the persistence of domestic dynamics in the content and tactics of reform (Spanou 2008, p.155).

Although modernization as Europeanization was not only a powerful rhetoric, but also an ambitious plan, it had to accommodate and filter through a range of practices which shape the content of reform and the ways in which it takes place, a theme to which I will return in the Analysis.

Greece’s pattern of involvement in the EU has shifted in time from a more passive and conflictual stance, to a position of more active participation in favour of federal union (Andrikopoulou & Kafkalas 2004). Its policy-making within the EU since 1996 can be characterised as supportive of further European integration. As a result, in terms of the commitment of its political leadership, Greece is now considered to be among the group of pro-European countries, including Italy, Luxembourg, Ireland and the Netherlands.

Pagoulatos (2003), studying the Greek political economy and the role of the EU in it, reminds us that “external pressures and constraints do not amount to one-way options; they simply increase, often unbearably so, the cost of non-compliance” (Pagoulatos 2003, p.207). The analysis in this and following chapters points to the fact that the cost of non-compliance is not felt equally among all actors.

5.1.1. Public opinion

Public opinion has been consistently favourable towards the EU and important European issues, such as closer integration, enlargement, the European Constitution etc, at least after the Greek membership ceased to be domestically controversial. Eurobarometer statistics⁶ highlight the extent of the support: after 1990, 70 per cent

⁶ Data has been drawn from studies of the Eurobarometer series of the Commission. The Eurobarometer consists of a range of studies, some of which are conducted at regular

of Greek voters have indicated that they believe that the country has benefited from EU membership, well above the EU average. In the same period, Greek respondents were among the first in Europe to believe that EU membership is a good thing, and that further and tighter integration is desirable and beneficial. The great majority of Greek voters also overwhelmingly supported the single currency (only Italy registered higher percentages than Greece in support for the euro), at least until its introduction⁷.

Overall, the literature suggests that the favourable stance of public opinion in Greece towards the EU can be attributed to four factors (Mavris 2004). Firstly, as the political parties' attitudes converged, adversarial politics subsided, and the Greek membership in the EU became politically neutral. As the position of Greece within the EC/EU gained legitimization across the political spectrum and from most of the policy elites, the question of whether Greece should be in or out of the EU ceased to be debated, and questions of how best to exploit the EU membership rose to the political agenda.

From this, one can infer the second factor, which shaped and is still shaping public attitudes towards the EU in Greece, namely the financial benefits of membership. In financial terms, Greece has benefited greatly from the EU's financing instruments, in particular the cohesion funds. Community transfers amounted to an average of 4.5 per cent per annum of the Greek GDP during the years 1989-93, and 7.2 per cent per

intervals (annually), and are issued to citizens of all member-states of the EU, in order to highlight attitudes of European citizens towards key European issues.

⁷ The introduction of the single currency in Greece led to significant public backlash, as it was understood to have resulted in a rise in inflation and prices, and a drop in the purchasing power of Greek consumers. It is also suggested that the introduction of the euro, along with a number of other domestic developments, such as the rise of issues of national identity and the re-emergence of the far-right in the political scene, has created a small but notable movement of euroscepticism, which however is still far from being the dominant mood (Featherstone & Papadimitriou 2008, p.8).

annum during the years 1994-99 (Pagoulatos 2003, p.209). For the debt-ridden, slow-moving Greek economy, which faced further problems with the trade and import balance sheets, the financial assistance, although small for the standards of the EU budget, was crucial in ways that will be discussed below.

The existence of the EU transfers has led to cynical explanations of the Greek pro-European attitude solely on the basis of exploitation of the financial benefits. This constitutes an uncritical and rather superficial view of utilitarianism. Explaining away a persistent and sweeping pro-European public opinion in Greece solely on the basis of utilitarianism is overly simplistic and can dangerously obscure other forces at play, not least the cost of participation in the European single market⁸ (Axt 1997). This leads us to the third factor that the literature identifies. It relates to the sense of political stability and strengthened regional position which participation in a large European community brings to a small peripheral country, particularly one with relatively newly-established democratic arrangements, facing a range of problems with neighbouring nations. As Ioakimidis (2009) argued, not only did participation in the EU come to signify a period of consolidation of democracy and political stability internally, but it also came to symbolize Greece's increased political clout to deal with issues of security and foreign policy externally.

The final factor relates to the identification of the EU as a model for the development of Greece. Greece aspired to the developed nations of Western Europe and participation in the EU came to represent a model and vehicle for the development of the country in a particular direction. This became more pronounced at the political level in the second half of the nineties, with the emergence of a discourse on modernisation, with which the EU became integrally associated.

⁸ The constitution of the Single European Market, which postulated the free movement of goods, the abolition of tariffs and barriers of trade, and the liberalization of markets under the rules of competition, was understood to bring great advantages to developed countries, as new markets for their products opened up. For a review of the process of negotiation around the single market, see Armstrong and Bulmer (1998)

The importance of these factors is highlighted by the fact that changing circumstances in the very recent years seem to be shaking the so far stable pro-European attitudes. For example, there seems to be some evidence to suggest that the recent Eastern enlargement has damaged the position of the EU as a model to emulate. As it was said, “the Greeks don’t look up to an EU which also has Romanians and Bulgarians in it”⁹. Coupled with the economic growth and social development of the country which has irrevocably taken place in the decades after its EU accession, some researchers are now suggesting, albeit more on the basis of indications rather than evidence, that the association of the EU with ‘all things good’ to which Greece should aspire is eroding.

5.1.2. Financial transfers from the EU

The financial transfers from the EU to Greece have been extensively discussed (Bianchi 1993, Economou 1997, Bourantonis, Kalyvitis *et al.* 1998, Christodoulakis & Kalyvitis 2000). It is often being referred to in terms of financial dependency, to highlight the extent to which the Greek programme of public investments has relied on European funds up until now. The main channels of financial transfer have been farming subsidies, funds to enable the structural adjustment of the economy to the single market, and finally funds to enable greater development of backward regions. The first two sources of funding, although important, are of limited relevance to this study, as particular rationales govern their distribution. In particular, the farming subsidies are paid directly to farmers in a redistributive rationale, while funding for structural adjustment comes with strict directions as to the required reforms of particular sectors of the economy. The third source of funding however concerns the broader category of cohesion funds targeting the unequal development of the EU. It is in this context that the issue of the information society in Greece has been framed.

⁹ P.C. Ioakimidis, lecture at the Hellenic Observatory, London School of Economics and Political Science, 13 January 2009, “Greece and the EU: Prospects for Greece’s European policy. From euro-enthusiasm to euro-realism?”

Existing research on the overall impact of the cohesion funds in Greece seems to indicate that effects originating from the supply-side nature of interventions tended to be short-lived, while the same researchers fail to trace long-lasting effects from the creation of demand (Lolos, Suwa-Eisenmann *et al.* 1995, Christodoulakis & Kalyvitis 2000). In other words, they reach the conclusion that the effects of the cohesion funds (at least until 2000) were limited to the immediate creation of market activity, spurring very little further innovation and growth. Arguably, the primarily economic research methods of these studies does not allow for alternative interpretations of development to emerge, whilst the short timeframes of study could prove too restrictive to adequately capture changes which emerge not as immediate results, but rather as second- and third-order effects.

5.2. The European context

5.2.1. The EU's cohesion policy

The goal of disparities reduction and harmonious development throughout the European Community was included in the founding Treaty of Rome of 1957. However, for many years there was very little provision for regional development policies. Regional policy was understood to be the jurisdiction of national governments, not the European institutions. The European Social Fund (ESF) and the European Regional Development Fund (ERDF), two funds created to allow for actions of regional policy, were of limited scale and role. The funds were distributed on a national quota system, and operated as a 'reimbursement' mechanism for expenses borne by states for their own regional development policies. In effect, regional policy was restricted to a mechanism of relatively small side-payments from the richer nations to the poorer (Ansell, Parsons *et al.* 1997).

The significance of cohesion policy increased with the introduction of the Single Market¹⁰. The hope that peripheral countries could be integrated in the broader economic processes of developed countries, and rendered more competitive through this exposure, was counter-balanced by a widespread concern that the Single Market had the potential to exacerbate existing inequalities, as unprepared domestic markets opened to foreign competition (Leonardi 2005). Cohesion policy emerged as a way to 'cushion' the less developed countries from the detrimental effects of economic integration.

The European Regional Development Fund (ERDF), along with the European Social Fund (ESF) and European Agricultural Guidance and Guarantee Fund¹¹ (EAGGF), collectively called structural funds, progressively grew in size, and soon came to represent an important mechanism for addressing economic disparities. The size of the structural funds nearly doubled with the Mediterranean enlargement, as firstly Greece in 1981, and later Spain and Portugal, demanded greater financial assistance in return for their acceptance of the Single European Act¹². The funds, operating as a

¹⁰ The Single Market provided for the abolition of trade barriers and taxes and came into effect in 1993. It was however instituted with the Single European Act in 1985. The Single European Act made specific provisions for the role of the Commission in regional policy, establishing the requirement to address economic and social disparities among member-states (Heritier 2001, Barnard & Scott 2002)

¹¹ This fund, which was renamed to European Agricultural Fund for Rural Development in 2007, was set up to finance the Common Agricultural Policy (CAP).

¹² Greece was accepted in the European Community (later European Union) in 1981, and Spain and Portugal two years later. The Greek Memorandum (1982) highlights the political negotiations that took place at the time, which made the provision of development funds a precondition for Greece's acceptance of the Single Market Act. The cohesion funds operated in a redistributive way to compensate for the damages which the national economy would suffer from increased competition.

‘shock absorber’, would help their pre-competitive economies mitigate the costs of economic integration.

Around the same time, the Commission initiated a small number of experimental development projects. Their experimental character lied on their focus on central planning at the highest level (i.e. the Commission), whilst delegating the implementation at the lowest level possible (i.e. the national or regional level). They also featured tighter control and monitoring procedures¹³ (Leonardi 2005). The positive feedback from these first experimental development projects, coupled with concerns over the limited effectiveness of regional policies at the time, and problems of accountability with regards to funds utilisation under the quota system, led to the complete overhaul of the administration and implementation of the structural funds in 1988. The reform sought to enforce the principles of strict regulation and accountability to all European cohesion funding schemes. It also attempted to inscribe an ethos of collaborative development planning and multi-level governance in the allocation of European funding. The reform also led to a significant increase of the allocated budgets (Wishlade 1996). The reform considerably strengthened the position of the Commission itself which acquired a legitimate involvement in national affairs through the oversight, monitoring and evaluation of the developmental efforts undertaken with European funds (Ansell, Parsons *et al.* 1997). The reform of the structural funds thus qualitatively altered the targets, operation and power relations around the EU’s regional policy.

¹³ Small experimental projects for regional development started in 1979 and culminated in the Integrated Mediterranean Programmes (IMP) allocated to Greece, Italy and France in 1986. They were characterised as ‘integrated’ as they attempted to concentrate all development efforts from various actors into a single programme of action for a particular region or sector in need. They also featured a number of other innovations, such as a multi-annual timeframe of implementation, and the involvement of the Commission from the design to the implementation of the project (Bianchi 1993, Georgiou 1994, Economou 1997).

The literature on cohesion policy revolves around the funding mechanisms in a rather normative manner. Beyond the funding mechanisms, the cohesion policy of the EU is aimed at redressing inequalities and disparities among its members. National disparities may manifest themselves in different forms, or originate from different factors. Inequalities may be economic, social, or territorial. They may originate from the geographical position in the periphery, or from the complex path-dependent ways of socio-economic development (Molle 2007). Deciding on what kind of policy is needed to redress existing inequalities is, thus, a political decision rather than a technocratic one. This then indicates that the decision to address questions of the constitution of an information society with the help of cohesion funds places it firmly in the heart of regional development.

5.2.2. The Community Support Framework (CSF)

The reform of the structural and cohesion funds of 1988 brought to the fore the need for comprehensive interventions, planned, implemented and monitored by a variety of actors in specific timeframes, in order to address particular regional needs. The structure that this new philosophy in regional development took was the Community Support Framework (CSF). An understanding of this instrument is needed in order to understand the limitations it placed when it came to the implementation of ICT projects.

The Community Support Framework (CSF) constitutes a six-year contract between the Commission and the national and/or regional authorities that undersign it. The academic literature (see for example, Leonardi 2005) stipulates that at the first stage, the national authorities submit to the Commission¹⁴ the overall development plans and indicative distribution of resources. The Commission has six months to request amendments, and once the amendments are incorporated, the resulting document is adopted in the form of a CSF. The national or regional authorities are then called to break down the CSF into smaller operational programmes which target either a

¹⁴ In particular, the Regional Development Directorate-General

particular geographical area or a specific sector (e.g. education, transport infrastructure, public administration reform, technology etc.), and which are again subject to the Commission's approval. An operational programme specifies a particular developmental rationale, as well as a broad description of the means and the measurable goals to be achieved. Finally, each operational programme is further detailed into a Complimentary Planning Document which details the sets of actions ("measures") and the specific types of projects ("actions"), as well as a comprehensive breakdown of the budget. It is the Complimentary Planning Document that constitutes the effective project plan in use by the national, regional and European authorities (for this case, the Special Secretariat and the Management Authority for the Information Society). It is also the document that is monitored on a yearly basis, and is subject to amendment by the Monitoring Committee. The schema below provides an overview of the multiple layering which was just described.

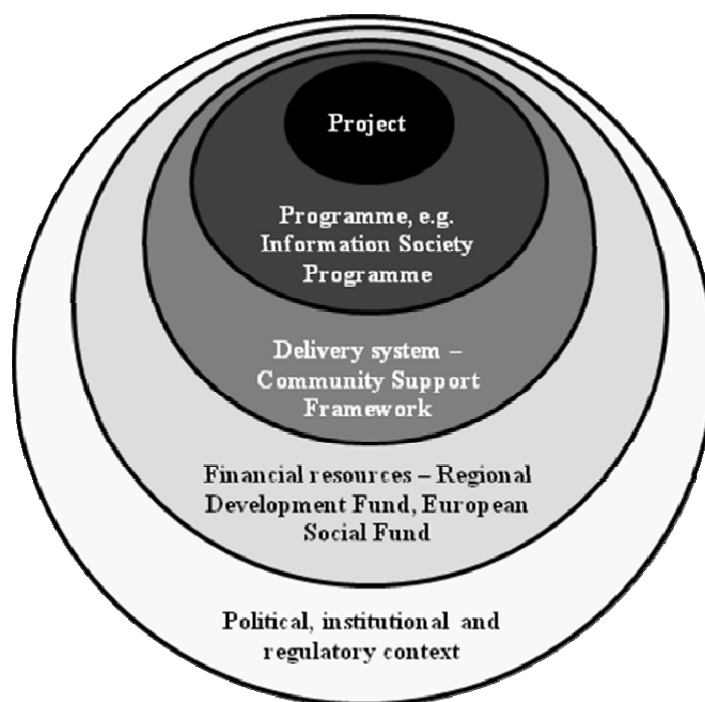


Figure 1 - Adapted from Molle (2007)

The practice of negotiating the Community Support Frameworks and operational programmes is however more intricate than the above straight-forward process

suggests. To begin with, instead of a three-stage process of clear go/no-go decisions and a formal process of amendments, interviewees in the information society domain described a protracted process of multiple iterations and negotiating cycles, where the boundaries between the national and the European are far less clear-cut. Interviewees further suggested that the role of the Commission officials in influencing the developmental goals themselves is underestimated¹⁵, particularly when national priorities diverged from the European ones. This discussion will be taken up at length later in the analysis.

There have so far been four programmatic periods of CSFs: 1989-1993, 1994-1999, 2000-2006 and 2007-2013. In contrast to the system of national quotas that used to operate before the reform, the new system demands that financial claims be justified by empirical evidence, that European funds be complemented by contribution from the national budget and the private sector (albeit of a very small scale), and that funds be funnelled to the lowest level of policy making (often the regional level instead of the national). The first two programmatic periods followed the principle of partnership, in which the Commission became a partner in the planning and implementation, sharing operational responsibility with the national authorities. The principle of partnership has been substituted for the principle of accountability in the latest two programmatic periods (i.e. 2000-2006 and 2006-2013). The result is that responsibility lies with the national authorities, while the Commission assumes the role of an external evaluator.

The rules and regulations surrounding the Community Support Frameworks have become increasingly tight and more restrictive. On the one hand, budgetary pressures felt by all European states, and particularly the ones that contribute to the European budget, necessitated greater financial accountability. On the other, failing European productivity vis-à-vis the US and Japan highlighted the need for

¹⁵ Interview with Officer in DG Employment 31/01/2007, Interview with Officers in DG Regional Development 04/02/2007, Interview with Officer in DG Enterprise 31/01/2007

interventions to be more efficient and effective. A series of changes introduced in 1999 instituted a time limit of two years from the planning to the implementation of an intervention, failing which the allocated funds would need to be returned to the Commission. This rule, known as N+2 rule¹⁶, brought about to ensure faster response, would have crucial implications in practice.

The Community Support Framework has only received limited and passing attention in the literature that deals with the EU's cohesion policy. In effect, it has been treated as a tool which enables the funds to be tied into specific cohesion efforts, and as such relegated to something of a technicality, while academic interest has centred on either the targets of cohesion policies, or their effects. As such, the role of the Community Support Framework in creating limitations and affordances of its own, for example through its timetables, funding mechanisms and myriads of rules that govern its operation, has been overlooked.

It appears that at a specific point in time, ICT diffusion and the development of an information society were considered important aspects of addressing European disparities. Understanding the affordances and constraints of the Community Support Framework, which is the instrument of addressing European disparities, is necessary in order to properly account for its role in ICT policy in Greece. Throughout the analysis, I aim to show how the Community Support Framework itself, alongside the cohesion development goals and policies, has structured the policy domain of ICT and the information society in Greece.

The narrative of the policy of the EU and Greece on the information society follows on. The narrative highlights the way in which information society policy in Greece

¹⁶ According to the N+2 rule, only 7% of the total budget is released at the beginning of each programmatic year. The remainder of the budget is reimbursed into the national budget if the projects initiated in any one year are completed within two years, i.e. the year N+2.

has taken place in the context of the EU's cohesion policy through the vehicle of a Community Support Framework.

5.3. Tracing the evolution of the information society

This section details the narrative of the evolution of the information society in the European Commission and Greece. The narrative traces the co-evolution of two, at times distinct, at times interwoven, streams of activity. On the one hand, it traces the creation of policies and documents, which discursively construe the identity of the information society as an object of policy and action. On the other hand, the narrative traces the unfolding of a series of consecutive action programmes, drawing from concurrent technological and political discourses, designed and implemented in an attempt to bring about specific versions of the information society.

The table below provides a summary of the two parallel narratives and an index to which the reader can go back, when there is a need to take stock of the overall picture.

Date	Events at EU level	Events in Greece
1988	Reform of EU cohesion funds – Initiation of Integrated Mediterranean Programmes in areas of Italy, France and Greece	
1988-1993		Integrated Mediterranean Programme for ICT: emphasising actions to improve the telecommunications infrastructure, encourage the production and marketing of innovation and fostering an ICT market. The only one of eight Integrated Mediterranean Programmes in Greece focusing on services, with the rest targeted primarily towards the primary sector

1993	Europe and the global information society (Bangermann Report)	
1994	Europe's way to an information society – An action plan	
1994-1999	2 nd programmatic cycle for structural funds	2 nd Community Support Framework (CSF 2) aiming at improving the employability of the work force Kleisthenis operational programme: reorganisation of the public sector through IT-mediated interventions
1995		Greek strategy for the information society: Tool for employment growth and quality of life
1996	Europe's way in the information society: Rolling Action plan	
1998	eEurope Action Plan	
1999		"White Bible" Greece in the information society
2000-2006	3 rd programmatic cycle	3 rd Community Support Framework (CSF 3) Operational Programme Information Society (OPIS): IT interventions in a wide area of economic and civic life (e-government, ICT for SMEs, ICTs in education)
2002	eEurope 2005 Action Plan	
2003		Digital promise (draft strategy that was never completed)
2005	i2010 – digital convergence and policies for innovation along with social inclusion	
2006		Digital Strategy for productivity and quality of life
2007-2013		4 th Community Support Framework Operational Programme Digital Convergence emphasising "productivity" and "quality of life"

Table 1 - Timeline of events at the EU and the national levels

5.3.1. The early history of the information society in Europe

In 1993, the information society as a rhetorical object was brought into the public interest in the Bangemann report, one of the most influential European policy documents in the domain of ICT, released under the title *Growth, competitiveness, employment: The challenges and ways forward into the 21st century* (European Commission 1993). It highlighted the role of ICTs in improving the competitiveness of the European economy, which faced the increasingly technology-based competition from the United States and Japan. This first initial document was further detailed in the European Commission's action plans in 1994 (European Commission 1994) and in 1996 (European Commission 1996), which focused attention on the creation of all-encompassing digital networks on which economic activity, freed from the limitations of state regulation, geography, and distance, could flourish. The action plan called on the private sector to have "prime responsibility" for the financing and deployment of the networks to build the interconnected pan-European infrastructural base, while the state was called to provide the necessary conditions for competition to emerge. This would be accomplished primarily through the absence of the states rather than their presence. Timelines were set for the creation of European guidelines and regulatory frameworks on the abolition of tariffs and state monopolies, the protection of intellectual property rights, electronic protection, privacy and standardisation. This and only this was to be the legitimate area of action for the state, as an either national or trans-national entity, in the information society.

In Greece in 1995, a policy document called *The Greek strategy for the information society: Tool for employment, growth and quality of life* made its appearance (Ministry of Industry Energy and Technology 1995). The strategy emerged from the Ministry of Industry, Energy and Technology, at a time when it was headed by Kostas Simitis, who became Prime Minister a year later, and it was created by one of Simitis' long-standing advisors.

The 1995 Greek strategy is one of the first surviving documents in the Greek political and policy contexts to discuss the 'information society'. The strategy portrays the information society as a 'tool for employment, growth and quality of life'. It highlights the role of the private sector in financing the infrastructures, in innovating for commercial products and services, and in driving the creation of the citizens' information needs. The state was to take a light-touch approach, responsible for educating the population and ensuring fair distribution of the benefits.

The 1995 strategy led to little political or societal mobilisation. It was created in an esoteric way within the Ministry of Industry and took little stock of the, arguably sporadic, policies and efforts happening concurrently within the Greek administration and economy with regards to ICT. Thus, the 'information society' remained largely marginal within the political world.

Contemporary to these developments was the second Community Support Framework (CSF2), which operated from 1994 to 2000. Greece participated in CSF2 with a developmental plan which included a number of operational programmes, most of which were region-specific. All the region-specific operational programmes provided for measures of ICT diffusion and the development of ICT applications, such as digital infrastructures, back-office computerization and ICT skills, although, for lack of clear budget ring-fencing, most of the ICT funding was diverted to more traditional projects.

Beyond the region-specific operational programmes, the flagship programme at the time was one for the modernization of the public sector through ICT, named Klisthenis. Drawing on a broader political agenda on modernization of the economy and the state, Klisthenis materialised the hopes for a reformed, efficient public sector, working as a springboard for the rest of the economy. It emphasised projects of infrastructures (installation of PCs, digital networks, backbone database systems) and IT skills. Despite the high hopes however, Klisthenis run into insurmountable difficulties, including escalating costs and time-frames, wavering commitment, and limited use of the systems after deployment. In light of such slow progress and

mixed results from the ICT projects, and as the funds were not strictly earmarked for specific actions, they were often diverted to other “tried and tested” areas of investment, such as IT training.

5.3.2. The information society taking hold

In 1999, the European Commission proposed the eEurope initiative (European Commission 1999) as the new EU strategy for the information society. It was created by the newly founded Information Society Directorate General, whilst in 2000 it was endorsed as an integral part of the Lisbon Strategy¹⁷ (European Commission 2000). The Lisbon Strategy has become important in the literature as it contains one of the most high-level proclamation with regards to the information society, i.e. the desire to make Europe “the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment by 2010”. The Lisbon Strategy made the information society not only a legitimate concern of policy, but also an important one. Despite the cloak of legitimacy and importance, the eEurope initiative, further elaborated in its various action plans (European Commission 2000,

¹⁷ The Lisbon Strategy, also known as Lisbon Agenda or Lisbon Process, was prepared by the European Commission and voted by the European Council in Lisbon in March 2000. It constituted a development plan with a 10-year timeframe, which aimed to address the low productivity of Europe and its falling competitiveness in the face of the US and Japan. Clearly influenced by Schumpeterian writings, as well the neo-Schumpeterians that contributed to its creation, such as Christopher Freeman, Bengt-Åke Lundvall, Luc Soete, Carlota Perez, Manuel Castells, Giovanni Dosi, and Richard Nelson (Rodrigues 2004), the aim was to concentrate on innovation as the motor for economic change and productivity; on the fostering of a learning economy; as well as on the creation of the necessary conditions for a socially and environmentally sustainable development. The interim report (Kok Report) in 2004 (European Commission 2004) commented on the slow progress towards the targets and called for a refocusing of the effort on the creation of jobs.

European Commission 2002), did not have teeth on its own. The initiative relied on national authorities to take action according to the general directions of the eEurope texts and report the results back to the Commission. A benchmarking exercise meant that all countries were pitched against each other in the same indicators, and appeared in comparison with the rest of the EU members in pie charts and diagrams which were widely publicised, but this exercise had varying importance for different European member states.

In its substance, the eEurope initiative embraced the possibilities of the Internet and favoured the creation of fast broadband networks and networked services for the government, health, education, transport. It also emphasised the need to support the economic actors that were likely to be left behind in these innovation-intensive times, the SMEs¹⁸. The academic literature has already discussed the materially different character of this strategy from the Bangemann Report (European Commission 1993), particularly in the way it brought to the light social and cultural dimensions of the information society, albeit in a rather superficial manner (Goodwin & Spittle 2002, Chadwick & May 2003, Berleur & Avgerou 2005).

In Greece, the catchphrase of the 'information society' began to gain some visibility in the political circles around 1998. Kostas Simitis, who had become Prime Minister in 1996, invited a Greek economist, previously engaged in science and technology policy within the OECD, to be appointed as his information society advisor¹⁹. The result of this appointment was the creation of a group, comprising of eight public servants, academics and policy makers, led by the Premier's information society advisor, which met "in the basements of Maximou (Megaron Maximou is the

¹⁸ Small to Medium Businesses

¹⁹ Simitis, who was the Minister of Industry during the period 1994-1996, served as Prime Minister between 1996 and 2004. One of his advisors who had written the 1995 strategy, also selected the new Special Advisor for the Information Society, who was at the time working in science and technology policy within the OECD.

headquarters of the ruling party at the time)”²⁰ during the course of eighteen months. In 1999 they created the *White Bible for Greece’s entry into the Information Society* (White Bible 1999).

The White Bible was in effect an information society strategy in the form of a white paper. This non-binding policy paper was debated among the members of the group in informal meetings behind closed doors and away from the media spotlight. The resulting white paper, which documented its authors’ vision for the role of ICT in national development, was endorsed by the ministerial council, although it was never openly debated. It thus became the country’s *de facto* information society strategy, whilst the rest of the political world, civil society and public administration mechanism remained detached, having taken little notice of either the process of creation or the final product.

5.3.3. 2000-2008: The Information Society Programme

Concurrently, the Ministry of Finance was negotiating with the Commission the formulation of the third Community Support Framework (CSF3). The CSF3 had gripped the attention of policy makers and politicians, as had happened during the negotiation of the previous ones²¹. Successfully negotiating the size of European funding and signing the CSF3 became a key political objective for the government, which was facing re-election in 2000.

Global developments such as the Internet boom, as well as media hype about the potential of ICT, and the Internet in particular, filtered through to the political elites in Greece. With the rise to prominence of the issue of the information society in

²⁰ Interview with one of the members of the group, then Officer in the IT Development Agency (YAP), a now obsolete agency mainly limited in the approval of large hardware procurements, 30/05/2007

²¹ By this I mean the CSF2 from 1994 till 2000, and before that the CSF1 from 1988 till 1993.

media and political circles, the negotiation of an operational programme specific for the information society was initiated, although the origin of the idea remains heavily contested²². The Prime Minister's advisor for the information society participated in the painstaking negotiations, while the White Bible was used as the wild card to demonstrate the country's proactive and strategic planning towards the information society.

In an effort to involve as many stakeholders as possible, even at this later stage of the process, an invitation was sent out to all ministries to feed into the process of creating the Information Society Programme by identifying their needs and vision about the strategic use of ICT. Despite persistent efforts, the invitation failed to draw the desired attention and a response was only achieved from one ministry. Interviewees²³ from the team which created the Information Society Programme invoked what they understood as the failure of the rest of the political world to participate in the process of shaping the Information Society Programme to justify

²² Neither the interviews nor the archival data managed to explicate in a (relatively) uncontroversial fashion whether the initiative for the creation of an operational programme for the information society originally came for the Commission or the Greek authorities, as evidence has remained conflicting. Whoever was responsible for the original idea, what appears certain is the fact that the form it took in its various details (e.g. as one multi-thematic programme, centrally managed, by a variety of new structures) was shaped by the continuous and persistent interaction of the two sides on the negotiating table, i.e. the Commission and the Greek authorities tasked with the negotiations.

²³ Interviews with the first Special Secretary for the Information Society, who was negotiating the Programme with the Commission, the first head of the Managing Authority, and the first head of InfoSoc Ltd. They all cited the 'ignorance' and 'unwillingness' of ministers and high-ranked policy-makers when it came to issues of ICT.

the creation of the White Bible and the Information Society Programme in such an introvert manner.

The CSF3 was eventually signed in the spring of 2000 and the Information Society Programme²⁴, as a single multi-thematic programme, was one of the first operational programmes to be approved by the Commission. The Commission favoured the creation of a single multi-thematic operational programme for ICT in an attempt to enforce centralised control and management. However, the nature of internal Greek politics meant that the creation of a single multi-thematic programme which cut through traditional bureaucratic silos, was greatly resisted by the Greek political elites. Individual ministers and high-level civil servants feared the loss of control and ownership over the funds and projects that a single multi-thematic operational programme would entail. Issues of jurisdiction, legitimacy and authority came squarely into play. Tensions among ministries about resources and areas of control accentuated at that time.

To get around the political resistance on the creation of a single, multi-thematic programme, some local manipulations were needed. The document of the Information Society Programme was drafted by one person²⁵ in the hustle and bustle of the run-up to the national elections and sent to the Commission without ministerial approval on the eve of the elections in April 2000. On the aftermath of the election, the newly formed cabinet was faced with a done deal, as the Commission approved the document which had been sent.

Similar kinds of improvisations were employed when it came to agreeing the budget of the Programme. Indeed, the budget for the Information Society Programme (3

²⁴ The official name was Operational Programme for the Information Society (abbr. OPIS)

²⁵ He was part of the group who created the White Bible and compiled the document of the Information Society Programme. He later went on to become the first head of the InfoSoc Ltd until 2002.

billion euros out of a total budget of 27 billion euros for the entire CSF3), which was drafted by the same person who created and sent the Information Society document, marked a ten-fold increase on previous national investments in ICT. Such a large sum would have been hard to justify to the members of the Greek cabinet, who would have preferred to have some of these funds redistributed to more traditional areas of action. Potential resistance was overcome by creatively presenting the CSF3 budget in ways which downplayed the size of the Information Society Programme budget. For example, the cabinet was given the broken down figures per thematic domain (e.g. ICT in education, health, transport etc.) rather than the total budget. Moreover, the individual programmes were identified by their acronyms rather than their full names (e.g. OPIS instead of Operational Programme Information Society), which further impeded comprehension by the newly-appointed cabinet (for a sketch drawing, see Figure 4 on page 251). Overall, the budget, due to its atypical format, received little scrutiny by the cabinet, which signed it off for the Commission's approval. The contingent circumstances in which the budget was created do not of course subtract from the fact that the Commission placed enough importance on the Information Society Programme to endow it with such generous funding.

The wide scope of the Programme, its far-reaching ambitions, as well as a budget many times greater than the allocated budgets of past ICT programmes created a widespread feeling of apprehension within the circles of the Commission and the Greek central government²⁶. It was feared that the limited capacity of public administration bodies for ICT innovation would prove an insurmountable hurdle for the implementation of the Programme, and that the size of the budget would in effect trigger questionable practices of misappropriation of funds, of the sort with which both the Commission and the central government were familiar²⁷. These problematizations culminated in the establishment of the tri-partite organizational

²⁶ Source Proceedings of the Monitoring Committee 2001

²⁷ Interview with first Special Secretary for the Information Society

structure for the management of the Information Society Programme, comprising the Special Secretariat (political representation of issues of the information society) and Managing Authority (financial and organizational administration of the Programme), InfoSoc Ltd (executive agency for project management) and the Observatory of the Information Society (research and policy think tank).

The top positions in the management of the Programme were given to those already involved in the negotiations and initial work on the Programme: the PM's Advisor for the information society became the Head of the Special Secretariat, while the leadership of the Managing Authority and of InfoSoc was entrusted to two high-level public servants, who had participated in the creation of the White Bible and the drafting and budgeting of the Programme. They had also both been involved for many years in managing ICT investments in their respective departments.

The Information Society Programme specified four action areas: education and culture, e-government, financial assistance to small businesses, and telecommunications. The criteria on the basis of which individual projects were to be selected were drawn in collaboration with the Commission and pertained both to the developmental potential of the projects and to the organizational capacity of the host organizations, i.e. the beneficiaries.

The Information Society Programme set off to a slow start, as the staff in the new organisational structures sought to find their place within a complex and highly institutionalised public bureaucracy. The Special Secretariat introduced an elaborate planning stage which intended to match the functional needs of the potential beneficiaries with the action areas of the Information Society Programme. Thus, public authorities and state-controlled companies were asked to create 'business plans', documenting the 'as is' status, and expressing the 'to be', i.e. their vision in terms of ICT innovation for a five-year period. The help of consultants was solicited, but the business plans, whose concept of forward planning was foreign to the operational routines of public authorities, were hastily prepared and proved less innovative than expected. The onus was then on the Special Secretariat to shape them

so that their content fall within the action lines of the Information Society Programme.

With public authorities preoccupied with the execution of business plans, and the Managing Authority preoccupied with their evaluation, the implementation of the rest of the Programme was notably slow. Indeed, the first two years (2000-2002) the only project that took off was the procurement of IT equipment for school labs. Fierce competition among IT companies for the very few released invitations to tender frequently resulted in appeals against the results and protracted legal proceedings. The forward planning process proved, however, too long and politically unacceptable. The acutely felt fear that the Information Society Programme was slow in achieving its objectives finally led to the demise of the first leadership of the Information Society Programme in 2002 and the establishment of a new group of people in the top positions of the tri-partite management structure. They brought with them a different ethos and a vision for an information society driven by free information and engagement of the civil society. It was this different mentality that they attempted to express in a new strategy, in 2003, which however remained unfinished and was disregarded when, in 2004, a change of government brought a new management team in.

However, during the period 2002-2004, some progress was made as the Information Society Programme gained visibility and public and private organisations strived to put forward proposals for information systems that were aligned with their business plans, while simultaneously being in line with a wide range of selection criteria. In light of an interim performance monitoring deadline in 2003, a major effort was put in to speed up the Programme. The intervention, which was called “Crash programme”, spearheaded at the highest political level, temporarily simplified the processes of approval for projects, in order to bring the desired effects. Overall, however, the take-up of the Information Society Programme was the slowest of all other EU-financed programmes, and concerns about the slow implementation voiced

through the press²⁸, in parliamentary sessions, as well as in meetings with Commission officials²⁹, became louder.

In April 2004, a new government came into power and, in the resulting reshuffle of the top politically-appointed posts, a new group of people, coming from a corporate background, was brought in. The climate was particularly sombre: there was increasing media attention and growing concern among those involved in the field that the Information Society Programme was failing to meet its objectives and that Greece was failing to catch up with the other European member-states. The emphasis of the new leadership concentrated on speeding up the implementation of the programme, by removing administrative and legislative holdups and easing operational bottlenecks. A new unit was created, the Digital Committee, to give high-level political impetus to projects that had stalled due to legislative impediments or bureaucratic complexity. Moreover, efforts by the Managing Authority to increase its operative capacity by hiring more staff, and by InfoSoc to proactively regulate the relations between competitors in the IT industry³⁰ so that delays due to appeals could

²⁸ The slow implementation of the Information Society Programme was used politically by the opposition party, and damning critiques appeared occasionally, and with increasing rate as the elections of 2004 approached, in the papers supporting the opposition.

²⁹ For example, the Proceedings of the Monitoring Committee 2003 demonstrate the heightened concerns of various stakeholders, and in particular officers from the Commission, about the progress of the Information Society Programme.

³⁰ A number of meetings were set up in a quasi-informal setting, hosted by one of the advisers to the Special Secretary for the Information Society, in which representatives from a range of IT companies fiercely competing for the same contracts were invited. The purpose was to attempt a 'truce' in which all competitors would realise that it was to everybody's benefit not to legally appeal on decisions for contracts, as this slowed all other bidding processes down, thus bringing the whole process to a standstill. What was

be avoided, meant that the rate of implementation of projects rose. There was a widespread impression that a race against time had begun as all projects had to be included in the programme by the end of 2006 in order to be eligible for funding.

In the meantime, the new leadership started work on a new information society strategy, of which a draft was released over the Internet for public consultation in 2005. The strategy organised discussion around the themes of productivity and quality of life and became the new official strategy, under the name of *Digital Strategy* (Digital Strategy 2005). Its creation marks some notable differences from the past, as an online consultation went under way and contributions from a wide range of social partners were invited on a draft of the strategy, but not on the initial agenda. Shortly after the ratification of the Digital Strategy by the ministerial council, an advertising campaign was also launched over the press, radio and television. Concurrently, high-visibility open-door events on broadband Internet connectivity and ICT in education were taking place in central locations in Athens. The Information Society Programme and the notion of the information society in general was, perhaps belatedly, reaching a wider audience.

In 2007, at the time of the second field visit, the rate of implementation of projects of the Information Society Programme had risen. Projects in many areas of the wider public sector, central and local government, as well as projects of telecommunications and assistance to small-to-medium enterprises (SMEs) were into full swing, and the small national IT industry was kept busy. Plans and budget items changed as funds were pulled out from stalling projects and actively funnelled into other areas. There was a widespread feeling of urgency, exacerbated by the fact that the end of 2008 was the deadline for the completion of all projects. The initial delays had to be compensated for, the information systems projects needed to be completed within the specified deadlines, and the budget of the Information Society Programme needed to be fully allocated and expended. This was felt already in mid-2006. “This

attempted was to reach an understanding that “there was enough work to go around” for everyone to benefit.

is a race against time. We need to put the money into good use. [...] We need to absorb the funds until 2008 or we will lose them” announced the Special Secretary of the Information Society in a workshop organised by the Observatory for the Information Society titled “New development and fund-raising tools for the ICT industry”³¹. Similarly, commenting on the progress of the implementation of the projects, the director of InfoSoc exclaimed:

“we [InfoSoc] are going to be the dynamic catalyst, we will be close to you all [the beneficiaries] and we will do it systematically, because the next 10 months are crucial”³²

Concurrently, the organizations were preparing for the beginning of CSF4, and the respective ICT operational programme, called Digital Convergence.

Officially, the process of negotiation [with the Commission] is about to begin. Unofficially, the negotiations have already finished. We have submitted our plans, they have suggested unofficial amendments, they also gave us official guidelines. We incorporated everything. (Interview with high-ranking Officer in Managing Authority for the Information Society, 2/06/2007)

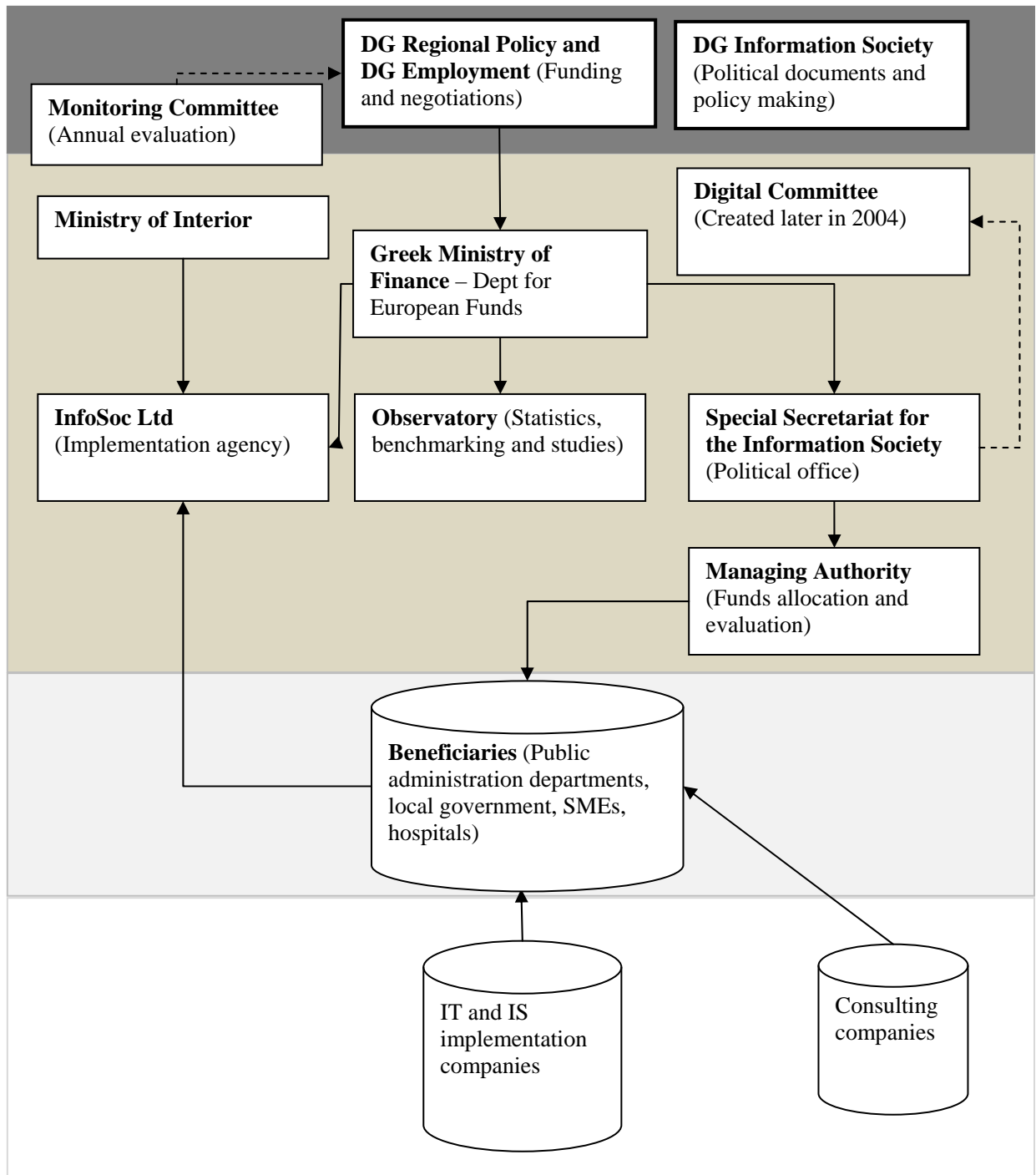
³¹ Date 14/06/2006

³² Source: Proceedings of the Monitoring Committee 2006, p.29

5.4. The agencies of government

Exploring the policy field in an attempt to understand the way policy on ICT and the information society is shaped required a close look at the intermediaries of government, and in particular their roles, histories, and ways and rationales of governing. The schema below offers a parsimonious view of the policy domain and the various institutional agents in their attempts to govern through their particular means and rationalities. The representation unsurprisingly constitutes a reduction of the complexity of actual relations among the agencies of government, which form an intricate web of exchanges of information, contracts, funds, reports and people. For reasons of schematic simplicity, the various agencies are represented as if in a hierarchy. Although some of these agencies are also in hierarchical relationships between them (e.g. the Special Secretariat for the Information Society falls under the Ministry of Finance), the emphasis here is not so much on the formal organizational positions, but rather on the positions of power and influence these agencies come to occupy through their continuous involvement in the field. The complexity of the associations requires that we approach the domain with an open mind as to who is higher or lower in terms of influence or importance. The different background colours designate authorities which reside in different areas of the policy domain, i.e. the European Commission, the central national administration, the wider segment of beneficiaries, and the implementers. They should not be understood as one being of top if the other, but rather of them being side by side until further analysis explores the relations of power among them.

The agencies of government can be clustered in four groups: the instruments of the Commission, the tri-partite management structure for ICT policy and investments, the intended beneficiaries, and the industry. The following section traces their histories and interconnections.



*Note: Rectangular shapes are taken to denote singular organizational structures
Cylindrical shapes represent a pool of organizations*

Figure 2 - Map of organizational actors involved in the case study

5.4.1. The agencies of the Commission

5.4.1.1. DG Information Society

Officially named Directorate-General Information Society and Media since 2005, DG Information Society is responsible for shaping the strategic vision of the information society within the Commission. It provides direction in the form of strategies and documents which are published and widely circulated.

DG Information Society coordinates, and takes input from, a number of high level groups that are usually theme-specific, and over which it has little direct control³³. The high level expert groups produce varied publications, ranging from interoperability to security and user-friendliness for people with disabilities, which form the basis for the production of the relevant policies. The DG Information Society operates under considerable role and staff constraints. For example, a shift towards greater decentralisation with regards to ICT meant that staff working on e-health was transferred from DG Information Society to DG Health. This move was indicative of mentality shift according to which the appropriation of ICT in the different facets of social life could not be achieved through central planning by one authority, but through the distributed responsibility of different authorities. In this way, ICT is no longer a means in itself, but an instrument to achieve other developmental goals. As a result of this restructuring, DG Information Society witnessed a significant reduction in its staff and in the scope of its actions.

³³ Within the political sciences, scholars focusing on the internal workings of the European Union have researched in the role, *modus operandi* and importance of the various technocratic committees around the Commission, the ‘com(m)itology’, looking at the ways in which technocracy informs, legitimises and de-legitimises the Commission’s policy making (Bradley 1992, Radaelli 1999, Christiansen & Kirchner 2000, Eriksen & Fossum 2000, Harlow 2002, Rhinard 2002).

The efforts of DG Information Society to frame a European political field around the innovative use of ICT have resulted in a range of proclamations and action plans which have received varied degrees of attention throughout the years. Just before the turn of the century, DG Information Society launched the eEurope initiative urging member states to explore the possibilities of ICT in order to increase the productivity and the growth rate of European economy. The eEurope initiative, consisting of successive action plans, was deemed too technology-centric and was replaced in 2005 by the current strategy, i2010. i2010, reflecting popular discourses about digital media convergence, aims to enhance the competition of IT markets, foster research in ICT and the development of services to ensure the digital inclusion of all parts of society.

The work of DG Information Society is of advisory character, as there is limited legal basis on the treaties for European intervention by hard law with regards to ICT. Its limited power to enforce its decisions means that implementation of the necessary reforms depends on the cooperation of member-states. The DG's limited formal basis of power means that their position needs to be constantly validated, through persistent lobbying, the publication and promotion of cross-country comparisons, the issuing of formal and informal advice etc. For example, during my discussion with one high-ranked official within DG Information Society, I was presented with two sheets of paper. The first one was a commentary on the process of telecommunications liberalization in Greece, a project of major concern at the time within the DG, detailing the extremely slow progress on the part of the Greek state in bringing about the necessary reforms and in overcoming the resistance of the incumbent. The second was a league table of the fifteen European member-states regarding Internet penetration, showing Greece at the last positions of the table. They expressed their disappointment at the slow progress and at the missed opportunities for Greece to catch up with the rest of the EU. They also expressed their frustration that their continuous input and involvement had failed to bring about the desired results. They were hoping that the impending publication of a cross-Europe report on telecommunications would force the Greek government into action.

The Lisbon Agenda equipped the DG with a novel instrument: benchmarking. Part of a broader move to rely less on hard law and more on collaborative learning through sharing of experiences and results (termed Open Method of Coordination, discussed in the Analysis chapter), benchmarking provided a yardstick on which member-states could be compared on a number of different indices. Benchmarking was hailed in the Lisbon agenda as a way to bring about reform by focusing on the outcomes, not the methods. It effectively became an ingenious coercive device to push member-states into action, by making their deficiencies public to their counterparts and to the world.

5.4.1.2. DG Regional Development and DG Employment

DG Regional Development (informally called Regio within the EU circles) is in charge of the Union's policy which fosters regional cohesion. Cohesion policy was implemented in an ad hoc way from the beginnings of the Union to address economic disparities among the members-states and their regions. The introduction of the Single European Act in 1986 created the legal basis for an integrated approach to regional development aiming at greater economic and social cohesion across the Union. The accession in the then European Community of Greece and later of Spain and Portugal, which were significantly less developed than the then members of the Community, meant that disparities increased. It was felt that the less developed economies would be further disadvantaged by the implementation of the single market, as import tariffs were removed and borders were dropped within European market. Thus regional policy became a cornerstone of the EU.

DG Regional Development manages the European Regional Development Fund (ERDF) which is offered to regions whose Gross Domestic Product (GDP) is less than 75% of the EU average to foster their development. In way of redistribution, the richer countries of the EU (net contributors) fund the cohesion fund which is offered to the poorer countries (net receivers). The procedures through which this financial instrument has been appropriated have evolved through time from a rudimentary

system of country quotas to a system based on clear developmental plans and social dialogue, materialised in the Community Support Frameworks (CSFs).

DG Regional Development came to be involved in the process of ICT diffusion in Greece through its position as primary financial contributor in the Information Society Programme (as well as the operational programmes that came before it, such as Klisthenis). As such, they have a say in all negotiations and procedures, although they find themselves primarily involved in the financial management of the programme.

We are only looking at the funds, unfortunately we don't look at the substance [the content of the ICT projects and interventions]. [...] It is INFSO [DG Information Society] that has a say in the strategy (Officer in DG Regional Development, 01/02/2007)

Despite their official involvement with the financial side of the programme, there is evidence to suggest that their role in the domain has been more multi-faceted than that, for example, in their ability to offer strategic directions, even in areas outside their formal authority, where they would be reluctant to readily acknowledge their full role. For example, after forcefully arguing that the Greek government defined the directions of the Information Society Programme, an interviewee from the DG Employment finally suggested:

Regional policy is national policy. We [the Commission] intervene to help with the directions that we imagine would be best [for the country]. For example, during the negotiations for the Information Society Programme, they [the Greek negotiating team] came to us and said "We need to create a database for the Ministry of Agriculture". Well, not databases again! This is what they were supposed to have done with [the funding from] CSF2! We said no, if they wanted the funds, they would have to use them for Internet applications [i.e. e-government]. (Officer in DG Employment, formerly Officer in DG Regional Development, 31/01/2007)

DG Employment implements the employment policy of the EU and manages the European Social Fund (ESF), a fund targeted towards training and skills development of the workforce. The Social Fund's purpose is to assist with issues of employment, cohesion and inclusion. Thus, its role is to fund actions that improve either the capacity of citizens to improve their quality of life, or the capacity of the

system to provide better and more opportunities to anyone involved. As the Social Fund is much smaller in size compared to the Regional Development Fund, funding from it is usually integrated with funding from the Regional Development Fund in a common Community Support Framework (CSF), despite the different target. This makes the DG Employment a negotiating partner with some involvement, despite the relatively small portion of funding they account for.

5.4.2. The tri-partite management for the information society

The following section zooms in the agencies created after 2000, entrusted with the management of the Information Society Programme. A useful phase to keep in mind, summing up the rationale of the complicated structure is “one strategist, one manager, one implementer, one observer³⁴”, corresponding successively to the Special Secretariat, the Managing Authority, the InfoSoc, and the Observatory.

5.4.2.1. Special Secretariat for the Information Society

The Special Secretariat for the Information Society (*Ειδική Γραμματεία για την Κοινωνία της Πληροφορίας*) constitutes the political arm of ICT policy making. A relatively small office, comprising the Special Secretary and their advisers, the Special Secretariat was first created in 2000 under prime-ministerial mandate. The head of the office is politically appointed and has changed every time there was a change of government, or a reshuffle of political positions with the subsequent shift in the centres of power.

Staffed by high-calibre employees, all of whom have high academic credentials but little political experience, the Special Secretariat has been entrusted with the role of central planning towards the desired ICT interventions, negotiating for the funds, as well as providing the high-level political support for the implementation of the

³⁴ Interview with Advisor to the Special Secretary during the period 2004-2008, 25/05/2007

planned ICT interventions. For such an ambitious role, the Special Secretariat has remarkably little authority. As opposed to a 'general secretariat', a well-established structure within Greek ministries, which is in charge of a portfolio of vertical nature (e.g. health, policing, social security etc.), its institutional standing is crippled by its status as a 'special' secretariat, whose portfolio is of a horizontal nature, and thus depends on other institutional authorities (e.g. ministries, general secretariats) for the implementation of the planned interventions. The Special Secretariat's ability to make authoritative decisions about ICT policy is dependent on the consensus of other ministries, thus granting it little more than a consultative role.

The Special Secretariat for the Information Society lies under the authority of the Ministry of Finance. The Ministry of Finance is primarily responsible for the country's relations with the EU and for the overall use of European funds. Its control by the Ministry of Finance weakens its institutional position as a cross-functional, autonomous agency, aiming to propose interventions that cut across ministerial boundaries.

International experience has provided at least two competing models of political structures for the management of ICT. The first model, championed by the UK, is the creation of a strategic group inside the PM's cabinet, placing it above other ministries and thus giving it the authority and legitimacy to take actions throughout the spectrum of activities, even when these fall within the jurisdiction of other government departments. The second model, often found in countries of central and northern Europe, suggests the creation of a separate ministry of information technology. The former structure, which was supported by the Premier's advisor on the information society in 1999, was resisted on grounds of political incompatibility: it conflicted with the Premier's wish to keep a lean cabinet, as well as with his intention not to stir political upheaval by placing a newly-founded structure above long-standing ministries. The latter structure was resisted on the grounds that a vertical structure could not accommodate the horizontal character of ICT spanning all sectors of policy and economy. Up to this day, debate on which structure should have been followed arises fervently on every occasion with stakeholders on various

capacities, but there is widespread consensus that the selected option has made the representation of a political vision for ICT particularly hard.

Within an institutionally weak structure, the frequent change of leadership and advisors according to the whims of the political cycle is unsurprising. Within the first seven years of operation there had been three successive special secretaries, with an average of a little over two years in office. Important links and personal relations built with the European counterparts had to be often lost and re-established.

5.4.2.2. *Managing Authority*

The Special Secretariat's most important department is the Managing Authority (*Ειδική Υπηρεσία Διαχείρισης*), which has the overall responsibility for the day-to-day management of the ICT projects. Its role consists mainly of three dimensions. Firstly, the Managing Authority decides which projects should be funded based on criteria and a methodology agreed with the Commission (see Table 2 below). Secondly, it allocates the funds and is ultimately accountable to the Commission for their prudent management. Thirdly, it conducts checks to establish the progress of individual projects and ensure that the actions of involved beneficiaries are consistent with the complex legal framework regarding European funded projects. Failure to comply with the regulations about the eligible areas of expenditure or the competition principles can result to the EU funds being revoked, with the resulting bill being paid from the national budget, something which is feared by all within the central administration.

<i>Compatibility</i> Compatibility with the general aims of the specific action line Compatibility with the eligibility criteria set by the Regional Fund and the Social Fund Compatibility with the list of intended beneficiaries Compatibility with the Programme's time frame
<i>Purpose</i> Contribution to the general aims of the specific action line Financial sustainability – social benefit Social outreach – number of citizens directly benefiting Innovativeness

Evidence of duration of results Synergy with other projects
<i>Completeness</i> Establishment of the project as a complete and stand alone intervention Adequacy of the beneficiary who will operate the project in terms of knowhow, organization, human resources
<i>Maturity</i> Soundness, accuracy and clarity of the proposal Adequacy of the implementing organization to project manage
<i>Compliance</i> Compatibility with national and Community policies Compliance with regulatory framework (e.g. on competition, equality, employment, protection of the environment, etc.)

Table 2 - Criteria of eligibility and selection of projects (Source: 5th Monitoring Committee of the Information Society Programme, 25/11/2005)

On top of the financial management, the Managing Authority is uniquely entrusted with the administrative management of ICT projects. This involves inviting the submission of project proposals by beneficiaries, overseeing the invitations to tender by the IT industry, establishing the contracts, monitoring the projects, and finally reporting financial data to a number of actors, including the DG Regional Development and DG Employment, the Ministry of Finance, the Observatory, and the Monitoring Committee in its yearly meeting.

The role of the Managing Authority as gatekeeper to the funds as well as the administrative obligatory passage point gives it significantly more authority than the map of organisational actors (Figure 2, page) suggests. Despite its administrative subordination to the Special Secretariat, the Managing Authority is a fiercely independent unit with considerable authority and command over the whole policy field. This uneasy structure is further troubled by the occasionally clashing goals and divergent criteria of success of these two departments. Indeed, the Managing Authority's main responsibility is the wise management of the funds according to EU directions and regulations, while the politically-appointed Special Secretariat has an interest in maximising spending, which, at least in the short term, justifies its continuing existence.

Contrary to the head of the Special Secretariat who is a political appointee by direction of the prime minister or the minister of finance, the Managing Authority is headed by a senior civil servant, protected by tenured employment within the public sector, and reporting directly to the Ministry of Finance and ultimately the Commission. Although this could ensure greater continuity within the service, the head of the Managing Authority has been repositioned every time the head of the Special Secretariat has been removed from office. The employees of the Managing Authority are also tenured civil servants, most of them repositioned from other posts within the wider public sector. At the time of the field visit, the staff members in the Managing Authority were overworked and disillusioned, as they were dealing with an ever increasing number of projects under tight deadlines and were acutely aware that they were not fully successful in ensuring compliance with the legal framework. The hiring of new staff had been authorised but it was subject to time-consuming procedures of civil servants employment.

5.4.2.3. InfoSoc Ltd

InfoSoc Ltd (*Κοινωνία της Πληροφορίας Α.Ε. – ΚτΠ Α.Ε.*) is a state-controlled company, under the direction of both the Ministry of Interior and the Ministry of Finance. Its creation was conceived in 1999 on the negotiating table between officials of the Commission and the Greek state, as a response to the perceived difficulty of public authorities to manage the procurement and implementation of information systems. The company came into existence in 2001, with the target of offering consulting services to public agencies which had limited capacity with regards to information systems procurement and implementation.

In this capacity, InfoSoc became the outsourcee to which the beneficiaries of public funds for ICT (ministries, local government authorities, public utility companies etc.) could outsource the management of the entire process of procuring and implementing information systems. This involves, but is not limited to, drawing up the requirements for an information system, drafting an invitation to tender for the technical implementation (coding) and/or the procurement of IT equipment,

coordinating and manning the committee for the evaluation of the bids, as well as selecting the procurer and managing the relationship with them. InfoSoc has become a middleman between the public sector beneficiaries and the Greek IT companies which are mostly implementing the projects.

Requesting the services of InfoSoc has not always been voluntary. In fact, the Managing Authority exercised its discretionary right to compel beneficiaries to make use of the InfoSoc's services, when the beneficiaries were deemed not to have adequate capacity either for in-house development, or for managing an IT outsourcing relationship. This greatly increased the importance of InfoSoc in the field of ICT policy and investments.

InfoSoc is located in a modern, newly-built complex, quite some distance away from the city centre (Syntagma Square), which is the locus of decision-making and authority, and around where most of the other agencies are clustered (for example, the ministries, the Special Secretariat and the Observatory for the Information Society). In 2007, InfoSoc employed a total of 90 highly-educated staff. Its status as a company, instead of a public agency, allows it to hire its staff directly from the market, bypassing cumbersome and time-consuming procedures regarding civil servants' employment, and offering competitive salaries well above the civil servants' salaries. The fixed-term and permanent contracts that the company offers, instead of the permanent tenure contracts of civil servants, allow for greater flexibility in terms of matching the operational capacity with the operational workload, which has allowed the InfoSoc to expand quickly in order to match increasing demand of its services. It is also able to seek funding from the banking sector and thus does not have to rely solely on the public budget.

Contrary to private companies, however, InfoSoc is not a profit-seeking organization and as such it cannot make its own choices about its involvement with customers and projects based on the expected financial return. InfoSoc is legally required to provide its services to all public sector agencies that either willingly ask for its help or are instructed to do so by the Managing Authority. In this perspective, it is

substantially different from private companies both in its non-profit-seeking behaviour and in its inability to select the target of its services.

The historical context in which InfoSoc was created may shed some light on its peculiar format. It was conceived at a time when policy-makers had already seen positive results from the creation of other publicly-owned companies, particularly in the construction sector, to perform efficiently in project-based work cutting through the red tape of the public sector. Their ability to work on the side of the traditional public sector, sometimes circumventing it completely, appealed greatly to the Commission too, who saw in the cumbersome processes of the public sector the source of all faults for the previous less than successful ICT investment programmes in Greece. Thus, there were high hopes that InfoSoc, the outcome of these debates, would be a major contributing factor in a more successful implementation of the latest ICT investment programme.

InfoSoc's success is measured on the number (and value) of projects it carries through to completion. At the time of the field study, InfoSoc employees presented to me a report detailing the total value of turn-key projects they had managed from design to handover. They proudly claimed that it was because of their success that the programme of public ICT interventions was progressing at a satisfactory pace and that the projects they were managing made up the bulk of the funding that was successfully channelled into IS projects. Despite their apparent success, or perhaps because of it, their actions had created rifts with the Managing Authority, which was concerned that in their drive to complete projects they sidelined the regulations which the Managing Authority was entrusted to enforce. InfoSoc's success criterion, and consequently its vested interest, is to enable and expedite the completion of projects, even when this entails a less than stringent obedience of the rules that govern the funding.

Although InfoSoc Ltd is jointly owned by both Ministries of Interior and Finance, it is often described as the 'fief' of the Ministry of Interior, in the same way as the Special Secretariat and the Managing Authority are considered the fief of the Ministry of

Finance. The sense that the two organizations belong to opposing camps was a recurrent theme in the interviews, particularly the ones with higher-ranked political figures and policy-makers. The Digital Committee, created later in 2004 in light of significant delays in the necessary reforms to allow the implementation of information systems in key areas of the administration, was an attempt to redress these problematic relationships at the highest political level.

5.4.2.4. Information Society Observatory

The Information Society Observatory, (*Παρατηρητήριο για την Κοινωνία της Πληροφορίας*) or Observatory, was the third agency conceived in 1999 to address another aspect of the management of ICT investments: the lack of data about ICT innovation and usage in Greece. It would achieve that through the commission of studies of mainly quantitative, but also qualitative nature, which would then be made freely available. The Observatory was belatedly created in late 2004, five years after its initial conception and legislative constitution.

At the time of the first field visit in 2006, the Observatory had a fully formed board of directors, which included academics, higher-ranked civil servants, and members of the two other pillars (Special Secretariat and InfoSoc). The overlap of individuals among the three different structures was striking. By 2005, the Observatory had commissioned one study, which was meant to depict the current state of affairs with regards to ICT in various facets of public life. It was called “the diagnosis” and formed the basis on which the latest information society strategy was drafted. At the time of the second field visit in 2007, the Observatory had a number of highly qualified permanent staff, and could showcase an impressive number of studies into the use of ICT and information systems in the Greek society and economy, which were made available through their online database³⁵.

³⁵ The archive of the Observatory for the Information Society now holds a great deal of studies which go back to 2000. The great majority of studies from the period 2000-2004 have been conducted by the Commission, independent consulting companies, or state-

The Observatory was envisaged to also play an advisory role to the Special Secretariat, i.e. the political arm of ICT policy in the country. Its role as an independent think tank, benefiting from its intimate knowledge of ICT use and innovation in the Greek society to make relevant policy suggestions, was modelled according to the experience of policy think tanks operating in many Western countries as well as around the Commission. Such a model of policy formulation has been completely absent in Greece. In the past this advisory role had been played in an ad hoc fashion by academics and consultants, but had resulted in limited accumulation of institutional knowledge. It was hoped that the Observatory would help redress this.

Despite its impressive performance in gathering data about ICT usage, the Observatory's track record in informing policy is limited. The cross-fertilisation of staff between functions has created important individual linkages. However, questions are raised as to whether institutional links have been forged, so as to allow the transfer of policy suggestions from a research body to a strategic unit which will act upon them.

Wearing my Observatory hat, I can tell you that the Observatory has managed to collect data and map the situation with ICT on the ground. As for its other role, it hasn't been as successful in informing policy. I guess it's because it [its staff] doesn't really have the skills and knowhow. [...] It [the Observatory] also has to become the institutional way to keep the knowledge within the system (Interview with member of the Observatory board of directors, 25/05/2007)

funded think tanks, such as the e-business forum and have been retrospectively added in the archive. Increasingly, the studies from 2004 onwards have been commissioned by the Observatory and cover a range of current issues, such as Internet penetration, e-government, interoperability, the state of the ICT industry, ICT in the prefectures and municipalities etc. It is worth mentioning that a number of these studies are the Greek translations of the relevant European ones, whilst others use the data gathered for the benchmarking exercise in order to reach national conclusions. The archive is accessible at www.observatory.gr (last accessed on 05/09/2010).

The institutional dimensions which contributed to the establishment of the Observatory are worth dwelling upon. Its creation was congruent with a number of relevant problematizations at a European level about the method of governance and the evaluation of results, which culminated in the introduction of a more flexible results-based method of governance, the open method of coordination (OMC) mentioned above, which became a constituent part of the Lisbon Agenda. According to the open method of coordination, the goals are agreed at the European level, while the method of their implementation is left to the national administrations to decide. Quantitative measures are required to express the targets to be met, as well as to judge progress. The Commission, being responsible for forming the Lisbon Agenda, was at the forefront of these processes of change well before the Lisbon Agenda was actually ratified. Thus, the establishment of the Observatory was consonant with the preoccupations of European policy-makers at the time, even if its belated creation may raise questions about its position of priority within the concerns of Greek policy makers.

5.4.3. Steering and monitoring bodies

5.4.3.1. Monitoring Committee

The supreme authority for the EU-funded ICT investments is the Monitoring Committee (*Επιτροπή Παρακολούθησης*), which convenes once a year to check and report on the progress of the investments. The Monitoring Committee is chaired by a high-ranked political appointee from the Ministry of Interior, in this way counterbalancing the Ministry of Finance's dominant position in controlling the funding. The Monitoring Committee includes a broad range of stakeholders from the Greek administration and the Commission, including representatives from ministries, public sector agencies, the Special Secretary, Managing Authority, InfoSoc and Observatory. Its annual meeting is widely publicised and is open to participants from trade unions, the industry, and to the public and press, even though only its appointed members have a vote.

The Monitoring Committee has significant authority over the composition and funding of EU-funded ICT investments. It can terminate projects that show inadequate progress by releasing the allocated funding, and can make funding available for projects which require more resources. Its composition by high-ranked officials from a number of functions was understood to allow it to take decisive action to push forward with the implementation of important ICT investments, especially where cross-functional coordination was required. The subsequent creation of the Digital Committee, discussed below, raises questions as to how well the Monitoring Committee has served its role as a cross-functional solutions forum.

Representatives of the Commission, and in particular DG Regional Development and DG Employment, have always been present in the meetings of the Monitoring Committee. After 2000, their role has been advisory rather than executive, in an attempt to distance the Commission officials from assuming direct responsibility for the decision-making of EU-funded investments. Consequently, they do not have a vote, even though their voices are heard loudly enough to play a crucial role.

5.4.3.2. Digital Committee

The Digital Committee (*Επιτροπή Πληροφορικής*), not to be confused with the Monitoring Committee discussed above, was set up in 2004, shortly after a change of government led to a complete new leadership being put in place for the top posts of the Special Secretariat, Managing Authority, InfoSoc, and Observatory. The Digital Committee consists of the Head of the Special Secretariat, who is also the chair, the head of InfoSoc, as well as the Secretary General for Public Administration (Ministry of Interior), the Secretary General for Information Systems (Ministry of Finance) and the Secretary General for Research and Technology (Ministry of Development).

Its diverse participation is congruent with its official mandate as a strategic unit setting the high-level policy directions for ICT. It is also congruent with its covert role as a light-weight schema of top policy-makers collaborating in order to overcome traditional functional silos and political strife, and taking prompt,

coordinated action wherever needed to expedite the slow progress of, usually large, ICT projects³⁶. Their intervention was decisive in enabling progress in large-scale projects which had stalled because of institutional and legislative impediments. At the time of the field visit, some progress had been achieved for the majority of ICT projects and as a result the Digital Committee had significantly reduced its meetings and its output. The strategic planning was left to the Special Secretariat.

5.4.4. The beneficiaries

Who are the beneficiaries of the EU-funded ICT investments? During the period 2000-2006, the EU-funded ICT investments targeted specific domains of social life, including schools, universities and hospitals, Small to Medium Enterprises (SMEs), and the public administration and local government authorities. These were called “beneficiaries” as they benefited from the funding provided by the EU and national budgets. They accounted for a very large number of small and medium-sized organizations, including three thousand schools of all levels, the overwhelming majority of the local government authorities, as well as departments within the public sector of varying size and organizational capability in handling ICT innovation.

To gain access to the available funding, each of the beneficiaries needs to respond to the Managing Authority’s invitations for proposals. Each invitation for proposals calls on eligible beneficiaries to submit proposals on specific types of ICT investments and innovations (e.g. call on local government authorities to submit

³⁶ The creation of the Digital Committee brought again to the fore the question of whether a new structure could be established having respectable political clout vis-à-vis the established ministries. The options of creating either a committee directly under the PM or a separate ministry, were both rejected as unworkable (the former as too disruptive of existing political balances, the latter as too functionally isolated). The Digital Committee was described as “the best compromise under the current political pressures” (Interview with advisor to the head of the Special Secretariat, 25/05/2007)

proposals for the creation of online data repositories for citizens' information, call on schools to submit proposals for the creation of IT labs etc.). Each invitation for proposals specifies an overall budget for that type of action, which was pre-agreed with the Commission.

The eligible beneficiaries need to respond to an invitation by submitting a proposal specifying the intended project, and analysing the business need and the expected outcomes in terms of the investment's social contribution, and particularly its potential to create employment opportunities. A fairly detailed description of the intended project is required; the beneficiary needs to be able to articulate the requirements unaided by intermediaries or consultants, thus proving the palpable need for an IS intervention as well as an appreciation of its nature.

The beneficiaries need to also demonstrate their institutional and operational capacity in managing the intended projects. This refers to the existence of skilled personnel, infrastructure, and equipment and, importantly, previous experience in managing similar IS projects. When the "maturity criteria", as they are called, are not met, the services of InfoSoc can be summoned; occasionally, the Managing Authority requires the involvement of InfoSoc as a prerequisite for the approval of the IS project.

After approval, the beneficiary (or InfoSoc if contracted) issues an invitation to tender for the project, which is usually split in two parts: firstly, the invitation for the full analysis of the project is released, resulting in the production of a specifications document, which in turn provides the basis on which the invitation for tender for the coding or procurement of the technical system is issued. Importantly, public sector procurement has traditionally revolved around physical products, and has rarely been concerned with intangible products or services. As a result, both the law and the participants' prior experiences dictate that the product be specified through its

material components (namely, hardware parts) and its technical characteristics, instead of the functional needs it is called to respond to³⁷.

Producing the specifications of the project in a bidding invitation introduces major sources of uncertainty. The inherent difficulty of fully prescribing how an information system should work is intensified by regulatory demands for fair competition (an invitation to tender cannot appear to be biased towards one particular product or vendor). The established practice of prescribing tangible deliverables, which can be easily signed-off at delivery, produces an opposite trend. Thus, two competing needs arise: on the one hand, the need to spell out functional requirements, which are independent of the implementation platform, whilst on the other hand, the need to produce specific technical requirements, so that the civil servant signing the delivery of the project can be safeguarded against fraud and litigation. In effect, the second pressure has proven much greater, thus resulting in the production of detailed technical hardware specifications, which had mixed effects on both the IT industry and the public agencies.

The bidding process is heavily regulated both by the national law and more importantly by the European directives. The beneficiary, or InfoSoc, is responsible for ensuring that the procurement procedure respects the complex European legal and regulatory framework. Complying with a large array of competition regulations

³⁷ The regulatory framework that governs public procurements (*Κανονισμός Προμηθειών Δημόσιου*) is explicitly concerned material products, and is problematically silent on services and knowledge products. Despite the dire disruptions that this creates when it comes to the procurement of software, or even worse IT services, there has been little change. One practical reason, as one interviewee put it, is the following.

At the delivery of the contract, the public servant will need to be able to verify that what has been contracted is delivered. He has to sign. Most public servants don't know much about IT, but they can count the number of PCs, screens and cables. Even the ones [public servants] who do know about IT, do you think they would sign a paper verifying the delivery of some fuzzy information system? This is public money, they could be accused of misusing public funds!" (Interview with Officer in Ministry of Interior, 22/03/2007)

(regulating advertising, deadlines, appeal procedures, cut-off and evaluation criteria etc.) is of vital importance to avoid annulment of the bidding process. This has proven challenging for public agencies with limited knowledge of the extensive regulation, thus further reinforcing the key role of InfoSoc.

On selecting the best bidder, the beneficiary, or InfoSoc on behalf of them, needs to ensure that the supplier delivers on schedule and on specifications. They also need to provide regular updates of financial and progress data in the financial management information system called Ergosys, which provides full visibility to all layers of national and European administration. Progress reports are submitted on a monthly, quarterly, and yearly basis. During the field visit, the time-consuming progress reports were one of the most frequently mentioned and intrusive methods seeking to manage closely the behaviour of the participants.

At the end of the implementation, the beneficiary, or InfoSoc, needs to perform the sign-off, involving the official acceptance of the completed product from the vendor. The discussions during the field visit revealed that this was a process fraught with stress and uncertainty, which civil servants sought to alleviate by focusing on the tangible aspects of the ICT investment (hardware) and not on the satisfaction of the functional needs which the ICT investment responds to. The need for physical products to be changing hands was singled out by some as an indication of the need for a paradigm change in public investment in ICT, while for the civil servants themselves it was the only way to ensure that public investments are done wisely.

In many respects, the beneficiaries were often portrayed as the 'unruly actor'. They were mostly blamed as responsible for a range of issues, occasionally out of pursuing their own interests, and occasionally out of ignorance. They were often believed to be acting out of self-interest, focused on "getting their hands on the funding" and caring little about the ICT innovations they were supposed to build and foster with the funding. One of the respondents from a management authority for one of the programmes targeting SMEs explained the situation as following:

They [the SMEs who were the beneficiaries of the programme] think that this is like the subsidies of the Common Agricultural Policy, where they can just get the money and go. Well, it's not like that here. They actually have to produce something! (Interview with Manager of project for ICT diffusion in SMEs, 12/04/2007)

What they were supposed to produce were information systems as socio-technical innovations, which were to be moving the respective institutions towards a specific view of modern operations. In the context of the Information Society Programme, they were effectively of two sorts: either e-government projects at a variety of organizational contexts, or projects of Internet connectivity, for example for SMEs. As the beneficiaries struggled to bring these systems to life, they were accused of passively subverting the efforts of the Greek government to foster innovation through their "ignorance" and "backwardness".

At other times, the beneficiaries were portrayed as actively corrupt, colluding with companies in an attempt to "get their hands on the funds". In this way they were thought to actively demean the rationality of the methods and techniques that the Greek state, or more specifically the EU, had set as the proper way of fostering innovation through competition. In particular, accusations for collusive bids, 'below-the-radar' relationships with the industry, and improper (financial) management were prevalent in the policy domain, and were directed from the officials in the Management Authority and InfoSoc to the beneficiaries. They were deemed to be uncooperative thus jeopardising the success, however success was translated, of the Programme.

5.4.5. The IT industry

The industry is shaping policy in action in more ways than just by implementing well specified interventions. In fact, the influx of European funds for ICT investments has itself created an at times vibrant market of professionals attempting to both create and satisfy the demand spurred by the availability of funds. Thus, their role needs to be further explored if we are to understand the course of ICT investments and their tentative results.

The IT industry in Greece can be broadly explored as pre-2000 and post-2000. Before 2000, the vast majority of companies in the IT sector were involved in wholesale distribution of hardware and software, with a small number of international companies acting as systems integrators. Due to the small size of the Greek market, and its low demand for IT, the IT industry was to a large extent dependent on public sector IT procurements, which were in turn funded by the consecutive CSFs. Between the years 1998-2001, the mounting optimism about the dot.com market, coupled with high growth rates of the Greek economy due to the Olympics, and the funds from CSF2, led the IT companies to experience exponential growth. An era of mergers and acquisitions followed, which saw agglomerations of companies arise. The industry stagnated during the international burst of the dot.com bubble, which also coincided with a shortage of European funds.

In the years immediately after 2000, numerous small and larger IT companies ceased operations. The remaining were forced to make significant staff reductions, and struggled in a stagnating market. Thus, the Information Society Programme came to reflect the entire IT industry's hopes for survival. Respondents often mentioned that at the time the Information Society programme was negotiated and the budget agreed, IT companies used to calculate their share by dividing the 3 billion euros budget by the number of companies in the industry.

Competition was fierce for the first invitations to tender, leading companies to put forward proposals with large reductions often resulting in negative profit margins. Appeals at every stage of the process were the norm, resulting in long delays. Perversely, being able to demonstrate experience in successfully appealing against bidding results became an asset for IT professionals looking for a job in the industry.

Companies wishing to increase their chances of winning an invitation to tender would often resort to questionable methods directly subverting the efforts of the Managing Authority and Commission to regulate the field. One such practice was

offensive selling³⁸, which effectively circumvented the rule about the separation of the specifications analysis from the implementation. Instead, IT companies would monitor the invitations for proposals issued by the Managing Authority and would identify potential 'beneficiaries – clients', e.g. public authorities that would be eligible but that had not come forward with a proposal on their own. The IT companies would covertly collaborate with them to submit a proposal and would then have an advantage when bidding. This prevalent technique replaced the previous practice of invitations to tender biased towards a specific product or vendor, which was severely penalised with the new regulations.

Discussions with procurement managers in IT firms as well as the trade union of IT companies revealed that the belief that the IT sector should receive indirect assistance from the state is deeply ingrained. Indeed, they did not consider problematic the dependence of the IT industry from the state, and put forward the industry's contribution towards employment as a mitigating factor. Their concerns revolved around the lack of proper procedures and time scheduling on the part of the state to allow the IT sector to do business and make profit.

5.5. The situation in 2010

The Information Society Programme achieved a one-year extension from the Commission, which delayed its completion (i.e. the completion of all information systems and their implementation, as well as their administrative wrap-up) until 31 December 2009. This was required in particular for the completion of projects in two action lines: e-government and telecommunications, especially the rolling out of optical fibre networks and broadband services. Between 2007 and 2009 a great effort took place to enable the projects which had been included in the Programme to

³⁸ Offensive selling in this case denotes all practices which offered unfair advantage against other competitors in the market.

complete, which involved much closer cooperation and control of the beneficiaries from the Managing Authority³⁹.

A number of important information systems were completed⁴⁰. Syzefksis, a network infrastructure connecting all civil service agencies, is not only purported to directly reduce communication costs, but has also provided the platform for the development of other distributed information systems (e.g. a system connecting the posts of the Meteorological Office around the country). Police Online was hailed as a great success, although its most important features were the ones that allowed the computerisation of back-office practices across police offices in the country (e.g. passports and identity cards issuing), rather than the services offered directly to the citizens. The online information system for the Personnel Selection Agency⁴¹ allows candidates for public sector posts to trace their applications online, although most other services still take place offline in the offices. A similar information system for the courts allows litigants to check online the progress of their cases through the

³⁹ Two measures in particular were characterised as particularly effective. On the one hand, a second member of staff from the Managing Authority was appointed as a controller, with overall responsibility and authority for monitoring the progress of important projects. On the other hand, selected beneficiaries of important projects were invited to sign agreements with the Managing Authority, on top of their already existing contracts on the projects. The agreements, which were far less binding than the official contracts, were meant to be trust-enhancing ‘gentlemen’s agreements’, which would ensure that both parties put in their best effort and continuing commitment to finish the project in light of the tight deadlines.

⁴⁰ Information was drawn from two evaluation reports published in 2010, namely the “Study for the mapping, operation and evaluation of information systems and Internet portals funded during CSF3 by the Information Society Programme”, published in July 2010, and the “Analysis of projects and beneficiaries of the Information Society Programme” published in April 2010.

⁴¹ www.asep.gr

otherwise slow judicial system. The information system for the land registry⁴² was put into operational use, involving both a fairly low-key Internet application towards citizens, and a more productive range of online services offered to lawyers, solicitors, land and forest registrars etc. The reform and computerisation of the process to set up a new business was hailed as a breakthrough, supposedly slashing the time needed to set up a business from two to three months to seven days, although no usage data has been published yet. Similarly, information systems for the citizens' registry, the issuing of social security numbers, building permits, driver' licenses, as well as the issuing of a small number of certificates to citizens and businesses involved a great of infrastructural work, although not necessarily a transformation of the civil service.

There were mishaps as well. By all accounts, the majority of information systems in healthcare did not materialise to anything more than the deployment of the accounting modules of Enterprise Resource Planning packages in hospitals. The effort to develop Internet portals for services provided by the municipalities and prefectures ran into difficulties. Although a few examples shine though, a large majority of the projects was abandoned and for the projects that did materialise, the usage has been rather low. Finally, the move to roll out broadband infrastructures across the country, a key indicator in EU politics on ICT diffusion, was blighted by significant delays. In March 2009, nine month before the finalisation of the Programme, population coverage was close to 50%, whilst absorption was close to 35% of the allocated funds⁴³.

From a financial point of view, the Information Society Programme was finalised on 31 December 2009. Financial data drawn from the monitoring information system Ergosys and published on the Information Society Programme website shows that the Programme was finalised with 100% absorption of the allocated funds. It was

⁴² www.ktimatologio.gr

⁴³ Source Proceedings of the 2009 Monitoring Committee, p.18

heavily oversubscribed by as much as 140% to compensate for failed and dropped projects.

With the Information Society Programme drawing to a close, InfoSoc and the Observatory for the Information Society actively started to rethink their roles. There were vivid discussions with regards to InfoSoc's intention to extend its remit to offer paid services to civil service departments beyond national and EU-funded programmes. Providing a wide range of services, such as project management of information system projects, the compilation of requirements documents, as well as liaising with other governmental departments or the IT companies, InfoSoc was growing to be in direct competition with the IT market, whilst being funded by public money⁴⁴. Although this move was greatly detested by the IT industry, InfoSoc's institutional position meant that it easily became the preferred point of call for governmental departments. In the same vein, a similar expansion of the scope of actions by the Observatory meant that its board of directors wished that it played a role of 'strategist' or consultant especially for large agencies which were in need of an

⁴⁴ Source Proceedings of the 2006 Monitoring Committee. The representative for the Federation of Greek ICT Companies strongly challenged the legitimacy of the move of InfoSoc to change its statutory framework of operation to allow the provision of paid services to public sector agencies: "despite the justification of the management of InfoSoc that this happens so as to ensure a lifeline [for InfoSoc after the completion of the Programme], given that the company was founded on an initial capital from the state budget, lives off EU money, and was a demand of the market, it is incomprehensible to suggest a change of its constitution without any consultation, so that it can go in the market and offer services" (p.35). InfoSoc's replied that it responded to the demands of the public sector agencies: "we believe that, instead of turning away all of you, the beneficiaries, telling you that we cannot support a project because it is not in the Programme, we need to evolve our organizational structure to address your demands, so that we contribute to the development of public sector in a digital Greece" (p.57)

IT vision or a strategic plan⁴⁵. Although the Observatory has not extended its remit yet, InfoSoc has.

Moreover, the raising of the profile of ICT innovation domestically has been particularly evident in the elections in October 2009. ICTs were proclaimed, on equal footing with renewable energy, as the vehicle of development for the country. On the eve of the elections, a number of high-profile moves contributed to the creation of a momentum. These included the renaming of the Ministry of Interior into Ministry of Interior and e-Government, the declaration of a new era of openness where all public acts and bills are posted online for public scrutiny and dialogue, and perhaps more interestingly the operation of a website through which applicants could apply for consideration for some of the most highly political posts (traditionally the bastions of close friends and allies of the ministers).

As the financial crisis engulfed the country, two diverging trends emerged. On the one hand, many ICT projects have stalled or failed to even initiate due to the state's inability to fund them. Moreover, the change of leadership in the top posts has brought a rethink in the strategic priorities. As a result, an updated Digital Greece strategy has been put up for a public consultation, following on from all too familiar arguments that the previous one lacked a clear direction, was leading to dangerously low absorption rates⁴⁶. On the other hand, many envisage a 'digital recovery' of the country⁴⁷. Although the meaning of the digital recovery is still vague, it appears that

⁴⁵"We wish to also act as counsellors for specific beneficiaries, consultants if you wish, to help them design their own master plan, their own plan with regards to digital Greece. I believe we have acquired the knowhow" (Chairman of the Observatory for the Information Society, 2008 Proceedings of the Monitoring Committee, p. 36)

⁴⁶ "Public consultation instead of digital convergence", *Eleftherotypia*, 26 March 2010, "Acceleration and streamlining of financing procedures", *To Vima*, 25 March 2010

⁴⁷ One of the latest reiterations of the 'digital recovery' idea was expressed by the current Minister of Finance, in the trade publication for the ICT industry, *SEPEnews*, titled

its role is more 'accounting' than visionary. The use of ICT to document and control public expenses and to combat tax evasion through cross-checks in the centralised databases seems to constitute the way to the digital recovery.

5.6. Conclusion

In this chapter, I set out to accomplish three goals. To begin with, I sought to make apparent the multi-layered context in which the information society was placed in the policy cycles in Greece and the Commission. To do that, I highlighted the policy context for the successive ICT programmes implemented in Greece, which was shaped in the EU. In this respect, ICT policy in Greece has taken place in the context of the EU's regional policy for cohesion and reduction of disparities among member-states. Within the EU's regional policy, interventions have assumed a particular institutional form: they have a specific duration, target national and regional development with the aim of catching up with the rest of the developed EU states, are funded through the EU budget, and are subject to monitoring and evaluation because of this. This shows why looking at the ICT interventions would have been inadequate; the multiple levels of institutional actors enable and constrict the field of possibilities for ICT intervention through particular techniques and technologies, and through the mediation of sets of discourses, which will be further analysed in the following chapter.

Secondly, I explored the position of Greece within the EU. I showed how, after a first few troubled years, the political elites across almost all parties have shared a similar pro-European stance, favouring closer integration in various controversial issues. Public opinion has also been overwhelmingly favourable towards the EU, viewing the EU membership as positive and beneficial, and identifying the EU with a positive development model. In light of the overwhelming support for the EU, and the

"Greece' financial reform will also be digital", 01 September 2010. It was also a popular argument in the annual Digital Economy Forum, also titled "The recovery will be digital", which took place on the 3rd of May 2010.

existence of ample funding for modernization through the deployment of information systems (the development of an information society), the paradox emerges: why did the Information Society Programme, as well as the ICT programmes that run before it, stumble onto such great difficulties which threatened to greatly limit its results? Why was the existence of funding, the legitimacy gained by the association with powerful EU visions of cohesion and development, and the provision of ready-made images and discourses about the acceptable version of the information society not enough to allow these programmes of action to sustain a momentum?

To address this paradox, I embarked on a journey to explore the narrative of ICT policy and interventions in Greece. This constituted the third theme and goal of this chapter. The narrative chronologically traced the successive programmes of ICT in Greece and linked them with important developments in the EU, and in particular in the Commission. The narrative was complemented by the exposition of the actors in the field, in an effort not to present them as frozen, timeless and independent entities, but as products in a time-space nexus, entities produced and conditioned by their varied interdependence on other entities in the same field. The presentation demonstrated a number of observations. Firstly, the relative independence of successive ICT policies from the ICT programmes that were pursued shows that implementation did not result as a direct effect of policy formulation, as is traditionally perceived. Secondly, although a link can be empirically seen between the EU and Greece with regards to ICT, a better, theoretically-informed understanding needs to be gained on the ways in which ideas about the information society were packaged and moved from the EU to Greece. Finally, the great discrepancies of the achieved outcomes from the intended outcomes needs to be further explored. It is to these issues that the analysis now turns.

6.CHAPTER SIX – ANALYSIS

The previous chapter discussed the context of the case study, presented the chronological narrative of events, and discussed the shape of the field in terms of the institutional actors which formed it. The first section considered Greece in the context of the European Union. In particular, it focused on the developmental course of the country in the past decades and the way it has been pursued through a range of European funds, usually delivered in the form of a Community Support Framework (CSF). As it was noted, a CSF constitutes a development instrument, which specifies its own duration, regulations, earmarked funding, and developmental goals. The second section presented the narrative of the Greek state's attempts to foster ICT diffusion and innovation, from 1985 onwards, emphasising key moments, for example the production of strategies, and the ICT programmes which sought to enable the implementation of information systems in the country. Finally, the third section focused on the period after 2000 which saw the most active mobilisation, partly signified by the establishment of a host of new institutions, whose stated purpose revolved around the promotion and management of ICT at a national level. The discussion further unveiled their complex relationships, unstated goals, and *modus operandi*.

The above narrative raises the need to explain why things worked like that, and what we can learn about the role of ICT in the Greek and European policy agenda. More broadly, what can this narrative tell us about the position of a middle-level country in the midst of dramatic technological change? How is it negotiated in terms of national development and how is it mediated? And finally, can a theoretically informed account provide any ideas which could be extrapolated to other cases?

6.1. Introduction

Disillusionment and pessimism is widespread within the circles of Greek practitioners and some academics with regards to the technological progress of the country. The delay in the development of advanced in telecommunications infrastructures and the ensuing high cost of Internet connectivity were credited with the slow take-up of the Internet for a long time⁴⁸. Indicators with regards to innovation production have also been traditionally low⁴⁹. It points to a limited base of indigenous technology development, thought to be inadequate to operate as a springboard for the wider diffusion of ICT. Even as the rate of ICT take-up appears to have improved, the gap, the nature of which I will discuss later in the chapter, is still visible and intensely felt, creating mostly negating interpretations of the situation.

A number of structural and circumstantial explanations are often given to account for the slow development of the Greek agenda for ICT innovation and the troubled process of ICT diffusion. It is often claimed that shortage of funding is to blame for the country's slow performance in areas of technology and innovation. Moreover, a

⁴⁸ As late as 2005, the cost of a high-speed Internet connection in Greece was thirty percent more than the European average, something which has been said to have resulted in limited uptake of the Internet for both households and businesses, particularly SMEs on which the economy largely rests.

⁴⁹ Traditional criteria of innovative activity include investment in science and technology, and the registration of technology patents. Greece is thought to perform poorly in such indices. Government investment in research and development has been traditionally among the lowest in the EU, second only to Ireland (Source: Eurostat, Science and technology in Europe, Statistical pocketbook, 1991-2001). Similarly, the country scores among the lowest positions (in EU-15) in technology patent registration (Source: European Commission, Towards a European Research Area, Science, Technology and Innovation, Key Figures 2003-2004)

lack of appropriately educated and trained workforce is frequently cited as a reason for the slow progress. Finally, blame is also placed on the political elites, which are criticised as too short-sighted and narrow-minded to encourage investments in technologies, whose benefits may not be harvested during the course of their own political tenure. Thus, lack of vision and political support are often thought to be part of the problem.

Such accounts can, however, be limited, and perhaps misplaced. The previous chapter demonstrated how the process of ICT diffusion has been marked by the provision of European funding in an effort to reduce regional disparities. In the latter period, after 2000, the funding amounted to a considerable investment, thus making the argument of lack of funding difficult to believe. Moreover, the country has a sprawling ICT industry with skilled workforce and a large pool of graduates with good technical and technological education. So, a competent workforce is available to enable the implementation of ICT projects. Finally, the analysis which follows shows that there was no lack of vision and political impetus, even if it did not come from the indigenous political and policy scene.

More structuralist accounts put forward the persistent characteristics of the Greek state, society and economy, and the relationship among them, as the reason behind the slow rate of diffusion of technologies and the hampered efforts of the Greek state to foster it. Sociological studies on the Greek society, produced in the 70s and 80s and expressing the malaise of the times, identified a pervasive culture of clientelistic relations between state and citizens, a severely distorted bureaucracy, and the existence of two conflicting national identities aspiring to competing development models (Tsoukalas 1987, Mouzelis 1995b, Mouzelis 1995a, Tsoukalas 1995, Dimitrakopoulos & Passas 2004). When these concepts are used as an analytical lens through which to explain contemporary phenomena, their power to open up domains for examination appears reduced. Indeed, if all amounts to, and can be explained by, clientelistic relations, then there is little room to move the analysis forward. However, I would point out that even within these conditions, things still get done.

So, what becomes important is to explore how things get done, rather than how they occasionally stop or run into problems.

In this section, I present an alternative analytical narrative, which provides a theoretical interpretation of the meso level. I argue for the need to understand the mechanisms, the concrete, material and tangible processes, which have structured the process of ICT diffusion through the state ICT programmes, and in particular the processes which have allowed the Information Society Programme to progress better than its predecessors. The analysis provides an explanation with regards to the idiosyncratic take-up of ICT in the country (or lack thereof) throughout the last two decades and highlights the mechanisms through which the European Commission attempted to guide it.

The overarching argument supported throughout the analysis is that two technologies of government operated in the post-2000 period, which supported and reinforced each other. On the one hand, practices of funding and monitoring embedded into the structure of the CSF, as the format through which the Information Society Programme was delivered, created a disciplined regime of operation. On the other hand, popular discourses about the information society, regularly reproduced in policies and official documents, coupled with practices of pan-European reporting and comparison, operated so as to provide the high-level political impetus and direction. Each of the two technologies of governing can be understood as distinct and autonomous, but as contributing to the creation of an overall more effective regime which allowed the Information Society Programme to achieve momentum for progress. There are however limits to the effectiveness of the regime and unintended consequences which manifest themselves in moments of contestation.

More specifically, I suggest that a regime of government emerged, which consisted of particular visions of ICT in the context of Greek and European development; a number of strategic documents which operated in a self-disciplining way to demarcate appropriate behaviours for public administrators in the 'information age'; a set of disciplinary mechanisms relating to the monitoring and reporting of progress

of ICT innovation and diffusion; as well as a framework of action lines, timeframes, schedules, rules and regulations, and methods of financial reporting, which governed the implementation of the great number of innovation projects under the Information Society Programme.

The chapter is structured as follows. Firstly, I analyse the European political project on the information society as a technology of government which legitimised specific discourses, acceptable ways of acting and thinking for national policy, and methods of pan-European visibility and comparison. Secondly, I discuss the structure of the CSF and the Information Society programme as a technology of government, in an attempt to demonstrate the ways in which the characteristics of this form of intervention had a decisive impact on the way the ICT initiatives were conceived and implemented. In particular, the practices of funding, monitoring and reporting are scrutinised in order to show their effect on creating legitimate ways of acting for the policy-makers and the beneficiaries of the Programme. Thirdly, I go on to show that although each of these two technologies of government had operated independently before 2000, it was when they converged and operated in a complementary, but still autonomous, way that they brought about visible results. Finally, I analyse the practices of contestation which co-constituted the domain.

6.2. The information society as a technology of government

Governing the technological artefact has always been within the aspirations of the EU. Even if not always politically visible, governing innovation and the deployment of ICT, usually through research programmes, has been within the scope of the EU. In an insightful analysis of the role of technology in furthering the purposes of European integration, Barry (2001) argues that the EU has attempted to enforce homogeneity and trans-national coordination through the creation of technical standards, while the construction of digital networks has advanced closer integration among member-states and the EU itself. This section argues that at some point in

time these varied actions started to be identified as constitutive of the information society. Moreover, through practices of reporting and comparison the related discourses spiralled outside the realm of Brussels and were taken up by member-states, such as Greece. But how did this happen? What conditions allowed the Commission, conceived as a particular locale, to make its effects felt at such a distance? To answer this question it is first necessary to demonstrate that the European discourses around the information society were indeed taken up by the national policy-makers in Greece.

The nexus of discourses and practices which developed around the information society as a political and policy goal can be analytically understood as a technology of government. The discourse on the information society intensified, at the beginning as it was expressed in an increasing number of strategies and action plans of mounting significance, and subsequently as it became embedded in practices and methods which anchored the visions and discourses in real-life practices.

6.2.1. European visions of the information society

The information society as it was developed and expressed within the Commission was a dynamic concept and comprised a changing set of solutions and initiatives. This section explores the European visions on the information society from the European policies produced in 1994 onwards. It focuses on the content and aims of the policies.

In 1993, a committee of experts from the industry, presided by Martin Bangemann, published their report 'Growth, competitiveness, employment: The challenges and ways forward into the 21st century', which was endorsed by the European Council in Corfu, and has since been thought to be the first European strategy for the information society. The Bangemann report represents the information society as a "revolutionary tide", powered by technological progress and driven by the market. The strategy urges for structural adjustments in the economy, in order to enable it to keep up. It sees unemployment and fragmentation as the two major dangers:

unemployment as the result of the inability of the European economies to carry out structural adjustments, and fragmentation, both social and regional, should the changes fail to encompass every citizen and every member state. The proposed solution is entrepreneurial activity, and “NOT more public money, financial assistance, subsidies, *dirigisme*, or protectionism” (European Commission 1993, p.9, emphasis in the original). The strategy identifies the creation of high speed telecommunications infrastructures as the foundation of the information society, and calls for privatisation and liberalisation of the sector. It also proposes ten applications, to help accelerate the take-off of demand, including the promotion of telework, distance learning, and ICT use by SMEs, the use of ICT in road and air traffic, and the creation of networks for universities, healthcare providers and public administrations across Europe.

In 1999, the ‘eEurope – An information society for all’ strategy was endorsed by the European Council of Lisbon. Described as a “political initiative”, the eEurope strategy represents the information society not as an uncontrollable tide any more, but as a political project that “can be shaped towards our values, principles and strengths” with an explicit aim to foster cohesion. The impact of the information society can be felt on employment, growth and productivity. The report focuses on ten areas, where a European common approach is thought to be of value, with interim targets and deadlines. The report reiterates the prior commitment for regulatory reforms and enhancement of competition in telecommunications, the strengthening of academic networks, the utilisation of ICT in transport, and the promotion of ICT to SMEs. It shifts the emphasis from the creation of networks for public administration and healthcare providers to ‘government online’ and ‘healthcare online’, proposing integrated customer orientated systems instead. It also spearheads the need for universal provision of PCs, electronic content and connectivity in schools, and seeks to raise awareness about the supply of venture capital for high-tech SMEs to enhance innovation.

The next major development in the European front was the i2010 strategy, adopted in 2005. The report specified three areas of action, which included the promotion of

broadband connectivity and infrastructure development, along with regulatory reforms for the establishment of an innovative and competitive technology and media market. The report made further reference to the need to strengthen European innovation, as well as the desire to address the various divides which appeared in the fabric of the otherwise thought homogenous European information space. European research programmes were heralded as a viable option for the production of outstanding research and innovation, which would be simultaneously uniquely European, and world-class competitive. Finally, the report promoted action in e-health, e-government, and issues of accessibility in order to facilitate an inclusive society. It thus sought to use the umbrella-term 'inclusion' to refer to the range of rifts, discontinuities and differences, demographic, geographical, economic, educational, which had manifested themselves in the statistical reports, and which had to be overcome.

In 2010, Europe's new strategy, named Digital Agenda, is awaited. Early reports and speeches show that the new strategy will follow on the footsteps of i2010, but with a greater focus on regulatory harmonisation. Issues such as the development of high-speed Internet infrastructure, the reduction of obstacles in the European media and content production market, and the "avoidance" of a digital divide appear to top the political agenda at the highest level of policy-making⁵⁰.

6.2.2. Shifting discourses on the information society

The previous section provided an insight into the visions of the European information society, viewed through the technological priorities which the

⁵⁰ In the mandate to the Vice President of the Commission, Neelie Kroes, the president of the European Commission, Jose Manuel Barroso, urges for regulatory action to accelerate broadband Internet penetration, lift barriers which hamper the creation of a competitive and productive European media market, and improve ICT skills in the wider population (Source: http://ec.europa.eu/commission_2010-2014/kroes/about/mandate/index_en.htm, accessed 30/03/2010)

Commission sought to pursue. The question which arises is whether these visions and technological directions had any material effect on the ways Greece made sense of, and represented, the information society in the context of national policy. How were these visions received and interpreted in the country by national policy-makers? This section will demonstrate that the visions and technological directions which were produced at the EU level had a profound impact on the ways of discussing the information society within Greece. The EU strategies constituted the legitimate discourses on the information society. They also rendered the information society as a particular type of object, and created specific kinds of legitimate actors in it.

The analysis which follows suggests that around the middle of the 1990s, the governing of the technological artefact, which had always taken place in a fragmented manner, emerged as a new encompassing object, the information society, which was to become central in public policy. The information society was to be governed, measured and managed. Rendering the information society into an object of government begets further questioning. By which rationality would this new object be governed? Who was to govern it and how? These questions are explored by critically reflecting simultaneously on the European and Greek policies.

The information society initially emerged as a primarily economic object, and as such it needed to be managed according to the dominant neo-liberal economic paradigm. As an economic object, the private sector would be “entrusted” with its development (European Commission 1994, p.10). Its engine would be private innovative activity. Innovation would be marketable, and safeguarded by well-established patent systems. As an extension of the market, the information society was to develop within the established framework of competition. Indeed, the role of the national and regional governments was to ensure that it did. The advent of the information society was further understood to accentuate the urgency for further liberalisation and privatisation; market barriers needed to be lifted to allow an uninhibited European information society to face up to the challenge of global competition. Moreover, individuals were called to take ownership of the changes and take action and risks to

respond to them. A distinct regime of truth emerged around the 'European' information society: the business in the information society was to be an innovative one and the individual an entrepreneurial one.

The Greek strategy of 1995 (Ministry of Industry Energy and Technology 1995), which inaugurated the 'information society' as a rhetorical object for the first time in Greek policy-making, reads remarkably close to the first EU policies. It reproduced the discourse of the information society as the legitimate domain of business activity. The role of the public sector was portrayed as mainly regulatory, and distributional, in providing universal services of public interest. Despite the heavy state-centric character of the country, and its limited technological base (Thomadakis 1995), the Greek strategy of 1995 subscribed to a particular version of truth about the information society. It reproduced the European discourses on the innovative business and the entrepreneurial individual as the pillars of the information society, even though it was succinctly at odds with the capabilities of the Greek public and private sectors.

Through time, the character of the information society in European policy and political rhetoric shifted away from the entrepreneurial individual and the innovative business and became a different object to govern. By 1999, the information society was an object discursively defined by the dangers of digital exclusion of the unconnected, the spectre of unemployment for the under-skilled, the risk of consumer exploitation, and the limitations of obsolete government processes, unresponsive to new demands. For these dangers to be addressed, private entrepreneurship and innovation, although necessary, were no longer considered enough. The information society was now in need of more governing; it was in need of overt government intervention (Berleur & Avgerou 2005, Liikanen 2005). These discourses were sustained in the eEurope action plans, in 1999 and 2002 (European Commission 1999, European Commission 2002). They attempted to render the new vision of the information society programmable and governable through lists of 'e-priorities', most of them of a non-compulsory nature, to be taken up by the Commission and member states. For example, a list of twenty government processes,

which were to be modernised and delivered over the Internet by all member-states, was established⁵¹. Interventions like these needed to take place at the national level within set deadlines. The governing of the information society was becoming increasingly strict.

In 1999, the Greek White Bible was published (White Bible 1999). The choice of name is evocative. The White Bible was not a strategy, a policy, or an action plan. It was a 'bible', a document of conviction, expressing the hopes for a better future, and the dangers befalling the country should it fail to realise the promises of the new socio-economic arrangements. The report upheld discourses about rights and obligations: the rights of citizens in the information age, and the obligations of the state to ensure the future of its citizens and businesses in the new socio-economic arrangement.

As a 'bible', the value of the White Bible could not be discussed in terms of its own merits. Neither could it be challenged by counter-arguments. It could only be challenged through a different regime of truth. However, the White Bible reiterated, and was legitimised by, the dominant at the time discourse about a state-led information society and the specific roles of the state in fostering the transformation. It discussed e-services and e-rights for the new type of citizens-turned-consumers of public and private electronic services, and the state's role as educator, protector and procurer. Challenging its dogma would have meant openly opposing a version of truth about how to pursue the information society that was made legitimate by the Commission. Such a contestation did not happen but much later in the day, when the Bible's 'doctrine' was juxtaposed to the reality of implementation.

⁵¹ The list included twenty government transactions, of which twelve targeted businesses and eight targeted citizens, and which were considered primary targets for reaping the benefits of the 'information society'. Four stages of reform were specified: provision of information online, possibility to download forms, possibility to initiate the transaction online, but need to complete the transaction offline, and finally possibility to complete the transaction online. The stage of online delivery was understood to be an important measure of development of the information society.

An attempt to produce an alternative discourse on the information society in Greece in 2003 with the drafting of yet another information society strategy brought in a whole set of different considerations. The draft report, although congruent with ideas of a state-driven information society, advocated the need for a more horizontal mobilisation of the civil society to compliment the vertical role of the state. The report attempted the discursive creation of an ‘improved’ vision of the information society, enhanced through discourses about the power of networks to connect and transform individuals into influential collectives. Thus, without directly contesting the dominant frame of reference, the draft report unsuccessfully attempted to introduce into the Greek context a set of discourses which had not emanated from European policy making.

At the European level, the i2010 report (European Commission 2005) defined the information society as a primarily regulatory object. The report is centred around a commanding discourse on convergence.

Proactive policies are needed to respond to fundamental changes in technology. Digital convergence requires **policy convergence** and a willingness to adapt regulatory frameworks where needed so they are consistent with the emerging digital economy (i2010 – A European Information Society for growth and employment, COM(2005)229, p.3, emphasis in the original)

Where previous European strategies emphasised the common goals, now the emphasis shifts to a need to build an “integrated Information Society policy approach” (European Commission 2005, p.12) in the EU, by creating a favourable European business environment. So, the information society is not an object that requires merely government intervention, but also integrated policies and government interventions.

The i2010 report also repositions the question of the digital divide in terms of inclusion. The possibility of unequal development of the information society across the EU is not only an impediment to economic growth, as in the Bangemann report, or a problem for competitiveness, as in the eEurope report, but also associated with a broader sense of political failure.

Reinforcing social, economic, and territorial cohesion by **making ICT products and services more accessible, including in regions lagging behind, is an economic, ethical and political imperative.** (i2010 – A European Information Society for growth and employment, COM(2005)229, p.9, emphasis in the original)

The discourse on inclusion then becomes closely connected with notions of ‘quality of life’, encompassing considerations on health, culture and transport, which were already part of the European agenda. Moreover, ‘accessible and cost effective’ public services become the means of enhancing inclusion, thus reflecting the emphasis of previous strategies on e-government.

In the Greek Digital Strategy (Digital Strategy 2005) discourses of convergence are downplayed, and the information society is framed in terms of quality of life and economic productivity. It thus reiterates many of the discourses expressed in i2010. However, the analytical importance of the Digital Strategy pertains not so much on the discursive constitution of the information society, but rather on what it signals for the capacity of the Greek authorities to render the information society a social arrangement to be purposefully pursued. This point is taken up in the next section.

Overall, despite the shifting technological priorities and the changing terms of discourse, the strategies and policies created a regime of truth on the information society in which government intervention for the creation of the information society became not only the legitimate, but also the recommended way of pursuing it. Taking a hands-off approach became a hard policy to justify nationally and internationally, as national backwardness was now visible to, and thought to have a direct impact on, the whole European community.

6.2.3. The information society as a governable object

The previous section pointed to the ways in which the information society was rhetorically constructed. The analysis demonstrated that it was not a unitary object, but rather as a assemblage of visions, discourses and technological priorities which shifted through time. The above discussion also demonstrated how discourses

articulated at the EU level were reproduced in discourses expressed in the Greek policies in a remarkably similar fashion. If then the information society policies were formulated within particular regimes of practice, what can be said about the purpose they were serving?

This section questions the role and purpose of the policy-making activity, and highlights the different purposes that information society policies played in Greece and in the EU. The enquiry starts from a questioning of the necessity for the constant stream of policy-making activity which surrounded the information society at the EU level, and in Greece. Instead of viewing it as functionally necessary, i.e. as a functional response to a rational need, I suggest that there is a need to question the purposes of this policy-making flurry. In this process, what stands out is the way in which the European policies themselves, in their materiality, acted as governing mechanisms for the Greek policy-makers.

The narrative pointed to the continuing policy-making activity, accompanied with the production of detailed action plans on the part of the European Commission. Despite the shifting terms of reference, the regular production of action plans points to a desire (or perhaps need) to make the information society the object of public policy. This 'object' was definitely fluid and slippery, as is reflected in the changing discourses which surrounded it. However, it was still an object which policy-makers in the Commission felt the need to talk about, and discuss action plans for. At a first level, the action plans set a number of instructions for achieving a specific (albeit evolving) goal. More than that, the action plans presupposed a level of knowledge about the information society and, in doing so, they attempted to render it programmable. The Commission's action plans minimally attempted two things. Firstly, they rendered the information society a distinct social arrangement whose nature and aspects were familiar and known, and which could be legitimately governed through specific instructions by the Commission. Secondly, by framing the information society in terms of global changes and European competitiveness, they set the ground for rendering the Commission as the appropriate locus of policy decisions. Indeed, if the information society was so integrally linked with the

globalized conditions, then it surpassed the capabilities and spheres of influence of individual states, particularly of the smaller ones. Not only did the Commission already have a level of knowledge about the new societal arrangements that constituted the information society, but it also had the legitimacy to act on it.

Since its launch, eEurope has had a broad policy impact, strengthening existing initiatives and fostering the development of new ones. It has become a policy concept, not only at European level, but in Member States at national and regional level. 'eInitiatives' of one kind or another are now generalised within the Union, with the launch by individual Member States and regions of new initiatives and support programmes. Other European countries and applicant countries have also been following the EU's lead (eEurope 2002 Update, COM(2000)873, p.2)

Member States should subsequently report annually on achievements in their implementation reports on the National Reform Programmes according to the new Lisbon governance cycle. Progress on these will be analysed in the Commission's Annual Lisbon Progress Report (i2010 – A European Information Society for growth and employment, COM(2005)229, p.12)

Commenting on the impact of i2010 on member states, the Commission argues that:

The i2010 initiative has been implemented in all Member States by national strategies. Some are general ICT strategies and some address more specific policies [...]. The national strategies are constantly revised and updated as part of the Lisbon process. Almost all plans closely reflect the goals of the i2010 strategy. A first wave of national ICT strategies was launched after the adoption of i2010 in 2005 and a second wave has recently followed. National ICT strategies show how the open method of coordination works in practice: some clearly refer to inspiration from other member states. [...] Many of the smaller Member States now aspire to become top European players (Europe's Digital Competitiveness Report – Main achievements of the i2010 strategy 2005-2009, COM(2009)390, p. 10)

The constitution of the Commission as a legitimate locus of governing the information society was continually reiterated through the production of targets and action plans. However, there exists another important evolution in the role of the Commission in the information society after 2000. Not only was the Commission discursively construed as legitimately speaking of, and acting upon, the information society, but it was now legitimised to govern the governing of the information society by national authorities too. The Commission attempted to assume the authority to determine the 'correct' national conduct for a phenomenon, which no

longer pertained to national sovereignty. Rather, it was construed as a phenomenon of European and global importance through discreet, yet effective, disciplining mechanisms.

The role of EU-produced documents as objects that rendered the information society a known, familiar and thus governable social arrangement, through the production of concrete action plans and timelines, was discussed above. Unlike these, however, and with the exception of the Digital Strategy in 2006, the Greek information society policies up to 2005 were drawn at a particularly high level, setting decade-long goals, and failing to specify actions or timelines to implement them. These strategies did not attempt to manage the information society with targets, concrete steps, deadlines, and instruments. They did not conceive and attempt to represent it as object which was knowable, well understood and thus governable, like the European policies did. They thus could not effectively function as means of governing other actors' conduct with regards to the information society and its national implementation. Their purpose, their *raison d'être*, was different.

Interviews with Greek policy makers revealed deep contradictions as to the reason for creating these documents. An example of this can be investigated in the case of the creation of the Greek White Bible produced in 1999. A key policy-maker behind the drafting of the White Bible found it "disgraceful" that before the creation of the White Bible, Greece was the only European country not to have an information society strategy. It was as if it highlighted a shortcoming of policy attention or lack of shrewdness on the part of Greek policy-makers, as if it showed that they had failed to appreciate the magnitude of the impending change. When I pointed out that the White Bible was not the first Greek information society strategy, as the 1995 one preceded it by a few years, he dismissed it as inappropriate. This can be interpreted as a question of legitimacy with regards to the dominant truth on what the information society and the role of the state in fostering it should be at this specific point in time. In this respect, the 1995 strategy was not legitimate in 1999 on two counts. Firstly, because it was incompatible with dominant version of the information society pursued by the Commission at the time. It was out of tune with

the prevalent discourses about what kind of object the information society was and how it was meant to be governed. Secondly, and perhaps more importantly, because failing to create a strategy was incongruent with the expected national policy response to the object of the information society. For the Greek policy-makers creating the White Bible was seen as demonstrating a rational and purposeful approach towards planning and investing in ICT, which they believed to be congruent with what was expected of them by the Commission. Similarly, interviews with the Special Secretary of the Information Society and the Director of InfoSoc⁵² during 2002-04 showed that the draft policy of 2003 was created as a response to the Commission's Updated action plan of 2002, even though it did not subscribe to the same discourses and did not attempt to act as an action plan.

The content of the strategies was less significant than their perceived symbolic value as the outcome and instrument of rational deliberation on managing and constructing an information society. They constituted products of a self-governing process. More than "being seen to do the right thing", it was a question of "being the right kind of policy-maker" in the fast-changing technological conditions. The content was less important than what was perceived to be appropriate for a responsible, strategising policy-maker to do in the information society, or at least what the Commission expected a responsible policy-maker to do in the information society. Walters and Haars (2005) argue that the particular view of government as a strategic activity confronts member states "with an *obligation* to govern strategically" (p.128, emphasis in the original). This obligation to govern strategically was a continuous accomplishment for the Greek policy makers. It involved a process of ongoing and active engagement with, and assimilation of, the European visions and discourses, the reproduction of these discourses in national policies, and the continuing attempts to infuse these documents with legitimacy in an otherwise unsympathetic local context.

⁵² Interview with Former Special Secretary for the Information Society 2002-2004, 25/05/2007, interview with Former Director of InfoSoc 2002-2004, 16/06/2006

So, whereas the purpose of the European documents was to render the information society an object that was known well enough to be governed through action lines and deadlines, the purpose of the Greek documents was symbolic. They were supposed to demonstrate both the acceptance of legitimised truths about the information society at specific points in time, as well as the compatibility with the expected pattern of behaviour.

The Commission's attempts to govern the information society established a regime where the creation of an information society strategy was the appropriate thing to do. The regime of practice effectively defined the degrees of freedom of Greek policy-makers, who, working within the context of a country with limited capacity in technology policy, saw their options to be already defined. What this further means is that the assumed position of the Commission as the legitimate governor of the governing of the information society was not challenged by the Greek policy-makers⁵³. They responded to the EU-originating regimes of truth about the information society by upholding the authoritative position of the Commission in speaking of, and initiating action on, the information society.

The above then highlights the way in which the strategies and action plans, in their materiality and visibility as official EU documents, operated as devices of self-government for the Greek policy-makers. But was there any other way which demanded a certain course of action to be taken? Was there any other mechanism which helped define the acceptable responses of national policy-makers to the changes associated with the information society?

⁵³ "[...]we have to *prove* ourselves to our Partners in the European Commission, and to the citizens as well, that we can maximise effectiveness by servicing development" (Chairman of the Monitoring Committee 2006, also General Secretary for the Civil Service, Proceedings of the 2006 Monitoring Committee, p.8, emphasis added)

6.2.4. Benchmarking: a mechanism of governing

The most visible method to govern the implementation of the European information society policies was the benchmarking exercise. According to it, the broad policy directions of the eEurope and the i2010 reports were made concrete via the specification of measurable targets to be achieved by member states in specific timeframes. The benchmarking mechanism did not stipulate the ways of implementing the strategies, but rather offered the centralised targets for their decentralised implementation.

The benchmarking exercise constituted the most visible mechanism attempting to discipline the conduct of individual states. Reflecting a growing emphasis on international comparison on ICT and innovation, the mechanisms of benchmarking and best practices operated in ways which on the one hand unified a comparable European technological space, and on the other intensified the visibility of rifts among member states.

The benchmarking exercise constituted the one of the main techniques of the Open Method of Coordination (OMC), a method which came in effect as part of the Lisbon Agenda in 2000. The OMC incorporates a number of non-binding policy instruments purported to aid learning, coordination and convergence towards common EU goals (Wincott 2003). The OMC has been said to incorporate four elements (Walters & Haahr 2005). Firstly, it is founded on a principle of central formulation of objectives and well defined, quantifiable targets. Secondly, it stipulates that the implementation of these targets needs to be performed at the lowest possible level, i.e. at the level of the state or region. Thirdly, it is based on the continuous and systematic monitoring of a range of common indicators, which are then reported to the Commission. Fourthly, such data is utilised to produce 'public' comparisons across member states, which would enable the least successful states to realise their position and learn from the best practices of the most successful states.

There are different interpretations of the OMC and benchmarking in the literature and their effects on the EU. Walters and Haars (2005) argue that the OMC can be seen as an instrument in the governmentalisation of Europe, as a technology of performance and agency, which constituted the main enabler of an ethos of advanced liberalism in the EU, i.e. an emphasis on the responsibilities of agents to take initiative and excel. Bruno, Jacquot *et al.* (2006) challenge the neutrality of such instruments pointing to their intricate political ends, and argue that they help sustain a particular “governing vision and know-how [...] towards a common finality: ‘a competitive Europe’” (p.533). What such literature has failed to address is how the benchmarking efforts are consumed, rather than produced, i.e. what they mean for those involved, how (or whether) they structure their conduct, and eventually how effective they are.

At the heart of the benchmarking exercise lie the ideas of measurement and monitoring. In the current case specifically, such concepts are not new, and have long been part of the European techniques. For example, the official European agency for statistics, Eurostat, regularly collects comparable data across member states, which are then compiled in tables and publications, to allow for the emergence of a knowable European space. What the benchmarking exercise did, however, was to infuse into the collection and monitoring of statistics a sense of direct comparison and competition, and different, more explicit modes of visibility⁵⁴. Bruno, Jacquot *et al.* (2006) make a similar point by coining the term ‘co-opetition’ in the passage below:

The ‘Key Figures’ device [...] is precisely conceived so as to induce policy-makers to undertake ‘performance benchmarking’ in such a systematic way that the OMC ensues as a result of member states’ involvement in the management of European ‘co-opetition’ (Bruno, Jacquot *et al.* 2006 p.572, emphasis added)

⁵⁴ An example of a typical Eurostat monitoring table can be found in Appendix E (page 36) juxtaposed with a typical benchmarking report.

The discourse and associated practices around benchmarking legitimated the emergence of the Greek Observatory of the Information Society, an institution whose stated purpose was to trace and measure, mostly quantitatively, the progress of the information society in the country in ways that would allow the country to provide reliable comparable data to the Commission. The Observatory's establishment was congruent with the dominant discourses about how to govern the emergence of the information society in the European space. It also formed the necessary anchor point between the discourses and the practices which substantiated them, i.e. the processes of gathering specific sets of data on particular aspects of the society and economy in specific time frames, reporting them to the Commission, and tracking their progress over time and against the performance of other member states. In this sense, the establishment and operation of the Observatory constituted a necessary institution in order to enable the benchmarking programme, which had become so prevalent at the time in the EU, to operate in Greece.

It is thus paradoxical that the Observatory, although agreed with the Commission during the negotiations for the Information Society Programme in 1999, was not officially founded until three years later, did not acquire a board of directors until mid-2003, and did not start operations until 2005. What does this signify about the way in which the European demands on quantitative measuring, reporting and comparison were 'metabolised' by the national authorities?

There was a widespread belief in Greece that the benchmarking exercise was not taken seriously by the Greek policy-makers. One of the interviewees remarked:

Benchmarking? What benchmarking? Do you see any benchmarking happening here? It is already 2006 and the Observatory has only now finally started its operation. In 2003 it had a board of directors, but no CEO, no offices, no infrastructure and no staff. Does it look like they [the state] take it seriously? [...] We don't do benchmarking here [in Greece]. There are lists with indicators, but only some are measured but not monitored consistently, others are not measured at all. [...] Benchmarking requires management by objectives, or management by projects. But the Greek state doesn't work like this. Projects are so interwoven in the daily functioning of the organisations, that benchmarking becomes almost impossible to achieve (Interview with member of the board of directors, Observatory for the Information Society, 19/06/2006)

His comments are not out of place. Indeed, benchmarking was introduced into the public agenda from the business sector as part of the New Public Management drive and is founded on managerial principles (Hood & Peters 2004, Barzilai-Nahon 2006, Mosse & Whitley 2009). Management by objectives, the recasting of the citizen as customer and the pursuit of efficiency in lieu of other societal goals are implied within the process of benchmarking, but their relevance to the goals and modes of operation of the Greek state is limited. Thus, the practice of benchmarking concerned few people outside the Observatory. Even later in mid-2007, when the Observatory demonstrated an impressive range of research activity, usefully compiled and distributed in an online database, and its legitimacy was not challenged, it was still treated as a peripheral institution. The lack of any local discourse on benchmarking highlights its relative unimportance for the Greek politicians, policy-makers, the press, and other actors involved in the Information Society Programme. Since, the practices surrounding benchmarking did not gain a solid foothold on the Greek political scene, they failed to operate as the necessary material support for the associated discourses on the European information society. As a result, these discourses remained generally a rhetorical exercise involving the few.

Although the benchmarking exercise as an entire process of monitoring, reporting and comparing did not gain a foothold in the Greek political scene, there was one aspect of it which gripped the attention of policy-makers in the EU and Greece alike. It was the ranking, or position of the country, in the league tables. The ranking constitutes the element of benchmarking which epitomises the principles of competition and visibility.

A closer look at the country profiles which are produced as part of the annual EU benchmarking reports can shed light on the working of the practice of benchmarking. An example from Greece's ICT profile included in the 2007 i2010 benchmarking report is included below (Figure 3). The two-page report starts off by stating that:

Information society in Greece is still developing slowly and on most indicators Greece is close to the bottom of the EU. There are signs of increasing gaps

compared to other EU countries (Source: i2010 Annual benchmarking report 2007, p.1)

The table on the second page of the above report includes a list of indicators, their historical evolution for the past five years, the EU-average across twenty-five member states, and finally, the country's rank. It is the last two pieces of information which became important in Greece.

The information on the EU average created a very definite dividing line which separated the under-performers ('below average') from the good or over-performers ('above average'). The effect was dual. On the one hand, Greece was constituted as a below-average performer, who failed to keep up, or to catch up, with the technological developments. On the other hand, the EU average became a target in itself, a target of what the country needed to achieve to be judged as a good (not only average) performer. For example, a recent report from the Greek Observatory for the Information Society, reproduced in the media, heralded the fact that the use of the Internet by people aged 16-24 in Greece was "very close to the EU average" and that the Greek growth rate in broadband connections was "above the EU average"⁵⁵. The comparison to the EU average, and in particular the position of the country on the 'correct' side of it, came to represent the success or failure of the country's efforts to embrace ICT. Effectively, the discussion on the Greece's position with regards to the EU average came to represent the local reinterpretation of the digital divide in the country.

The second element of the benchmarking mechanism which had an effect on the wider field was the ranking (last column in Figure 3). On the face of it, the ranking included in the country profile did not achieve anything more than what the

⁵⁵ Source: "10th Bi-annual report on broadband connectivity", Observatory for the Information Society, March 2010, reproduced in nation-wide newspapers, such as Naftemboriki ("Above the European average the growth rate of broadband penetration", 29/03/2010), To Vima ("Half the population of our country uses a PC", 12/03/2010) and others.

diagrams and figures used widely already achieve, i.e. to compare the member-states and place them in order with regards to a certain dimension. At a symbolic and discursive level, however, the inclusion of the ranking in Greece's ICT profile proved powerful, as the country found itself almost always at the bottom.

The ranking implies a competition in which different competitors' performance is judged not in terms of its merits but in direct juxtaposition to others', similar to the outcomes of a race. With the ranking nothing is left implicit. Not only does it specify how far away one is from the average, thus constituting one as 'below-average', but the exact position in the table is made visible.

In Greece's case, this ranking has meant that for many years the country featured, very prominently and visibly, in the last positions for most of the indicators. Within the Commission this was interpreted and presented as a major failure. For example, the interviewees within the DG Information Society were quick to present to me a press clipping from a Greek newspaper which stated that "Greece will be trailing behind Europe even in 2010!" (Appendix E, Figure 8). What is important in this is not the pessimism which the article exuded, but rather its use by the Commission officials to further reinforce the effects of the benchmarking mechanism of enabling visibility. The ranking thus sustained an intensified field of visibility, which did not so much enhance coordination, as enable an easily observable competition.

i2010 Annual Report: Greece

Broadband	2003	2004	2005	2006	EU25	Rank
Total DSL coverage (as % of total population)	2.0	9.0	12.0		87.4	27
DSL coverage in rural areas (as % of total population)			0.0		65.9	22
Broadband penetration (as % of population)	0.0	0.3	1.0	3.3	15.7	25
DSL penetration (as % of population)	0.0	0.3	1.0	3.3	12.8	24
Predominant download speed			LE 512kbps			
Households having broadband (as % of those having access to the internet at home)	3.6	1.4	2.9	16.6	62.1	29
% of enterprises with broadband access	13.0	20.6	44.3	57.7	74.5	23
Number of 3G subscribers per 100 inhabitants			1.0		5.0	16
Digital Television in households			10.8		30.6	15
Music: number of single downloads per 100 inhabitants			2.0			14
Internet Usage						
% population who are regular internet users	14.3	17.3	18.3	22.7	46.7	27
Take up of internet services (as % of population)						
Sending emails	12.4	15.4	13.9	16.9	43.8	28
Looking for information about goods and services	11.4	13.6	16.7	22.8	42.9	27
Internet telephoning or videoconferencing	1.1	1.1	0.7	1.8	7.1	29
Playing/downloading games and music	7.2	10.9	8.5	11.2	18.2	26
Listening to the web radio/watching web tv	3.0	4.3	3.8	5.4	11.8	26
Reading online newspapers/magazines	8.9	11.3	9.0	13.9	19.0	23
Internet banking	1.3	1.3	1.4	2.5	22.0	27
Places of access						
% at home	10.3	11.8	14.3	18.0	42.6	27
% at work	7.2	8.9	9.8	12.2	23.0	27
% at educational place	3.2	4.2	3.7	4.2	8.0	27
% at PIAP	3.3	2.7	2.6	4.3	6.8	19
eGovernment Indicators						
% basic public services for citizens fully available online	18.2	18.2		16.7	36.8	22
% basic public services for enterprises fully available online	50.0	50.0		50.0	67.8	21
% of population using e-Government services		8.0	7.1	8.6	23.8	23
of which for returning filled in forms	2.8	2.4	3.2	2.1	8.1	24
% of enterprises using e-Government services		77.2	81.3	84.5	63.7	5
of which for returning filled in forms	56.6	44.9	55.7	76.3	44.8	3
ICT in schools						
Number of computers connected per 100 pupils				5.9	9.9	22
% of schools with broadband access				13.0	67.0	27
% of teachers having used the computer in class during the last 12 months				35.6	74.3	26
e-Commerce						
E-commerce as % of total turnover of enterprises	0.9	1.6	2.1	2.8	11.7	19
% enterprises receiving internet orders	6.3	5.4	6.1	7.7	13.9	19
% enterprises purchasing on the internet		13.4	13.9	14.3	37.9	22
e-business. % enterprises:						
with integrated internal business processes	42.1	39.1	49.8	56.7	37.3	3
with integrated external business processes	12.4	9.0	19.2	15.4	13.5	7
Security: % enterprises using Secure servers	46.8	43.6	43.8	35.8	41.0	14
% using digital signatures for authentication	5.9	4.0	7.4	8.8	14.3	23
Employment and Skills						
% employees using computers connected to the Internet	28.4	21.2	25.8	25.6	36.1	22
% of persons employed with ICT user skills	11.7	12.1	12.1	12.9	18.5	24
% of persons employed with ICT specialist skills	2.2	2.4	2.2	2.0	3.1	26
Indicators on growth of ICT sector and R&D						
ICT sector share of total GDP	3.4				5.5	19
ICT sector share of total employment	1.7				4.0	18
ICT sector growth (constant prices)	5.3				3.6	3
R&D expenditure in ICT by the business sector, as % of GDP					0.3	
=== as % of total R&D expenditure					25.7	

Figure 3 - Country ICT profile for Greece, i2010 Annual benchmarking report 2007

6.3. The CSF as a technology of government in ICT innovation

The narrative presented in Chapter 5 made evident the reliance and co-existence of Greek ICT diffusion programmes with the European development and financing instrument of the Community Support Framework (CSF). As explained in section 5.2.2, the CSF constitutes a contract between a member state and the EU with a designated duration (usually six years, plus two years for the completion of all projects), and specific aims targeted at reducing regional disparities. It is further broken down into operational programmes, which can be of a regional or sectoral character (such as the Information Society Programme), and are governed by the regulations of the CSF.

The CSF has received passing attention in the European studies literature, only discussed as an instrument in the service of broader developmental goals. The Greek participants of the study, but also largely the public opinion and the press, have tended to focus on the financing side of the CSFs and the associated programmes. However, their effects on the developmental course of the country are much more varied than that. In particular, the diffusion of innovation and ICT in Greece has become synonymous with the ICT programmes within consecutive CSFs. For this reason, it is imperative to unpack the effects of the format of an ICT programme within a CSF on the nature and evolution of the Greek efforts to promote ICT innovation. This is what this section seeks to achieve, by analysing the CSF as a technology of government, supported by and supporting its own discourses and techniques and creating appropriate subjectivities in the process.

6.3.1. Technological priorities

Officially, the creation of programmes within CSFs is a regimented process with clearly delineated positions and spaces of negotiation between the Commission and member states. In particular, the creation of the programmes within CSFs (their

focus, developmental aims, priorities and budget) rests with the national authorities, and bears the mark of approval of the European ones. However, when looking closer into the case, a much more complex picture emerges. For example, the negotiation of the Information Society Programme provided the domain for a dynamic interplay of power and influence, interwoven with contemporary discourses on the nature of the information society, discussed above, and integrally linked with experiences from the previous ICT programmes. The lengthy and strenuous negotiation of the Information Society Programme resulted in a distinct shift in the focus and priorities of the Programme away from the original Greek proposals. One of the widely articulated examples was the emphasis on e-government, which emerged not as a Greek developmental priority but from a potent discourse within the Commission.

When we went to them [the Commission] with the idea to create one operational programme for the information society, they had specific expectations. They expected extroversion⁵⁶. [...] The Commission had a say on *how* the Programme should be done, and by extension on the substance of the Programme (Former Special Secretary on the Information Society 2000-2002, 08/06/2006)

In CSF1 they [the Commission] suggested infrastructures, in CSF2 they wanted computerisation and integration of back office operations, and in CSF3 they asked for extroversion. From 1994 [when CSF2 began] onwards, our policy has been moulded by the European policy, which provides the funding, and as such specifies the directions as well (Former Director of InfoSoc 2000-2002, 14/06/2006)

Respondents in the Commission were always cautious about how they presented their involvement in the negotiations, often reverting to the official procedure whenever they were asked about it. However, after a long discussion and in a moment of transgression from the official line of non-intervention, an EU officer said in exasperation:

They came to us and said that they'll do new databases for the ministries. We said, no, you can't do that, we're not paying for it. Not again! That's what you did in Kleisthenis [in CSF2]! If you want an operational programme on ICT,

⁵⁶ Extroversion (εξωστρέφεια) was the local interpretation of the concept of citizen orientation which is implied in e-government.

then it will have to be for services to the citizens (Officer, DG Employment, 31/01/2007)

Their input in member states' strategic directions is captured in a more factual way in the eEurope progress report in 2000.

Priorities of eEurope feature prominently [...] in the negotiating mandates with the Member States for the structural funds national programmes (2000-2006). In the latter, the Commission underlined those eEurope objectives which would be eligible for co-financing under structural funds (eEurope – An information society for all, Progress report 2000, COM(2000) 130, p.6)

There were, however, subtler ways in which the European priorities infiltrated the Greek Information Society Programme. For example, one of the first projects that went ahead as part of the Information Society Programme was the project to equip secondary schools with PCs and Internet connections. It was heralded as the most successful project implemented by the end of the first two years of the Programme, having both the potential for high impact and high visibility. As it happened, the eEurope Action Plan of 2000 set as one of its primary targets that all schools are provided with access to PCs and the Internet by the end of 2002. Similarly, the Greek 'Get Connected' project, which run from 2001 till 2007, and aimed to subsidise the cost of a PC and Internet connection for SMEs whilst offering basic IT training, is intimately linked with the EU's 'Go Digital' campaign, which:

"encourages SMEs to 'Go Digital' through co-ordinated networking activities for the exchange of knowledge on best practices, e-commerce readiness and benchmarking" (COM(2001)136 Helping SMEs to Go Digital)

Thus, the priorities and directions of the Information Society Programme were not straightforwardly derived from the national developmental priorities. Rather, there existed an unclear and highly permeable boundary between what was deemed to be a national priority and the priorities expressed by the Commission, accepted on the basis of constituting the developmental directions for the European Union as a whole.

The next section examines the ways in which the EU funding gave rise to particular discourses and financial management practices, and demanded the emergence of particular types of subjects.

6.3.2. The effects of funding

The existence of a sizeable stream of funding from the EU meant that investment in ICT innovations was financially feasible. There was a widespread impression, often amounting to certainty, that were it not for the European funds, ICT projects in Greece would not have been possible as they would not have been allocated funding from the national budget. The consensus seemed to be that the adoption of ICT and innovation was not enough of a national priority to achieve significant investments from the national budget⁵⁷.

After we drafted the strategy [the White Bible], we needed to find the money to implement it. Then we jumped on the opportunity of the negotiation of CSF3, we thought this is where we'll find the money (Former Special Secretary on the Information Society 2000-2002, 10/05/2007)

The existence of earmarked funding led to an abundance of larger and smaller ICT projects in a wide range of organisations and aspects of public life. It was feared that the projects were unnecessary, "a luxury", i.e. that they were motivated more by the existence of funding for ICT projects rather than a genuine and justifiable need. Indeed, the relationship between the ICT projects and the European funding which was allocated to them appeared to be co-constitutive, rather than sequential, in the sense that the existence of the European funds spurred the surfacing of demand for particular kinds of ICT projects.

⁵⁷ There are some notable exceptions to this. The information systems for taxation and insurance contributions were initially financed out of the national budget, although both systems later received funding from the Information Society Programme in order to develop their online components, i.e. websites where citizens can fill in their tax returns forms, and where businesses can submit the insurance contributions for their employees.

Funding from the CSF3 was however simultaneously restrictive. Its restrictive aspects were felt as vividly, but discussed much less. They pertained to a particular organisation of time, timing and duration that the CSF demanded. The most obvious, but less observed, aspect of it was the fact that the Information Society Programme, as part of a CSF, specified a six-year time frame, with the need to have the entire body of interventions and projects completed by the eighth year. Further regulatory requirements meant that an ICT project needed to be completed within two years from the signing of the contract, in order to retain its eligibility for the funding.

This had a direct impact on the organization of time and activities in the field. For example, during the first field visit, there was a flurry of activity by the Managing Authority, as it sought to incorporate as many ICT projects as possible before the end of 2006, which marked the administrative end of the Programme. During the second field visit, the action had moved to InfoSoc and the IT companies, which sought to implement the hastily introduced projects by the end of 2008.

Analytically, however, the most important effect of the EU funding was the fact that it gave rise to a particular type of subject, the beneficiary, which was to be the ultimate recipient and host of change. The next section demonstrates the ways in which the beneficiaries were portrayed in the prevailing discourses around the information society and the role of innovation in the economy and society. In other words, how were the ideal beneficiaries described or implied to be? What were their main characteristics and how were these derived from the implied connection between technology, innovation and development? What kind of an identity was formed, through a range of discourses and practices, and thought to be compatible with the effort of ICT diffusion?

6.3.3. Constituting the beneficiaries

The existence of funding gave rise to a particular type of subject, the beneficiary, who had simultaneously a right and an obligation to benefit from the interventions and

changes promoted by the Programme. What kind of a subject was the beneficiary supposed to be and how did they appear to be in practice?

The beneficiaries were supposed to be not only the hosts of change, but also the agents of change. With the interventions of the Programme being targeted increasingly at the supply of ICT services and content in an attempt to spur demand, co-opting the organisations that were to host and offer these services was critical. Thus, a 'successful' beneficiary was one who was co-opted into the goals and intimate workings of the Programme. They were assessed on exhibiting the set of appropriate behaviours which allowed the Information Society Programme to be nominally and substantively successful (i.e. successful both in terms of the absorption of funds and in terms of the broad diffusion of ICT). Advertising campaigns, public events, workshops and fora were organized urging potential beneficiaries to submit proposals for IS projects, and then to manage them and complete them in the appropriate ways. What was effectively sought was their compliance with the goals and practices of the Programme. A good beneficiary was one that submitted proposals for ICT projects, engaged in rational planning and management of the projects, complied with the regulatory framework and brought the ICT projects to completion. A good beneficiary was one who acted in the designated and legitimate ways, one who did not challenge the specific technology which was the CSF and the Information Society Programme within it.

Simultaneously, a 'successful' beneficiary was meant to be entrepreneurial and to be acting out of their own innovative drive; anything else was deemed to result from either backwardness, self-interest, calculation, or greed. The beneficiaries were supposed to not only passively comply with the mechanisms and practices of the Information Society Programme, but to also actively engage and promote its spirit.

The emphasis on strategy as the legitimate mode of conduct for agents who aimed to participate in the ICT diffusion emerges here again. At a discursive level, companies are urged to make a "coherent and comprehensive definition of their business model" and not to "allow technology to guide their strategic choices", but rather

ensure that “the [e-business] project is defined by the business plan⁵⁸, before they embark on an e-business project. In the publication “10 steps for the modern businessman”⁵⁹, beneficiaries are also advised to conduct an economic and technical feasibility study to ensure that their business can benefit from the adoption of e-business and e-commerce solutions.

A similar effort was made to bring about a particular strategising ethos in the operation of public sector agencies as well. Public sector agencies of varying sizes and capacities, from large ministries and prefectures to smaller administrative agencies and municipalities, were asked to produce “business plans” in order to be able to put forward proposals for ICT projects, i.e. in order to be beneficiaries. The business plans were meant to describe the current situation and needs of the beneficiary and specify their vision for development and the role of ICT in it. What was in effect required was a shift from the care for the day-to-day operation to the long term vision for development, broken down into *manageable* steps⁶⁰. Not only was a long-term view required, but equally valued was the ability to break down the projected reality into chunks that could appear amenable to management by concrete targets and quantifiable results.

⁵⁸ “The A-Z of businessmen for IT and the Internet” (2003), p.29, published by the e-business forum, as part of the Greek Network of Research and Technology, financed by the Information Society Programme, and circulated through the trade channels.

⁵⁹ “10 steps for the modern businessman”, (2005), published by the e-business forum, as part of the Greek Network of Research and Technology, financed by the Information Society Programme, and circulated through the trade channels.

⁶⁰ “The ministry of Justice would come to us with a proposal for a €600,000 ICT project, and an IT department with two people. We would say, you can’t do that, you are not mature enough to manage such a project” Interview with Special Secretary for the Information Society during 2000-02, 11/06/2006

A good beneficiary was also supposed to be innovative, forward-looking and dynamic, albeit in directions that were already inscribed in the Programme. The appropriate innovative technological directions were the ones which pertained to the utilisation of the Internet, from e-business, to e-government and e-health. The good beneficiaries, the ones described as “mature” and “advanced users”, were the ones that embraced or shared the aspirations of the Programme for innovative adoption of ICT. A good beneficiary then was not only a host for the ICT projects, but an active agent of change.

In effect, however, the beneficiaries were often denigrated by policy makers as being solely driven by the existence of funding, for example by putting forward proposals for IS projects for which they had little need. They were constructed as backward, calculative, unruly in their compliance with the regulations, and occasionally corrupt. They were thought to be the weak link of the system. Having created “a comprehensive institutional artillery for the management of the Information Society Programme⁶¹”, the beneficiaries were thought to fail their obligation to make the most of it.

We are making policies that belong to different ministries. It shouldn't be happening like this. They should be coming to us and tell us that they want to do this and that, and we'll give them the money. This is how it should be happening. We shouldn't be making their decisions (Interview with adviser to the Special Secretary for the Information Society 2004 till now, 02/05/2007)

They [SMEs] don't understand that when you get money from the Programme you actually have to produce something, make a change. They think it's like agricultural subsidies, they can just take the money and go (Interview with Coordinator for project of ICT diffusion in SMEs, 12/04/2007)

Generally speaking, the acceptance criteria [criteria for the acceptance of proposals for IS projects] are now quite lax, even though the regulatory framework which came from the EU was very stringent, when it came to the financial management. Its implementation however was lax. [...] We had to lower the bar because no beneficiary organization was mature enough to manage a project, but the funds needed to be funnelled through nonetheless.

⁶¹ Interview with Former Special Secretary for the Information Society 2000-2002, 08/06/2006

We had three billion euros, the largest budget in the world for investment in ICT. What were we going to do with it if we didn't distribute it? (Interview with Officer in the Managing Authority, 19/06/2006)

Their lack of innovative and managerial/strategising capacity and their ambivalence in fully embracing an ethos of self-development constituted proof for the Greek policy-makers that their efforts to govern the beneficiaries, their conduct and aspirations, had failed. The beneficiaries were eventually co-opted into the Programme: enough ICT projects were included in the Programme for it to take full advantage of the available funding, and increased monitoring and scrutiny ensured some level of conformance with the regulations. In this sense, the compliant beneficiaries acted in ways which enabled the Programme to be successful (or at least more successful than the previous ICT programmes). However, the majority of them were thought to be simultaneously subversive, not only through their relative neglect of the rules, but also, more profoundly through their reluctance to actively reflect the ethos of the modern information age.

6.3.4. Practices of monitoring and reporting

Most agents in the field (beneficiaries, IT and consulting companies, InfoSoc, Special Secretariat, Managing Authority, and the Commission) were involved in processes of monitoring and reporting in regular and frequent intervals, which rendered them governable, visible and in some respects answerable. The monitoring and reporting practices were enabled and facilitated by a powerful technical tool: a web-enabled information system which was used for the input of progress data from the various localities (the organizations responsible for the implementation of the information systems, i.e. the beneficiaries, the IT and consulting companies and InfoSoc Ltd.). The system made the data directly available to the highest levels of policy making (the Managing Authority and the Special Secretariat in Athens, and crucially the Commission in Brussels), without allowing the manipulation (aggregation, representation) of data as they were made available to higher levels of policy-makers. Moreover, the information system could record and monitor financial information, such as budgets, costs and expenditures, but was not designed to keep track of

information regarding actual deliverables or products. Ad hoc database applications had to be improvised to allow the Managing Authority staff to track the progress of the ICT projects themselves.

With the reporting practices focusing on the financial data of the projects (budgets and expenses), a particular type of knowledge, an economic knowledge, about the ICT projects became the legitimate way to manage them. The reporting practices also helped sustain a discourse on the absorption of funds, which, in the backdrop of past experiences, became the dominant and largely unchallenged goal of the Information Society Programme.

The absorption rate reflects the rate by which budgeted funds are committed to projects. At a second level, the absorption rate reflects the rate by which committed funds are funnelled into payments for the completion of the projects. Reporting on the absorption figures and rates for the Information Society Programme overall, as well as for individual projects became a crucial part of monitoring and evaluation, highlighted in all interim evaluation reports from the period 2000-2006. Surprisingly, there is little else in the way of financial forecasting or monitoring, for example return on investment, expected value added etc. The absorption figures and rates on the other hand figure prominently.

The origins of this preoccupation could perhaps be traced to the reform of the structural funds in 1988, with the rise in prominence of tighter management of the funds on the one hand, and a concern with achieving measurable results on the other. During the decade of 1990, the financial administration of the operational programmes turned into an important issue. At the same time as the information society was becoming the organising principle of government action on ICT, the question of the financial management of European funds in EU-originating ICT programmes took hold. The absorption of funds started to emerge as a parallel discourse which was much closer to the implementation of programmes and actions, than the articulation of strategies.

It is debatable whether at some point a purposeful decision was taken to start measuring absorption figures exclusively in the expense of other measures. The availability of data could well have been the driver behind the selection of absorption data as the basis of financial management, rather the other way around. More than establishing intentionality, however, it is the pervasive effects of this choice that are crucial for the understanding of what the information society means for the Greek policy-makers.

From the speeches of public figures to informal chats, discussions revolved around the absorption of funds. It was to be measured and reproduced in all monitoring exercises and represented in the form of graphs, numbers or percentages, in all evaluation reports. Charts and graphs showing the allocated budget in juxtaposition to the available budget were published every month on the Information Society website. Public outcry often ensued, when the Greek media discovered that 'Greece is losing money', not that Greece is failing to make useful interventions with ICT⁶². These practices of monitoring, reporting and reproduction sustained an all-consuming discourse revolving around the absorption of funds.

There is no reason for me to explain right now [...] exactly why it is imperative that the funds are absorbed up to the last euro. What I would say is that if we were to lose the funds, we would risk to find ourselves behind our times, and that, when inside the EU the countries are competing for better access to knowledge, better jobs, and higher productivity, we cannot allow our Programme [the Information Society Programme], and by extension modern technologies, to be treated as a luxury (Special Secretary of the Information Society, Proceedings of the 2006 Monitoring Committee, p.11)

The challenge is to surpass [...] the objective difficulties, to finish despite the material obstacles; to move faster, to establish contracts worth one billion euros, to absorb 519 million euros this year (Special Secretary of the Information Society, Proceedings of the 2006 Monitoring Committee, p.13)

When we first came in office [in 2004], everybody was against us, the media were bashing us... Everybody was saying how damaging the low absorption rates were, and how we were going to lose money. We had to work really hard

⁶² For example, "Another Titanic for the ICT projects in the public sector: Important ICT projects with zero absorption", *Isotimia*, 20/04/2008

for a year to make sure we wouldn't lose money. Now the absorption is up and we can focus on the quality of the projects (Adviser to the Special Secretary for the Information Society, 23/03/2007)

The absorption rates measured a process: the process of how fast and how much of the budgeted funding is funnelled in projects which are being implemented. As an indicator of process it reflects, more or less accurately, how efficient the process of funding ICT innovation has been. Its frequent reiteration in the evaluation of the ICT projects gave it a prominent role and signified that the absorption of funds was one of the most important criteria by which to monitor the progress of the planned interventions. More than that, however, absorption figures were also understood and utilised as a criterion of effectiveness, i.e. as an indicator of whether the Information Society Programme is successful in its multiple targets. The institutionalised practice whereby what was measured becomes the proxy of success or failure, has resulted in a major displacement of targets. For many of the participants in the policy domain, their purposeful action was targeted towards ensuring greater and faster absorption of funds, with other targets conveniently out of the picture. The monitoring of the ICT projects on the basis of different rationalities, such as on the basis of their technical innovativeness, their social benefits or cultural contributions was sidelined.

A particular kind of subjectivity emerged, one that required the policy-makers to care about and prioritise the financial aspects of the innovations they were pursuing. There was a tension that could not be reconciled between their expectations of the changes that they were trying to effect and the everyday practices that involved the monitoring and evaluation of financial data. Administrators in both sides (Greece and the Commission) lamented having become "accountants".

6.4. An effective regime of government

The sections above drew on elements of the narrative in order to analytically represent the case in a Foucauldian light. In this respect, I argued that during the later period 2000-2008, two autonomous technologies of government were at play. The first one was constituted by the creation of a powerful regime of discourses about the

information society, and the role of the state and the Commission in governing it, sustained and enhanced by newly emergent practices of benchmarking. The second technology of government was constituted by the practices involved in the funding, monitoring and reporting of the Information Society Programme as part of CSF3, which gave rise to an influential discourse on the absorption of funds, as well as the emergence of a particular subjectivity for the beneficiaries and the policy-makers.

Reinterpreting the Foucauldian principle of double conditioning, I contend that not only were the two technologies complementary, but also that the one acted as the anchoring of the other. The information society as a technology of government provided a high-level legitimising discourse, an authoritative vision, and a comprehensive direction, which were otherwise lacking in Greece. They were enforced through practices of European comparison and competition, which rendered non-action an embarrassing option. As a political project, the EU-envisaged information society would not be able to have effects unless it found itself supported in material practices in a multiplicity of localities. The Information Society Programme as part of CSF3, the institutions and nexus of relations which emerged to service it, the funding and monitoring practices which were fostered, were the ways in which the distant discourses on the information society touched on the multiplicity of points where change could be effected. I would argue that previous ICT programmes in Greece lacked a “strategic envelope” (Foucault 1978, p.99) to encompass and anchor them, which meant that specific efforts to promote the adoption of ICT all too often dissipated in the everyday workings of the organisations involved. Moreover, the European project of the information society would have been too distant to have comprehensive effects were it not for the multiplicity of actions, projects, tactics and continuous relations developed within the Information Society Programme.

I suggest that terms such as policy formulation and implementation, with the sequential and smooth relationship that they imply, are poor descriptors of the case. What this case demonstrates is that policy formulation can occur independently of a project of implementation, for different reasons and in different locales (or levels).

The implementation then is not a straightforward or negotiated process of putting policy into practice, but a process of anchoring a collection of specific local tactics, relations and practices onto a strategic envelope, which may itself be more than rhetoric and text, and entail its own intricate practices. This theme is taken up again in the next chapter.

6.5. Practices of contestation

The previous sections explored the creation of a regime of practices and discourses which rendered the domain of ICT policy in Greece governable through the strategies, programmes and mechanisms originating in the European Commission. The regime demanded, and resulted in, the emergence of particular types of subjectivities for the Greek policy makers as well as the beneficiaries of the programme. The regime of practices and discourses was however constantly challenged. Indeed, however effective a regime of government may be, it can never be complete or all-encompassing. Rifts, conflicts and opposing discourses are co-constitutive of the domain. The process of governmentalisation is always incomplete and in need of continuous reification, as alternative technologies of government, discourses and interpretations are taken up to varying degrees. How did the rifts and conflicts manifest themselves in this case? This section discusses the practices of contestation which emerged in the Greek domain and the subjugated rationalities which they entailed.

As discussed in the Theory chapter, the word ‘resistance’ is frequently used to demarcate the types of behaviours that deviate from the prescribed ones. In the analysis below, I refer to practices of contestation, instead of acts of resistance, in the hope of highlighting their nature not as undesirable reaction or by-product, but alternatively as a mode of conduct with its own mechanisms, tactics and discourses, which is effectively co-constitutive of the domain. Indeed, the hope is to follow Foucault’s advice “to be respectful when a singularity revolts, intransigent as soon as power violates the universal” (Foucault 2002, p.453).

How can practices of contestation be traced and studied? I suggest that they can be studied in their manifestation as recurring sets of behaviours which are disruptive, unanticipated, or subversive of the dominant discourses and prescribed methods, thus challenging the dominant technologies of government. The practices of contestation which are explored in this section subverted the working practices surrounding the CSF and the Information Society Programme itself, and challenged the legitimacy of the discourses on the information society. The argument then is that within a given regime of technologies of government terrains of contestation open up, which shape the nature, effects, and process of governmentalisation of ICT policy in Greece.

The Greek government's attempts to steer and direct ICT diffusion and innovation produced mixed results. Monitoring and evaluation reports documented numerous delays in the procurement and development of a large number of information systems, which occasionally meant that projects were abandoned, with the funds being transferred to other activities. They also reported limited utilisation of information systems by the host organisations, thus raising questions about the effectiveness of the ICT programmes (Monitoring Committee 2001). Interviewees in the management of the Information Society Programme and the ICT industry also talked about the difficulty of the beneficiaries (central and local government authorities, and the wider public sector) to develop information systems aligned with the scope of the Information Society Programme. Another frequent complaint was that projects often departed from the initially agreed scope and contract, thus creating issues of eligibility of funding from the Programme.

The participants' intimate understanding of ways and practices around the Information Society Programme created a space for them to manipulate elements of their environment which were meant to be accepted as given. Their intimate knowledge made them particularly mobile and desirable as well. For example, employees of the Managing Authority, with their in-depth understanding of the processes of funding and evaluation, were particularly desirable in the ICT companies, which valued their expertise and connections in the administration.

Similarly, employees from the ICT industry often migrated to the administrative side of the Information Society Programme looking for better working conditions, whilst simultaneously keeping their involvement in the field. It was thought that their connections with the ICT industry could help them accelerate the work procedures through informal co-ordination practices.

Many of these problems were attributed to two inter-related factors pertaining to the perceived backwardness of the beneficiaries and to the proliferation of covert relationships between the beneficiaries and the ICT companies. The ambivalence of the beneficiaries (public sector and small businesses) to wholeheartedly embrace innovation by taking responsibility for its implementation in their locales has already been discussed (section 6.3.3). The specific practices through which this ambivalence was manifested cannot be explored without further discussing the nexus of relations with ICT industry. The main characteristic was a prevalent discourse on corruption. Allegations of favouritism through bribery or preferentially worded invitations to bid manipulating the selection process were rife. There was a common belief that covert relations between the beneficiaries and the ICT companies resulted in collusive bidding and rigged bidding contests. Suspensions of collusive practices during the bidding process frequently led to protracted legal proceedings. Bidding wars between rival ICT companies resulted in tit-for-tat injunctions and lawsuits, bringing many projects to stalemate.

Such practices were habitually rationalised as a necessary response to the resource-intensive demands and excessive red tape of the Greek ICT programmes. Interviewees in ICT and consulting companies often commented on the sheer amount of work needed in order to participate into a bidding contest for any but the simplest ICT projects. Such work involved not only the detailed designs and requirements specifications for the systems, but also a comprehensive response to the compliance and maturity requirements. One of the respondents complained that, when the company submitted a bid for a large information system, the

documentation was so extensive, that a small van was needed to transport the bulk of the paperwork to the offices of the Managing Authority⁶³.

Do you think companies would be doing all this work for nothing? We know to which bidding contests to submit; we would not be submitting a bid if we did not know we have good chances of getting it [the contract] (Interview with Project Manager in ICT consulting company, 02/06/2007)

The Managing Authority has dramatically slashed the budget for all the invitations, probably to allow more beneficiaries to take part, or because they thought that the companies were overcharging... which did happen at the beginning... Our profit margins are really squeezed now. So when we submit a bid, we stop at nothing to ensure that we win (Interview with Project Manager in ICT company, 20/04/2007)

This rationale had more to do with survival than with innovation. Indeed, for the ICT companies to be able to make a profit, reuse of existing solutions and resale of packaged software was deemed to be a financially much more sensible option. Fully customised solutions were rare, not only on account of the high development costs, but also because the majority of the user organisations were not advanced enough users of ICT to demand highly innovative solutions.

The contradiction between the vision of an innovation-driven information society and the implementation of reused, to a large extent standardised, solutions manifested itself in different ways. An example occurred in a meeting of an informal e-health working group held in a conference room in Athens⁶⁴. The meeting was attended by members of the management of the Information Society Programme, ICT professionals involved in projects of e-health, as well as administrators in hospitals and health authorities and civil servants in the Ministry of Health. One ICT consultant spoke of his team's efforts to implement a large patient care system in a

⁶³ Interview with Head of procurement to the public sector in ICT company, 30/03/2007

⁶⁴ 2nd Pan-Hellenic Conference on 'Initial results and best practices on information systems for the health and social security sectors'. Organised by HL7 Hellas, a not-for-profit organisation lobbying for the introduction of ICT in health and social security sectors, in Athens, 14-16 May 2007

hospital, similar to those implemented in other hospitals across the country. The project specifications had been approved by the Managing Authority and included in the contract, so as to ensure that the information system was within the action lines and eligibility criteria of the Programme. Summarising his experiences of the difficulties and delays his team faced in implementing the project, the ICT consultant expressed his dilemma as follows: should he implement the project according to the specifications, “knowing” that the bulk of the functionality “will not be used because it is neither desired nor needed”, or should he hold back on delivering the full specified functionality to better suit the needs and desires of the organisation? His dilemma was summed up in the juxtaposition “information society vs. reality”, which was displayed prominently in his on-screen presentation. In the subsequent discussion, the audience appeared divided: a number of health administrators and health professionals in a similar vein protested that their health organizations did not really need the kinds of systems that they were in the process of implementing. The counter-argument was voiced by the managers of the Information Society Programme. They insisted that the systems needed to be implemented in accordance with the specifications not only due to the contractual obligations, but also to ensure that a specific vision of change through technology was kept intact. They argued that “something needs to change” in the host organisations (beneficiaries), “even if they have to be made to change”.

The incident highlights the actors’ ambivalence and problematizations on the very reasons for doing what they had already been doing for a long time. The vision expressed by, and the assumption inscribed in, the “information society” was judged as incompatible with the needs and desires of the people who were to finally benefit from it. The juxtaposition of the “information society”, as expressed in this context, and the “reality” highlights not only the distance between the two, but perhaps more importantly their perceived incompatibility in the eyes of the people who were called to make them work during implementation. The “information society” was not only understood as imposed from above and thus not attuned to the local needs, but was also seen as excessively technologically-deterministic and inflexible. The combination

of a perceived top-down vision with the existence of a host of geographically dispersed implementation sites characterised by a non-technologically-oriented tradition led local implementers to believe that their degrees of freedom in determining what the information society meant for particular contexts were significantly reduced. Their practices of contesting it created an explosive domain, characterised by heterogeneity and deep rifts.

The above example highlighted the rift between the assumed area of application of the information society and the localised practices where it was denied validity. Further practices reinforce this point. For example, one of the basic rules intended to assess the capabilities of the beneficiary to manage and productively utilise an information system was that the beneficiary was able to produce the initial proposal without expert assistance. This rule was very frequently flouted. Municipalities and SMEs were frequently approached by ICT and consulting companies, urging them to submit proposals which the companies themselves drafted covertly. The companies would then be in a preferential position to win the bid. Interviewees in the industry argued that the beneficiaries did not know enough about ICT and information systems to put forward their own proposals without expert guidance. So, unless a company helped them, beneficiaries would by default miss out on the possibility of an ICT project.

Such practices were rendered legitimate not through their association with an overarching belief in the role of ICT for development or innovation, but through their embeddedness in an alternative *modus operandi* and web of beliefs. They remained in the fringes of legitimate discourse, upholding instead the importance of local contextual differences. Such practices and the associated discourses were often discredited at the policy level as ignorance, conservatism, resistance to change, or corruption. They thus contributed to the maintenance of a fractured, contested domain, whereby the formulation of policy on the information society and its implementation were made possible through different, and to some extent clashing, viewpoints and tacit assumptions about the role of ICT in bridging national differences with the EU.

The status and ability of the Commission to specify the appropriate directions for action on ICT was challenged, not on grounds of technical expertise, but rather on the grounds of limited validity of their globalised visions and overarching assumptions. Participants asserted that their knowledge and ways of working was more attune to the local circumstances, as they 'knew' better the needs of specific organizational and cultural contexts. On the basis of this knowledge, they felt it was legitimate to reshape the scope of the Programme according to their assumptions of the needs of specific, local implementation sites.

Following from this, the regime of truth of the information society as a technological imperative did not manage to gain a foothold in a significant part of the population which it was supposed to affect. Despite the significance with which the Information Society Programme was invested at a policy level, the discourses on the information society as a vehicle for development had limited success in capturing the aspirations of a wide array of beneficiaries. The continuing difficulties to match the nature of the information society with the nature of work and aspirations in a range of local implementation contexts can be said to have manifested themselves in the various practices of contestation and the continuous challenging of the vision of the Information Society Programme.

Overall, it appears that the manipulation of the practices surrounding the Information Society Programme and its processes of selection, funding and monitoring, was inherently bound with an attempt to question the validity of the information society vision for the various locales which were called to act upon it. Thus, the practices of contestation and the related legitimising discourses against the mechanisms of the Information Society Programme were simultaneously fuelled by, and fuelling, the challenging of the European information society visions and discourses and the Commission's moral authority to lead it.

6.6. Conclusions

This chapter provided a theoretical account of the ways in which the Greek state has sought to foster development through innovation in ICT under the parallel mobilisation of the European Commission in the same domain. The case study had already revealed that since the mid-80s the main driver behind ICT innovation in the country had been a series of consecutive government ICT programmes, funded to a great extent by the Commission. However, long-standing efforts to foster and diffuse ICT innovation had been curtailed by multi-faceted problems, and the country has chronically experienced limited productive ICT utilisation and poor indigenous innovation.

The chapter set out to achieve two targets. Firstly, it set out to provide a theoretically informed account of the nature, origin and ways of operation of the Greek state's efforts to promote ICT for national development. It achieved this by bringing into the explanation the European perspective, which has tended to fade into the background in the existing literature. I argued that it is only possible to fully understand the Greek efforts to make policy in ICT innovation through a careful consideration of the concurrent European actions. Secondly, the analysis sought to shed light on the mechanics of how these policies were put into practice, and in this way to illuminate the methods, practices and instruments of implementation. In pursuing this dual goal, the analysis explored on the one hand the types of visions of technology, through the discourses manifested in documents of policy produced in the EU and reproduced in strategies and actions in Greece, and on the other hand the range of practices that were implicated in the implementation of the ICT programmes.

The chapter was structured around the notion of a technology of government, which is understood to be the assemblage of practices and associated discourses which make each other coherent. More than emphasising the purely technical artifacts, the notion of a technology of government draws attention to the discursive and non-discursive practices that create specific potentialities. It also provides a frame of

reference through which to study the legitimising forms of knowledge, supported by mechanisms, instruments, technical systems etc.

This analysis explored the conditions of possibility which allowed particular courses of action (government-led programmes of ICT innovation, the emergence of a discourse on information society etc.) to be made viable in the context of Greece. The analysis showed that state action for ICT innovation in Greece emerged out of the continuous attempts to create subjects with specific kinds of behaviours (towards strategic planning and innovative attitude) and specific kinds of aspirations of a technological future. These attempts were carried in powerful discourses, and inscribed in policy documents, benchmarking reports, monitoring and funding mechanisms. Although the domain was rife with rifts and fissures created by practices of contestation, the ability to successfully pursue a strategy of European governmentalisation of ICT rested greatly on the ability of the Greek authorities to embrace, interpret, and carry forward the ethos of innovative living and technologically-driven social change.

So what was learned for the case of Greek ICT policy? The first remark has to do with the highly dynamic nature of the domain and the resulting relations. The case study has revealed the precarious nature and uncertain achievements of the Greek state's efforts to direct and manage ICT innovation. This was not only a problem of legitimacy, although legitimacy had to be continuously accomplished. It was rather an issue of the continuous contestation of the practices, discourses and mechanisms which attempted to impress a technological vision and the ways to achieve it.

Secondly, what becomes evident is the need for active work, conceptual and practical, that is necessary in order to interpret and enact the necessary decisions, at a policy level, which would be congruent with a vision for modernisation through technological change. Continuous thinking and doing from the part of the Greek policy makers was needed, in the form of the constant production of strategies, incessant rationalisation of the demands and pressures on their positions, and active participation in processes of rational management and monitoring. Further

discussion on the nature and implications of this constant work – which I refer to as askesis, after Foucault (2001) – is taken up in the next chapter.

Postscript

As the final sections of this thesis are written, Greece continues to discover the extent of the crisis with which it is faced. The crisis appeared as one of primarily fiscal origin, in line with what has happened in other countries. Increasingly, the structural causes of the crisis seem to surface. They relate to the country's limited productive base, lack of competitiveness, crippling statism and absence of development model. Ideas and visions of development have given way to 'survival' strategies, aimed at bringing about significant and visible benefits fast. As the political elites of the country seek solutions to the short term fiscal problems, the administrative state mechanism is called to make, and operate within, significant budget cuts. It is not only the state mechanism that has faced novel challenges; widespread feelings of uncertainty about the future have led to introversion within the media and the population. In a climate of conflictual and polarising politics arising from the bailout plan, Europe is being challenged in its capacity to act as a model of development for Greece to emulate. The information society as a technological vision of the future seems to have also fallen out of favour, only now appearing to hesitantly re-emerge as part of the country's recovery plan. For now, the technological vision revolves around the potential of ICT to enable the identification of tax evaders or monitor the price of goods.

In light of these developments, what can we make of the preceding analysis? One point which has to be raised relates to the fragility of the regime of government which appeared to be effective for a period of time. The regime, as it was argued, was constituted as the information society and the Community Support Framework as distinct technologies of government operated in confluence to make ICT policy and the process of centralised government-led diffusion of ICT a lot more effective. The analysis showed that, even when the regime was producing material effects, it was not devoid of practices of active contestation which aimed to unsettle it. It is however

when the crisis took hold and marked the point of crucial discontinuity, that the non-deterministic, temporally-bound character of the regime and the technologies which constitute it becomes fully evident. Thus, the recent events do not negate this analysis; rather they make us aware of the limits of all context-sensitive analyses in front of random and unforeseen events and temporal discontinuities.

From a Foucauldian perspective, this point of discontinuity holds great promise for a fruitful analysis in the future. Such an analysis could investigate in what ways and to what extent the fiscal crisis shifted the discourses around ICT diffusion and the information society and transformed the technologies of government in operation. It could also further examine the inescapable shifts in how ICT is talked about, portrayed and envisaged within conditions of austerity. In the past the state was the main driver behind concerted efforts, however problematic, to steer the diffusion of innovation. Given the limited capacity of the state to act as a driver for investments it would be interesting to see whether a neo-liberal rationality will emerge as the dominant way forward.

7.CHAPTER SEVEN – DISCUSSION

This thesis is about the steering and governing of ICT-enabled change at the national and supranational level. Its particular focus lies in the exploration of discourses and material practices which structure government activity and channel it towards particular directions of desirable socio-economic change through ICT. Our grasp of the conditions in which such activity is sustained is severely limited, despite the wealth of theoretical accounts of deep socio-economic changes implicated with ICT in theories of the information society, and the abundance of real-life examples of policy activity at national and supranational levels to bring about visions of the information society.

The two previous chapters traced the meeting point of European and Greek ICT policy activity. They analysed the discourses and practices which sustained particular visions of the European information society and the innovative, strategising, and complying subjects, as well as mechanisms of visibility through comparison and monitoring. In this chapter, I reflect on the broader debates that are associated with the research question. The central research question was:

How does the government steering of ICT-enabled socio-economic change happen?

This question is further specified in the following sub-questions:

To what extent is the government steering of ICT-enabled socio-economic change a technical/rational matter of policy implementation?

Given that the information society has emerged as a trend of global scale, how do the mechanisms and technologies of government at the national and international level interact?

What are the features of the construction of the information society as policy-led socio-economic change?

This chapter addresses the three sub-questions above in turn. Firstly, I question whether policy can be satisfactorily analysed as a rational/technical activity, in light of the lessons learned from the European and Greek case of policy making for the information society, and argue for a perspective which highlights the way in which policy choices and acceptable responses by policy makers are conditioned within broader policy networks. To address the second question, I revisit issues of governmentality, in particular with regards to international organisations, as I seek an illuminating account of how government in modern, multi-layered systems of governance happens. Finally, I round up this chapter by arguing that, in a different direction to the majority of sociological accounts, there is a palpable need to study the information society as a political and policy project. In this vein, I put forward a number of conjectures with regards to the nature of the information society as a policy-led process of socio-economic change.

7.1. On making (ICT) policy

In the Literature Review I reviewed theories and perspectives of policy making. The review aimed at identifying competing theories of policy activity and highlighting the assumptions on which they rested. In summary, I found that the most prevalent way of understanding and representing policy activity was a rational/technical model of policy making. It understood and sought to prescribe policy activity as a sequence of relatively distinct and self-contained stages, from the identification of a problem and the selection of an appropriate course of action, to its implementation and evaluation. Such a view rests on a perception of a straightforward means-end rationale, one in which policy is a technocratic activity applied to find a solution (an optimum solution) to a given and objectively defined problem. Moreover, such a model of policy making posits policy in direct opposition to politics; indeed, policy is understood as what is left when politics is removed from the domain of action.

I also argued that it is this model of policy activity which implicitly underpins most of the substantive policy research, including research into ICT policy. It is indicated

by the use of the terms 'policy' and 'implementation', under the assumption that one is the sequence and consequence of the other. It is also embedded in the implicit black-boxing of the two processes as distinct and uncontroversial, amenable to be studied in technical and managerial terms. Such a perspective allows researchers to sideline questions of process, and instead focus on the content or impact of the substantive policy domains, without, however, recognising that questions of process are inherently implicated and in varying ways reflected in the content of policy.

The literature review commented on alternative models of policy activity, which challenged different aspects of the technical/rational perspective. The view of distinct stages of policy formulation and implementation was challenged in favour of a much more incremental process of 'muddling through' past commitments, institutional obstacles and current opportunities to achieve small-scale changes, rather than large-scale reforms (Lindblom 1979). Against the idea of an objective identification of the problem some policy theorists highlight the ad hoc, opportune, temporal, and relatively unstable coupling achieved out of quasi-autonomous streams of problems, policies and political arrangements (Kingdon 1984, Zahariadis 2003). Illuminating the varied role of experts, epistemic communities or coalition groups results in a complex, unpredictable, and far less streamlined policy process (Atkinson & Coleman 1992, Sabatier & Jenkins-Smith 1993, Jenkins-Smith & Sabatier 1994). Finally, a critical turn to policy analysis has called for probing the way in which problems are framed discursively, investigating interests and values in the whole policy process, as well as giving a voice to the disadvantaged or to alternative views.

My effort to understand the nature of policy activity started early on during the field study. Initially, I sought to make sense of the domain in terms of the conventional ideas of policy formulation and implementation. Soon, my understanding of the case raised doubts. Did policy formulation guide action (implementation)? Or, did the implementation become its own script of policy, for example with the ICT programmes being an institutionalisation of policy-in-practice (Colebatch & Degeling 2007)? Through which processes were the ICT policies and strategies transformed into programmes of action, if at all? Was this a case of policy being formulated at the

very top (the European level) and being transferred, translated and implemented at the national context (Dolowitz & March 2000, Radaelli 2000, Stone 2004)?

The problem I saw was not that the policies and strategies were intimately and inexorably tied to the programmes of action, or that the two stages occurred in an inverse sequence. Rather, the problem was that many of the assumptions behind the two analytical terms did not seem to stand up to detailed scrutiny and analysis. Particularly when considering a longer time frame, a complex picture emerged which did not correspond well to the classic sequence of policy formulation and implementation. The European and Greek strategies and action plans emerged often, and seemed disjoint from the implementation of the ICT programmes. The programmes of action, which, according to practitioners in the field and some scholars (Caloghirou & Constantelou 2006, Boucas 2008), constituted the implementation stage, were their own image of policy in themselves, followed their own temporal logic, and although influenced by the strategies, their content could not be conceived as a straightforward implementation of a policy.

I thus formed the view that the technical/rational element in policy activity operates as a powerful myth. The term “myth” is employed to point to a living, meaningful story, one which has a narrative, conjures up a desirable end, and is shared among like-minded participants, enabling them to retain a sense of order and purpose in their everyday lives⁶⁵. The myth of policy as a technical/rational activity makes available a specific vocabulary, in the form of useful names and categories for the activities which policy makers perform (e.g. alternatives’ identification, selection of optimum course of action, consultation/deliberation, implementation, evaluation etc). In its operation as a myth, the technical/rational dimension of policy making also conjures up a believable and acceptable narrative, i.e. a way to logically and

⁶⁵ Myths do not offer solutions, but rather handy conceptions to deal with reality. “We cannot solve life’s fundamental divisions, but myths tell us that we can talk about them in ways that are manageable” (Lévi-Strauss 1963, Mosco 2004 p.28, citing).

temporally link the various activities in a meaningful whole. This further enables the re-presentation of the messy process of policy into more orderly post-hoc rationalisations. Moreover, it allows policy makers to feel part of a collective mentality, one which upholds the order of technical rationality over the disorder of political life.

The operation of the technical/rational dimension of policy activity as a myth was evident in various instances. On the one hand, the unproblematic appropriation of the terms of policy activity and the narrative of a clear-cut and uncontroversial separation between the formulation and the implementation of policy constituted one of the established and taken-for-granted truths. The policy domain was dominated by the terms of the policy cycle model. The view that a successful policy formation was followed by a problematic policy implementation invited remarkable consensus, even when the participants' views diverged on the causes of the problems or the solutions. In a telling example, policy-makers in the Commission remained sceptical of the ability of the Greek administration to bring the Information Society Programme to a successful completion. Their scepticism was expressed as follows: "The Greeks are good in making policies and strategies; it's when it comes to implementing them that the problems arise"⁶⁶.

The 'failure of implementation' came to represent the gap between the ideal and the reality. It reflects the distinction between the 'sacred' account of policy as an authoritative and purposeful activity, and the 'profane' account of a conflict-laden policy process, which needs to be continuously managed (Colebatch & Degeling 1986, Tenbenschel 2002, Colebatch 2005, Colebatch 2006). Simultaneously, the perceived causes of the gap are rendered into managerial/technical concerns, to be dealt with in a managerial/technical fashion. Two important implications arise. On the one hand, political issues are interpreted as technical ones, to which technical solutions can be applied, such as better project management, enhanced skills and

⁶⁶ Interview with Officer in the Commission, DG Employment 31/01/2007

technical capability, or more transparent procedures. On the other hand, the presupposition of a two-stage process of policy formulation and implementation creates a false dichotomy, and further sustains the myth of policy as a technical/rational activity.

The technical/rational element of policy activity does not only operate as a prescription, or a post-hoc rationalisation, but also as an aspiration, a desirable end in itself, tied up to what it means to be a good policy-maker. The making of policy then involves the continuous attempts to create subjects with specific kinds of behaviours (towards strategic planning, innovative attitude etc.) and specific kinds of aspirations. On the one hand, rationalisations are necessary in order to allow policy-makers to render the various contradictory elements of their environment internally consistent. On the other hand, the practices they enact (e.g. the writing of policies, the public consultations, the monitoring and evaluation etc.) form part of their continuous efforts to 'be' a particular kind of rational and strategic policy-maker. It is through such acts that policy-makers seek to accommodate their aspirations and the demands of their positions with the intricacies of what is going on in the ground.

The research challenges the view of policy making as a predominantly technical/rational activity on another basis. It suggests that, although policy makers both seek, and claim, to make decisions based on an understanding of the problems and some knowledge of the appropriate solutions, their policy options and modes of professional conduct are heavily conditioned. The policy domain is a vibrant domain of circulation of power, in the form of legitimate discourses, truth claims, material arrangements, devices and mechanisms which make certain constellations of power lasting and effective. Not only are specific alternatives rendered thinkable at given points in time, and but so are forms of desirable professional conduct which enable policy makers to legitimately operate within a broader policy network.

The case study provides evidence for the fruitfulness of such a critical analysis of policy through the study of the European and Greek case. The thesis reveals that a richer grasp of social practice is gained when we are attentive to the field of power

relations and the constitution through them of legitimate policy topics, policy actors and policy subjects. The case demonstrated that, in contrast to attempts to normalise and rationalise policy activity, many of the policy processes served purposes and performed functions which could not be encompassed in the reductionist technical/rational model. For example, the function of the Greek policies for the information society was not to direct action or guide implementation, but to serve as a signifier for the state's strategic attitude towards the ICT-enabled socio-economic change. Also, practices of monitoring did not serve to monitor the progress of implementation of the information systems, but to trace the take-up of funds. Strategic rational decisions mainly reflected and were borne out of, the need to legitimately act within a dense, thoroughly political, realm of power relations, technological visions, and accepted instruments of intervention.

What is more, the research provides evidence on the validity of the criticism that the investigation of the discursive constitution of policy only provides half the picture. The other half rests on identifying the institutional fabric on which policies are discursively constituted, and which they help establish. The case study suggests that the material arrangements act as 'prop and anchor' of policy discourse. It further demonstrates that, although discourses were important in transferring a certain vision of the European information society, they were simultaneously supported by practices, such as the systematic gathering of data by the Information Society Observatory, itself specifically created for this purpose, the frequent drafting of policies, and the publication of benchmarking indices and subsequent comparison.

Summing up, this section presented two inter-related arguments with regards to the process of policy making, and specifically the predominance of the technical/rational model of policy in substantive policy research and in discourse in practice. I argued that the technical/rational dimension of policy activity, rather than accurately describing or successfully prescribing action, operates as a myth to tie actions together into a meaningful and accepted narrative, and to provide a model of practice to aspire to. So, policy makers both claim and seek to make their experiences and actions comply and converge with the myth of technical/rational policy making.

However, my study suggests that the technical/rational model of policy overestimates the degrees of freedom which policy makers can exert. Instead, I argued that their options are heavily conditioned through the circulation of discourses, which frame and legitimise policy alternatives, and through material arrangements, which shape desirable forms of conduct within a broader policy domain. What emerges is a terrain of action which is simultaneously marked by a desire to adhere to technical/rational principles of decision making, and a pervasive nexus of discursive and material conditions which render some policy options and forms of professional conduct thinkable and actionable.

7.2. On multiple layers of governmentality

This section discusses the mechanisms and technologies which allow the governing of issues, such as the information society, at a global scale across and through multiple levels of governance. In an attempt to address the second of the sub-questions, which were stated at the beginning of the chapter (page 206), this discussion takes up again theoretical issues of the government of self and others in governmentality and brings in governmentality studies in the analysis of international organisations.

The governmentality approach was used in this thesis to provide a decentred, non-essentialist approach to investigate the processes and methods of governing. Such an approach does not equate *a priory* governing with government (i.e. the specific forms through which the state exerts its authority), but instead seeks to locate the specific processes, mechanisms and technologies which make government, indeed the government of things, people and ideas, possible at a distance.

Throughout the analysis of the case of Greek and European ICT policy two poles stood out from which discourses, practices and power relations originated, and around which they circulated. The first pole was the European Commission, with the strategies it produced and circulated, the instruments and mechanisms for funding and monitoring it supported, and the concomitant discourses and identities that emerged as a result. The second pole was constituted by a number of national

authorities which, through their diverse positions and capacities, sought to assimilate, interpret and enact these discourses and mechanisms in their attempt to foster the societal changes associated with the information society. In effect, what we have is a range of national institutions which have sought to govern, i.e. to configure things so as to bring about some desired societal changes, whilst simultaneously being governed, in their relationship of economic reliance, expertise and aspirational development, by another institution at the European level. It is this idea of being simultaneously the governed and the governing which I discuss in this section.

The extant literature on governmentality is diverse, stretching across disciplines of social policy, international relations, political science, law, medicine, education, management⁶⁷ etc. Across disciplines, studies on governmentality have primarily sought to explore novel forms through which governing manifests itself. Despite a decentred understanding of the act and art of governing, the existing literature can be criticised as being territorially delimited, i.e. tending to examine programmes and technologies of government that operate within the boundaries of nation-states (Merlingen 2003). Even when research has mapped the emergence of forms of neo-liberalism or advanced liberalism (Miller & Rose 1990, Rose 1999, Miller & Rose 2008), whose manifestations can be traced in many contexts around the world, the domain where these have been researched has usually been the nation state.

Research in international relations and globalization has moved to a different direction. By pointing to the increasing significance of transnational corporations,

⁶⁷ Governmentality studies have proliferated mainly within the political science and social policy fields. Rose, O'Malley and Valverde (2006) offer a useful mapping of the governmentality literature in these fields. In management, the special issue of *Organization* on governmentality and the enterprise holds recent additions to the literature (Gleadle, Cornelius *et al.* 2008, Salaman & Storey 2008). The field of new public management has also utilised some governmentality concepts to trace the emergence of new subjectivities for civil servants under shifting conditions of employment and governing regimes (Stokes & Clegg 2002, Du Gay 2008).

non-governmental organizations and supranational government organisations, forms and technologies of government at a transnational scale gain centre stage. What emerges is a kind of 'governance without government' (Rosenau & Czempiel 1992), driven by the global economy, increased interconnectedness due to advances in technology, and neo-liberal processes of privatisation, decentralisation and self-management.

One of the central empirical claims is that as nonstate actors take on a greater part of the economic and social activities, they gain power against the weakening state. Although this may be true in certain cases, it cannot be taken for granted. Instead, a more attentive exploration of the micro processes and relations of power needs to be undertaken to establish how exactly the balance of power between the global and the national is shifting, without starting from a preconceived position of a zero-sum situation (Sassen 2000, Sending & Neumann 2006).

More pertinently to the EU, some scholars have explored the processes and techniques of European integration, and thus the relation between the EU and member states, through the lens of governmentality. Whether focusing on the constitution of technologies such as the *bilan*, or balance sheet (Walters & Haahr 2005), benchmarking (Larner & Le Heron 2004, Walters & Haahr 2005), or the technical standards and regulations (Barry 2001), research has explored the ways in which member states are 'brought in', and are made to be part of the unified spaces that these technologies create. What is missing is a more intimate understanding of the subjects on which these technologies operate on, the subjects who, being policy makers in their own right, are called to govern the conduct of their populations. Fraser calls it a "new, multi-leveled structure of governmentality, a complex edifice in which national state is but one level among others" (Fraser 2003, p.167).

So what does it mean to be simultaneously governed and in a position of governing others in this 'multi-leveled' structure of governmentality? Foucault's work revolves around the idea that there is no position outside power. We are all always implicated in some sort of regime of government, as power resides in relations, rather than in set positions or resources. In fact, there are usually multiple regimes of truth and

practices in operation, comprising a dense nexus of power relations. Thus, there is no single originating point of power and government which is outside of it. The implication is that we should be able to say something about what it means to be simultaneously the subject of government and governing others, especially in cases where the dominant rationalities and technologies of government tie uneasily with established ways of working and living.

A central idea around which this discussion can be organised is the conception of agency as being free in specific ways, or a kind of 'regulated freedom' (Rose & Miller 1992). In their words:

Power is not so much a matter of imposing constraints upon citizens as of 'making up' citizens capable of bearing a kind of regulated freedom (Rose & Miller 1992, p.174)

The position that power, and governing in particular, does not negate agency but rests on agency to allow it to be productive has already been analysed in the Theory chapter. Technologies of agency, such as the rise of contractualism (Yeatman 1998) or techniques of 'voice' and 'representation' (Cruikshank 1993, Cruikshank 1999), constitute material ways of implicating subjects into specific kinds of binding relations with their community (Dean 1999). They also enable them to act meaningfully and 'in sync' in their environment. When referring to collective agents instead of individual citizens, technologies of agency have been reinterpreted as 'technologies of involvement' (Walters & Haahr 2005). Drawing on the study of the Open Method of Coordination in the European Union, Walters and Haars argue that:

technologies of involvement construct the involved parties as active participants in common projects, as co-constructors of 'the European economy' (Walters & Haahr 2005, p.124).

This interpretation is congruent with the current analysis, but needs to be further elaborated if we are to understand the kinds of processes implicated in being the intermediary in a relation of 'governing at a distance', i.e. to simultaneously render oneself subject of government and govern others. How can one seek to exercise

power through being “*in the know* about what they seek to govern”⁶⁸ (Rose & Miller 1992, p.186) (e.g. by collecting statistics or financial data), whilst simultaneously being scrutinised and judged on the basis of the same knowledge? How can one be a passive recipient of discourses and ideas, whilst simultaneously attempting to enact them within a varyingly receptive context?

Miller and Rose (1990) hint at the need for actors to “construe their goals and their fate as in some way inextricable”:

To the extent that actors have come to understand their situation according to a similar language and logic, to construe their goals and their fate as in some way inextricable, they are assembled into mobile and loosely affiliated networks. Shared interests are constructed in and through political discourses, persuasions, negotiations and bargains (Miller & Rose 1990, p.282)

I take the reference to ‘goals’ to signify the aspirations, targets and external demands which arise out of the interaction within a multi-layered governable domain. I take the reference to ‘fate’ to denote the life choices and views about what it is that makes a fulfilling existence. Miller and Rose appear to address the possibility of actors seeing their goals and fates as convergent, harmonious and closely tied together. My research suggests that when this is not the case, i.e. when the demands and goals are not in inextricable harmony with ‘fate’, the personal understanding of a good life, a much more dynamic process of bringing the two closer together is needed.

My research suggests that actors in a multi-layered governable domain actively seek to bring closer the demands and goals of their position and their aspirations for a fulfilling life, in an attempt to reconcile conflicting aspects of their living praxis. To do this, they continuously reproduce rationalisations and practices to help them

⁶⁸ “The accumulation of inscriptions in certain locales, by certain persons or groups, makes them powerful in the sense that it confers upon them the capacity to engage in certain calculations and to lay a claim to legitimacy for their plans and strategies because they are, in a real sense, *in the know* about that which they seek to govern” (Rose & Miller 1992, p.186)

settle the contradictions which arise from the position of being in the middle in a system of multi-layered governance. I use the word rationalisation to designate the specific understanding which is reached at any given moment and which allows a degree of coherence between goals and living praxis. Thus, practices of thinking and doing are needed to iron out the contradictions.

It is here that Foucault's exploration of practices and technologies of the self comes in. In particular, I would tentatively suggest that his notion of *askesis* (exercise) (Foucault 2001), renders visible the continuous work of thinking and doing which is necessary in order to fashion oneself in particular ways. This is important because it may shed some light on how the formation of ethical (meaningful and fulfilling) subjectivities happens in the context of significant incongruities between the dominant regimes of truth and practices and aspects of the pre-existing institutional and cultural fabric.

To begin with, rationalisations, i.e. legitimising discourses which allow the world to make sense and to be justifiable to others, need to emerge and be sustained both downwards (towards the sites of implementation and the population) and upwards (towards the supranational authorities). Downwards, my research suggests that legitimising discourses aim not only to co-opt but also to inspire. For example, national policy makers keenly circulated discourses revolving around the (financial) benefits derived from the Information Society Programme, the binding and inescapable nature of the contractual obligation, or the linkage with broader developmental targets and visions. For example, the vision of the information society as a vehicle of socio-economic development and closer European integration created a powerful discourse, to which the national policy-makers subscribed to. There was a closely-held conviction that closer integration with the EU was the desired goal and that investing in ICT was a necessary condition in achieving it. Such types of rationalisations, which need to be continually sustained, allow a governmental programme to be passed down in a way which settles challenges of the legitimacy, authority, and origin of the governmental programmes.

A different set of rationalisations needs to emerge to allow the actors in the middle layer to come to terms with their limited capacity to act autonomously in a context of governing at a distance. Such rationalisations appear to constitute active efforts to reconcile, in their hearts and minds, the position of authority which national policy makers occupy with the fact that their courses of action and desirable forms of conduct are conditioned and regulated. For example, the national policy makers in this case frequently referred to their relation with European decisions and their European counterparts in terms of compatibility. The idea of compatibility indicates a more autonomous position than governing or imitation, but still draws from the legitimacy of the European technological visions and programmes of action. It also indicates an equal balance of power, where in fact the balance of power is largely unequal. For example, the national policy makers portrayed their position of both agents of government and governed subjects as a blessing. The Commission was often portrayed as a partner with confluent interests and targets and equality of negotiating power, rather than an observer and assessor of performance.

The above points could appear to be mechanisms of legitimisation, perhaps operating at the representational level, as facades for an inconvenient situation. However, if the rationalisations only operated for external legitimisation, they would not be powerful enough to sustain the uneasy balance between the demands of being governed and the possibilities of governing. I would instead suggest that, beyond the management of appearances, actors engaged in governing and being governed 'at a distance' may be required to make conscious efforts to internalise, and make part of their ethical makeup, different aspirations, which are attuned to particular regimes of government. National policy makers engaged in ICT policy are called to embrace, interpret, and carry forward an ethos of innovative living, strategic decision making, and technologically-driven social change. This is neither automatic, nor self-evident. Instead, it is accomplished through constant and conscious *askesis*, i.e. efforts to 'become' particular kinds of policy makers, and to create an ethical existence which accommodates their aspirations, the demands of their positions, and the intricacies of what is going on on the ground. My research shows that not only were

rationalisations necessary in order to render the various elements of their environment internally consistent, but many of the practices in which national policy makers were engaged could also be understood as exercises in the process of self-formation. For example, the writing of policies was simultaneously a practice demonstrating their status as governed subjects, but also served to cultivate and make material their aspirations to be like, act like, and develop like the European counterparts.

A very limited body of research in aesthetics of existence and information systems has discussed the ways in which subjects are implicated in the development and implementation of information systems in ways which reflect their judgements of a good life. Avgerou and McGrath (2007) explain the persistent problems of embracing technical change by showing the incompatibilities with the aspirations and life choices of civil servants. Mohammed (2008) explores the concerns and ethical stances of actors implicated in an IS-driven rationalisation programme. In a way, their understanding of the care of the self is static. This research points instead to an ongoing dynamic process of fashioning of the self, and to the continuous work needed in order to 'become' a particular kind of subject with specific aspirations.

To sum up, this section set off by identifying a gap in the study of domains of multi-layered governmentality, as the ones carved out of the interplay of national and supranational organisations in the governing of topics which emerge as global preoccupation, such as the information society. In particular, there is a palpable need to understand the processes through which actors in the middle layers of a multi-layered domain come to constitute themselves as being simultaneously the subjects of government and governing others. I argued that a continuous engagement in practices of thinking and doing, i.e. of *askeseis*, or exercises, is needed to bring closer the demands of the environment and the living praxis. Such a perspective can help to fruitfully investigate the active work required in the fashioning of subjects, particularly when the demands and aspirations which may need to be embraced are in discordance with established ways of living and working and the wider context.

7.3. On the nature of the information society

This section takes up the theme of the information society. Sociological manifestations of the information society were discussed in the Literature Review, whilst the analysis underlined the discursive constitution of the information society in Europe and Greece, along with the ways in which it was embedded in programmes of action and monitoring exercises. The overarching question in this section, then, is: what has this thesis taught us about how the information society is materialised? It thus addresses the third sub-question (page 206) which is concerned with the features of the information society as a policy-driven process of socio-economic change.

The literature review on theories of the information society demonstrated a great diversity of research perspectives. A wide range of phenomena has been designated as signalling the rise of the information society, including the proliferation of ICT equipment (for example Hilbert, Lopez *et al.* 2010), the rising economic significance of the information industries and knowledge workers, the role of ICT in the creation and reproduction of culture, and the predominance of information flows and mobilities over geographically-bounded space (Castells 2000a, Urry 2007). Moreover, the information society is also invariably linked to other related discourses, for example on globalisation, post-modernity, and post-industrialism (Kumar 2005). Kumar successfully shows that although one set of societal changes cannot be reduced to the others, they form interlocking links explaining recent conditions of human life. Thus, the study of the information society becomes further complicated as researchers seek to unravel it from related and concurrent trends.

Critical voices stress that continuities in the fabric of society, as well as shifts happening over very long periods of history, are much better in explaining the current changes than the assumed sudden technology-driven transformations (May 2002). Such a view not only challenges the rise of a qualitatively different information society, but also creates deep rifts in the analytical foundations of the term. Indeed,

Webster (2006) has suggested that the multiplicity of meanings of the term 'information society' has acquired in the academic literature does not allow it to robustly substantiate the changes that are happening in society, a criticism also echoed by Garnham (2000).

Moreover, frequently linked to increased interconnectedness through cross-border flows of capital, goods and people, manifestations of the information society have been implicated with the 'death of the state', or at least with its role differentiating drastically (Hirst & Thompson 1995, Castells 2000c). The main argument rests on the capacity of ICT and information infrastructures to enable economic, business, social and cultural exchanges around the world, with supposedly total disregard for territorial boundaries. In such de-territorialised conditions, the state is unable to exert its authority over activities which do not correspond with, or are not contained by, its borders. The claim of the death of the nation state has been criticised as overly simplistic (Golding 2000, May 2002). An obvious response is that the information society, in its business and trade aspects, relies heavily on national regulatory frameworks, for example intellectual property rights (May 2002). Thus, the information society would be inoperable and unsustainable without the legislative and executive power of the state. My research suggests that limiting the discussion of the relevance of the state for the information society to its legislative capacity is a gross underestimation.

A major problem in the information society literature continues to be the relatively static images which emerge out of both proponents and critics of the information society accounts. The information society is often portrayed as emerging in a self-nascent way. A readily available assumption is that manifestations of an information society are driven by the invisible hand of the market, or the power of the crowds (Mueller 2002, Papacharissi 2002, Roper 2002). Cross-border trade via the Internet, flexible working conditions with the help of ICTs, social networks engaging in meaningful civic participation or meaningless banter are manifestations of shifts which seem to have gained momentum in an almost life-like manner. The hidden assumption is that this scenario of self-propelling change towards the information

society is taking place everywhere. This assumption masks the great number of contexts where such changes have been less widespread, or indeed very limited. Even studies in the critical tradition do not go far enough in challenging the assumed autonomous course of technology-driven societal change away from centralised management and control.

The idea of an autonomously emergent information society has been challenged to some extent by the growing acknowledgement of asymmetries across the world. It was soon witnessed that the kinds of changes associated with the information society were occurring neither universally nor equitably. The information society which was emerging, driven by savvy technologists and profit-seeking businesses, was a segregated one, and one which suffered from, and to some extent replicated, existing inequalities. Such inequalities refer not only to geography, but also gender, age, income and education.

In view of such criticism, there have been calls for an analysis of the information society which is more attentive to the conditions of its creation and maintenance. Such a project would examine how the images of present and future are talked about and are brought to life through discourses and practices, conducted in quite specific, traceable and observable, rather than abstract and diffuse, ways. One such project is Mattelart's (2002) examination of the conditions of making the global information society through the operation of legitimate consulting and academic knowledge made available in specific publications. Mattelart constructs an archaeology of the intimate relationship between discourses of interconnectedness in today's globalised conditions and deep-seated beliefs of staged growth driven by technological progress. He is also particularly keen to show the role of the global political institutions. In this way he brings forth elements which are also important for this thesis: the need to engage with the political happenings and the need to keep a firm eye on the trans-national context, which constitutes the formative playground for many technological ideas and projects which are eventually assimilated into national strategies. In this sense, his project is related to this one both in terms of methods of

enquiry and in terms of the core concerns, albeit posed at a different (higher) level of abstraction.

This thesis constitutes in many respects a genealogical study of the information society (Webster 2006), i.e. an investigation into the practices and discourses which frame it, bring it to life and make it have real effects, and into the conditions of possibility which sustain it in a given context. The case of Europe and Greece challenges the autonomous, emergent nature, which much of the sociological literature is implying with regards to the information society. Rather than a 'fact of nature' which emerges in a self-promoting manner, the information society became a political pursuit, entangled in the many folds and creases of other concurrent political (in the broader sense of the word) projects.

The case study of this thesis has demonstrated that continuous and conscious efforts to centrally steer and direct the information society, in an attempt to achieve the promised ICT-enabled socio-economic changes, are happening at a global scale, regardless of the degree of success or failure, or the effectiveness and efficiency of such attempts. I contend that, unless we acknowledge and carefully study the efforts to plan and govern the information society, rather than ascribe to it an emergent and self-propelling quality, we have no way of understanding whether government projects to diffuse ICT make any difference, or whether discourses on the information society are purely rhetorical or have material consequences. Regardless of the eventual effectiveness of the efforts, change through ICT innovation is actively pursued and orchestrated by policy makers at different levels. This means that not only is the information society not solely driven by technical inventions or the market, but also that policy, a rather neglected factor, may have a lot to do with accomplishing it.

The case of Europe and Greece sheds some more light into specific elements of the nature of the information society, as it has come to materialise through political processes. It reveals that the constitution of the information society has three core elements: a *material*, an *aspirational* and a *power-related* one. These aspects are distinct

but deeply interrelated in ways which can in some occasions lead to stable and powerful carriers of change, whilst in other occasions to precarious and temporary arrangements. The three aspects are discussed below.

I use the material aspect to point to the concrete arrangements and configurations aimed at bringing about ICT-enabled socio-economic change in the name of the information society, which have very material effects. The fact that a great deal of funding and a host of investment programmes are committed, by donors, international, supranational and national organisations, to help foster the changes associated with the information society cannot be overlooked as of secondary importance. The first reason is that their existence can constitute the same needs which they are supposed to address. The second reason is that their 'concreteness' (contracts, budgets, funds, deadlines, action plans, monitoring reports, comparisons through benchmarking, etc.) may be the way in which the information society is experienced and lived by the populations affected. The third reason why they cannot be treated as mere epiphenomena is that they seek to effect societal changes towards specific directions, often through the appropriation of specific kinds of technologies. Thus, the material aspect of the information society cannot be ignored, but should not be understood in essentialist terms either. It is a product of economic and technical considerations around productivity, the global competitiveness of economies and states, and the state of global development. The material aspect of the information society needs to be studied not just for the practical ways of shaping how the information society materialises, but also for the global political processes which sustain it.

Secondly, I suggest that the information society in its re-conceptualisation as a political project has a powerful aspirational aspect. This dimension relates to the ideational constitution of the visions of a technological future, through discourses articulated in policies and strategies. Desirable directions of change and modes of being are portrayed and simultaneously constituted as 'here and now' realities. Some aspects of the aspirational element of the information society have been investigated as crystallisations of the 'digital sublime' in captivating myths (Nye 1994, Mosco

2004). My understanding of the aspirational element of the information society does not have to do just with the production and circulation of technological visions and myths, but instead includes the active work which needs to be accomplished so that such ideas can be keenly embraced and acted upon, rather than passively consumed. The constitution of technological, strategic, innovative and compliant subjects, of the sort explored in the case of Europe and Greece, is achieved discursively, but the discursive/ideational approach does not do justice to the variety of practices of doing and thinking needed in 'becoming', or aspiring to become such a subject. An emphasis on the aspirational elements of the policy-led information society offers distinct advantages over ideational approaches which reduce the information society to ideology, as it highlights not only the practices on which such an ideology would rest, but also the effects it has in shaping desirable and acceptable subjectivities.

Thirdly, the information society in its manifestation as policy-led socio-economic change is thoroughly imbued in grids of power relations, which simultaneously sustain and challenge its messages. Some scholars have raised a call to be more attentive to the complexity of relations around the information society beyond instrumentality.

[T]he prevailing tendency to consider information and information technology chiefly in terms of economic growth, productivity, and planning, again puts it in a strongly technical, calculative, and instrumental context (with the major issues being those of competitive position and the allocation of wages and profits). Against this orthodoxy, our own approach focuses upon information and information technologies in terms of their political and cultural dimensions. In both these aspects what are raised are the complex relations between technology, information, and power (Robins & Webster 2004, p.63-64)

Steering away from a purely technocratic and technological understanding of the information society requires that we take notice of the ways in which information and ICTs recast and sediment particular power dynamics. For Robins and Webster (2004, p.64), this can be achieved by focusing on Foucault's "capillary forms of power", i.e. the surveillance and control aspects of the increased capabilities for the gathering of information on the population. I believe that focusing on surveillance and control of the body through information and technology is too narrow a

perspective to address the ways in which power, operating through subjects' hopes and aspirations, comes to form and govern the political and policy project of the information society. Instead, we need to look on the one hand at the institutional relations of power in government (for example the relation between the EU and member states, or the UN and developing countries), and the role they play in creating specific conditions of possibility for the diffusion of the information society. On the other hand, we also need to go beyond institutional power to also explore the myriad of ways in which power is usurped, visions are distorted and programmes are subverted, thus creating local conceptualisations and materialisations of the information society.

Mapping the above points with the preceding analysis, the information society emerged as an answer to the European economy productivity lag, and through time came to be associated with different contemporaneous discourses. It eventually entered an era of greater governmentalisation by close management through trans-European measurement, comparison, and competition against set targets leading to a greater degree of visibility. It was these European discourses that provided the pattern for the Greek policy-making efforts even when the discourses were of limited relevance to the immediate context. They were however, of great aspirational value, in shaping visions for a technological future and the desirable qualities for innovative, strategic, yet still compliant subjects. The successive ICT programmes mattered because their material elements (their eight-year deadline, the specified budget, the action plan, regulations and monitoring reports) created tangible affordances and limitations for the materialisation of an information society in the country. Finally, the entire domain in which the information society was discussed and acted upon was thoroughly political and intimately tied to the circulation of power, traversing institutional carriers and operating a multiple locales and with varying effects.

Summing up, I assert that the study of Europe and Greece has provided a compelling case for the need to pay greater attention to the way in which information systems and ICT innovation and its diffusion (which I have referred to as the information

society project) is been steered through policy as different levels. Moreover, I have suggested that the information society as an effort of policy-driven socio-economic change needs to be studied through a perspective which defies broad, instrumentalist and deterministic explanations. An alternative approach would need to operate at the meso level to explore the processes through which the information society is materialised.

This section has culminated in the formulation of a set of conceptual conjectures about the nature of the information society as a policy-driven, globally-orientated process of socio-economic change. I have argued that material, aspirational and power-related aspects come together in the construction of the information society through policy and political processes at a global scale. They create the conditions in which the information society as a policy-driven process is made possible and materialises at a global scale.

8.CHAPTER EIGHT – CONCLUSIONS

8.1. Synopsis

Another [...] question concerns the kind of effort involved in IS innovation. Is it a matter of methodical and skilful technical tasks, of managerial competences, of political manoeuvring? Can the process of IS innovation be controlled by engineering, management and policy – or should it be seen as an inherently uncertain process of social change? (Avgerou 2003b, p.142)

In the above quote, Avgerou asks whether IS innovation can be steered, controlled or managed through processes of engineering, management or policy. The information systems field has been interested in, and addressed, the engineering and the management aspects of this question. It has found that a lot more is implicated in the design of information systems than merely engineering science, and that the implementation and use of information systems are subject to local improvisations and inadvertent results, which cannot be predicted or eradicated by better management control (Flichy 2007 provides a comprehensive review of the relevant literature). The question of whether IS innovation can be steered through policy has been taken up by scholars in evolutionary economics, developing the systems of innovation approach (Nelson 1993, Fagerberg, Mowery *et al.* 2005, Freeman 2008). In contrast, the information systems field has failed to actively and imaginatively engage with the question of whether IS innovation can be steered through policy. This has led to a great discrepancy between the amount of action regarding policies for ICT and information systems innovation at national, regional and global levels, and the amount of academic attention paid on this domain of action from an information systems perspective. This research started with the working hypothesis that the information systems perspective, which remains attentive to the simultaneous constitution of innovation through technical, social and contextual forces, can contribute valuable insights on the nature of ICT policy.

It is this gap which this thesis addressed, by seeking to understand the process through which ICT-enabled socio-economic change is pursued and steered through policy. In further specialising the research question, I firstly asked to what extent ICT policy can be construed as a technical/rational process. Secondly, I sought to better understand the nature of the information society as a process of policy-driven and widespread socio-economic change. Thirdly, I investigated the mechanisms and technologies of government, which allow the information society project to have material effects on a global scale.

The thesis was theoretically founded on Foucault's notion of governmentality, which has inspired a mounting research on the fields of policy (Larner 2000, Fischer 2003, Bailey 2006, Miller & Charles 2007, McKee 2009) and political science (Miller & Rose 1990, Rose & Miller 1992, Dean 1999, Rose 1999, Lemke 2002, Lemke 2003, Rose, O'Malley *et al.* 2006, Jessop 2007, Miller & Rose 2008). Governmentality is concerned with the process of governing things, persons and consciences towards particular ends and through specific technologies, i.e. assemblages of methods, tools, calculations and discourses. Broad regimes of governmental thought and practice, for example neo-liberalism (Miller & Rose 1990, Rose & Miller 1992, Rose 1999), advanced liberalism (Miller & Rose 2008), contractualism (Yeatman 1998), relying on the agency of the individual in self-fashioning its conduct, are traceable to differing degrees in different contexts. In contrast, this study performed a more detailed genealogical analysis of the technologies of government which constitute the domain of ICT policy. It rendered visible the circulation of discourses making certain options thinkable, the material foundations, which allow discourses to have visible effects 'at a distance', and the subjectivities created as a result.

The study of Europe and Greece, and their continuing attempts over the past two decades to actively steer ICT-driven socio-economic change provided a compelling case for understanding the intersection of national and supranational visions and programmes aimed at bringing about socio-economic development through ICT innovation. Such attempts consisted in the drafting of European and Greek policies and action plans, the creation of national ICT programmes, the establishment of

European and Greek formal institutions, as well as the operation of pan-European monitoring and comparison processes.

I argued that the domain could be understood through the operation of two distinct technologies of government, which at a certain point in time effectively complemented each other. They consisted of influential discourses on the nature of the European, governable information society, sustained by policies, benchmarking processes, and reports, creating fields of visibility and comparison, and constituting the policy makers as subjects with specific behaviours towards strategic planning, and specific kinds of aspirations of a technological future. The constitution of ICT programmes as specific kinds of European funding agreements twisted notions of success and failure in the information society around financial appropriation, and constituted the identities of the innovative, yet conforming organisation. Although the domain was rife with rifts and practices of contestation, the successful pursuit of a strategy of European governmentalisation of ICT policy and the information society, rested greatly on the ability of the Greek authorities to embrace, interpret, and carry forward the ethos of innovative living and technologically-driven social change.

Opening up the discussion, I maintain that the technical/rational model of policy, which is implicitly accepted by both policy makers in practice and most academics studying ICT policy, operates as a powerful myth to re-present, and render manageable and legitimate the messy practice of making policy. However, it falls short of explaining the complex processes of the constitution of subjects, whose freedom to rationally choose means and ends of policy is regulated. It is also far too limited to provide any clues as to the conditions of possibility within which any process of policy making takes place. Turning to governmentality studies, I contend that, despite Foucault's assertion that there is no position outside power, the literature has not satisfactorily examined the position of simultaneously governing self and others (as were the Greek policy makers). In particular, we know little of how technologies of self are translated into technologies of power. I suggest that a process of continuous *askesis* is accomplished, in order to translate the ethical

fashioning of the subject (demands and aspirations) in its attempts to govern others (the population). Finally, I propose that the information society as a policy-led process of widespread ICT change can be analysed in three elements: a material, an aspirational and a power-related one. Such an analysis is attentive to the breadth of programmes and investments, closely related to economic competitiveness and productivity, the proliferation of technological visions, and the inescapable creation and preservation of both in networks of power relations.

8.2. Contributions

8.2.1. Contribution to the information systems community

This thesis is about effecting change at the societal level driven by information systems innovation. The protagonists in this narrative were the people implicated in this process: the European and Greek policy makers, the Greek civil servants, academics, consultants, and public sector sales managers in companies. The narrative does not take place in one organisation; nor does it recount events happening in a network of organisations. Rather, it represents a geographically distributed and diffused domain, linked through strategies and policies, budgets, funds, evaluations, and benchmarking reports. It is a domain marked by unclear and highly permeable boundaries, and a lack of a unitary function.

The organisation, however, has been the context of most work in the information systems field (Checkland & Holwell 2000). In most cases a highly systemic conception of the organisation is assumed, one which conveys the idea of the organisation as a system with clear boundaries and specific goals, which are accomplished by its organisational members working in different functional parts. The organisation as a coherent goal-seeking machine is further reflected in the accepted separation of levels of managerial activity (strategic planning, tactical/managerial control, operational control). There are of course alternative

understandings of the nature of the organisation, for example highlighting their path-dependent nature, their intimate relation with (or, co-constitution through) their immediate and wider context, and their lack of clear direction and unitary goal (e.g. Checkland 1999, Benbasat & Zmud 2003, March & Olsen 2006). There is, however, an implicit agreement that the information systems field has the organisation as its frame of reference. For example, Walsham (1993) explores the appropriation of information systems in four domains of organisational life: strategy, evaluation, design and development. Thus, it would be fair to say that the field has been heavily influenced in its research agenda by organisational science and management, even when it has borrowed theories from other fields, such as sociology (Orlikowski & Barley 2001, Galliers 2003).

Within this frame of reference, the information systems field has investigated the management and use of technologies *in situ* and has gained a great deal of knowledge on organisational members in their capacities as users and managers of information systems. On the one hand, there has been an enduring preoccupation with the user as the locus of decisions for the acceptance or rejection of technologies. The user has been the focus of studies elaborating on the design, acceptance (or resistance), and appropriation of information systems into everyday tasks and activities (Robey 1979, Ives & Olson 1984, Davis 1989, Legris, Ingham *et al.* 2003, Venkatesh, Morris *et al.* 2003). The manager has been the other pole around which substantial research has revolved. In many ways, the information systems discipline has through the decades learnt a lot about the way managers make (or should make) strategic choices about information systems, whether it is to acquire, implement, evaluate, use, alter, or replace them (Mason & Mitroff 1973, Zuboff 1988, Stephens, Ledbetter *et al.* 1992, Introna 1997, Tallon, Kraemer *et al.* 2000, Willcocks & Lacity 2006).

The emphasis on the role of information systems for the management and the managers of organisations has even extended to include public sector organisations (Caudle, Gorr *et al.* 1991, Willcocks 1994). The reinterpretation of civil servants into public sector managers is probably closely tied with the associated

reconceptualisation of public administration as new public management (Dunleavy & Hood 1994). Moreover, the increasing allure of the practice of IT outsourcing for the public sector, as well as the rise of e-government has further reinforced the framing of studies of information systems in government in terms of management, and of civil servants in terms of managers, even when public goods and services are concerned (see Cordella & Willcocks 2010 for a discussion of some of the issues involved). Overall, the emphasis of the information systems field has mainly centred on the management of information systems, and its recommendations and research methods have been mostly geared towards understanding the actors that are directly involved in it, the managers.

The contribution of this thesis to the information systems academic community lies exactly in its shift away from the two positions presented above, i.e. the identification of the formal organisation as the domain of study, and of the manager as the most relevant actor. On the first point, the study of the processes of policy-steered and ICT-enabled socio-economic change has highlighted the benefits of opening up the boundaries of the domain of study beyond the formal organisation (Galliers 2003). Had this study been restricted to the confines of one organisational unit (for example, the European Commission, or the Special Secretary for the Information Society), it would have been difficult to adequately grasp the constitution of relations of power, embodied in various material artifacts and mechanisms, and spanning geographical distances. In framing the research, I “chose to draw and redraw [the] boundaries” (Galliers 2003, p.343) in an iterative process. Thus, elements of the domain which could be taken as constant or somehow stable (for example, the ‘beneficiaries’ of the ICT projects, or the specific documents of ICT policy) were themselves unpacked and constituted through the processes explored. Moreover, the multi-level perspective meant that I was able to unravel and substantiate the effects of European visions of, and programmes for, the information society onto the national policy makers’ efforts to steer information systems diffusion and innovation in society. In probing the point of intersection between national and supranational processes, I not only investigated the ways through which specific locales shape broader processes, but inversely also

showed how broader processes come to have material effects on distributed points of information systems innovation. The outcomes of the analysis serve to break down the assumption of the organisation as an adequate unit of analysis for information systems innovation, an object which is globalised and closely tied to conceptions of legitimate economic, strategic and policy responses.

On the second point, this study has shed light on a different, and forgotten, actor in relation to information systems, i.e. the policy maker. Despite their increasing involvement in making strategic decisions about ICT innovation and diffusion, the concerns and conditions under which policy makers act remain poorly understood. A better understanding is essential if we are to more comprehensively grasp the variety of contexts in which ICT innovation is pursued through policy, and not only through private initiative (an example is the thriving e-government trend, see for example a recent paper by, Cordella & Iannacci 2010).

Policy makers make decisions about technology and innovation under considerable ambiguity and uncertainty, which relates to their inability to foresee the future course of technological innovation. They are also faced with considerable complexity which is inherent in their attempts to influence the innovative activity across a wide range of dispersed sites, and in their distance, geographical and temporal, from these dispersed sites of implementation. Moreover, they lie on the intersection of a dense network of global and regional sites of policy making creating multiple demands, which could be seen as impinging on their legitimate authority and autonomy. My research shows that these demands are instrumental in limiting the range of options to manageable levels. More than that, they provide patterns of legitimate action and interaction. Through their intermeshing in an intense network of power relations, policy makers are constituted as subjects, which are called to strategically engage with the steering of innovation in their realms of authority, whilst simultaneously accepting and complying with the global and regional technological imperatives. Thus, in conditions of increased interdependency, innovating and innovating strategically is both an advantageous opportunity, and an obligation.

More specifically, I argue that policy makers' conceptions of technology and of its benefits are bound in the creation and embrace of specific visions for a technological modern future. Such visions operate as discourse at the ideational level, and are also inscribed in material practices of benchmarking, best practices, evaluation reports and ICT strategies, which in turn help reify them. This thesis provided evidence to show that the circulation of technological visions and priorities shapes the policy makers' understanding of the role of technology and technological priorities within the rest of their world outlook. I thus suggest that, particularly when it comes to policy-driven information systems, such as e-government, diffusion of Internet connectivity, or diffusion of ICT use among SMEs, the information systems community has a lot to gain from examining the broader conditions within which such projects are shaped and made meaningful. A closer look at the policy makers' decisions can reveal diverse motives, such as aspirations of modernity, development, and equal participation in global fora, contractual demands, financial incentives and others.

8.2.2. Theoretical contribution

The substantive theoretical contribution of the thesis lies in the creation of a set of conceptual propositions about the nature of the information society as a policy-driven phenomenon of socio-economic change. I have argued that theorising about the information society as an emerging phenomenon does not recognise the array of planned efforts to create and make it materialise, not just at the organisational, but also at the political level. To the extent that the information society can be seen as a policy-driven phenomenon, and both this thesis and global developments demonstrate that it partly is, I have argued that it can be fruitfully conceptualised as constituted of three elements. It is firstly material, in its inscription in and implementation through investments, programmes of action, and funding. The tendency to treat these as epiphenomena, as mere expressions of already given intentions is inattentive to the specific effects of such material expressions of economic rationality on what kind of 'thing' the information society is materialised

into. The information society as a policy-led project is, secondly, aspirational, not only insofar as it is inscribed in visions, and expressed through speeches, strategies, policies, and influential publications, but also insofar as these work through hearts and minds, hopes and aspirations of the actors involved. Finally, such a project rests and is circulated through existing institutional arrangement and power relations. Instead of unsettling or challenging them, existing institutional arrangements, and the power nexus around them serves to further diffuse the information society as a policy-driven endeavour. Both of the elements above, then, the material aspect of investments, funds, and programmes, and the aspirational aspect of technological futures are created and sustained within a dense plateau of competing or established truth claims, mechanisms and attempts at subjectification.

The lens of governmentality has found little recognition in the information systems field. One reason is easy to deduce. Governmentality is better suited to explain broader processes which operate at the societal level, even though they become substantiated and can be traced into everyday material arrangements. However, such a framing of the research object is rare in the mainstream information systems field, as I have already argued. The relative obscurity of the term and its analysis in Foucault's only recently published lectures could be another reason. Thus the governmentality ideas have found limited appeal, even though other Foucauldian concepts, such as power/knowledge, regimes of truth and the panopticon metaphor, have been more readily accepted.

This thesis has demonstrated that the governmentality lens can be successfully utilised in the study of technology, particularly in the study of the regimes of discipline and self-formation which technology sustains and through which it is governed. Technology in this line of reasoning can flexibly accommodate and encompass not only the tools and technical devices (e.g. the information systems), but also the discourses which envelop them and give them meaning and purpose, the processes of which they become part, and the power relations which sustain or challenge the social practices of their creation and use. By upholding a different, more encompassing sense of technology attention is drawn to its effects of governing

practices, regulating subjects and construing new forms of subjectivities. Such an approach could be used to study technology and information systems and the intensifying grid of agents which seek to steer and govern the expanding technological rendition of reality.

With regards to the lens of governmentality, although I did not enhance current understanding of broader political mentalities and technologies of rule, I contributed to the existing literature by bringing into the spotlight the simultaneous processes of governing and subjectification that take place in conditions of multiple levels of decision making. The thesis pointed to the need to further explore the concept of *askesis*, as a way to theoretically capture the continuous efforts of thinking and doing which are needed in order to enable the self-fashioning of conduct in contexts where there is a significant gap between external demands and aspirations, and the living praxis.

8.3. Limitations

The main limitation of this research relates to the time frame selected. Foucault's historical studies often spanned centuries; a significant number of studies conducted by researchers in the Foucauldian tradition of governmentality have traced the shifts of governmental logics and practices over many decades. In this light, the time frame of this study may appear too short for the kind of genealogical analysis conducted.

This could be considered as a limitation of the kinds of conclusions which can be arrived at. The short time frame does not facilitate the creation of conjectures which reflect long-term shifts in the governmental reason and the associated practices, of the type that Foucault identified when discussing the shift from a sovereign to a governmental rationality. However, the shorter time frame allows one to trace subtler shifts in the mentalities and methods in the governing of things, ideas and people, for example the convergence of two distinct technologies of government at a point in time resulting in the creation of a more effective local regime of truth and practices. Such subtle shifts, which can be responsible for smaller-scale changes

(either in terms of the effect they have, or in terms of the domain they impact) may be rendered less visible, if larger time spans of research are taken into consideration.

On another note, a further limitation that is ensued by the shorter time frame of research and the utilisation of recent data pertains to the nature and validity of this data. Thus, Foucault usually centred his treatises on periods in the distant past (for example, Ancient Greece, the Roman times, the seventeenth and eighteenth century Europe). He assembled his narratives from historical and archival data from secondary sources, with the relative stability and distance that this involves. In contrast to this purely historical approach, the current study, although taking into account the recent history of government-led initiatives on innovation, had a clearer emphasis towards events that happened in the relatively recent past and have direct implications for the present. The consequent use of a variety of primary data, such as interview data, as well as data of recent validity means that the narrative consists of elements which are more recent, currently debated, contested to different degrees, as well as data whose interpretation is of more interest to a greater number of participants. Again, although this is a diversion from what has been understood as a Foucauldian study, it is not necessarily problematic. Instead, it reflects my preoccupation, as well as the preoccupation of the information systems field in general, with contemporary issues of greater relevance.

A further limitation relates to the formation of subjects. The current study researched the technologies of government which more or less effectively attempted to create subjects with specific qualities, intentions, aspirations and outlooks to innovation. It is however important to note that especially in the latest published books, Foucault came to be primarily interested with the ways people come to work on themselves, engaging in practices of *exercise*, in the sense of active work, that enable them to lead better, more fulfilled lives, for example thinking and acting on dietetics, the relation to sexual partners, friends and the family, the relation to religion, the state and the household etc. (Foucault 1987, Foucault 1990).

There is a tendency to see this as a radical break with Foucault's previous work on the making of subjects through the nexus of power relations. For example, Alversson and Skoeldberg (2009) suggest that:

Such an active role of the self, reflecting on itself and thereby producing the subject, is of course excluded by postmodern ideas according to which the subject is generated by the discourse(s). True, even in the final phase of Foucault's thinking, the subject produced [...] is coloured by forms of knowledge and power; yet the important thing is that it is *irreducible* to these" (emphasis in the original, p.256)

I see this difference more as a matter of degree rather than a distinct break. For, even when Foucault is concerned with the care and self-government of the subject, he places his subject within an already existing discursive and institutional nexus of possibilities, which provides the reference framework for the individual's practices of care to itself (for example, practices of asceticism emerging not within Christianity, but rather as a direct challenge to the Christian ethos (Foucault 2001, Foucault 2007). It is this point of reference that provides the indications of what constituted a good fulfilling life, which may lead the subject to become a 'pocket of resistance'.

This study has explored to a certain extent practices of self-formation, focusing on the active work of thinking and doing which the policy makers engaged in, in order to embrace and internalise specific ways of being compliant, innovative and strategising. Clearly, although an initial exploration was undertaken in the Discussion, the issue has not been fully explored and analysed, although it has opened up a course for further research.

8.4. Further research

The focus of this thesis revolved around the question of how the government of ICT-enabled socio-economic change happens. In addressing this question, a number of domains of enquiry opened up, including the operation of technologies of government, i.e. assemblages of technical devices, tools, mechanisms, and the associated discourses; the processes of subjectification through technological aspirations and monitoring practices, and the interpenetration and interplay of

locales at various levels of institutional governance structures. Overall, the governmentality lens proved fruitful in the conceptualisation and explanation of the conditions in which the European and Greek case of governing ICT innovation happens. More importantly, it proved to be a great springboard through which to develop a theoretical understanding of the middle range, i.e. a set of conjectures on the nature of the information society as a policy-driven, globally-orientated process of socio-economic change. Further research could seek to elaborate on these conjectures, assessing their capacity to illuminate and analyse other cases of policy-driven change through ICT.

The information systems field has not paid much attention to the policy maker as a relevant actor in the wider process of innovation. This thesis has clearly demonstrated their salience for the direction of information systems innovation in certain contexts. It has also pointed to some differentiating factors, mainly their immersion in dense networks of power relations, and their distance, geographical and temporal, from the dispersed sites where information systems are actually implemented. A productive line of research could look into the practices through which policy makers reconcile this distance, and internalise the global demands. For example, initial observations from the field study, which remained outside the scope of this thesis, point to a separation between the 'material' and the 'financial' aspects of information systems (a separation between the 'technical' and the 'financial' object). Recent work has examined the negotiation of abstract, financial representations rendered through information systems with people's living praxis (Fay, Introna *et al.* 2010). Such a line of enquiry could be extended to study policy makers' relationship with technology, given the distance between their level of entanglement with technology and its actual implementation in varying sites. Another line of enquiry could focus more on the process through which global visions, aspirations and demands are acted upon, and require processes of internalisation in order to become meaningful with the life experiences of national policy makers.

One domain which could be further explored is the role of international organisations in shaping practices of government and subjectification in the name of development through the diffusion of ICTs. The prevalence of international organisations and their far-reaching role in various areas within the context of development and developing countries is well-established (Escobar 1995). Within such contexts there appears to be significant scope for exploring the diffusion and use of ICTs as the technical means in which, and through which, technologies and rationalities of governing conduct are circulated. Such an approach would have the advantage of tracing significant links between processes which take place and have planned and unanticipated effects in geographically dispersed locales.

Using a governmentality lens to investigate the spread and diffusion of technology and innovation has the distinct advantage of emphasising governing, rather than the formal institutions of government. This allows the investigation of the different ways, techniques or mechanisms through which the diffusion of innovation happens. A governmentality perspective could, for example, explore the diffusion of innovation through strongly neo-liberal or advanced liberal rationalities, techniques of self-reliance, or technologies resting on the role of the community. Such a perspective could allow the investigation of domains where the formal institutions of government do not appear to be directing action, but rather it is the market or the community which does so. A relevant study by Leyshon, French *et al.* (2005) examined the constitution of e-commerce as an innovation which spread widely at its initial stages on account of the rhetorical power of abstract terms, such as the term 'e-commerce' itself and the 'first mover advantage', as well as on the basis of its circulation in a buoyant 'cultural circuit of capital' (Thrift 2002), i.e. the network of consultancies, management gurus and business schools.

As ICTs become further and more deeply embedded into the fabric and practices of social life, they become naturalised, i.e. their power to give rise to emotions of great hype subsides. This amplifies their capacity to reflect, and be the carriers of, specific rationalities of governing conduct, as they are more seamlessly and less contentiously sewn in existing governing regimes. A governmentality perspective

may not offer ready-made constructs to direct research, but its world outlook can be a powerful beacon for furthering our understanding into phenomena of modern governing of conduct through technical means.

9. APPENDIX

9.1. Appendix A – On abbreviations

Table of abbreviations (including the Greek terms where relevant)

CSF	Community Support Framework (Κοινοτικό Πλαίσιο Στήριξης, ΚΠΣ)
EC	European Commission (Ευρωπαϊκή Επιτροπή)
ERDF	European Regional Development Fund (Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης, ΕΤΠΑ)
ESF	European Social Fund (Ευρωπαϊκό Κοινωνικό Ταμείο, ΕΚΤ)
EU	European Union (Ευρωπαϊκή Ένωση, ΕΕ)
ICT	Information and Communication Technology (Τεχνολογίες Πληροφορικής και Επικοινωνιών, ΤΠΕ)
IMP	Integrated Mediterranean Programme (Μεσογειακό Ολοκληρωμένο Πρόγραμμα, ΜΟΠ)
NSRF	National Strategic Reference Framework (Εθνικό Στρατηγικό Πλαίσιο Αναφοράς, ΕΣΠΑ)
OPIS	Operational Programme Information Society (Επιχειρησιακό Πρόγραμμα Κοινωνία της Πληροφορίας)
SEPE	Trade Union of ICT Companies (Σύνδεσμος Επιχειρήσεων Πληροφορικής Ελλάδος, ΣΕΠΕ)
SMEs	Small to Medium Enterprises (Μικρές και Μεσαίες Επιχειρήσεις, ΜΜΕ)

9.2. Appendix B – On data sources

Data was collected on various occasions and from a multiplicity of sources. An full record of the sources from which material was drawn is provided below. In particular, I provide a list of the interviewees, a record of the conferences and workshops I attended specifically with a purpose of data gathering, and a list of websites which were regularly consulted and from which information was drawn.

9.2.1. Interviews

Below is a list of the people which were interviewed for this study. Names are not included, although some of them can be easily identified due to the high profile roles which they played in specific times. However, rather than naming them, what is more important to convey is the role or roles they played and the positions they held, often in multiple organizational settings. In the table I further indicate whether the interviewees were working in Greece or in the European Commission, as well as whether I met them in the first round of interviews in 2006, or the second in 2007. Multiple 'X' signs indicate multiple discussions with the same individual.

List of interviewees

	Organizational position	GR or EC	2006	2007
1	Policy maker, Former Special Secretary for the Information Society (2000-02)	GR	X	X
2	Head of research centre, Policy lobbying and advising	GR	X	
3	Member of board of directors in the Observatory for the Information Society (2005-09), lecturer in university	GR	X	
4	Former Director of InfoSoc (2000-02), long-standing high-ranking civil servant in the Information Systems Department of the Ministry of Finance	GR	X	
5	Former Director of InfoSoc (2002-04), professor in university	GR	X	
6	Member of board of directors in the Observatory	GR	X	

	for the Information Society (2005-09), assistant professor in university			
7	Project manager in Managing Authority for the Information Society	GR	X	X
8	High-ranking policy maker (Officer) in DG Employment, formerly in DG Regional Development	EC		X
9	High-ranking policy maker (Officer) in DG Enterprise and Industry, Technology for Innovation Unit, formerly high-ranking civil servant in the Ministry of Interior	EC		XX
10	High-ranking policy maker (Officer) in DG Information Society	EC		X
11	Middle-level administrator in DG Information Society	EC		X
12	High-ranking policy maker (Officer) in DG Regional Development	EC		X
13	High-ranking policy maker (Officer) in DG Regional Development	EC		X
14	Leader and coordinator of e-Business Forum, policy research and lobbying	GR		X
15	High-ranking civil servant in EDET Ltd. (state-owned company responsible for managing the Greek Network for Research and Technology, also entrusted with designing and managing the projects for the diffusion of ICTs in SMEs under the Information Society Programme)	GR		X
16	High-ranking civil servant in the Ministry of Interior, ICT Programme Management Unit	GR		X
17	Director of Managing Authority for the Information Society (2004-now)	GR		X
18	Manager of project for ICT diffusion in SMEs	GR		X
19	Adviser to the Special Secretary for the Information Society (2004-08)	GR		XXX
20	Civil servant in the Ministry of Interior, project manager in the Managing Authority for the Information Society (2004-06)	GR		X
21	Leader of project for ICT diffusion in SMEs, lecturer	GR		X
22	Consultant to the Local Administration Agency for ICT projects	GR		X
23	Manager of project for ICT diffusion in SMEs	GR		X
24	Head of procurement to the public sector in ICT company	GR		XX
25	Consultant and trainer for ICT in SMEs	GR		X

26	Consultant and trainer for ICT in SMEs	GR		X
27	Civil servant in Agency for Small and Medium Enterprises, Coordinator for project of ICT diffusion in SMEs	GR		X
28	Head of public sector sales and procurement in ICT company	GR		X
29	Head of public sector sales and procurement in ICT company	GR		X
30	CEO of ICT consulting company	GR		X
31	High-ranking administrator in the Central Unit for the Management of the CSF, Ministry of Finance	GR		XX
32	Head of the Central Unit for the Management of the CSF, Ministry of Finance	GR		XX
33	Project manager in ICT consulting company	GR		X
34	Technical manager in ICT company involved in ICT projects for the public sector	GR		X
35	Director of non-for-profit developmental agency involved in the project management of ICT projects	GR		X
36	High-ranking civil servant in Technology Development Agency, a long-standing but sidelined government agency involved in budget approvals for IT	GR		X
37	Civil servant in Technology Development Agency, a long-standing but sidelined government agency involved in budget approvals for IT	GR		X
38	Former Director of the Managing Authority for the Information Society (2000-02), Deputy director of the Greek Computer Society	GR		X
39	Director of the Greek Federation of Computer Companies, participant in the creation of the White bible for the Information Society	GR		X
40	Former Special Secretary of the Information Society (2002-04), professor in university	GR		XX
41	Former civil servant in the Technology Development Agency (1994-2000), Director of ICT company	GR		X
42	Project manager in InfoSoc	GR		X
	Total			52

9.2.2. Workshops and conferences

During the field work I attended a number of conferences and workshops specifically with a view of data gathering and networking. During these events, I observed the

discourses that circulated and the organizations and individuals that sustained or challenged them. I further collected written material, such as the presentations and proceedings, and I made contact with participants, some of which I later interviewed. Such events were also instrumental in giving me a glimpse into the official political discourses as expressed by politicians, who otherwise proved difficult to access.

List of workshops and conferences

30 January 2007	e-Business W@tch Conference on e-Business impact on firms and industry structure: Industry and Policy perspectives. Organized by DG Enterprise & Industry, Unit 4 Technology for Innovation/ICT Industries and ebusiness, in Brussels
28 March 2007	Workshop on Assessment methodology and monitoring practices for projects – Exploring the legality of processes and financial monitoring. Organised by the Managing Authority for the Information Society, in Athens
14-16 May 2007	2 nd Pan-hellenic conference on first results and best practices on information systems for the health and social security sectors. Organised by HL7 Hellas, a not-for-profit organisation lobbying for the introduction of ICT in health and social security sectors, in Athens
14 June 2007	Workshop on new developmental and financial tools for the ICT industry. Organised by the Observatory for the Information Society, in Athens

9.2.3. Types of documents

As mentioned in the Methodology, the research was heavily reliant on the study of documents. Below is a comprehensive list of the documents which I collected and studied in the course of this research. Although not all of these documents were eventually included in the Analysis, they helped create a background understanding and challenged or led to more nuanced explanations of the ideas which were eventually supported.

Types of documents

Policies and strategies, such as the Lisbon Strategy, the eEurope strategies and action plans, the i2010 strategy, the Greek 1995 strategy, the White Bible, the Greek draft strategy of 2003 and the Digital Strategy
Programmes, such as the Information Society Programme and the CSF3
Assessment reports, such as the interim evaluation reports for the Information

Society Programme from 2001 to 2008, the final evaluation report for Klisthenis (the ICT programme in CSF2), two interim evaluation reports for the Integrated Mediterranean Programmes
Proceedings of the Monitoring Committee for the Information Society from 2001 to 2009
Benchmarking reports published by the Commission
Operational documents, such as the template for submitting proposals of ICT projects, the document detailing the tables with the evaluation criteria, the Complimentary Document detailing the budget per action line for the Information Society Programme, the invitations for projects in specific action lines
Analyses and consultancy reports, often commissioned by the Observatory for the Information Society and made public in their online repository
Financial progress data on a monthly basis for the Information Society Programme, expressed in charts and diagrams, and published on the website of the Special Secretariat for the Information Society

9.2.4. Websites

Numerous documents were obtained from the public domain, and in particular from websites on the Internet. The websites were the official websites of organizations in Greece and the European Union. The websites were regularly visited throughout the duration of the research and were monitored for changes and important uploaded information. A list is included below, along with an indication of the organisation that each website represents. The list was compiled on 09 March 2010, when all links were also accessed and checked for validity.

www.infosociety.gr – Special Secretariat for the Information Society
www.observatory.gr – Observatory for the Information Society, including a comprehensive archive
www.ktpae.gr – InforSoc Ltd
http://www.espa.gr/ - Information on the Greek National Reference Framework, the Greek development strategy for the years 2007-2013
http://www.hellaskps.gr/ - Information on the Greek Community Support Frameworks, with more extensive information on CSF3 and CSF4
http://www.ops.gr/Ergorama/ - Information on the management information system of CSF3
www.sepe.gr/ - Greek Federation of ICT Companies
http://ec.europa.eu/dgs/information_society/index_en.htm - DG Media and Information Society
http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm - Information on i2010 strategy

http://ec.europa.eu/information_society/eeurope/i2010/archive/eeurope/index_en.htm - Information on eEurope strategy
http://ec.europa.eu/regional_policy/index_en.htm - DG Regional Development
http://ec.europa.eu/regional_policy/funds/prord/pro2000_en.htm - Information on the Community Support Frameworks of individual member states
http://europa.eu/lisbon_treaty/index_en.htm - Information on the Lisbon Strategy
http://aei.pitt.edu/ - Archive of European integration, provided by the University of Pittsburgh, and providing free access to EU documents

9.3. Appendix C

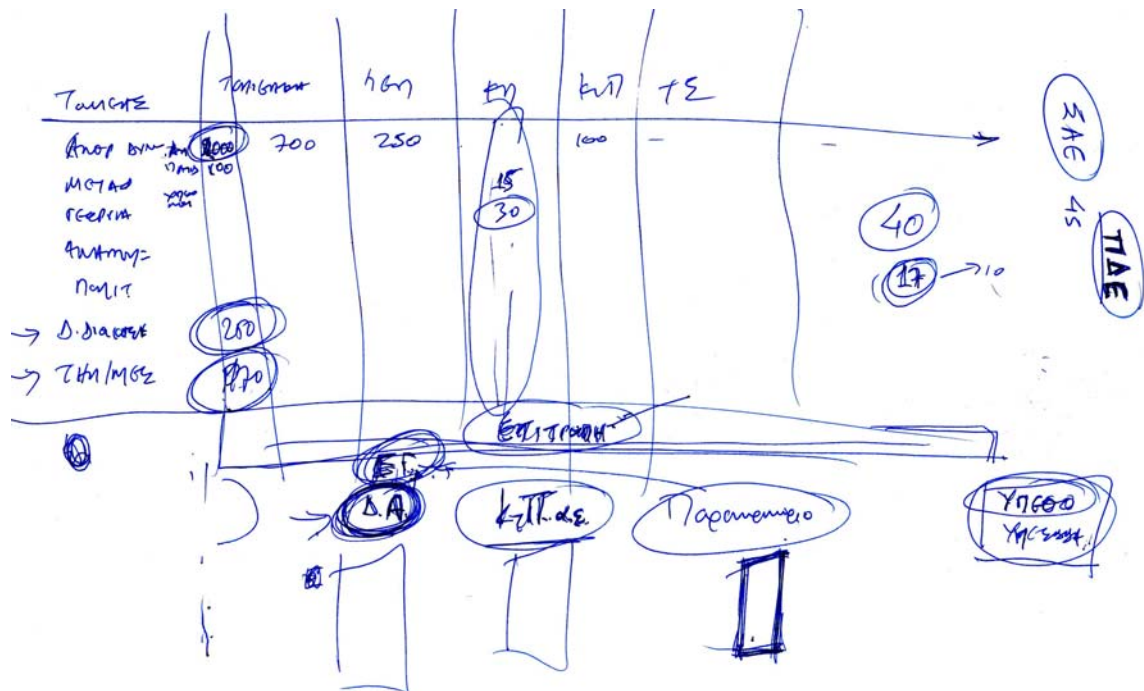


Figure 4 - Drawing by interviewee representing his version of how he managed to have the budget for the Information Society Programme accepted by the cabinet

A tidier, more comprehensible version of the above drawing can be found in the table below. The interviewee agreed that the form and format of the table below adequately represented the formatting of the budget proposal that was presented and approved by the Cabinet. The figures are not accurate but have been selected to reflect the fact that there was a conscious effort to create the impression that individual ministries would be managing budgets far greater than in reality. For example, the Ministry of Interior would be seemingly managing a budget of 200, but in effect 150 out of the 200 would be assigned to the Information Society Programme.

		Operational Programmes					
		OPP	OPT	OPIS	OPCO	OPCU	OPE
Areas of Action	Total						
Education							
Transport	280		250	30			
Agriculture							
Economic growth	250			80	40		130
Culture	110			10		100	
Public Sector	200	50		150			
Telecommunications	170						

(The above abbreviations correspond to the following: OPP: Operational Programme Politeia (civil service), OPT: Operational Programme Transport, OPIS: Operational Programme Information Society, OPCO: Operational Programme Competitiveness, OPCU: Operational Programme Culture, OPE: Operational Programme Entrepreneurship)

9.4. Appendix D

The Information Society Programme targeted four specific areas: education and culture, the public administration and wider public sector, Small-to-Medium-Enterprises (SMEs) in the digital economy, and telecommunications⁶⁹. As the graph below shows, nearly forty percent of the budget was earmarked for projects targeting the public administration, while the rest of the budget was shared roughly equally among the three other areas.

Roe (1994) argues that budgets are more than lists of words and numbers; they reflect their creators' priorities and embody the values and value systems of their authors. Reading the budget of the Information Society Programme this way highlights the priorities of its creators: interventions in the public sector with a clear citizen orientation top the list of priorities; spurring the digital economy through supporting ICT adoption and skills creation within the SMEs is a prevalent concern; facilitating the liberalisation of the telecommunications and postal market is within their problematisations; and strengthening the position of ICT in education and the presentation of culture through ICT is deemed worthy of some attention.

The table below sheds light into the types of actions which the programme set out to achieve within each area of involvement, and thus the types of technological interventions that were pursued. The above problematizations become more concrete as they are substantiated into types of actions to be pursued. The total budget for the Information Society Programme is broken down in five main action lines: education and culture, public administration, support for the SMEs, telecommunications, and finally consultancy support for all the above areas.

⁶⁹ A fifth area, called Technical Assistance, included funds earmarked for buying in professional services of consultancies.

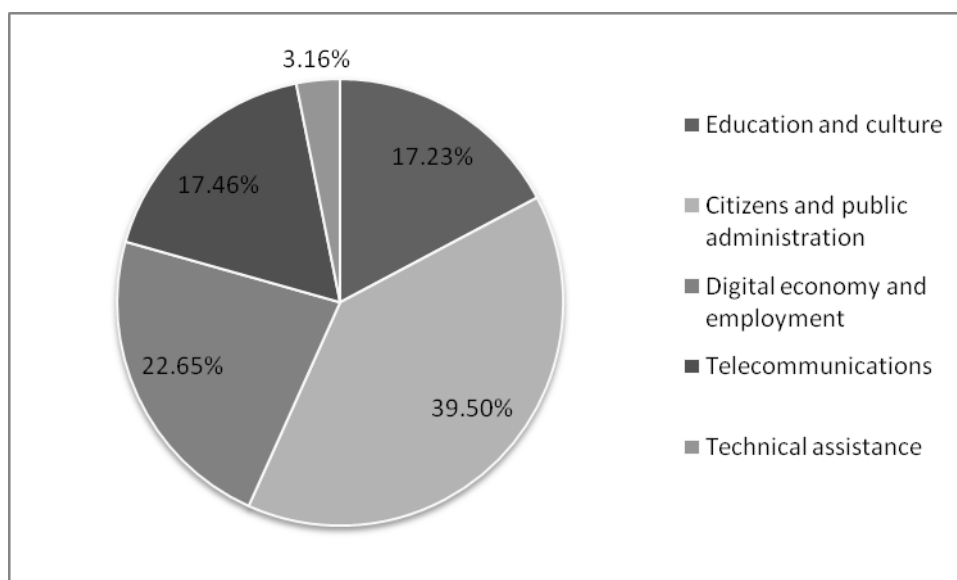


Figure 5 - Breakdown of initial budget allocation for the Information Society Programme

Below is a comprehensive list of the types of specific priorities within each action line and the percentage of the *total* budget that was earmarked for relevant projects within each one.

Type of technological innovation	Percentage of the total budget
Action line 1	
1.1 Equipping and networking schools and universities	4.9%
1.2 New technologies in education (content creation)	7.9%
1.3 Documentation, management and promotion of Greek culture	4.4%
Action line 2	
2.1 Government on line: business plans, studies and pilot projects	2.6%
2.2 Government on line	17.1%
2.3 Administration of Structural Funds and transition to the Euro	1.7%
2.4 Regional geographic information systems and innovative actions	3.9%
2.5 Training and modernisation in the public administration	3.9%
2.6 ICT applications in health and welfare	4.3%
2.7 Training and organisational reform in health and welfare	0.3%
2.8 "Intelligent transport"	1.4%

2.9 Data and information technology in a modern land registry	1.4%
Action line 3	
3.1 A "digital" environment for the new economy	2.8%
3.2 Business in the digital economy	6.7%
3.3 Research and technological development for the information society	2.2%
3.4 Skills upgrading	8.3%
3.5 Employment promotion for the IS	2.6%
Action line 4	
4.1 Supporting the liberalisation process	2.1%
4.2 Development of local access network infrastructure	4.3%
4.3 Advanced telecommunications services for the citizen	3.2%
4.4 Modernisation of postal services	1.6%
4.5 Training in the communications sector	0.1
Action line 5	
5.1 Technical Assistance European Social Fund (ESF)	2.3%
5.2 Technical Assistance European Regional Development Fund (ESRF)	0.9%

Table 3 - Directions of action (action lines) within the Information Society Programme

It can be seen from the above table that e-government was budgeted to attract more than 17% of the funding, while ICT training for the workforce and the creation of electronic content for educational purposes were planned to receive around 8% of the total budget, and support funding for businesses approximately 7%. Beyond the numbers, interviews in the Managing Authority showed that e-government projects took indeed disproportionate precedence over other concerns, while significant emphasis was placed on the strengthening of skills and infrastructures in the SMEs constituting the majority of the Greek (and European) economy.

This list of actions and the concomitant budget allocations were not final. The above list and budgets are drawn from the text authorised by DG Regio in 2001 (Operational Programme "Information Society" 2001). The technological priorities and the allocated budgets changed significantly as the priorities shifted during the six-year implementation period.

9.5. Appendix E

Table 4.3: Internet users

	EU-15	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
2000	92 790	3 000	2 090	24 800	1 000	5 486	8 460	679	13 200	100	7 000	2 700	2 500	1 927	4 048	15 800
2001	117 981	3 200	2 300	30 800	1 400	7 388	15 653	895	15 600	160	7 900	3 150	2 900	2 235	4 600	19 800
2002	135 107	3 400	2 500	35 000	2 000	7 856	18 716	1 065	17 000	165	8 590	3 340	3 700	2 650	5 125	24 000
2000	25	29	39	30	9	14	14	18	23	23	44	33	25	37	46	26
2001	31	31	43	37	13	18	26	23	27	36	49	39	28	43	52	33
2002	36	33	47	42	18	19	31	27	30	37	53	41	36	51	57	41
IS	NO	CH	BG	CY	CZ	EE	HU	LV	LT	MT	PL	RO	SK	SI	TR	
2000	168	1 950	2 096	430	120	1 000	392	715	150	225	51	2 800	800	507	300	2 000
2001	172	2 100	2 224	605	150	1 500	430	1 480	170	250	99	3 800	1 000	674	600	4 000
2002	175	2 300	2 375	:	210	:	560	1 600	310	:	:	:	1 800	863	800	4 900
2000	60	43	29	5	18	10	27	7	6	6	13	7	4	9	15	3
2001	60	46	31	7	22	15	30	15	7	7	25	10	4	13	30	6
2002	61	50	33	:	30	:	41	16	13	:	:	:	8	16	40	7

Figure 6 – Internet penetration in the EU. An example of a Eurostat statistics table.

Source Eurostat Pocketbooks 2003, Information society statistics, Data 1997-2002

Greece

Description	2004	2005	2006	2007	2008	EU27	ranking
Broadband							
Total DSL coverage (as % of total population)	9.0	12.0	18.0	86.3	88.0	92.7	22
DSL coverage in rural areas (as % of total population)		0.0	10.0	50.0	55.0	76.6	21
Broadband penetration (as % of population)	0.5	1.4	4.4	9.1	13.4	22.9	23
Speed - % of broadband subscriptions above 2 Mbps		0.0	9.7	30.0	43.7	63.3	20
% of households with an internet connection	17	22	23	25	31	60	25
% of households with a broadband connection	0	1	4	7	22	49	25
% of enterprises with a (fixed) broadband access	21	44	58	72	71	81	22
% of individuals using a mobile phone via UMTS (3G) to access the Internet			0	1	1	3	24
% of indiv. using a laptop via wireless connect. away from home/work to access the inter.				1	3	12	24
Internet Usage							
% pop. who are regular internet users (using the internet at least once a week)	17	18	23	28	33	56	26
% pop. who are frequent internet users (using the internet every day or almost every day)	9	11	13	19	23	43	25
% population who have never used the internet		73	65	62	56	33	25
Take up of internet services (as % of population)							
sending emails	15	14	17	21	26	53	26
looking for information about goods and services	14	17	23	28	31	50	24
uploading self-created content					4	11	25
ordering goods or services, over the Internet, for private use	1	2	5	8	9	32	24
reading online newspapers/magazines	11	9	14	16	19	25	22
selling goods and services (e.g. via auctions)	0	1	0			10	
internet banking	1	1	2	4	5	29	25
downloading computer or video games or their updates					6	9	24
downloading/listening to/watching music and/or films					19	28	23
paying for online audiovisual contents					2	5	23
listening to the web radio/watching web tv	4	4	5	8	16	20	19
seeking health information on injury, disease or nutrition	6	2	6	8	10	28	26
looking for a job or sending a job application	2	2	4	5	5	13	24
doing an online course				2	2	3	21
seeking information with the purpose of learning				5	22	26	15
eGovernment Indicators							
% basic public services for citizens fully available online	18		17	33		51	18
% basic public services for enterprises fully available online	50		50	63		72	
% of population using eGovernment services	8	7	9	12	10	28	25
% of population using eGovernment services for returning filled in forms					4	12	25
% of enterprises using eGovernment services	77	81	84	82	78	68	11
% of enterprises using eGovernment services for returning filled in forms	45	56	76	77	62	50	9
of which to submit a proposal in a public electronic tender system (e-procurement)		21	11	10	7	9	18
eCommerce							
eCommerce as % of total turnover of enterprises	2	2	3	2	3	12	16
% enterprises selling online	6	7	7	6	6	16	19
% enterprises purchasing online	14	14	11	8	9	28	20
eBusiness: % of enterprises							
using applications for integrating internal business processes (all enterprises)					42	41	17
using applications for integrating internal business processes (large enterprises)					71	70	19
using applications for employees to access Human Resources services					14	11	12
exchanging automatically business documents with customers/suppliers					20	25	20
sending/receiving e-invoices				10	13	21	20
sharing information electronically with customers/suppliers on Supply Chain Manag.					20	16	13
using analytical Customer Relation Manag.				15	15	17	12
Indicators on the ICT sector, ICT skills and R&D							
ICT sector share of total GDP	3.1					5.0	
ICT sector share of total employment	1.5					2.7	
ICT R&D expenditure by the business sector, as % of GDP	0.09	0.07				0.31	19
=====, as % of total R&D expenditure	54.5	36.1				26.4	5
% of ICT exports on total exports	1.2	1.0	2.1	1.0			27
% of ICT exports on total imports	4.7	4.2	5.1	4.9			27
% of persons employed with ICT user skills	12.1	12.3	13.0	12.7	12.9	18.4	24
% of persons employed with ICT specialist skills	2.4	2.2	2.1	2.2	2.0	3.0	26

Figure 7 – Source: Greece's ICT profile, i2010 Annual benchmarking report, highlighting the importance of ranking in the practice of benchmarking

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Ψηφιακός ουραγός η Ελλάδα και το 2010!

Έκθεση της Eurostat για το μέλλον του ψηφιακού περιεχομένου στην Ευρώπη παρουσιάζει την Ελλάδα και το 2010 να βρίσκεται στην τελευταία θέση της ΕΕ στην ευρυζωνικότητα.

Figure 17: Online penetration in households in the EU (selected countries)

% at end year	2001	2003	2005	2006	2008	2010
Austria	28.0	36.2	50.7	57.0	60.7	67.0
Belgium	28.4	34.8	47.9	53.0	61.5	69.0
Denmark	42.7	56.0	81.3	85.4	87.8	89.1
France	21.9	27.2	39.0	49.0	56.7	62.0
Finland	30.0	43.0	60.0	62.0	71.3	78.0
Germany	33.1	46.0	61.3	64.3	72.5	76.1
Greece	10.0	15.1	22.7	28.4	36.1	41.7
Ireland	23.6	36.0	47.5	51.0	58.0	63.8
Italy	15.0	30.9	39.7	45.4	51.8	56.1
Netherlands	48.0	63.3	79.5	82.6	85.8	88.4
Portugal	14.0	21.7	34.1	38.9	47.6	53.9
Spain	18.7	25.2	37.0	43.0	49.0	54.0
Sweden	62.7	70.0	75.7	78.0	80.6	81.9
UK	36.9	45.0	57.0	61.1	69.0	74.3
Total EU 14 (Western Europe)	29.5	39.4	52.4	57.2	63.5	68.2
Czech Republic	9.6	14.3	21.1	26.6	38.6	46.6
Estonia	10.2	17.4	30.1	41.2	50.4	58.4
Hungary	1.8	9.4	27.6	36.3	47.7	55.4
Poland	9.1	17.8	31.4	38.0	46.9	53.4
Slovakia	5.2	9.4	25.8	32.7	47.6	56.9
Slovenia	23.4	38.9	49.1	55.2	61.8	64.9
Total EU 16	9.9	17.9	31.9	38.3	48.8	56.9
Total EU 20	23.6	32.9	46.2	51.6	59.1	64.5

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Η έλλειψη συγκροτημένης ψηφιακής στρατηγικής και το έδαφος που χάθηκε τα προηγούμενα χρόνια αποτελούν τα βασικά αίτια για τη δημιουργία του ψηφιακού χάσματος ανάμεσα στη χώρα μας και τους ευρωπαϊκούς εταίρους μας και το οποίο δεν αναμένεται να καλυφθεί ούτε στην αυγή της δεύτερης δεκαετίας του 21ου αιώνα. Το μεγάλο κόστος για την Ελλάδα δεν είναι το γεγονός ότι παραμένει στην τελευταία θέση των δεικτών ευρυζωνικής πρόσβασης. Η ταχεία σύνδεση στο Διαδίκτυο είναι, απλώς, προαπαιτούμενο για την ανάπτυξη ηλεκτρονικών δημόσιων υπηρεσιών, επιχειρηματικότητας, καινοτομίας και ουσιαστικής συμμετοχής στην παγκόσμια ψηφιακή οικονομία που βρίσκεται σε ανάπτυξη.

Στην έκθεση προβλέπεται ότι η διείσδυση των υπολογιστών στα ελληνικά στίπια θα φτάσει

Πακιστάν καλούν τ έθνη σε ι

Περιορισ δραστική συναλλά υποχώρ

Πέθανε ο

Οκτώ ύπ τρομοκρ συνελήφ Βρετανία

Βυτιοφόρ σε στρατ Ιράκ προ τραυματι

Με τον π ηρωθους Σουηδία συναντη ηρωθους

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31/01/2007

Figure 8 – Newspaper article from ‘Kathimerini’ titled “Greece will be trailing behind Europe even in 2010!”, reporting on Eurostat’s predictions on Internet usage. The clipping was presented to be in my interview with DG Information Society officials to prove the country’s backward position

Bibliography

- Alvesson, M. and Skoeldberg, K. (2009). *Reflexive methodology: New vistas for qualitative research*. 2nd ed. Sage Publications, London.
- Andrikopoulou, E. and Kafkalas, G. (2004). Greek regional policy and the process of Europeanization, 1961-2000. In *Greece in the European Union*. (Eds. Dimitrakopoulos, D. and Passas, A.) Routledge, London and New York.
- Ansell, C., Parsons, C. and Darden, K. (1997). Dual networks in European regional development policy. *Journal of Common Market Studies*, 35 (3), 347-375.
- Antonelli, C. (2008). *The economics of innovation: Critical concepts in economics*. Routledge, London, New York.
- Archibugi, D., Howells, J. and Mitchie, J. (1999). *Innovation policy in a global economy*. Cambridge University Press, Cambridge.
- Armstrong, K. and Bulmer, S. (1998). *The governance of the single European market*. Manchester University Press, Manchester, New York.
- Assimakopoulos, D. and Macdonald, S. (1999). Collaboration and innovation networks in ESPRIT. *Prometheus*, 17 (3), 299-308.
- Atkinson, M. M. and Coleman, W. D. (1992). Policy communities, policy networks and the problems of governance. *Governance*, 5, 154-180.
- Atkinson, P. and Coffey, A. (2004). Analysing documentary realities. In *Qualitative research: Theory, method and practice*. (Ed. Silverman, D.) Sage, London.
- Avgerou, C. (2001). The significance of context in information research and organizational change. *Information Systems Journal*, 11 (1), 43-63.
- Avgerou, C. (2002). *Information systems and global diversity*. Oxford University Press, Oxford.
- Avgerou, C. (2003a). The link between ICT and economic growth in the discourse of development. In *Organizational information systems in the context of globalization*. (Eds. Korpela, M., Montealegre, R. and Poulymenakou, A.) Kluwer Academic Publishers, Boston, pp. 373-386.
- Avgerou, C. (2003b). New socio-technical perspectives of IS innovation in organizations. In *Information systems and the economics of innovation*. (Eds. Avgerou, C. and La Rovere, R. L.) Edward Elgar, Cheltenham, pp. 141-161.

- Avgerou, C. and McGrath, K. (2007). Power, rationality, and the art of living through socio-technical change. *MIS Quarterly*, 31 (2), 295-315.
- Axt, H.-J. (1997). Greece's accession to the EC and its economic consequences: A comparative view. In *Greece and the European Union: Stranger among partners?* (Ed. Axt, H.-J.) Nomos Verlagsgesellschaft, Baden-Baden.
- Bailey, D. J. (2006). Governance or the crisis of governmentality? Applying critical state theory at the European level. *Journal of European public policy*, 13 (1), 16-33.
- Ball, S. (1994). Researching inside the state: Issues in the interpretation of elite interviews. In *Researching education policy: ethical and methodological issues*. (Eds. Halpin, D. and Troyna, B.) Falmer Press, London, Washington.
- Barnard, C. and Scott, J. (Eds.) (2002). *The law of the single European market: Unpacking the premises*. Hart, Oxford.
- Barry, A. (2001). *Political machines: Governing a technological society*. The Athlone Press, London and New York.
- Barry, A. (2006). Technological zones. *European Journal of Social Theory*, 9 (2), 239-253.
- Barzilai-Nahon, K. (2006). Gaps and bits: Conceptualizing measurements for digital divide/s. *The Information Society*, 22 (5), 269-278.
- Bauman, Z. (1998). *Globalization: The human consequences*. Polity Press, Cambridge.
- Beardon, C. and Whitehouse, D. (Eds.) (1993). *Computers and society*. Intellect Books, Oxford.
- Beck, U. (2000). *What is globalization?* Polity Press, Cambridge.
- Bell, D. (1973). *The rise of post-industrial society: A venture in social forecasting*. Basic Books, New York.
- Benbasat, I., Goldstein, D. and Mead, M. (1987). The case research strategy in studies of information systems. *MIS Quarterly*, 11 (3), 369-386.
- Benbasat, I. and Zmud, R. W. (2003). The identity crisis within the IS discipline: Defining and communicating the discipline's core properties. *MIS Quarterly*, 27 (2), 183-194.
- Berleur, J. and Avgerou, C. (2005). *Perspectives and policies on ICT in society: An IFIP TC9 (Computers and Society) handbook*. Springer, New York.

- Berleur, J. and Galand, J.-M. (2005). ICT policies of the European Union: From an information society to eEurope. Trends and visions. In *Perspectives and policies on ICT in society: An IFIP TC9 (Computers and Society) handbook*. (Eds. Berleur, J. and Avgerou, C.) Springer, New York.
- Bianchi, G. (1993). The IMPs: A missed opportunity? An appraisal of the design and implementation of the Integrated Mediterranean Programmes. In *The regions and the European Community: The regional response to the single market in the underdeveloped areas*. (Ed. Leonardi, R.) Frank Cass, London.
- Bimber, B. (1990). Karl Marx and the three faces of technological determinism. *Social Studies of Science*, 20 (2), 333-351.
- Borras, S. (2003). *The innovation policy of the European Union*. Edward Elgar, Cheltenham.
- Borras, S. (2004). System of innovation and the European Union. *Science and Public Policy*, 31 (6), 425-433.
- Boucas, D. (2008). State, economy, society and recent information society policies in Greece. In *Twenty ninth International Conference on Information Systems Proceedings*. Paris.
- Bourantonis, D., Kalyvitis, S. and Tsoutsoplides, C. (1998). The European Union and Greece: Political acceptability and financial transfers. *Politics*, 18 (2), 89-99.
- Bradley, K. (1992). Comitology and the Law: Through a Glass, Darkly. *Common Market Law Review*, 29, 693-721.
- Brown, H. (2007). *Knowledge and innovation: A comparative study of the USA, the UK and Japan*. Routledge, London.
- Bruno, I., Jacquot, S. and Mandin, L. (2006). Europeanization through its instrumentation: benchmarking, mainstreaming and the open method of co-ordination ... toolbox or Pandora's box? *Journal of European Public Policy*, 13 (4), 519 – 536.
- Buhalis, D. and Deimezi, O. (2003). Information technology penetration and e-commerce developments in Greece, with a focus on Small to Medium-sized Enterprises. *Electronic Markets*, 13 (4), 309-324.
- Bunnell, T. and Coe, N. M. (2005). Re-fragmenting the 'political': Globalization, governmentality and Malaysia's Multimedia Super Corridor. *Political geography*, 24 (7), 831-849.
- Callon, M. (2004). Europe wrestling with technology. *Economy and Society*, 33 (1), 121-134.

- Callon, S. (1995). *Divided sun: MITI and the breakdown of Japanese high-tech industrial policy, 1975-1993*. Stanford University Press, Stanford.
- Caloghirou, Y. and Constantelou, A. (2006). Addressing the complexity challenge: Some reflections on the non-linear root of putting policy into practice. In *European Communications Policy Research Conference (EuroCPR)*. Seville.
- Carmel, E. (2003). The globalization of software outsourcing to dozens of nations: A preliminary analysis of the emergence of the 3rd and 4th tier software exporting nations. In *The digital challenge*. (Eds. Krishna, S. and Madon, S.) Aldershot, Ashgate.
- Castells, M. (2000a). Materials for an exploratory theory of the network society. *British Journal of Sociology*, 51 (1), 5-24.
- Castells, M. (2000b). *The rise of the network society - Information age: economy, society and culture*. Blackwell Publishers, Malden.
- Castells, M. (2000c). Towards a sociology of the network society. *Contemporary Sociology*, 29 (5), 693-699.
- Castells, M. (2001). *The Internet galaxy: Reflections on the Internet, business and society*. Oxford University Press, Oxford.
- Castells, M. (2005). The network society: From knowledge to policy Chapter 1. In *The network society: From knowledge to policy*. (Eds. Castells, M. and Cardoso, G.) Center for Transatlantic Relations, Washington.
- Castells, M. and Cardoso, G. (2005). *The network society: From knowledge to policy*. Center for Transatlantic Relations, Washington.
- Caton, H. (1985). The preindustrial economics of Adam Smith. *Journal of Economic History*, 45 (4), 833-853.
- Caudle, S. L., Gorr, W. L. and Newcomer, K. E. (1991). Key information systems management issues for the public sector. *MIS Quarterly*, 15 (2), 171-188.
- Chadwick, A. and May, C. (2003). Interaction between citizens in the age of the Internet: "e-Government in the United States, Britain and the European Union. *Governance: An international journal of policy and administration*, 16 (2), 271-300.
- Chalmers, J. (1982). *MITI and the Japanese miracle: The growth of industrial policy, 1925-1975*. Stanford University Press, Stanford.
- Checkland, P. (1999). *Soft systems methodology: A 30-year retrospective*. Wiley, Chichester.

- Checkland, P. and Holwell, S. (2000). *Information, systems and information systems*. John Wiley and sons, Chichester.
- Chen, X., Gao, J. and Tan, W. (2005). ICT in China: A strong force to boost economic and societal development. In *Perspectives and policies on ICT in society: An IFIP TC9 (Computers and Society) Handbook*. (Eds. Berleur, J. and Avgerou, C.) Springer, New York.
- Chia, R. (1995). From modern to postmodern organizational analysis. *Organization Studies*, 16 (4), 579-604.
- Christiansen, T. and Kirchner, E. J. (Eds.) (2000). *Committee governance in the European Union*. Manchester University Press, Manchester.
- Christodoulakis, N. and Kalyvitis, S. (2000). The effects of the second Community Support Framework 1994-99 on the Greek economy. *Journal of Policy Modelling*, 22 (5), 611-624.
- Ciborra, C. (2002). *The labyrinths of information: Challenging the wisdom of systems*. Oxford University Press, Oxford.
- Ciborra, C. and Navarra, D. (2005). Good governance, development theory, and aid policy: Risks and challenges of e-government in Jordan. *Information technology for development*, 11 (2), 141-159.
- Colebatch, H. K. (2002). *Policy*. 2nd ed. Open University Press, Maidenhead.
- Colebatch, H. K. (2005). Policy analysis, policy practice and political science. *Australian Journal of Public Administration*, 64 (3), 14-23.
- Colebatch, H. K. (2006). What work makes policy? *Policy Science*, 39 (4), 309-321.
- Colebatch, H. K. and Degeling, P. (1986). Talking and doing in the work of administration. *Public Administration and Development*, 6 (4), 339-356.
- Colebatch, H. K. and Degeling, P. J. (2007). Interpretation, reflexivity and policy practice in clinical care. *Critical Policy Studies*, 1 (3), 235 – 251.
- Conceicao, P., Heitor, M. and Lundvall, B.-A. (Eds.) (2003). *Innovation, competence building and social cohesion in Europe*. Edward Elgar, Cheltenham, Northampton.
- Coopey, R. (Ed.) (2004). *Information technology policy: An international history*. Oxford University Press, Oxford.
- Cordella, A. and Iannacci, F. (2010). Information systems in the public sector: The e-government enactment framework. *Journal of Strategic Information Systems*, 19 (1), 52-66.

- Cordella, A. and Willcocks, L. (2010). Outsourcing, bureaucracy and public value: Reappraising the notion of the "contract state". *Government Information Quarterly*, 27, 82-88.
- Cronberg, T. (1997). Reshaping the Danish information society: 1984 and 1994. In *The social shaping of information superhighways: European and American Roads to the information society*. (Eds. Kubicek, H., Dutton, W. and Williams, R.) Campus Verlag, Frankfurt.
- Cruikshank, B. (1993). Revolutions within: Self-government and self-esteem. *Economy and Society*, 22 (3), 327-344.
- Cruikshank, B. (1999). *The will to empower: democratic citizens and other subjects*. Cornell University Press, New York.
- Damsgaard, J. and Lyytinen, K. (1998). Governmental intervention in the diffusion of EDI: Goals and conflicts. In *EDI and data networking in the public sector*. (Ed. Andersen, K. V.) Kluwer Academic Publishers, Dordrecht.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13 (3), 319-340.
- De Miranda, A. and Kristiansen, M. (2000). Technological determinism and ideology: The European Union and the information society. In *Policy agendas for sustainable technological innovation*, 3rd POSTI International Conference. London.
- de Sola Pool, I. (1974). The Rise of Communications Policy Research. *Journal of Communication*, 24 (2), 31-42.
- Dean, M. (1999). *Governmentality*. Sage Publications, London.
- Digital Strategy (2005). *Digital strategy 2006-2013*. Informatics Committee, Athens.
- Dimitrakopoulos, D. and Passas, A. (Eds.) (2004). *Greece in the European Union*. Routledge, New York.
- Diso, L. I. (2005). Information technology policy formulation in Nigeria: Answers without questions. *The International Information & Library Review*, 37 (4), 295-302.
- Dolowitz, D. P. and March, D. (2000). Learning from abroad: The role of policy transfer in contemporary policy-making. *Governance: An International Journal of Policy and Administration*, 13 (1), 5-24.
- Dosi, G. (2008). Foreword. In *Systems of innovation: Selected essays in evolutionary economics*. (Ed. Freeman, C.) Edward Elgar, Cheltenham.

- DTI (2000). Closing the digital divide: Information and communication technologies in deprived areas. HMSO, London.
- Du Gay, P. (2008). 'Without affection or enthusiasm' problems of involvement and attachment in 'responsive' public management. *Organization*, 15 (3), 335-353.
- Dunleavy, P. and Hood, C. (1994). From old public administration to new public management. *Public Money and Management*, 14 (3), 9 - 16.
- Dutton, W. (1992). The ecology of games shaping telecommunications policy. *Communications Theory*, 2 (4), 303-328.
- Dyer, G. and Wilkins, A. (1991). Better stories, not better constructs, to generate better theory: A rejoinder to Eisenhardt. *Academy of Management Review*, 16 (3), 614-619.
- Eagleton, T. (2003). *After theory*. Basic Books, New York.
- Economides, S. (1995). Greece and the New Europe in the 1990s. In *Greece and Europe in the modern period: Aspects of a troubled relationship*. (Ed. Carabott, P.) King's College London, Centre for Hellenic Studies, London.
- Economou, D. (1997). The impact of the first Community Support Framework for Greece: The anatomy of failure. *European Urban and Regional Studies*, 4 (1), 71-84.
- Edquist, C. (2005). Systems of innovation: Perspectives and challenges. In *The Oxford handbook of innovation*. (Eds. Fagerberg, J., Mowery, D. C. and Nelson, R. R.) Oxford University Press, Oxford.
- Ellul, J. (1964). *The technological society*. Vintage Books, New York.
- English, M. and Watson Brown, A. (1984). National policies in information technology: Challenge and responses. *Oxford Surveys in Information Technology*, 13 (1), 125-142.
- Eriksen, E. O. and Fossum, J. E. (Eds.) (2000). *Democracy in the European Union: integration through deliberation?* Routledge, London.
- Escobar, A. (1995). *Encountering development: The making and unmaking of the Third World*. Princeton University Press, Princeton.
- Etta, F. and Edler, L. (2005). *At the crossroads: ICT policy making in East Africa*. East African Educational Publishers, International Development Research Centre, Nairobi, Canada.

- European Commission (1993). Growth, competitiveness, employment: The challenges and ways forward into the 21st century. White paper. COM (93) 700. European Commission, Brussels.
- European Commission (1994). Europe's way to the information society. An action plan. COM(94) 347 final. European Commission Brussels.
- European Commission (1996). Europe's way to the information society. Updated version of the action plan. COM(96) 0607 - C4-0648/96. European Commission, Brussels.
- European Commission (1999). eEurope: An information society for all - Communication on a Commission initiative for the Special European Council of Lisbon, 23 and 24 March 2000. COM (1999) 687 final. European Commission, Brussels.
- European Commission (2000). eEurope - An information society for all: Progress report - For the Special Council on Employment, Economic reforms and Social Cohesion - Towards a Europe based on innovation and knowledge. COM (2000) 130 final. European Council, Brussels.
- European Commission (2002). The eEurope 2005 action plan: An information society for everyone. COM(2002) 263 final. European Commission, Brussels.
- European Commission (2004). Facing the Challenge: The Lisbon strategy for growth and employment - Report from the High Level Group chaired by Wim Kok. European Commission, Brussels.
- European Commission (2005). i2010 - A European Information Society for growth and employment. SEC(2005) 717. European Commission, Brussels.
- European Commission (2009). Europe's Digital Competitiveness Report - Main achievements of the i2010 strategy 2005-2009. COM(2009)390. European Commission, Brussels.
- Evans, P. B. (1992). Indian informatics in the 1980s: The changing character of state involvement. *World development*, 20 (1), 1-18.
- Fagerberg, J., Mowery, D. C. and Nelson, R. R. (Eds.) (2005). *The Oxford handbook of innovation*. Oxford University Press, Oxford.
- Falch, M. and Henten, A. (2000). Digital Denmark: from information society to network society. *Telecommunications Policy*, 24 (5), 377-394.
- Fay, E., Introna, L. and Puyou, F.-R. (2010). Living with numbers: Accounting for subjectivity in/with management accounting systems. *Information and Organization*, 20, 21-43.

- Featherstone, K. and Papadimitriou, D. (2008). *The limits of europeanization: Reform capacity and policy conflict in Greece*. Palgrave Macmillan, Basingstoke, New York.
- Fischer, F. (2003). *Reframing public policy: Discursive politics and deliberative practices*. Oxford University Press, Oxford.
- Fischer, F. and Forester, J. (Eds.) (1993). *The argumentative turn in policy analysis and planning*. Duke University Press/ University College London, London.
- Flichy, P. (1995). *Dynamics of modern communication: The shaping and impact of new communication technologies*. Sage Publications, London.
- Flichy, P. (2007). *Understanding technological innovation: A socio-technical approach*. Edward Elgar, Cheltenham.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Enquiry*, 12 (2), 219-245.
- Forbes, N. and Wield, D. (2002). The Indian software industry: Miracle in the making or a high-technology "sweet-shop"? In *From followers to leaders*. (Eds. Forbes, N. and Wield, D.) Routledge, London.
- Foucault, M. (1973). *The birth of the clinic*. Tavistock, London.
- Foucault, M. (1978). *The will to knowledge: The history of sexuality Volume 1*. Pantheon Books, New York.
- Foucault, M. (1979). *Discipline and punish: the birth of the prison*. Penguin, Harmondsworth.
- Foucault, M. (1980). *Power/Knowledge: Selected interviews and other writings 1972-1977*. Pantheon Books, New York.
- Foucault, M. (1987). *The use of pleasure: The history of sexuality Volume 2*. Penguin, London.
- Foucault, M. (1988a). *Madness and civilization: A history of insanity in the age of reason*. Random House, New York.
- Foucault, M. (1988b). *Technologies of the self*. In *Technologies of the self: A seminar with Michel Foucault*. (Eds. Martin, L. H., Gutman, H. and Hutton, P. H.) Tavistock, London.
- Foucault, M. (1990). *The care of the self: The history of sexuality Volume 3*. Vintage Books, New York.
- Foucault, M. (1994). *Ethics: Subjectivity and truth*. Penguin Books, London.

- Foucault, M. (2001). *The hermeneutics of the subject. Lectures at the Collège de France 1981-1982*. Picador, New York.
- Foucault, M. (Ed.) (2002). *Power: Essential works of Foucault 1954-1984*. Penguin, London.
- Foucault, M. (2007). *Security, territory, population. Lectures at the Collège de France 1977-1978*. Palgrave Macmillan, Basingstoke.
- Fraser, N. (2003). From discipline to flexibilization? Rereading Foucault in the shadow of globalization. *Constellations*, 10 (2), 160-171.
- Fraser, N. (2007). Creating model citizens for the information age: Canadian Internet policy as civilizing discourse. *Canadian Journal of Communication*, 23 (2), 201-218.
- Freeman, C. (1987). *Technology policy and economic performance: Lessons from Japan*. Pinter, London.
- Freeman, C. (2007). The ICT paradigm. In *The Oxford handbook of information and communication technologies*. (Eds. Mansell, R., Avgerou, C., Quah, D. and Silverstone, R.) Oxford University Press, Oxford, New York.
- Freeman, C. (2008). *Systems of innovation: Selected essays in evolutionary economics*. Edward Elgar, Cheltenham.
- Freeman, C. and Louçã, F. (2002). *As time goes by - From the industrial revolutions to the information Revolution*. Oxford University Press, Oxford.
- Freeman, C. and Perez, C. (1988). Structural crises of adjustment, business cycles and investment behaviour. In *Technical change and economic theory*. (Eds. Dosi, G., Freeman, R., Nelson, R., Silverberg, G. and Soete, L.) Pinter, London, pp. 38-66.
- Fuchs, E. R. H. (2010). Rethinking the role of the state in technology development: DARPA and the case for embedded network governance. *Research Policy*, 39 (9), 1133-1147.
- Galliers, R. (2003). Change as crisis or growth? Toward a trans-disciplinary view of information systems as a field of study: A response to Benbasat and Zmud's call for returning to the IT artifact. *Journal of the Association for Information Systems*, 4, 337-351.
- Galperin, H. (2004). Beyond interests, ideas and technology: An institutional approach to communication and information policy. *Information society*, 20 (3), 159-168.

- Garnham, N. (1997). Europe and the global information society: The history of a troubled relationship. *Telematics and informatics*, 14 (4), 323-327.
- Garnham, N. (2000). 'Information society' as theory and ideology: A critical perspective on technology, education and employment in the information age. *Information, Communication & Society*, 3 (2), 130-152.
- Garnham, N. (2004). Class analysis and the information society as mode of production. *The Public*, 11 (3), 93-104.
- Georgiou, G. A. (1994). The responsiveness of the Greek administration system to European prospects. *International Review of Administrative Sciences*, 60, 131-144.
- Gerrie, T. (2003). Was Foucault a philosopher of technology? . *Techne*, 7 (2), 14-26.
- Gibbs, J., Kraemer, K. L. and Dedrick, J. (2003). Environment and policy factors shaping global e-commerce diffusion: A cross-country comparison. *The Information Society*, 19 (1), 5-18.
- Giddens, A. (1990). *The consequences of modernity*. Polity Press, Cambridge.
- Gil-Garcia, J. R. (2004). Information technology policies and standards: A comparative review of the states. *Journal of Government Information*, 30 (5/6), 548-560.
- Gleadle, P., Cornelius, N. and Pezet, E. (2008). Enterprising selves: How governmentality meets agency. *Organization*, 15 (3), 307-313.
- Godin, B. (2005). The knowledge-based economy: Conceptual framework or buzzword? *Journal of Technology Transfer*, 31 (17-30).
- Golding, P. (2000). Forthcoming features: Information and communications technology and the sociology of the future. *Sociology*, 34 (1), 165-184.
- Goodwin, I. and Spittle, S. (2002). The European Union and the information society: Discourse, power and policy. *New media & society*, 4 (2), 225-249.
- Gopalakrishnan, S. and Damanpour, F. (1997). A review of innovation research in economics, sociology and technology management. *Omega International Journal of Management Science*, 2 (1), 15-28.
- Gore, A. (1996). Bringing information to the world: The global information infrastructure. *Harvard Journal of Law and Technology*, 9 (1), 1-9.
- Greek Government (1982). Greek memorandum: Position of the Greek government on Greece's relations with the European Communities. 3/1982. Bulletin of the European Communities, Presented at Council meeting on 22 March, Brussels.

- Green, N. (2002). On the move: Technology, mobility, and the mediation of Social time and space. *The Information Society*, 18 (4), 281–292.
- Gros, F. (2001). Course context: The 1982 course in Foucault's work. In *The hermeneutics of the subject: Lectures at the College de France 1981-1982*. (Ed. Foucault, M.) Picador, New York.
- Guba, E. and Lincoln, Y. (1994). Competing paradigms in qualitative research. In *Handbook of qualitative research*. (Eds. Denzin, N. K. and Lincoln, Y. S.) Sage, Thousand Oaks.
- Gurbaxani, V., Kraemer, K. L., King, J. L., Jarman, S., Dedrick, J., Raman, K. S. and Yap, C. S. (1990). Government as the driving force toward the information society: National computer policy in Singapore. *The Information Society*, 7 (2), 155-185.
- Hall, P. and Loefgren, K. (2004). The rise and decline of a visionary policy: Swedish ICT-policy in retrospect. *Information Polity*, 9, 149-165.
- Hannam, K., Sheller, M. and Urry, J. (2006). Editorial: Mobilities, immobilities and moorings. *Mobilities*, 1 (1), 1-22.
- Harlow, C. (2002). *Accountability in the European Union*. Oxford University Press, Oxford.
- Henten, A. and Kristensen, T. M. (2000). Information society visions in the Nordic countries. *Telematics and Informatics*, 17 (1-2), 77-103.
- Heracleus, L. and Barrett, M. (2001). Organizational change as discourse: Communicative actions and deep structures in the context of information technology implementation. *Academy of Management Journal*, 44 (4), 755-778.
- Heritier, A. (2001). Market integration and social cohesion: the politics of public services in European regulation *Journal of European Public Policy*, 8 (5), 825 - 852.
- Hilbert, M., Lopez, P. and Vasquez, C. (2010). Information societies or “ICT equipment societies?” Measuring the digital information-processing capacity of a society in bits and bytes. *The Information Society*, 26 (3), 157–178.
- Hirst, P. and Thompson, G. (1995). Globalization and the future of the nation state. *Economy and Society*, 24 (3), 408 - 442.
- Hislop, D. and Axtell, C. (2007). The neglect of spatial mobility in contemporary studies of work: The case of telework. *New Technology, Work and Employment*, 22 (1), 34-51.

- Hobday, M. (1988). Evaluating collaborative R&D programmes in information technology: The case of the U.K. Alvey programme. *Technovation*, 8 (4), 271-298.
- Hood, C. and Peters, G. (2004). The middle aging of New Public Management: Into the age of paradox? . *Journal of Public Administration Research and Theory*, 14 (3), 267-282.
- Inda, J. X. (Ed.) (2005). *Anthropologies of modernity: Foucault, governmentality, and life politics*. Blackwell Publishing, Malden, Oxford.
- infoDev (2010). *The global opportunity in IT-based services: Assessing and enhancing country competitiveness*. The World Bank, Washington.
- Innis, H. (1951). *The bias of communication*. University of Toronto Press, Toronto.
- Introna, L. (1997). *Management, information and power: A narrative of the involved manager*. Macmillan, Basingstoke.
- Ioakimidis, P. C. (1996). EU cohesion policy in Greece: The tension between bureaucratic centralism and regionalism. In *Cohesion policy and European integration: building multi-level governance*. (Ed. Hooghe, L.) Oxford University Press, New York.
- Ioakimidis, P. C. (2001). The europeanization of Greece: An overall assessment. In *Europeanization and the southern periphery*. (Eds. Featherstone, K. and Kazamias, G.) Frank Cass, London, Portland.
- Ioakimidis, P. C. (2009). *The Future of Greece's European Policy: From euroenthusiasm to eurorealism?* Presentation given at the Hellenic Observatory, London School of Economics and Political Science, London.
- ITU (2010). *Measuring the information society*. International Telecommunications Union, Geneva.
- Ives, B. and Olson, M. H. (1984). User involvement and MIS success: A review of research. *Management Science*, 30 (5), 586-603.
- Jenkins-Smith, H. C. and Sabatier, P. (1994). Evaluating the advocacy coalition framework. *Journal of Public Policy*, 14 (2), 175-203.
- Jessop, B. (2007). From micro-powers to governmentality: Foucault's work on statehood, state formation, statecraft and state power. *Political Geography*, 26 (1), 34-40.
- Kahin, B. and Wilson, E. (Eds.) (1997). *National information infrastructure initiatives: Vision and policy design*. MIT Press, Cambridge & Massachusetts.

- Kaitatzi-Whitlock, S. (2000). A 'redundant information society' for the European Union? *Telematics and Informatics*, 17 (1-2), 39-75.
- Keen, P. G. W. (1981). Information systems and organizational change. *Communications of the ACM*, 24 (1), 24-33.
- King, J. L., Gurbaxani, V., Kraemer, K. L., Raman, K. S. and Yap, C. S. (1994). Institutional factors in information technology innovation. *Information systems research*, 5 (2), 139-169.
- Kingdon, J. W. (1984). *Agendas, alternatives and public policies*. Little Brown, Boston.
- Klein, H. (2004). Understanding WSIS: An institutional analysis of the UN World Summit on the information society. *Information Technologies and International Development*, 1 (3-4), 3-13.
- Kubicek, H. and Dutton, W. (1997). The social shaping of information superhighways: An introduction. In *The social shaping of information superhighways: European and American roads to the information society*. (Eds. Kubicek, H., Dutton, W. and Willians, R.) Campus Verlag, Frankfurt.
- Kubicek, H., Dutton, W. and Willians, R. (Eds.) (1997). *The social shaping of information superhighways: European and American roads to the information society*. Campus Verlag, Frankfurt.
- Kumar, K. (2005). *From post-industrial to post-modern society*. 2nd ed. Blackwell Publishing, Oxford.
- Kuppusamy, M. and Santhapparaj, S. (2005). Investment in information and communication technologies (ICT) and its payoff in Malaysia. *Perspectives on global development and technology*, 4 (2), 147-167.
- La Rovere, R. L. (1998). Diffusion of information technologies and changes in the telecommunications sector: The case of Brazilian small- and medium-sized enterprises. *Information technology & people*, 11 (3), 194-206.
- Land, F. (1983). Inaugural lecture. *Information technology: The Alvey report and government strategy*. London School of Economics and Political Science, London.
- Land, F. (1990). Viewpoint: The government role in relation to information technology. *International Journal of Information Management*, 10, 5-13.
- Larner, W. (2000). Neo-liberalism, policy, ideology, governmentality. *Studies in political economy*, 63, 5-25.

- Larner, W. and Le Heron, R. (2004). Global benchmarking: participating 'at a distance' in the globalizing economy. In *Global governmentality: Governing international spaces*. (Eds. Larner, W. and Walters, W.) Routledge, London.
- Lasswell, H. D. (1951). The policy orientation. In *The policy sciences*. (Eds. Lerner, D. and Lasswell, H. D.) Stanford University Press, Stanford.
- Legris, P., Ingham, J. and Colletette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40 (3), 191-204.
- Lemke, T. (2002). Foucault, governmentality, and critique. *Rethinking marxism*, 14 (3), 49-64.
- Lemke, T. (2003). Comment on Nancy Frazer: Rereading Foucault in the shadow of globalization. *Constellations*, 10 (2), 171-179.
- Lemke, T. (2007). An indigestible meal? Foucault, governmentality and state theory. *Distinktion: Scandinavian Journal of Social Theory*, 15, 43-66.
- Leonardi, R. (2005). *Cohesion policy in the European Union*. Palgrave Macmillan, Basingstoke, New York.
- Leroi-Gourham, A. (1964). *Le geste et la parole, I, Technique et langage*. Albin Michel, Paris.
- Lévi-Strauss, C. (1963). *Structural anthropology*. Basic Books, New York.
- Leyshon, A., French, S., Thrift, N., Crewe, L. and Webb, P. (2005). Accounting for e-commerce: Abstractions, virtualism and the cultural circuit of capital. *Economy and Society*, 34 (3), 428-450.
- Liikanen, E. (2005). Policies of transition to the network society in Europe. In *The network society from knowledge to policy*. (Eds. Castells, M. and Cardoso, G.) John Hopkins Center for Transatlantic Relations, Washington.
- Lindblom, C. (1979). Still muddling, not yet through. *Public Administration Review*, 39, 517-526.
- Lipsky, M. (1979). *Street level bureaucracy: Dilemmas of the individual in public services*. Russell Sage Foundation, New York.
- Lolos, S., Suwa-Eisenmann, A., Zonzilos, N. and Bourguignon, F. (1995). Evaluating the CSF with an extended computable general equilibrium model: The case of Greece (1988-1995). *Journal of Policy Modelling*, 17 (2), 177-197.
- Lundvall, B.-A. (1992). *National systems of innovation: Towards a theory of innovation and interactive learning*. Pinter, London.

- Lymperaki, A. and Tsakalotos, E. (2002). Reforming the economy without society: Social and institutional constraints to economic reform in post-1974 Greece. *New Political Economy*, 7 (1), 93-114.
- Machlup, F. (1962). *The production and distribution of knowledge in the United States*. Princeton University Press, Princeton.
- MacKenzie, D. (1984). Marx and the machine. *Technology and Culture*, 25 (3), 473-502.
- Madon, S. (2000). The Internet and socio-economic development: Exploring the interaction. *Information technology & people*, 13 (2), 85-101.
- Mansell, R. (1993). *The new telecommunications: a political economy of network evolution*. Sage, London.
- Mansell, R. (Ed.) (2009). *The information society: Critical concepts in sociology*. Routledge, Abingdon.
- Mansell, R. and Streinmueller, E. (2000). *Mobilizing the information society strategies for growth and opportunity*. Oxford University Press, New York.
- Mansell, R. and Wehn, U. (1998). *Knowledge societies: Information technology for sustainable development*. Oxford University Press, Oxford.
- March, J. G. and Olsen, J. P. (2006). Elaborating the "new institutionalism". In *The Oxford handbook of political institutions*. (Eds. Rhodes, R. A. W., Binder, S. A. and Rockman, B. A.) Oxford University Press, Oxford, New York.
- Marklund, G., Vonortas, N. S. and Wessner, C. W. (Eds.) (2009). *The innovation imperative: National innovation strategies in the global economy*. Edward Elgar, Cheltenham.
- Markus, L. (2004). Technochange management: using IT to drive organizational change. *Journal of Information Technology*, 19 (1), 4-20.
- Marston, G. and McDonald, D. (2006). *Analysing social policy: A governmental approach*. Edward Elgar, Cheltenham.
- Mason, R., McKenney, J. and Copeland, D. (1997). An historical method for MIS research: Steps and assumptions. *MIS Quarterly*, 21 (3), 307-320.
- Mason, R. and Mitroff, I. I. (1973). A program for research on management information systems. *Management Science*, 19 (5), 475-487.
- Masuda, Y. (1981). *The information society as post-industrial society*. World Futures Society, Bethesda MD.

- Mattelart, A. (2002). An archaeology of the global era: constructing a belief. *Media, Culture & Society*, 24, 591-612.
- Mattelart, A. (2003). *The information society: An introduction*. Sage Publications, London.
- Mavris, Y. (2004). From accession to the euro: The evolution of Greek public attitudes toward European integration, 1981-2001. In *Greece in the European Union*. (Eds. Dimitrakopoulos, D. and Passas, A.) Routledge, London, New York, pp. 113-138.
- May, C. (2002). *The information society: A sceptical view*. Polity Press, Cambridge.
- McGrath, K. (2006). Affection not affliction: The role of emotions in information systems and organizational change. *Information and Organization*, 16 (4), 277-303.
- McKee, K. (2009). Post-Foucauldian governmentality: What does it offer critical social policy analysis? *Critical Social Policy*, 29 (3), 465-486.
- Mehta, M. D. and Darier, E. (1998). Virtual control and disciplining on the Internet: Electronic governmentality in the new wired world. *The Information Society*, 14 (2), 107-116.
- Merlingen, M. (2003). Governmentality: Towards a Foucauldian framework for the study of IGOs. *Cooperation and Conflict*, 38 (4), 361-384.
- Miller, H. and Charles, F. (2007). *Postmodern public administration*. M.E. Sharpe, New York, London.
- Miller, J. (2005). Perspectives and policies on ICT in Africa. In *Perspectives and policies on ICT in society: An IFIP TC9 (Computers and Society) Handbook*. (Eds. Berleur, J. and Avgerou, C.) Springer, New York.
- Miller, P. and Rose, N. (1990). Governing economic life. *Economy and Society*, 19 (1), 11-40.
- Miller, P. and Rose, N. (2008). *Governing the present*. Polity, Cambridge.
- Ministry of Industry Energy and Technology (1995). *The Greek strategy for the information society: Tool for employment, growth and quality of life*. Ministry of Industry, Energy and Technology, Athens.
- Mohammed, T. A. (2008). The art of existence and the regimes of IS-enabled customer service rationalization: A study of IT service management in the UK higher education. In *International Conference on Information Systems Proceedings*. Paris.

- Molle, W. (2007). *European cohesion policy*. Routledge, London, New York.
- Molle, W. (2009). European innovation policy: increased effectiveness through coordination with cohesion policy. In *Enhancing the effectiveness of innovation: New roles for key players*. (Eds. Molle, W. and Djarova, J.) Edward Elgar, Cheltenham.
- Monitoring Committee (2001). Progress report 2000 for the operational programme "Kleisthenis - Modernization of the public sector" Ministry of Interior, Athens.
- Montealegre, R. (1999). A temporal model of institutional interventions for information technology adoption in less-developed countries. *Journal of Management Information Systems*, 16 (1), 207-232.
- Moore, N. (1998a). The British national information strategy. *Journal of information science*, 24 (5), 337-344.
- Moore, N. (1998b). Confucius or capitalism? Policies for an information society. In *Cyberspace divide: Equality, agency and policy in the information society*. (Ed. Loader, B.) Routledge, London, pp. 149-160.
- Morris-Suzuki, T. (1994). *The technological transformation of Japan: From the seventeenth to the twenty-first century*. Cambridge University Press, Cambridge.
- Mosco, V. (1988). International telecommunication what price policy? Toward a theory of the state and telecommunications policy. *Journal of Communication*, 38 (1), 107-124.
- Mosco, V. (1998). Myth-ing links: Power and community on the information highway. *Information Society*, 14 (1), 57-62.
- Mosco, V. (2004). *The digital sublime: Myth, power and cyberspace*. The MIT Press, Cambridge.
- Mosse, B. and Whitley, E. (2009). Critically classifying: UK e-government website benchmarking and the recasting of the citizen as customer. *Information Systems Journal*, 19, 149-173.
- Mouzelis, N. (1995a). Greece in the twenty-first century: Institutions and political culture. In *Greece prepares for the twenty-first century*. (Eds. Conostas, D. and Stravrou, T. C.) Woodrow Wilson Center Press, Washington, pp. 17-34.
- Mouzelis, N. (1995b). Modernity, late development and civil society. In *Civil society*. (Ed. Hall, J. A.) Polity Press, Cambridge, pp. 224-249.

- Mowery, D. C. and Rosenberg, N. (1995). *Technology and the pursuit of economic growth*. Cambridge University Press, Cambridge.
- Mueller, M. (2002). *Ruling the root: Internet governance and the taming of cyberspace*. MIT Press, Cambridge, Mass.
- Mueller, M. and Lentz, B. (2004). Revitalizing communication and information policy research. *The Information Society*, 20 (3), 155-157.
- Muir, A. and Oppenheim, C. (2002). National Information Policy developments worldwide I: electronic government. *Journal of Information Science*, 28 (3), 173-186.
- Mytelka, L. K. (1991). States, strategic alliances and international oligopolies: The European ESPRIT programme. In *Strategic partnerships and the world economy*. (Ed. Mytelka, L. K.) Pinter, London, pp. 182-210.
- Nakamura, R. (1987). The textbook policy process and implementation research. *Policy Studies Review*, 7 (1), 147-154.
- Nelson, R. (Ed.) (1993). *National systems of innovation: A comparative analysis*. Oxford University Press, Oxford.
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press, New York.
- NTIA (1999). *Falling through the Net - Defining the digital divide: A report on the telecommunications and information technology gap in America*. US Department of Commerce, Washington, DC.
- Nye, D. E. (1994). *American technological sublime*. MIT Press, Cambridge, Massachusetts.
- O'Malley, P., Weir, L. and Shearing, C. (1997). Governmentality, criticism, politics. *Economy and Society*, 26 (4), 501-517.
- OECD (2009). *The development dimension: ICTs for development - Improving policy coherence*. Organisation for Economic Co-operation and Development, Paris.
- Ong, A. (1999). *Flexible citizenship: The cultural logics of transnationality*. Duke University Press, Durham and London.
- Ong, A. (2000). Graduated sovereignty in South-East Asia. *Theory, Culture & Society*, 17 (4), 55-75.
- Ong, A. (2005). Ecologies of expertise: Assembling flows, managing citizenship. In *Global assemblages: Technology, politics, and ethics as anthropological*

problems. (Eds. Ong, A. and Collier, S. J.) Blackwell Publishing, Malden and London.

Operational Programme "Information Society" (2001). REGIO/2001/00227-00-00. Greek Ministry of Finance, Athens.

Orlikowski, W. (2002). Improvising organizational transformation over time: A situated change perspective. In *Organizational improvisation*. (Eds. Kamoche, K. N., Cunha, M. P. and Cunha, J. V.) Routledge, London, pp. 185-228.

Orlikowski, W. and Barley, S. R. (2001). Technology and institutions: What can research on information technology and research on organizations learn from each other? *MIS Quarterly*, 25 (2), 145.

Orlikowski, W. and Iacono, S. (2002). The truth is not out there: An enacted view of the "digital economy". In *Understanding the digital economy: Data, tools and research*. (Eds. Brynjolfsson, E. and Kahin, B.) MIT Press, Cambridge, Mass, pp. 352-380.

Pagoulatos, G. (2001). Economic adjustment and financial reform: Greece's europeanization and the emergence of a stabilization state. In *Europeanization and the southern periphery*. (Eds. Featherstone, K. and Kazamias, G.) Frank Cass, London, Portland.

Pagoulatos, G. (2003). *Greece's new political economy*. Palgrave Macmillan, Basingstoke, New York.

Paltemaa, L. and Vuori, J. A. (2009). Regime transition and the Chinese politics of technology: From mass science to the controlled Internet. *Asian Journal of Political Science*, 17 (1), 1-23.

Papacharissi, Z. (2002). The virtual sphere : The internet as a public sphere. *New Media & Society*, 4 (1), 9-27.

Pettifer, J. (1995). Greek polity and the European Community. In *Greece and Europe in the modern period: Aspects of a troubled relationship*. (Ed. Carabott, P.) King's College London, Centre for Hellenic Studies, London.

Pick, J. and Azari, R. (2008). A global model of technological utilization based on governmental, business investment, social and economic factors. In *International Conference on Information Systems Proceedings*. Paris.

Pohoryles, R. J. (2002). The making of the European research area: A view from research networks. *Innovation: The European Journal of Social Science Research*, 15 (4), 325-340.

- Porat, M. (1977). *The information economy: Definition and measurement*. Government Printing Office, Washington DC.
- Poster, M. (1990). *The mode of information: Poststructuralism and social context*. Polity, Cambridge.
- Prior, L. (2004). Doing things with documents. In *Qualitative research: Theory, method and practice*. (Ed. Silverman, D.) Sage, London.
- Qureshi, S. (2005). E-government and IT policy: Choices for government outreach and policy making. *Information technology for development*, 11 (2), 101-103.
- Rabinow, P. (Ed.) (1986). *Foucault Reader*. Penguin, London
- Radaelli, C. (1999). The public policy of the European Union: whither politics of expertise? *Journal of European Public Policy*, 6 (5), 757-774.
- Radaelli, C. (2000). Policy transfer in the European Union: Institutional isomorphism as a source of legitimacy. *Governance: An international journal of policy and administration*, 13 (1), 25-43.
- Rein, M. and Schoen, D. (1994). *Frame reflection: Towards the resolution of intractable policy controversies*. Basic Books, New York.
- Rhinard, M. (2002). The democratic legitimacy of the European Union committee system. *Governance*, 15 (2), 185-210.
- Robey, D. (1979). User attitudes and management information systems use. *The Academy of Management Journal*, 22 (3), 527-538.
- Robey, D. and Boudreau, M.-C. (1999). Accounting for the contradictory organizational consequences of information technology: Theoretical directions and methodological implications. *Information Systems Research*, 10 (2), 167-185.
- Robins, K. and Webster, F. (2004). The long history of the information revolution. In *The information society reader*. (Ed. Webster, F.) Routledge, London.
- Rodrigues, M. J. (2004). *European policies for a knowledge economy*. Edward Elgar Publishing, Cheltenham.
- Roe, E. (1994). *Narrative policy analysis*. Duke University Press, Durham.
- Romer, P. M. (1994). The origins of endogenous growth. *Journal of Economic Perspectives*, 8 (1), 3-22.

- Room, G., Dencik, J., Gould, N., Kamm, R., Powell, P., Steyart, J., Vidgen, R. and Winnett, A. (2005). *The European challenge: Innovation, policy learning and social cohesion in the new economy*. Policy Press, Bristol.
- Rooney, D. (1997). A contextualising, socio-technical definition of technology: Learning from Ancient Greece and Foucault. *Prometheus*, 15 (3), 399-407.
- Rooney, D. (2005). Knowledge, economy, technology and society: The politics of discourse. *Telematics and informatics*, 22 (4), 405-422.
- Roper, J. (2002). Government, corporate or social power? The Internet as a tool in the struggle for dominance in public policy. *Journal of Public Affairs*, 2 (3), 113-124.
- Rose, N. (1999). *Powers of freedom*. Cambridge University Press, Cambridge.
- Rose, N. and Miller, P. (1992). Political power beyond the State: Problematics of government. *British Journal of Sociology*, 43 (2), 173-205.
- Rose, N., O'Malley, P. and Valverde, M. (2006). Governmentality. *Annual Review of Law and Social Science*, 2, 83-104.
- Rosenau, J. and Czempiel, E. O. (Eds.) (1992). *Governance without government: Order and change in world politics*. Cambridge University Press, Cambridge.
- Rosenberg, N. (1982). *Inside the black box: Technology and economics*. Cambridge University Press, Cambridge.
- Roszak, T. (1986). *The cult of information: The folklore of computers and the true art of thinking*. Lutterworth, Cambridge.
- Sabatier, P. (1999). *Theories of the policy process*. Westview Press, Boulder, Colorado.
- Sabatier, P. and Jenkins-Smith, H. C. (1993). *Policy change and learning: An advocacy coalition approach*. Westview Press, Boulder.
- Sadagopan, S. and Weckert, J. (2005). The information society in the Asia-Pacific region: India and Australia. In *Perspectives and policies on ICT in society: An IFIP TC9 (Computers and Society) Handbook*. (Eds. Berleur, J. and Avgerou, C.) Springer, New York.
- Salaman, G. and Storey, J. (2008). Understanding enterprise. *Organization*, 15 (3), 315-323.
- Sassen, S. (2000). The state and the new geography of power. In *The ends of globalization: Bringing society back in*. (Eds. Kalb, D., van der Land, M.,

- Staring, R., van Steenbergen, B. and Wilterdink, N.) Rowman & Littlefield Publishers, Boston.
- Sassen, S. (2002). Towards a sociology of information technology. *Current Sociology*, 50 (3), 365-388.
- Scheurich, J. J. (1997). *Research method in the postmodern*. Falmer Press, London.
- Scott, J. (1990). *A matter of record*. Polity Press, Cambridge.
- Selwyn, N. (2002). E-establishing and inclusive society? Technology, social exclusion and UK government policy making. *Journal of Social Policy*, 31 (1), 1-20.
- Sending, O. J. and Neumann, I. B. (2006). Governance to governmentality: Analyzing NGOs, states, and power. *International studies quarterly*, 50 (3), 651-672.
- Shih, E., Kraemer, K. L. and Dedrick, J. (2007). Research note: Determinants of country-level investment in information technology. *Management science*, 53 (3), 521-528.
- Shin, D.-H. (2007). A critique of Korean national information strategy: Case of national information infrastructures. *Government Information Quarterly*, 24, 624-645.
- Silva, L. and Figueroa, E. (2002). Institutional intervention and the expansion of ICTs in Latin America: The case of Chile. *Information, Technology and People*, 15 (1), 8-25.
- Smith, M. L. (2006). Overcoming theory-practice inconsistencies: Critical realism and information systems research *Information and Organization*, 16 (3), 191-211.
- Smith, M. R. and Marx, L. (Eds.) (1994). *Does technology drive history? The dilemma of technological determinism*. MIT Press, Cambridge Mass.
- Soeftestad, L. and Sein, M. (2002). ICT and development: east is east and west is west and never the twain shall meet? In *IFIP TC9 WG9.4 Social implications of computers in developing countries*. Bangalore.
- Spanou, C. (2008). State reform in Greece: Responding to old and new challenges. *International Journal of Public Sector Management*, 21 (2), 150-173.
- Spurge, V. and Roberts, C. (2005). Broadband technology: an appraisal of government policy and use by small and medium-sized enterprises. *Journal of Property Investment & Finance*, 23 (6), 516-524.
- Stake, R. (1995). *The art of case study research*. Sage, Thousand Oaks.

- Steinmueller, W. E. (2002). Knowledge-based economies and information and communication technologies. *International Social Science Journal*, 54 (171), 141-153.
- Stenson, K. (2005). Sovereignty, biopolitics and the local government of crime in Britain. *Theoretical Criminology*, 9, 265-87.
- Stephens, C. S., Ledbetter, W. N., Mitra, A. and Ford, N. F. (1992). Executive or functional manager: The nature of the CIO's job. *MIS Quarterly*, 16 (4), 449-467.
- Stokes, J. and Clegg, S. (2002). Once upon a time in the bureaucracy: Power and public sector management. *Organization*, 9 (2), 225-247.
- Stone, D. (2004). Transfer agents and global networks in the 'transnationalization' of policy. *Journal of European Public Policy*, 11 (3), 545 - 566.
- Stone, D. A. (2002). *Policy paradox: The art of political decision making*. 2nd ed. Norton, New York.
- Tallon, P. P., Kraemer, K. L. and Gurbaxani, V. (2000). Executives' perceptions of the business value of information systems: A process-oriented approach. *Journal of Management Information Systems*, 16 (4), 145-173.
- Tenbenschel, T. (2002). Assessing the relative merits of policy commitments: Is it possible for policymakers to use "rich" languages of rationality? *Administrative Theory & Praxis*, 24 (2), 299-322.
- Thomadakis, S. B. (1995). The Greek economy and European integration: Prospects and threats of underdevelopment. In *Greece prepares for the twenty-first century*. (Eds. Conostas, D. and Stravrou, T. C.) Woodrow Wilson Center Press, Washington.
- Thompson, M. (2004). ICT, power and developmental discourse: A critical analysis. *Electronic Journal on Information Systems in Developing Countries*, 20 (4), 1-26.
- Thompson, M. (2008). ICT and development studies: Towards development 2.0. *Journal of International Development*, 20, 821-835.
- Thrift, N. (2002). "Think and act like revolutionaries": Episodes from the global triumph of management discourse. *Critical Quarterly*, 44 (1), 19-26.
- Tigre, P. B. and Botelho, A. J. (2001). Brazil meets the global challenge: IT policy in a postliberalization environment. *The Information Society*, 17 (2), 91-103.
- Toffler, A. (1980). *The third wave*. Collins, London.

- Tsoukalas, C. (1987). *State, society, employment in post-war Greece*. Themelio, Athens.
- Tsoukalas, C. (1995). Free riders in Wonderland: Or of Greeks in Greece. In *Greece prepares for the twenty-first century*. (Eds. Conostas, D. and Stavrou, T. G.) John Hopkins University, Baltimore, pp. 191-219.
- Tsoukas, H. (1997). The tyranny of light. *Futures*, 29 (9), 827-843.
- UNDP (2009). *Global human development report: Overcoming barriers - Human mobility and development*. United Nations Development Programme, New York.
- Urry, J. (2000). Mobile sociology. *British Journal of Sociology*, 51 (1), 185-203.
- Urry, J. (2002). Mobility and proximity. *Sociology*, 36 (2), 255-274.
- Urry, J. (2007). *Mobilities*. Polity, Cambridge.
- Venkatesh, V., Morris, M. G., Davis, G. B. and Davis, F. D. (2003). User acceptance of information technology: Towards a unified view. *MIS Quarterly*, 27 (3), 425-478.
- Wajcman, J. (2002). Addressing technological change: The challenge to social theory. *Current Sociology*, 50 (3), 347-363.
- Walsham, G. (1993). *Interpreting information systems in organizations*. Wiley, Chichester.
- Walsham, G. (2000). Globalization and IT: Agenda for research. In *Organizational and social perspectives on information technology*, IFIP TC8 WG8.2 International working conference on the social and organizational perspective on research and practice of information technology. (Eds. Baskerville, R., Stage, J. and DeGross, J. I.) Kluwer Academic Publisher, Aalborg, Denmark.
- Walsham, G. (2001). *Making a world of difference: IT in a global context*. John Wiley & Sons, Chichester.
- Walters, W. and Haahr, J. H. (2005). *Governing Europe: Discourse, governmentality and European integration*. Routledge, London, New York.
- Webster, F. (1995). *Theories of the information society*. Routledge, London.
- Webster, F. (2006). The information society revisited. In *Handbook of new media: social shaping and social consequences of ICTs*. (Eds. Lievrouw, L. A. and Livingstone, S. M.) Sage Publishers, London, pp. 443-457.

- White Bible (1999). White Bible for Greece's Entry into the Information Society. Prime Minister's Cabinet, Athens.
- Wickham, G. (2008). The social must be limited: Some problems with Foucault's approach to modern positive power. *Journal of Sociology*, 44 (1), 29-44.
- Willcocks, L. (1994). Managing information systems in UK public administration: Issues and prospects. *Public Administration*, 72, 13-32.
- Willcocks, L. (2006). Michel Foucault in the social study of ICTs. *Social Science Computer Review*, 24 (3), 274-295.
- Willcocks, L. and Lacity, M. (2006). *Global sourcing of business and IT services*. Palgrave Macmillan, Basingstoke, New York.
- Wilson, W. (1887). The study of administration. *Political Science Quarterly*, 2 (2).
- Wincott, D. (2003). Beyond social regulation? New instruments and/or a new agenda for social policy at Lisbon? *Public administration*, 81 (3), 533-553.
- Winner, L. (1977). *Autonomous technology: Technics-out-of-control as a theme in political thought*. MIT Press, Cambridge, Mass.
- Winner, L. (2001). Where technological determinism went. In *Visions of STS: Counterpoints in science, technology, and society studies*. (Eds. Cutcliffe, S. H. and Mitcham, C.), pp. 11-18.
- Wishlade, F. (1996). EU cohesion policy: Facts, figures, and issues. In *Cohesion policy and European integration: Building multi-level governance*. (Ed. Hooghe, L.) Oxford University Press, New York.
- Yeatman, A. (1998). Interpreting contemporary contractualism. In *Governing Australia: studies in contemporary rationalities of government*. (Eds. Dean, M. and Hindess, B.) Cambridge University Press, Cambridge.
- Yin, R. (2003). *Case study research: Design and methods*. Sage Publications, Thousand Oaks, London.
- Zahariadis, N. (2003). *Ambiguity and choice in public policy: Political decision making in modern democracies*. Georgetown University Press, Washington, D.C.
- Zuboff, S. (1988). *In the age of the smart machine: The future of work and power*. Basic Books, New York.