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SOCIO TECHNICAL REGIMES AND E-GOVERNMENT DEPLOYMENT: THE CASE OF THE ITALIAN JUDICIARY

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Abstract

E government has often been associated to New Public Management reforms, and as consequence often conceived as tools to improve service delivery and efficiency in the public sector. Following similar assumptions the Italian Ministry of Justice has launched a number of e-government projects to reorganize the judiciary. Results have been mixed. To discuss these results the paper introduces the notion of socio-technical regimes. The discussion of how normative, organizational, institutional, and technical components are integrated into socio technical regimes suggests a new perspective to study e-government. This approach argues that e-government is not only a technical solution to organizational problems but a relationship intertwined within the values, routines, organizational settings, and technological configurations embedded into these projects. This highlights that e-Government deployment is affecting and is affected by the very institutional and technical fabric of public organizations, and allows making proposals about how to study and deploy such projects.

Introduction

E-government projects are intrinsically the result of political reforms and organizational changes designed to enact, support and drive a profound transformation in the organization of the public sector and in the mechanisms used to deliver public services. E-government policies have been largely conceived as a shortcut to redesign public sector organization along the line of private sector experiences, such as e-business, and to increase public sector efficiency by improving internal administration and management capabilities (Andersen, 1999; Chadwick & May, 2003; Dunleavy, Margetts, Bastow, & Tinkler, 2006). Mainstream research has seldom questioned the potential impact this re-organization can have on the value of the services delivered (Cordella, 2007; Cordella & Bonina, 2012; Dawes, 2009; Fountain, 2001). On the contrary, the leading publications in information systems and public administration fields have concluded that the “clearest positive impacts generated by IT on public administration are in the areas of efficiency and productivity of government performance” (Denziger & Andersen, 2002). In line with these findings, e-government policies have largely conceived ICTs as tool to foster the re-organization of the public sector along the basic principles of efficiency gains and costs savings that have driven many private sector ICT adoptions (Bekkers & Homburg, 2007; Dunleavy et al., 2006; Heeks, 2002; Homburg, 2004; Osborne & Gaebler, 1992). These reforms envisage ICT as a tool which, as in the case of private sector BPR driven initiatives, enforces, improves and allows for a more efficient way to organize activities, without considering that in public sector organizations structures provide important added value to the services which are delivered (Lipsky, 1980).

As a consequence, e-government policies have often been led by the assumption that ICT can be used to foster a reform of the public administration along the lines of private sector business organizations management techniques and indeed will provide a support to reduce the bureaucratic boredom (Heeks, 2002). Following this rationale, contemporary e-government reforms are often described as the right move to implement the changes needed to leverage the efficiency of public organizations’ performances and to promote private sector efficiency as an alternative to bureaucratic ineptitudes. In so doing they conceive bureaucracy as a barrier to efficient and effective service delivery.

Such ideas of public sector reform are informed by the rationale that less bureaucracy in public administration will improve the quality of government action. Bureaucracy has however been one of the foundations upon which the public sector has been organized for so long also because of the values infused in the services which it delivers (Du Gay, 2005). This is particularly visible in case of the judiciary and its operations. The right to a fair trial as stated in article 6 of the European Convention of Human Right, independence and impartiality of the judge, judicial accountability, timeliness of judicial proceedings are rights and values that shapes the bureaucratic setting supporting the administration of justice. Reforms of the judiciary have therefore to be shaped within the bureaucratic organization and designed in a highly regulated system where interdependences and procedural regulations cannot be easily changed to accommodate ICT implementation. The argument of the possible effects of e-Government on the internal organization of bureaucratic institutions and vice versa the effects of highly regulated organization on the implementation of e-government policies is discussed in this paper by looking at the case of the Italian e-justice program. We suggest the notion of socio technical regimes to study the complex dynamics that shape the case. The case shows that e-government implementation occurs within different socio-technical regimes. Our study highlights that socio-technical regimes not only shape the development path for technological artifacts (Bijker & Law, 1992) but also their use and the outcome of the institutional change brought about by e-Government policies. Since the outcome of e-government projects is situated in specific technological contexts and shaped by the actions of users who themselves possess specific characteristics and skills that shape the way in which technology is ultimately used socio technical regimes can offer an interesting approach to study these interactions and their outcomes. Our case study shows that any assessment of e-government projects should include an analysis of socio and technical interdependences and the associated regimes. The remainder of this paper unfolds in the following fashion: first, we provide a background on the e-Government literature. We then present the case study and discuss its analysis. Conclusions will follow.

1 Background

ICT in the public sector has mostly been discussed as a tool to help create new and better service delivery (Bekkers & Zouridis, 1999) by increasing efficiency and transparency, and improving accountability in public administration procedures and management (Barca & Cordella, 2006; Dunleavy et al., 2006; Gupta, Dasgupta, & Gupta, 2008; Heeks, 2002). By making government more accountable and transparent through this process of information rationalization, e-Government is often conceived as a powerful instrument to achieve public administration reforms driven by the New Public Management (NPM) ideology (Bonina & Cordella, 2008;

Cordella, 2007; Hood, 1991). NPM proposes a cluster of ideas and practices that prescribe public sector managerial and governance approaches in line with objectives typical of market economics (Osborne & Gaebler, 1992). This radical change in the logic underpinning the organization and governance of the public sector is associated with a fundamental change in the factors that account for assessing the action of the public administration, not least a shift from effectiveness to efficiency (Pollit & Bouchaert, 2004). The most evident transformation proposed by NPM is to promote a management culture for the public sector that, as in the case of the private sector, becomes results driven, where the managerial efficiency supersedes the need for effectiveness in the delivery of public services (Self, 2000). NPM provides a major set of ideas on which so many current e-Government initiatives are based (Cordella & Willcocks, 2010; Self, 2000). ICTs have in fact become one of the most common solutions implemented to standardize work procedures and smoothen information flows, to make overall organizational processes more efficient and transparent, leading therefore to the changes prescribed by NPM (Heeks, 2002).

Much public sector information systems literature has therefore drawn on private sector frameworks whose ultimate objectives are to make the public administrative system more efficient, streamlined, and consistent (Hood & Lodge, 2006). Under the flag of creating “a government that works better and costs less”, broader and more intense use of ICT gained a core place in the reinventing government’s agenda and public innovation efforts (Kettl, 2005). The use of ICT appears as transversal and crucial element in many of the key components identified in the NPM governmental reforms. Indeed, ICT enabled public sector reforms became embedded as part of NPM political and managerial reforms in many countries around the world (Cordella, 2007). Consequently e-government is discussed as a development process which follows the evolving nature of ICT (Gauld, 2009). Accordingly we find literature which debates these reforms as a phenomenon that can be described by development phases (Layne & Lee, 2001; Torres, Pina, & Acerete, 2005). The different phases are proposed to highlight how new functionalities designed in ICT do enable changes in the nature and organization of government’s activities. The discussion of these different phases is helpful to understand the evolutionary nature of public sector reform projects, though it fails to explain the political and administrative logics which underpin every project of reform in the public sector (Peters & Pierre, 1998). By focusing on the technical functionalities this approach discards to acknowledge that reforms in public organization are driven by political and administrative goals and therefore that the technical functionalities of the adopted systems are not given but designed to achieve specific political and administrative outcomes (Cordella & Iannacci, 2010).

The e-government literature has therefore mainly discussed the development of these programmes by looking at models of e-Government development which essentially conceived ICTs as the enabler (Cordella & Iannacci, 2010). Since the diffusion of Internet-based technologies, ICTs were perceived as tools to introduce a process of rationalization of public offices and customization of public services (Cordella, 2007). Given the procedural nature of many government tasks (Meier & Hill, 2005), most early e-government applications aimed predominantly at enhancing the internal efficiency and effectiveness of the administrative and executive functions of public administration (Snellen, 2005) without considering the problem of interdepartmental interoperability.

Although valuable, this focus on efficiency is limited because it pivots around best practices and universal strategies to successfully implement e-government programmes neglecting the existing debate about the limitation of the notions of “best practices” (Wagner, Newell, & Galliers, 2006). ICT developments in the public sector should therefore pay more attention to the complexity that is associated with their implementation, rather than focusing on best practices and universal strategies to prescribe how to successfully implement e-government programmes. Outcomes of public sector reforms have in fact an impact on social and political dimensions that are not accounted for in private sector frameworks (Aberbach & Christensen, 2005; Cordella, 2007; Cordella & Bonina, 2012; Moore, 1995). By downplaying this difference, e-Government programmes have often referred to private sector ICT experiences as the right move to enforce the basic principles of efficiency that are governing the private sector (Andersen, 1999; Chadwick & May, 2003; Thong, Yap, & Seah, 2000). These approaches do not look at public sector reforms as complex interdependent actions enforced by different branches of the public administration to deliver public values (Moore, 1995). They focus on the effect ICT can have on the provision of isolated services as if the efficiency and effectiveness of government action could be assessed without considering the overall outcome of its policies (Cordella & Bonina, 2012; Moore, 1995).

A more comprehensive approach is provided by studies which have looked at the socio-technical endeavors taking place around the deployment of ICTs in the public sector in general and public sector organizations in particular (Contini & Lanzara, 2008; Denziger & Andersen, 2002; Fountain, 2007). In these cases, ICT has been

conceptualized within the public sector context and a more comprehensive assessment of its impact on public policy delivery has been proposed.

By following this stream of research, we discuss the case of the Italian e-justice policy and the associated socio-technical tensions. The case however highlights on one side that e-government systems can be designed to support rather than change existing socio-technical configurations, and on the other that e-government programmes requiring changes in the existing socio-technical configurations need difficult institutional reconfigurations. Building on the findings of the case we suggest e-government initiatives are often emerging as outcomes of negotiations in specific socio-technical.

2 The public sector and the judiciary

In democratic regimes, the central role of public administration (PA) is to enact policies that have been selected by elected leaders (Etzioni – Halevy, 1985; Olsen, 2006). PA offices are supposed to enact these policies and therefore to deliver public services to every single citizen in precisely the same way, so that the basic principle of equality in front of the law and the State is enforced. In order to guarantee the homogenous implementation of public policies, and therefore guarantee impartiality in administrative action, the public sector and the judiciary is organized and regulated following well-defined, normative, and legal principles. While inscribing normative and legal values, bureaucracies embed in government action intrinsic values. Rationality, equality, and fairness are characteristics of the procedures followed to reach an outcome. In the judiciary these outcomes are fundamental pillars of modern democratic judicial system. This is far more important and relevant in judicial systems in which cases are often disputed, and the service provided by the judges (and by the system) is to adjudicate such disputes in an independent and impartial way. The value of the outcome is therefore enriched and granted by these procedural standards that are followed by the judicial organization to deliver it. Bureaucrats and judges, following normative and legal principles, are therefore supposed to enforce constitutionalism and the rule of law.

Bureaucratic and judicial action must therefore be assessed considering not just the [expected] contribution to realize predetermined goals, but also looking at the respect of the procedural standards followed to realize these goals (Olsen, 2006).

Judges do not adjudicate cases just following procedures established by the law. They act supported by bureaucratic institutions which contribute to enforce principles of impartiality and equality for the citizenry before the State and its apparatus (Peters, 2001). It follows that the normative propositions regarding the role of bureaucracy cannot be neglected in the formulation of policies that aim at reforming the organization of the judiciary.

Bureaucratic organizations however do not enact policies in a vacuum. This is well known in e-Government literature which provides good examples to discuss the tensions which shape the relationship between ICT and bureaucratic organizations (Fountain, 2001). Among these studies the technology enactment framework offers a framework to study the relationships between technology and organizations, and how organizations enact ICT according to their cultural, social and institutional features (Yildiz, 2007). Not without its critics (Bretschneider, 2003; Norris, 2003), the technology enactment framework, building on a broad socio-technical perspective (Luna-Reyes, Zhang, Ramon Gil-Garcia, & Cresswell, 2005), provides a useful instrument to study the complex process of technological adoption in the public sector. The framework adds emphasis on the role that public sector organizations (Luna-Reyes et al., 2005) play in shaping public sector ICT implementations. Making a distinction between “objective technology”, defined as the array of IT hardware, software, networks, the Internet, etc. and “enacted technology” as the use and perception of technology in a particular setting, the framework allows to study how public sector organizations enact ICT according to their cultural, social and organizational features (Yildiz, 2007). Cordella and Iannacci (2010) further discuss the role of technological artifacts in the shaping and enactment of public sector ICT policies discussing the enactment of e-Government policies and not only of technological artifacts.

To contribute to this stream of research which focuses on the cross socio-technical relationships which characterize ICT implementation in public sector's organizations we propose to look at the socio-technical path dependency which shape the deployment of ICT enabled reform of the Italian judiciary. Path dependency results from socio-technical interactions as those that shape the outcome of not only technical aspects of the technology, such as standards, but also users' work practices and local organizational arrangements that develop around technologies. As a form of organization (Jessop, 1996), technologies do not exist outside the specific spatial and temporal horizons of action pursued by actors during the institutional context of their [technological] use. That is, the larger socio-technical regime (Rip, 1995) determines the characteristics of technological products and

therefore their impact on markets and organizations (Bijker & Law, 1992; Star & Bowker, 1999). We investigate socio-technical regimes as a possible explanation for the different outcomes in public sector ICT implementations offering an in depth case study of the Italian judiciary. For our study, a socio-technical regime is a contextual alignment of technical, social, and institutional (the law) factors that promote, via interactions among the factors, organizational configurations. Rip and Kemp (1998) further note that “a technological regime is the rule-set or grammar embedded in a complex of engineering practices, production process technologies, product characteristics, skills and procedures, ways of handling relevant artifacts and persons, ways of defining problems—all of them embedded in institutions and infrastructures.”

The case study we provide herein shows that socio-technical regimes not only shape the development path for technological artifacts (Akrich, 1992; Bijker & Law, 1992) but also defines the organizational configuration which results from the adoption of the ICT solution. Our case shows that organizational configurations reflect the actions of technology users -who possess specific characteristics and skills- that conceive technology as useful for addressing specific problems that occur in a specific institutional contexts according to the technical characteristics of the artifact. In turn, our case study suggests that any assessment of path dependences as variables that affect the configuration of e-Government policies should include an analysis of socio and technical interdependences.

3 The socio technical regimes in courts and prosecutors' offices

At a first look, the organisation of the Italian judicial system is highly centralized and formalised. The Ministry of Justice and the Judicial Council have overall responsibility for the organisation and the functioning of courts, prosecutor's offices, prisons and other judicial agencies. The main functions of the Ministry of Justice concern the areas of management and provision of services, in particular the recruitment and administration of administrative and technical personnel, as well as the provision of buildings and organisational tools, including the development and the adoption of ICT, and the allocation of the budget for each judicial office. No less crucial than resources is the rule of the law. In the Italian case, as set out in Constitutional law, judicial authority can only be exercised in accordance with written laws enacted by Parliament, in order to guarantee the equal treatment of the citizen before the law and to safeguard citizens against arbitrary rulings in individual cases (art. 3 Constitution). To enforce these constitutional rules, judicial organisational procedures are strictly defined by laws, such as the codes of procedures, and by formal rules dictated by the Ministry of Justice and by the Judicial Council. The aim of these codes is to regulate, up to a very high level of detail, the structure and the functioning of both courts and prosecutors' offices. This strict setting of constraints is enforced in many ways including inspections and administrative enquiries into the functioning of judicial agencies which are carried out by the Inspectorate of the Ministry of Justice. The Italian judiciary, therefore, is a perfect case to discuss how the basic features of public bureaucracies, including the way in which the legal fabric guiding their operations affect development and deployment of e-Government programmes.

A common feature of courts is the coexistence of two main institutional figures and functions: judges and the administrative staff. While judges instruct and decide on cases and draft the legal reasoning to motivate their decisions, the administrative staff performs a large number of activities which serve to record, support and certify the work of the judges.

The result of all this is that the organisation of the Italian judicial system can be considered as a complex network of relationships between actors placed in two different socio-technical regimes. Each judge, being and independent adjudicator works alone tends to develop idiosyncratic methods and routines. Apart from the possibility to appeal the decision of the judge, control mechanisms are weak: hierarchy is not existent since it would undermine judicial independence, performance standard are absent or not enforced. Mutual adaptation works as a key coordination mechanisms. As a consequence, judges operate in a socio-technical regime shaped by the institutional setting which results in the functional autonomy of judges.

Despite this orientation, judges cannot operate as monadic entities. Indeed they need regular support by an administrative staffs organised as Weberian bureaucratic structures. In this case activity is coordinated through rule based procedural standardisation, supervised and enforced through hierarchical mechanisms.

Accordingly, court management is increasingly becoming the management of complex interaction characterized by a large number of independent actors with a very detailed knowledge of their specific area of activity (judges and to lesser extent lawyers) that have to cooperate with a formalized bureaucratic organizational units – the administrative staff.

Despite the high level of formalization, which should lead to perfectly standardized and rigid procedures, the everyday practices of courts and prosecutor's offices are full of exceptions that must be dealt with. During hearings, it is not uncommon to hear judges, clerks and lawyers discussing how to get hold of a copy of a document which has disappeared from the trial folder. At the court counter barristers frequently address to court staff questions that should not be asked because of the limits imposed by procedural rules, or because that information has already been communicated to them. In many stages of civil and criminal procedures, lawyers, judges and court staff have to fill the gap between the information that is available and information that should be available but that is not to hand due to errors, inaccuracy or lack of care in the handling of the case or lack of procedural standardization (Galbraith, 1977; Perrow, 1984). In these cases coordination is obtained by mutual adjustment between those involved. Judicial procedures emerge in many cases as the result of local adaptation and problem solving instead of through well-established standardized procedures as one might have expected, given the level of formalization of the judiciary and the democratic principles that the institution should uphold.

To address these issues the Italian Ministry of Justice has been working since the nineties to develop ICT solutions that can help to regulate and to standardize the functioning of the judiciary so as to increase control over the processes and procedures that govern the relationships among and between the judiciary offices. ICT systems, and the associated emphasis on standardization, streamlining and integrating business processes have been identified as ideal control technology.

4 ICT in the Italian judiciary

Since the nineties, European Judicial systems are attempting exploring and exploiting the possible uses of ICT, to integrate the exchange of information within the whole judicial sector (Fabri & Contini, 2001). The aim of these projects (and this is foremost in the Italian case) is to standardize the infrastructure underlying the communication exchange within judicial proceedings. This requires a radical change in the systems used at court level, and the development of systems that cut across the borders of the individual organization, and that link different organizations: prosecutors' offices, courts, and lawyers. This goal is reached by redesigning the shared "resources" in the large and non-homogeneous, user community of the judicial sector (Contini & Fabri, 2003). This involves a radical change in a well-established communication flow taking place within a complex, intertwined and interdependent set of socio-technical relationships.

This approach to ICT deployment can be conceived as an attempt to redesign the existing socio-technical context that is variegated because of the coexistence of two regimes, one based on functional autonomy and the other on typical bureaucratic specifications. Independent offices work in a setting where procedures are strictly regulated by codes of practice (laid down by legislation) and detailed regulations passed by the Ministry of Justice, the Judicial Council, and other public agencies. These rules describe and prescribe in detail when, what and how a certain action has to be taken by a specific party. In this framework, technology has been considered one, if not the instrument to better regulate judicial offices operations, where other "traditional" tools have failed as a result of institutional and constitutional constraints. ICT has been conceived as a superior means of enforcing procedural uniformity and standardization. The role of IT has thus been conceived as a means of standardization which is able to enforce working practices and procedures in accordance with normative requirements. This approach has been successful so far, only where the "mise en place" of technology has not necessarily required complex organizational changes or profound socio-technical adaptation (Contini & Cordella, 2004).

As anticipated, however, the operation of the Italian judicial system is characterized by a set of heterogeneous working practices followed by independent and autonomous judges within their areas of independence and functional autonomy. This independence is the fundamental element that shapes the socio-technical regime within which technological deployments are taking place. The introduction of ICT systems in the Italian Judiciary is helpful to highlight and discuss how such two different socio-technical regimes affect e-Government development. To illustrate this point we will consider two illustrative cases in the Italian judiciary, namely the automation of the criminal dockets in courts and prosecutors' offices (ReGe.), and Polis, a system that allows judges to write judicial decisions and publish them on the web.

In the first case, ReGe, the Ministry decided to abort several successful bottom-up developments of the system, which would have led to a more effective office automation, because of the fear of inconsistent applications (and procedures) in different courts (Fabri & Contini, 2001). On the other hand, the second case, Polis, illustrates how a failure to implement the system (judges were not using the application) led to the exploitation of the installed base and to the launch of a new, successful service (public access to court records), which was not originally considered as an option, but which has been a great success.

5 ICT deployment vis a vis two different socio-technical regimes

Independence and functional autonomy act as a guarantee for judges (and prosecutors) but a sociotechnical regime built around such principles can also dramatically increase the complexity of the organizational context of judicial proceedings. This complexity has to be taken into consideration when the design of new information systems is undertaken. These characteristics can, in particular, lead to failure or to a very slow uptake of IS projects that attempt to change the socio-technical regimes permeating the functions performed by judges by standardizing their work procedures. Though it seems easier to design ICT solution that support the administrative function of the judiciary. In this case the socio-technical regime seems to be more receptive to standardized ICT solutions as work practices are already organized around routines and technology put in place to homogenize the management and administration of the cases. This clearly emerges in the analysis of the ICT deployment in the Italian judiciary (the situation is the same in many other countries): while the Ministry of Justice has been able to deploy automated case management systems used by the administrative staff in a large number judicial offices, the development of systems aimed at supporting the work of judges can only be described with a long list of failures.

When automating the administrative area of judicial offices, the new technology acts as an extra layer in standardized procedures and working tools (such as paper registries). Furthermore, the tension between the characteristics of the technological tools and the characteristics of the receiving context is relatively low, mainly because these systems can be designed to automate the existing status in line with the existing socio-technical regime. With the new technology, the administrative staff no longer has to keep track of procedures with paper dockets but performs the same task using an “automated”, digital docket. For these reasons, the further level of data and procedural standardization imposed by the information technology fits with the organizational features of the receiving socio-technical context and the implementation and use of these technologies take place without major problems(Contini & Cordella, 2004).

The contextualization of these case management systems (CMS) does not provide many opportunities for the development of new organizational functionalities associated with the deployment of technology. ReGe, the most commonly used criminal case management system in Italy, was designed as a simple automation of the pre-existing paper docket, integrated with statistical reporting and some automated functions for drafting standard judicial documents. The adoption of this technology has however led to the “reinvention” of the old paper docket. Clerks transferred the data entry routines previously used in the paper docket to ReGe. These routines were perfectly adequate for the paper dockets, but mixed up data entries in the new system(Contini & Cordella, 2004). ReGe in fact not only took the place of the old paper dockets, but became a perfect functional equivalent of them(Contini, 2000). The application was however adopted on a nationwide level in the nineties, is still used and at least in terms of adoption rates can be considered a success.

When judges and prosecutors come on the scene things become more complex. In the first half of the nineties, a limited number of judges and prosecutors, in their own judicial offices, attempted to build tools to support their own judicial writing. These systems were able to upload data from the court’s case management system (such as ReGe) and to insert the information on judges’ electronic forms developed on the basis of the office automation features of Microsoft Word. These local developments were in practice very simple solutions of office automation. These initiatives took place in several offices as the result of the personal efforts of one or a few judges and with the help of some ICT specialists collaborating with the courts. The aim of these bottom-up efforts was narrow, local, and in line with the socio-technical regimes within which judges work. Each system is designed to support the routines of a judge in the specific court he/she works.

Quickly, the success of these polygenetic initiatives became a serious challenge for the Ministry. On the one hand, many courts were asking the Ministry for support for installing and maintaining these independently-made systems, while on the other the Ministry did not have the human resources to support such a growing number of applications. The Ministry was also unable to select one system as a centralized choice and hence organize its support. Contextually, the locally developed applications were challenging any efforts of the Ministry to regulate this domain with a centralized solution. Gradually, the Ministry reduced the support granted to these local initiatives which, as a consequence often failed, and in the meantime launched a national project to develop two applications - Polis- to support and standardize judges’ work.

Polis was developed to support and automate the work undertaken by judges within civil procedures. The system supports the judges’ writing of judicial documents such as judgments, orders, etc. Based on the Microsoft Word interface, the application allows each judge to build her/his own customized forms, in an attempt to allow an adequate level of flexibility. Once the forms have been created, the system can upload automatically the data

available on the court's case management system (names of the parties, number of registries etc.) and put the information on the judge's form in order to speed up the process of writing up the judgment and to reduce any potential errors during the execution of this task. In writing their judgments, judges should be further aided by the use of a glossary. All the judgments written using Polis are archived in a database made available to judges and lawyers. In order to update regularly the judgments in the data base, however, this system needs to be adopted by the vast majority of the judges of a specific court. This has however seldomly happened, even in the pilot courts (Carnevali, 2011). Despite the effort and the training sessions organized by the Ministry, a large number of judges involved in the pilot project found it difficult to adopt the new working practices embedded in Polis, and the new application has been accepted as standard working tool only by very few of them. Since one of the goals of Polis was to create the judgment database, the administrative staff was forced to use the application developed for the judges, in order to upload the judgments in the database (Carnevali, 2011) once they had formatted as required by Polis.

Judges rejected the technology and the standard procedures designed by the Ministry of Justice, even though by a large extent they were designed to comply with judges' needs. Polis was designed to rationalize and logically reorganize the data flow and management in the work of judges. The requirement analysis mainly took into consideration the inefficiencies that occurred in the paper based data flow and in the old information management. It however ignored the socio-technical regime within which judges' works, and in particular the low level of procedural standardization and the high level of functional autonomy of each single judge.

While the system has been a failure when analyzed in terms of adoption rates by judges - the vast majority did not use Polis to write and publish their decisions on the court website even in the pilot court - it has instead become a successful platform to support electronic access by the public to the data collected in the case management systems once uploaded by the administrative staff. As already mentioned, the administrative staff works in a socio-technical regime where standardized practices and technologies are part of the daily routines. The administrative staff following prescribed rules and routines regularly updates the case management systems of the courts (e.g. the data bases already developed by the Ministry of Justice), collecting data that lawyers need to know in order to work on their cases. During the piloting of Polis, it became clear that the infrastructure built to allow access to the judgments database could also be used to access data stored in the case management system. The administrative staff therefore appropriated Polis and gave a new life to it. The project, which seemed to have reached a dead-end as judges did not use it found new users in the administrative staff and became quite successful.

As it will be discussed in the next section we can argue that the slow adoption of Polis or even its rejection by the judges can be explained by the socio-technical regime that defines the context within which innovation can take place or be rejected. The swift adoption of public access to the case management system of the court organized around Polis by the administrative staff is instead the outcome of the positive match between the socio-technical regime which defines the working context of the administrative staff and the functionalities offered by the system.

ReGe and Polis delivered dissimilar results because of their different compliances with existing technology (Hanseth, 1996) and because they did not fulfill in the same way the needs and expectations of their users. The data collected for our case study reveals that the two systems have followed different strategies, justified by the contingent characteristics of the organizational context in which they operate. ReGe has been built by relying on the existing docket system, and by supporting the knowledge, practices and therefore the socio-technical regime within which the administrative staff works. The application has attempted to ameliorate the existing case management system tools used by professionals in the field by responding to the needs of their pre-existing socio-technical regime (Smith, 2007; von Hippel, 1988).

Polis was instead designed to change the socio-technical regime defined by the variegated technological solutions used by judges in the context of their functional autonomy. The application has thus been conceived as amelioration of the existing technical solutions (paper-and-word processing applications) used by the judges without considering if the existing socio-technical regime, defined by these "old" technologies and peculiar practices was keen to change in line with the functionalities offered by Polis.

The ways the two systems have developed show that only ReGe has successfully exploited the linkages and interdependences with other technological artifacts and infrastructures. ReGe is therefore properly situated within the existing technological architecture. This point may seem obvious (Shapiro & Varian, 1998), but it is not sufficient to explain why the system was successfully adopted. We argue here that it is the larger socio-technical regime (Rip, 1995) and not only the technological compliances which determines the characteristics of

technological products (Bijker & Law, 1992; Star & Bowker, 1999) and therefore contribute to define their path of adoption.

ReGe in fact fits the working practices, procedures, and habits of the administrative staff. ReGe complies with the existing socio-technical regime that defines the context within which administrative staff works. Polis instead builds on a different technological architecture than the one used by judges. Once again the dimension of technological compliances is not enough to explain why it fails to be adopted. Polis does not fit with the socio-technical regime that shapes the working context of judges. Judges' work is deeply shaped by the principle of functional autonomy. This makes judges reject any imposed system aimed at standardizing their work environment. The technological situatedness is playing a marginal role in this case. It is the broader socio-technical regime, defined by habits, work, institutional practices, and use of individual technologies (does not matter if simple word processors or locally designed applications) which make judges rejecting the system. The same system instead is used by the administrative staff, even if it was not designed to be used by them, because it well fits the socio-technical regime of the administrative staff and not the one of the Judges.

The principle of judicial independence, the subsequent functional autonomy of the individual judge, the objective complexity of the heterogeneous judicial proceedings developed by each judge, makes the design of a standardizing information infrastructure very difficult. Their functional autonomy, supported by the Judicial Council, prevents them from adopting a standardized way of working or of organizing the work. Once more we are faced with the problem described here as the conflicts between the existing socio technical regimes, and the changes that a systems like Polis, unavoidably, brings in.

6 Conclusions

Building on the notion of socio-technical regimes we note some factors that influence the adoption of e-government policies in the specific context of the Italian judiciary. Traditional explanations, based solely on the notion of administrative efficiency, are insufficient to explain why in the case we studied an IS solution designed to support a specific function of the judiciary, the work of judges, is not used by them but it is instead reinvented and adopted but the administrative staff in charge of the administration of the case management. We suggest that socio-technical factors help defining the adoption of public sector ICT solutions. Our findings further show that users' competences, skills, and needs offer important factors to better understand the adoption of IS in the public sector. We therefore propose the on-going use of the notion of socio-technical regimes to study the social and technical dimensions that potentially shape e-Government deployments.

The Italian e-justice project has been shaped by a complex set of factors. The case shows that e-government projects are not always the outcome of planning and controlled change management initiatives, as described by many NPM driven projects. E-government projects often emerge as an outcome of a complex set of relationships. Our case shows that technological, organisational, normative and institutional factors, merged into socio technical regimes, shape the trajectory of the ICT adoption. E-government initiatives, as the one discussed in this paper, seem to reflect very closely the high level of interdependences that characterise socio-technical regimes and therefore it can be useful to study if they define a similar path of evolutionary change and evaluate if this is a common trend in ICT enable public sector reforms.

E-government initiatives are often emerging as outcomes of negotiations and on-going relational interplay shaped by the existing socio-technical regimes so that e-government projects should be studied in their making and not as results of planned action and sequential evolutionary phases.

Socio-technical regimes enact technological deployment. The high level of institutionalisation of public sector organisations, especially in the judiciary, the bureaucratic nature of public sector organisations, and the need to standardize work practices to guarantee the principles equality and impartiality, all elements which ultimately define socio-technical regimes, make the latter a potential useful concept to study the complexity of e-Government reforms.

7 References

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