

A Path of Discontinuity: The TAXIS Case as a Transition from e-Government to e-Regulation

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Abstract. This study explores the development and evolution of the Greek Tax Information System (TAXIS) as a case of transition from e-government to e-regulation. Focusing on the characteristics of e-government and e-regulation we identify the links between these two forms of e-governance as complex and multi-layered forms of control. By employing regulation and infrastructure theories we examine the implementation of TAXIS to conclude that side-effects and patchwork may be desirable when new regulatory forms are to be introduced.

Keywords: e-government, e-regulation

1 Introduction

Ranging from the creation of information infrastructures to the devising of measures for the combating of the digital divide [1], e-government has been a concept with a multitude of dimensions [2] that has fascinated as well as disappointed individuals, organisations and, of course, governments.

E-government involves first and foremost the use of technological measures for the improvement of the state's administrative functions. In particular, it creates the conditions and fosters the info-structures supporting good governance [3], an objective attainable mainly through the employment of democratic institutions and the participation of the citizens [4].

The argument that sees e-government as a driving force for re-inventing democracy in the modern state has a flavour of technological determinism: as the technologies evolve, a transition from one way (informational) to two way (interactive) e-government services occurs. In that sense, the level of transparency concerning governmental activities is supposed to increase and subsequently the citizen is apparently allowed more control over the state's functions.

There are many that do not share this vision of e-government and approach it in a more sceptical fashion. In this study we seek to move beyond the dilemma of whether e-government is of any value. Similarly, we are not interested in the question of the essence of e-government or whether it is meaningful. It is not that we consider these questions as unimportant. It is rather the sterile nature of such a debate that makes us follow an alternative path for examining e-government and e-regulation.

In the existing literature e-government is approached almost uniformly as a mono-dimensional phenomenon that comes as a result of planned action and conscious decisions. We argue instead that the desired e-government or e-regulation structures are only an input into a broader process where different forms of infrastructure are involved in a dialectic process of

evolution, the final product of which is constantly negotiable and rarely the intended one. We hold that interactivity does not necessarily mean involvement, and communication does not inescapably entail participation in the decision making.

In support of our argument, we examine a case study of an advanced e-government service, the Greek taxation system, TAXIS. We complement our empirical data with an analysis of the relevant literature.

2 E-government: Panacea or Utopia?

In the late 1990s the Internet, and particularly the World Wide Web, fuelled enthusiasm for the anticipated social dividends of this “revolution in democratic communication” [5]. The Internet was expected by many to transform society. Nowhere was this confidence expressed more clearly than in President Clinton’s objective to wire every classroom and library in the USA by 2000, followed by every home by 2007. However, the digital revolution did not eradicate the digital divide and new technologies cannot be a substitute for fundamental institutional reforms [6]. The extent to which new technologies can lead to improved governance remains debatable. ‘E-government initiatives should be measured by the degree to which they contribute to good governance’ [7]. They can make a significant contribution [8] but this is not inevitable.

According to Silcock [9], “e-government is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees.” According to [2, 8], governments decide to go online in order to improve government processes (e-administration), connect citizens (e-citizens and e-services) and build interactions with and within civil society (e-society).

A fundamental change is claimed in the relationship between government and citizen [4] such that citizens are now ‘customers’ and the state the ‘service provider’. This presupposes a shift to two-way interaction between government and the citizen [10], enabling more participation and dialogue and allowing governments to be more accountable and transparent. In practice, both the re-conceptualisation of the citizen as a customer and the two-way communication have proven problematic. By interpreting e-governance as online service provision there is no guarantee that the level of service is going to improve. Business models, such as business process re-engineering and customer relationship management, which underpin many e-government initiatives, are not a *sine qua non* for success [11].

Current e-government services exhibit limited interactivity. Recent data (World Market Research Centre 2001) suggests that only 8% of government websites offer interactive services and only 1% allow credit card transactions. The increased monitoring needed for the implementation of interactive services may entail increased surveillance and privacy violations [12]. The government may also monitor, control or prohibit Internet or particular website access. Other problem areas include security [13], information overload [14] and poorly designed web sites [9].

3 Information Systems, E-Government and E-Regulation

From the first order cybernetics theories [15] to recent writing on advanced information infrastructures [11] and second order cybernetics [16], IS has been associated with the regulation of human behaviour. IS theory remains closely related to management [17] and organizational theory [18].

Large, complex IS act as infrastructures to support various human activities including fostering innovation and creating knowledge [19, 11, 20]. Ciborra’s work draws heavily on

transaction cost theory [21] with IS used to minimize costs and maximize potential benefits. Transaction cost theory is heavily based on the assumption of the rational individual, for which it can be criticised [19]. Ciborra examines IS at the levels of the team, the organisation and the market and explores their capacities for supporting co-ordination and collaboration. This understanding is complemented in his later work [11] by the use of actor network theory (ANT) [22, 23] to examine information infrastructures as power structures that can influence human and organisational behaviour.

Switching to the regulation literature, we can see that early regulatory theory approached regulation as an “identifiable and discrete mode of governmental activity” [24]. Selznick [25] broadens the definition by regarding regulation as “sustained and focused control exercised by a public agency over activities that are valued by a community”. Baldwin and Cave [26] define regulation in three senses: as a specific set of commands, as a deliberate state influence and as all forms of social control or influence. Each mode of regulation involves the control of human behaviour with variable degrees of influence and expected success. Although regulation is often regarded only as restrictive, some regulation can operate as an enabler of human behaviour [27].

Regulatory theory originally aimed at the creation of competitive markets for telecommunications and utilities [26]. The idea was that the market could operate as a regulatory mechanism and state intervention should be minimised. As a result, regulatory theory is often related to de-regulation and privatisation [28]. Like IS, much regulatory theory is based on transaction cost theory and seeks to discover mechanisms that allow collaboration and co-ordination of human behaviour at the least possible cost. Gradually regulatory theory has moved beyond telecommunication and utilities regulation to financial services, personal data and domain names. In each case the main consideration is how human and organizational behaviour can be controlled in order to achieve certain goals.

As regulatory theory evolved it became clear that the state was not the sole originator of regulation and traditional legislation was considered as just one of the many means of regulation [29]. The Chicago School has emphasised the importance of the market as a regulatory mechanism, again using transaction cost theory. Furthermore, Ellickson [30] highlights the importance of norms as regulatory forms and their independence from laws. Finally, Lessig [31] re-states the importance of technology, and IT in particular, as a regulatory factor. These different forms of regulation are both distinct and interdependent. For example, the law employs technology, norms and other organisational forms in order to achieve its goals. Copyright law tries to create a certain kind of market using technical measures to protect copyrighted works and attempts to cultivate an ethos that copying software is socially unacceptable [32]

Bringing together the two literatures, we see how IS incorporate regulatory characteristics and may also be used as regulatory mechanisms. Transaction cost theory forms a common foundation to explain the capacity of different mechanisms (namely markets, laws, organizations, norms and information technology) to organise human and organisational behaviour. Thus, the ability of information infrastructures to regulate human behaviour seems to be one of their main characteristics. In order for IS to maximize their regulatory capacity there is a need for synergy between different modalities of regulation [29, 11]. The successful implementation of an IS in an organisation requires a certain organisational structure, culture, and technology as well as the appropriate contractual agreements with employees. Actor Network Theory, which derives from Foucault’s [33, 34] work, allows us to conceptualise the interplay between the different modalities of regulation as a power game that may lead to irreversible outcomes. Legal theory has also used Foucault’s work to explain the disciplinary operation of architecture and other forms of technologies [33]. Moreover, more recent theories on reg-

ulation are based on second order cybernetics to explain the regulation of certain markets through corporate instead of state intervention [35].

Indeed, IT has been used to improve a wide spectrum of governmental functions [6] with the regulation of citizens' behaviour being a prominent one. It was perhaps inevitable that IS and the Internet in particular would be used not just as a means for the government to control its internal workings (re-engineering of the public sector, E-Government) or for the control of the government by the citizens (e-democracy), but also as a tool for the control of the citizens by the government (e-regulation). E-regulation, e-democracy and e-government are all sides of the same triangle that shows the flows of control related to the state and its operations.

The TAXIS case, described below, is a good example of how these three functions are brought together in a multi-faceted information system. The creation and implementation of the system has been carried out with a high level of participation of stakeholders who did not have a voice previously. Moreover, with the implementation of TAXIS it is possible for the government to re-organise both its internal operations, procedures and structures as well as its whole tax-collection and revenue management policy [36]. Finally, the controlling capacity of the state is increased since there is an improvement in the control of different stages of the tax-collection process.

4 Research Methodology

This project is an example of exploratory case study research [37]. Data collection was carried out in Greece in the summer of 2002, using a narrative mode [38]. Our objective was to collect salient data, including the more subtle facets that are usually overlooked by the mainstream literature. Our role was that of moderators, whereas the interviewees were left to express themselves with the minimum possible constraints. Fourteen interviews were conducted in Greece in person with a further three by telephone. Each lasted an average of forty-five minutes.

'TAXIS' concerns a wide range of different stakeholders and thus we interviewed the project manager, a member of the design team, two members that took part in the prototyping process, two accountants, two directors of local tax offices, four users of the system, and two users of online TAXISnet. A tax attorney and user of the TAXISnet, an accountant of a law firm and a public notary were additionally interviewed over the telephone. The data collected were assessed following a qualitative mode of analysis [39] in order to "describe routine and problematic moments and meanings in individuals' lives." [40].

5 Case Study of TAXIS (TAX Information System)

TAXIS, standing for Taxation Information System, was developed by the General Secretariat for Information Systems (GSIS) of the Greek Ministry of Finance [41]. It was a six-year IT development project with an overall budget of approximately 50 million euros. The main aim was to improve the quality of services provided by the Ministry [42] by supporting the central tax authorities in Athens and local tax offices. TAXIS itself is a client application carrying out tax filing, calculation and payment transactions with citizens and businesses. At one level, TAXIS is used by tax collectors when taxpayers physically visit local offices but, at another level, known as TAXISnet, it is used directly by taxpayers making transactions online on a remote basis. The project is one of sixteen sub-projects constituting 'KLISTHENIS', a large initiative launched in 1994 by the Ministry of Finance to modernise public administration [43], financed by the European Union and the Greek Government.

In 1993, the Ministry of Finance and a consortium of private companies evaluated the tax collection process prior to the introduction of TAXIS. They concluded that the functions of the Ministry were highly decentralised, making supervision, monitoring and control difficult. They also realised that the organisational structure was not conducive to new technologies [43]. Moreover, the majority of interactions between the Ministry and taxpayers required taxpayers to be present, implying a low quality of service, long queues and dissatisfaction. This structure was based upon antiquated procedures. Furthermore, complaints about the Greek bureaucracy were common. When the deadlines for the submission of tax forms were approaching often the queues would lengthen even more with considerable frustration and dissatisfaction. Also, the ineffective monitoring and management of the tax collection process had led to inconsistencies in both the process as well as in taxation policies [44]. In March 2000, the Ministry held a conference on taxation policy, within which an open debate took place, where various stakeholders had the opportunity to express their opinions.

According to the project manager of TAXIS, the main goals of the Ministry of Finance in developing the project were:

- Improvement of the collection of assessed debts
- Increase in the total collections from all kinds of taxation
- Reduction of tax evasion and subsequent increase of taxation revenues
- Improvement of the decision-making procedure regarding short-term measures about taxation, and improvement of the capability for evaluation of the measures.
- Improvement of the capability for long-term taxation policy planning and evaluation of the consequences of such policies within the general macroeconomic policy.

In addition, the following general goals were aimed at:

- Reinforcement of the taxpayers' confidence in the fairness of the taxation system.
- Improvement of the quality of service provided to taxpayers.
- Improvement of the efficiency and job satisfaction of the Ministry's personnel.
- According to the interviewee, these goals remained unchanged during the development process.

The implementation of 'TAXIS' was characterised by a high degree of uncertainty and complexity. A wide range of activities like analysis, design, writing, testing, integrating and certifying of applications had to be included. New procedures had to be designed and implemented in order to integrate the new applications into the Ministry. Tax staff at all levels had to be re-educated in the new techniques, procedures, and kinds of interactivity with both the computer and the public. The change in mentality due to the introduction of interactive procedures had to be managed.

Furthermore, the maintenance of the new system has to be prepared in such a way that further changes would be easy to realize, and should not rely on external resources. An intranet was created to make 'best practices' and re-education possible. Information concerning new services for taxpayers and other external actors (e.g. banks), was provided explaining how to communicate electronically with the Ministry. Finally the implementers had to ensure that TAXIS would not be an island of modern technology within a set of otherwise unchanged procedures in the rest of the Ministry by preparing the upgrade of the entire administration. In addition the security of the new procedures had to be ensured, and the quality of both the resulting system and its development process had to be guaranteed [45].

TAXISnet (www.taxisnet.gr) offers a web-based interface where taxpayers are able to use server-side applications 24 hours per day 7 days per week with a real time response for all transactions [45]. Users have access to a wide range of services after a short registration procedure. The registration information is confirmed by GSIS (this procedure takes

approximately three days) and a unique username and password is allocated. The full range of services offered by TAXISnet includes electronic submission of VAT declarations as well as electronic submission of income tax declarations. Other services available include the electronic issuing of tax certificates and provision of tax information [46]. These services are also available through the GSIS web site (www.gsis.gov.gr) and through GSIS call centres and fax servers known as TAXISphone. Moreover, printed application forms can be downloaded, there is a page for frequently asked questions (FAQs) and an e-mail based help desk service [46]. In addition, on-line tutorials are offered, on how to use the system and how to fill in the application forms. Finally, a major innovation for the Greek tax system is that of allowing the tax payments to be made via the banking system, using DIAS, the Greek inter-banking network.

According to the official web site (GSIS) of the 5 million taxpayers in Greece and the 800,000 companies who are obliged to submit VAT declarations, acceptance of TAXISnet is quite strong with approximately 46% of taxpayers in the Athens area (Attiki) and 37% of taxpayers in Thessaloniki submitting their income tax declarations through TAXISnet, and 59% of companies in both areas submitting their VAT declarations this way.

6 Discussion and Conclusion

Are regulatory infrastructures emergent or designed? In a sense, the answer lies somewhere in the grey area in between. Human intentionality is blended with a series of other factors to produce a final result that only rarely corresponds to the original objectives of the planners. At the end of the development process it is doubtful whether the will of the stakeholders has produced the infrastructure or the intentionality of the developers has been adjusted to the nature of the final product [47].

The development and implementation of TAXIS is an interesting case of the emergence of new regulatory infrastructures out of the dialectics between existing ones [48]. As we will argue, the development can be seen as a cultivated phenomenon, where the system is constantly evolving, rather than a fully controlled phenomenon.

As argued above, regulatory infrastructures may be manifested in different forms. Thus, the Greek taxation system comprises an ecology [49] of different regulatory forms that interact with each other to produce the final result that the citizen experiences. In each of these forms we find a system of rules, a problem domain where the rules are to be applied, a feedback or monitoring mechanism for receiving data from the problem domain, and an enforcement mechanism to implement the rules. The regulatory function is realised through the operation of this mechanism. This archetypical or paradigmatic description of the regulatory mechanism has many variations in practice. Regulatory modalities can comprise: the law, the market or different organisational forms, a system of norms and various technologies. In the course of processing our empirical data we had the opportunity to witness the dialectics of different regulatory forms that aimed at organising the tax collection function in Greece.

The Ministry of Finance has attempted to introduce information systems in the past as well. However, none of those efforts was nearly as successful as the TAXIS system [44]. The synthesis of different regulatory forms, such as technological, organisational, legal and social, lacked the minimum level of cohesion required to sustain such an ecology. The result was that the information systems were not absorbed by the existing regulatory modalities and were considered as failures.

The TAXIS information system is often projected as a success but what does that really mean? In March 2002, few people would regard TAXIS as a success. The system could not satisfactorily respond to an exploding increase in the number of users, which almost reached

300,000. During peak hours, the average access time on the web-site was over one and a half hours using an ISDN line. This occasion was exploited by some tax office staff who saw the previous power structures collapsing, leading to changes within the TAXIS hierarchy (change of top management) accompanied by bad publicity and public confusion regarding whether new users could be added to TAXIS. Reliability was and still is a problem. For example, in some cases, a tax office clerk may make an error in completing the online form and the system may crash. In this case, the citizen may be asked to return the following day. Furthermore, the failure of the system would be used as an excuse by staff who were not comfortable with the system or simply did not feel like working that day.

The acceptance among its primary users, namely the local tax office staff, was not particularly high. Many were against the new information system since it would produce redundancies and would render the information system (rather than the tax staff) the obligatory passage point for everyone desiring to transact with the Ministry. In terms of combating corruption, one of the primary objectives behind the introduction of TAXIS, the outcome was far from clear. The opportunities for corruption were reduced as it was much more difficult to issue false documents. However, there have been cases where tax staff have been offered money to reveal taxpayers' personal data, to which they have easy access.

Notwithstanding all these problems, TAXIS was regarded a success. The reason behind such an attitude should be sought in the incorporation of TAXIS in the existing regulatory ecology. In implementing TAXIS, the government was helped by the fact that the traditional manual system faced such severe inherent problems that, in many ways, it would be very difficult for things to get worse. Despite the teething troubles, most taxpayers were supportive. They quickly saw the benefits from reducing the paper-work required for the submission of tax returns and were keen to use a quicker, easier and more rational process for transactions with the Ministry. Acceptance was also helped by the 2.5% discount offered by the Ministry to those submitting tax returns online. It was clear that the developers of the system were very keen on its success and had the backing of the Ministry. In addition, the maturity of the technologies facilitated the successful implementation of the system. In ANT terms, the interests of different actors, both humans and non-humans, were translated in such a way that the successful implementation of the system was possible [50].

The approach followed by the Ministry in introducing the system facilitated its organic binding with existing infrastructures. It followed an evolutionary rather than a revolutionary model. Key processes were not radically changed and the forms appearing on the screen were identical to those used offline, so as to ensure a coherency of processes. The tax office staff were trained and a number of seminars and consultation forums between taxpayers and tax office staff took place. The idea was to enrol the users by providing various incentives and tempt the tax office staff by reducing their workload. The workload was reduced through a substantial reduction in the number of 'physical' transactions. Not only were many taxpayers using TAXISnet directly, the use of TAXIS increased the efficiency of dealing with taxpayers in the offices, cutting the number of repeat visits and reducing the queues. The reduced workload was accompanied by an improved working environment together with a better quality of service for taxpayers.

Another interesting facet of the effort for introducing TAXIS was the indoctrination of the bureaucratic culture of the ministry officers with the friendlier attitude to the citizen and the much more open culture of the TAXIS support team. In the clash between the civil servants and the TAXIS system, the ministry attracted the support of the numerous taxpayers, who saw TAXIS as a solution to many of the problems they were facing in their dealings with the taxation authorities. One of the interesting results was the redistribution of power within the ministry with the TAXIS team acquiring a higher status within the organisation.

In evaluating the success of TAXIS it is difficult to assess its real impact on the Greek public administration and the other modalities of regulation that surround it. One way to see the whole phenomenon is as an undisputed success: the users' acceptance rates are very high and it is only the technical limitations of the system that hinder a more exponential growth. On the other hand, user (taxpayer) satisfaction is high essentially among the most computer literate users. Users that do not feel comfortable with computers are still using an off-line version of the old system with the local tax office staff being neither encouraging nor particularly knowledgeable about computers. Nevertheless, tolerance levels are still high, especially among the professionals who understand the intricacies of the taxation bureaucracy and sympathise with the tax office staff, and some of the low scores for quality standards.

Perhaps not surprisingly, some of the goals set by the Ministry have not been achieved. For instance, despite the objective to use TAXIS as a tool for a more consistent and long term taxation policy the number of sizeable tax law revisions remains unchanged at around three per year. As noted, the system is quite flexible and can normally cope with many and constant changes. In addition, radical business process re-engineering has not been applied to most of the traditional processes.

Interestingly, it seems that the system has been mainly used by the state to regulate and control its own employees whereas the citizens have been only a secondary target of regulation. In the process of implementing TAXIS a series of patchwork and improvisation techniques have been applied by both developers and users of the system. The laws keep changing at a high rate but the new ones seem to take into consideration the capabilities provided by TAXIS. The culture of the TAXIS support team is much more service oriented and this seems to influence the tax office staff, who have accommodated the system but have managed to find new ways to maintain their power position within the e-regulatory framework of the taxation system.

The new TAXIS system has been organically integrated into the existing regulatory infrastructure of norms, laws, technologies and organisational forms. In that sense, the government could be considered to have successfully "cultivated" an information system. However, the side effects accompanying the 'successful' implementation have been such that the original goals set by the government have been significantly altered. Power structures, bureaucratisation and phenomena of rigidity and incoherence were re-introduced, albeit in a different form in the new regulatory environment. This 'drifting' phenomenon [11] has been well-received by most of the parties involved. Surprisingly, and although the original plans were never fully implemented, all those involved seem to be fairly satisfied and the whole system operates smoothly.

"Cultivation" of an information infrastructure and side effects seem to be inherently intertwined. In a paradoxical fashion imperfect control, in the sense of constantly negotiated goals, is the *perfect* form of control. It seems that there are occasions where the desired consequences are the unintended ones, where regulation comes from the absence of rigid control, where chaos simply works.

Should a system that only partially achieves its set objectives but is accepted by the majority of its users be regarded as a failure or success? Irrespective of whether the success is due to cultural factors, local contingencies or case specific circumstances, it remains a fact that the TAXIS project for the time being is regarded as successful. TAXISnet was one of only 44 from 281 projects that received the distinguished award for best practice in the European Union's Conference "From Policy to Practice" in November 2001¹. Besides, people do not usually go for the best solution but for the one that will just about do [51].

¹www.gsis.gov.gr/home.html

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