NEW TECHNOLOGIES IN PUBLIC ADMINISTRATION

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New Technologies in Public Administration

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Introduction

Giorgio Petroni

The following pages represent the first stage of a research path that began in 2000 and has not yet come to an end. Along this path, guided by a group of experts (a Steering Committee) operating in the Working Group of IISA's "New Technologies and Public Administration," we gathered the thoughts and expertise of scholars and managers involved in the relationship between technology dynamics and Public Administration (PA). This type of research began some years ago and was inspired by the realization that technological development has produced a far-reaching interaction with PA and its various branches. First of all, the Steering Committee has emphasized how technological development and PA influence each other by virtue of the fact that investments in research and development, such as the programs for technology transfer, are managed by public agencies. Moreover, there are some branches of PA that heavily rely on technology for their activities; it is enough to think, for example, about the defense sector, the space agencies that are now found in all of the main industrialized countries, the agencies for environmental protection, those that are responsible for food control and safety and so on.

At the same time, some technological advancements have found fertile ground in PA and now influence deeply their behavior. It is this last area that the Steering Committee has decided to explore further because the impact of technologies such as information and communication technology (ICT) or space technologies (the use, for example, of satellites for civil purposes) on PA is from a political and social point of view the most important. As a matter of fact, the adoption of such technologies can make it possible to offer more services to citizens and to render them more easily accessible. The adoption of new technologies can also enhance the efficiency and effectiveness of the bureaucratic apparatus and can even influence positively the mechanisms of political representation (it is enough to think about the process through which political leaders are elected by electronic vote.) The adoption of space technologies by PA, differently from that of ICT, is still in a beginning phase but it seems likely that their future impact on the behavior of the various public administrative bodies is going to be very significant.

The most interesting applications of technology are those relating to earth observations because these are able to strengthen enormously security and transportation systems, to foster the development of some production activities such as agriculture and fishing, and to improve air navigation and territorial control systems. Among the literature researched for this publications, it is important to emphasize the efforts currently being made (please refer to Yuko Kaneko's paper) by a highly industrialized country like Japan to provide its PA with satellite technologies. One should also stress the degree of complementarity among the above-mentioned technologies; the recent and strong development of ICT is undoubtedly linked to that of satellite

communications, which significantly influence the progress of the whole telecommunications sector. The Steering Committee has made operators and scholars aware of the importance of two types of technology matrix that in their application to PA are found in two different stages: ICT is currently in a fast developing stage while space technologies have started to be applied to PA only recently. It goes without saying that for the former the variety and quality of the developed technology are greater.

IISA has addressed these issues at various stages of its life; the topic was formally brought up for the first time during the "First Regional International Conference," held in Bologna, Italy and in the Republic of San Marino in June 2000, and was later discussed and explored further in the following two IISA conferences, in Athens ("Twenty-fifth International Congress of Administrative Sciences", July 2001) and in Seoul ("Twenty-sixth International Congress of Administrative Sciences", July 2004). The contributions included in this work revolve around the application of ICT in the activities and structures of PA of some European countries. In particular, these contributions discuss the various development stages of the implementation of e-government (easy access to information, provision of services, bilateral transactions between citizens and the bodies of PA, etc.) as well as the different actors of PA itself (central administrative bodies, local governments, public agencies, etc). Other papers (certainly not less important) were presented during the various IISA conferences and dealt with how ICT was applied in other European countries (in France and Germany, for example), North American countries (particularly Canada), African countries (South Africa) and Asian countries (with particular reference to Japan and South Korea).

The publication of this volume does not mean that IISA is going to cease the research that it has been carrying out so far on the relationship between new technologies and PA. As a matter of fact, the development of information and communication technologies and their increasing use in the public sector still need to be explored further. Moreover, the development of public services as a result of the adoption of space technologies will be the central topic of a book of which, so far, only the introduction has been written. Political authorities have become aware of the importance of the transfer of space technologies to public structures as well as of their use for civil and social purposes. For some time now, the transfer programs have played a crucial role in the strategies that the United States and Japan are developing in order to conquer space; and the Authorities of the European Union have recently begun to adopt a similar approach. This clearly emerges in the closer collaboration between the European Commission and the European Space Agency (ESA) as envisaged by a specific agreement: as a result of this cooperation some projects have been drawn up that are aimed at enhancing the use of space technologies for civil ends. Among these, the Galileo project and the Kosmos Skymed project stand out. The former aims at launching, in the next two years, a constellation of satellites that will ensure the strong development and the rationalization of transportation and air navigation systems, while the latter will make it possible to obtain timely information for the management and control of the territory (earth observations) of the Mediterranean countries.

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Technology and Public Administration: Conditions for Successful E-Government Development

Some Introductory Observations

Ignace Snellen[*]

The purpose of this paper is to indicate and discuss some of the organizational implications, and some conditions for success of e-Government. The introduction and expansion of e-Government has impact not only on the internal organizational structures of public administration, but also on the inter-organizational relationships, and not only on the implementation of policies, but also on the ways in which policies are developed. In the executive sphere, bureaucracies are replaced by "infocracies": information infrastructures with built-in decision premises (Zuurmond 1994). In the policy sphere, interactive policy making and co-production of policies are becoming an important trend. E-Government is important in these respects, but even more because at the background shifts in the relationships between state and society are at stake. I would like to emphasize three of these shifts.

The last two decades "government" as a vertical, top down, relationship between central government, represented by the ministerial departments, and the different sectors of society, is more and more replaced by "governance": horizontal negotiated relations between all kinds of stakeholders at one side and dispersed public authorities of any kind at the other side.

As a consequence of this, the former public hierarchies, with their reliable Weberian organizational structures, have become replaced by networks, dominated by the insecurity of interdependencies: a *strategic* insecurity because of the divergence of objectives of the participants in the network; a *resource* insecurity because of the diverse resource dependency relations of the participants; and an *institutional* insecurity because of the difference of cultures of the participants.

Most important is the shift from *mono-level government* to *multi-level governance*. The networks in the public sphere are not limited to single layers of government, but may cross international, national, regional, and local boundaries. Many of the authorities within those boundaries are democratically rooted. In more and more spheres the EU policies are characterized by this multi-level governance.

Besides these shifts in the relationships between state and society, other shifts are noticeable within the existing forms of governance. Private actors are recognized as partners in public policy making (e.g. large projects) and policy execution (e.g. assess-

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ments). More and more policies are not restricted to single sectors but cross sector boundaries, because it is realized that the causality of the problems comes from different angles (e.g. criminality), or that chains of successive approaches are necessary for a successful policy (e.g. in problems related to the food chain, or the judicial chain).

Since the times of Reagan and Thatcher, the introduction of New Public Management has led to many shifts in governance, from autonomization and agency formation to the formation of "quango's" (quasi autonomous non-governmental organizations) and to privatization. So, New Public Management has greatly heightened the complexity of state- society relationships. And governments themselves have, by adopting NPM, increased their own dependency on networks of partners and stakeholders.

Against this background, it is understandable that during the last decades, almost every country has got experience with ICT projects that failed, not only in the public sector but also in the private sector. And, still, overruns of time and budget of ICT projects are of the order of the day. Experiences of the United Kingdom may serve as an example, not because the UK are more "accident prone" in this respect, but because the projects that failed in this country are well documented and evaluated.

About failures of ICT projects in the UK Professor Helen Margetts (2004) remarks:

> "The history of government computing in the UK is littered with high profile projects that have gone wrong, and seriously hampered policy implementation". She mentions: "large-scale Social Security Agency projects that not only overran time and costs, but also resulted in maladjusted and outdated systems; a Passport Agency that almost collapsed when a new ICT system was installed; a new National Insurance System that failed to operate for a year; a UK Foreign and Commonwealth Office, of which the accounting system crashed."

In most of these failures private companies were involved as partners. These private parties very often try to convince governments to act as "launching customer" for advanced ICT applications. The problem is that a learning process, that ensues from a position as launching customer, comes with great risks for the government projects.

As indicated, these experiences are not specific for the UK. As far as the developing countries are concerned, the situation is even more dramatic. Richard Heeks (2003), of Manchester University, who is specialized on ICT for developing countries, estimates that of the e-Government projects in developing/transitional countries:

- *35 percent* are total failures: the initiative was never implemented but immediately abandoned.
- *50 percent* are partial failures: major goals for the initiative were not attained and/or there were significant un-desirable outcomes.
- *15 percent* are successes: most stakeholder groups attained their major goals and did not experience significant un-desirable outcomes.

These experiences in the highly industrialized countries, as well as in the less developed world, raise the question, what conditions may further or hamper the success of e-Government development.

I shall try and answer this question along the line of the following five subjects:

1. a conceptualization of e-Government in a broad and a narrow sense;
2. the growing ICT dependencies between (parts of) public administrations;
3. barriers to interoperability, as a condition for e-Government;

4. success criteria for e-Government;
5. relevant conditions for success of ICT projects and programs.

1. Conceptualization of E-Government Development

E-Government can be conceptualized in a narrow and a broad sense. E-Government in a narrow sense is focused mainly on public service delivery through the deployment of a website on internet. This deployment may develop along the following sequence of stages.

The *first* stage is a website on which information is provided to the citizens about opening hours of government localities, services that will be delivered, and events and happenings that are worthwhile to be informed about. This is generally the starting phase of website deployment by public administrations at the different levels of government. The information on the website is provided parallel to the traditional brochures, and may not contain more information than those brochures. The success of this first, rather timid, stage depends on the ease with which the website page can be consulted, the forms that can be downloaded, and on the accuracy with which the website is kept up-to-date. The organizational provisions that are required to keep the website up-to-date are often underestimated. (See also David Brown in this volume)

A *second* stage is reached, when the website can be used by the citizens, to make their opinions known about issues raised by the government, or other parties. The success of this stage depends on the feeling citizens have with respect to the adequacy of the reaction of the authorities on their concerns. In this communicative development stage of websites, citizens expect their input will be clearly recognizable in the output of the decision making process, started by the government. Very often citizens are disappointed about the way government takes their input in the interactive policy process into account.

A *third*, "transactional", stage of the website is reached when citizens can deal with the government on-line. A distinction can be made between one-of transactions, in which the system does not use prior information about the user, or 'account management' type transactions, where the transaction relies on a full account history of previous dealings of the agency with the citizen. Apart from user-friendliness, the success of this stage depends on the accuracy, authenticity, reliability, and up-to-date-ness of the personal and other data that are provided by coupled databases of possibly dispersed agencies.

A *fourth*, and provisionally last, development of websites in the public sphere is reached, when the website of the agency is aligned with relevant websites of public and, even, private parties (See also the description of the Public Services Broker in Ireland by Bannister in this volume). Examples of this alignment are "Non-stop-shops". They provide access to different agencies and levels of government, and handle combined "demand patterns" according to "life events" or "life episodes" of citizens or businesses. Other examples of alignment are websites, which are shared with, or have links to, private parties.

This is provisionally a final stage of development of website use by governments. The success of this stage depends largely on a clear set of agreements about technical, organizational and institutional conditions that have to be fulfilled. *Technical* agree-

ments have to be reached between departments and levels of government about all aspects related to the sharing of information, the organizational turn of the organizations towards the client, and the integration of information infrastructures over sectors of public administration. O*rganizational* agreements have to be reached about the remaining autonomy, and the necessary dependency and coordination between the interlinked providers of services to the citizens. *Institutional* agreements have to be reached about the boundaries of the jurisdictions of the participating offices, the protection of privacy, and the legal validity of electronics transactions, electronic signatures, etcetera.

E-Government in a broad sense stands for all possible kinds of ICT applications in different stages of policy making, such as agenda-setting, and development, preparation, implementation and evaluation of government policies, inside as well as outside the organizations of public administration.

So, a broad definition of e-Government does not restrict itself to the use of websites, but takes all applications of ICT over the whole range of political and public administrative activities into consideration (as we see in the papers of Brown and Petroni a.o. in this volume). Under the scope of this broader definition are falling: all kinds of *administrative applications*, such as decision support and processing systems; *democratic applications*, to facilitate interactive policy making and co-production of policies during policy development; and *accountability applications* such as freedom of information and monitoring of performances to control policy execution.[1]

E-Government can support service delivery in many ways. In discussions about e-Government and service delivery mostly are mentioned the possible improvements of services to citizens and enterprises by public administrations. As we will see in an overview of opportunities to share facilities and capacities through interoperability of ICT applications, the improvement of services between parts of public administration themselves is equally important.

2. Growing Interdependencies Between (Parts of) Public Administrations

As far as the broad definition of e-Government is concerned, three developments at different levels of public authority deserve further attention. These developments are a growing cooperation with the help of ICT applications at a European, a national and a local or regional level of government. At the European level the growing use and importance of European Information Systems stand out. At the national level the cooperation between authorities at the same or different levels of government in the form of "joined-up government" is increasing. At the local level of government capacities and facilities are combined in "shared service centers". These developments require a farsighted strategic attitude with respect to the information infrastructures in the different sectors of a national society.

European Information Systems

The first development, to be taken into account, is the expansion in the European Union of ICT networks that support the free movement of persons, capital, goods

[1] An even broader definition may be brought into vision when "governance", a combination of public and private steering within the different sectors of society, is taken as point of departure.

and services. Examples of such networks are the Social Security Net (SOSENET), which is an essential requirement for the free movement of persons and the guaranty of their pensions and other social rights and obligations, and the Schengen Information System (SIS), a Police network for the fight against international crime, which has become even more important by the war against international terrorism.

Other ICT networks and databases relate to Finance, such as the European Binding Tariff Information (EBTI) system, and the System Customs Enforcement Network (SCENT). In the field of agriculture mention may be made of the TRACES system a trade control and expert system and FADN, a Farm Accounting Data Network. Other systems are developed for environmental control, health care, education, social security and transport.

Public administrative research with respect to these European information systems makes it clear that some conditions have to be fulfilled for these information systems to function adequately (Kroon 1997). Most of all *trust* between the designers and developers of an information system, coming from different national and cultural backgrounds, is a basic requirement for the success of an international system. The attitude and behavior of the participants has to be an expression of this trust. In practical terms it means:

1) the participants are open towards each other with respect to the problems they encounter at the national level while realizing the European system: no nationalistic "window dressing",
2) they don't use the opportunity of the creation of a European system to fight their national turf battles,
3) they strive to optimize the information relations at the European level and don't try and protect mainly the existing national information systems,
4) they are prepared to anticipate on future participation in the European information systems by not putting up social, legal or technical barriers against them.

Joined Up Government Within and Between Levels of Government

A second development, to be mentioned, is called: "joined-up government". It stands for the development and implementation of policies across individual bureaus, departments, ministries and levels of government. The worldwide movement in the direction of "one stop shops" is a well known form of joined-up government. Joined-up government may consist of forms of *vertical* cooperation between governments at the European level, national authorities and e.g. big cities, but also of *horizontal* cooperation between different departments, e.g. by the ministries of Home Affairs and Justice in the field of security. In this way joined-up government tries to be an answer to the complexities of modern collective provisions.

With the growing complexity of modern societies the policy making by governmental authorities has also undergone important changes. Governmental authorities have to work together more than before. So ministries work together with European bodies and regional or local authorities to get policies implemented. This policy making along *vertical* lines has become necessary a. o. to adapt policy measures to regional and local differences. Other kinds of joined-up government between minis-

tries, along *horizontal* lines, are created to adapt policies to the specific needs of groups or categories of the population, such as the elderly, youth, handicapped people, etcetera. Interdependent chains of policies between ministries, e.g. with respect to food safety, "from the stable to the table", or related to the criminal justice system, lead also to forms of joined-up government. As far as one stop shops are concerned, some degree of joined-up government will always be at the background, in the back offices, of those arrangements in public administration. If governmental bodies are dependent on private parties, the joined-up formula may be even extended to cooperation of public sector bodies with for-profit firms and/or voluntary associations.

One of the keys of success of the joined up approach to effective government are the information systems that support this kind of approach. Common databases, accessible to all, or at least most, of the participating organizations, common decision support systems, which facilitate the connection between the different partial policies, common tracking, tracing and monitoring systems to control the flow of activities within the framework of the joined-up policies, and most importantly, common network facilities are essential for the well-functioning of joined-up government.

A special aspect of the sharing of information between the public bodies that work together in a joined-up policy structure has to do with the protection of data and privacy. According to EU directives personal data shall be obtained only for one or more specified and lawful purposes, and shall not be further processed in any manner incompatible with those purposes. The increasing sharing of data between public bodies in the context of joined-up government seems to be at loggerheads with the principles of privacy protection. But especially the struggle against terrorism and social security fraud appear to be a generally accepted excuse for expansion of the sharing of personal data. I will limit myself to mentioning this problem and don't go deeper onto this difficult subject. (Raab a. o. 2004)

Shared Service Centers at the Local Level of Government

A third development is the necessity of a growing cooperation of especially small municipalities, and other small government bodies, to cope with the growing complexities of modern societies, and to achieve economies of scale and scope. Without cooperation with other (sub-critical) public bodies it has become more and more difficult for them to attain efficient and effective policies at the base level of public administration.

Modern citizens expect from their local governments on the one hand effectiveness, efficiency and a high level of professionalism and on the other hand accessible, quick and adequate services in a very wide range of activities. To achieve economies of scale and scope, and to meet the rising expectations of the citizens, many mergers of municipalities have taken place. This created a broader basis for expertise of local government. Lately we see a growing tendency of, especially, small municipalities to work together to reach the advantages of a larger scale. Parts of their tasks are brought together in so called "shared service centers". Shared service centers may be created between the offices within one municipality, e.g. between financial bureaus of different departments of a municipality, as well as between offices of different

municipalities. In this paper we are interested especially in service centers which function between offices of different municipalities. Shared services may be founded for basic tasks of a municipality, such as garbage collection, providing housing allowances, environmental permits, etcetera, or for common support functions like invoicing, human resource management, ICT, etcetera.

Motives to start shared service centers are:

- To reduce the vulnerability of small municipal organizations with respect to the maintenance of a high level of service provision.
- To attain economies of scope and scale, and reduction of costs.
- To improve the quality of processes and to raise the professionalism and expertise of the employees.
- To increase the labor productivity by sharing knowledge and experience, and creating a basis for specialization.
- To improve the career perspectives of the personnel. (Korsten a. o. 2004)

Shared services between local or regional governments put high demands on the available information infrastructure and information architecture. Each participating municipality or regional authority remains responsible towards its own citizens, and at the same time will have to take the common interests of the cooperating bodies into account.

A major technical challenge is the specification, consistency and integration of data standards as an essential element of multi-agency operations. In a following section of this paper I will go deeper into the many technical, legal, organizational and institutional barriers that have to be surmounted to realize shared services in the public sphere.

A Stage Model of Information Sharing

When we look at the history of information technology applications within organizations and connect this with the inter-organizational information developments described so far, we see the following picture:

departmental	organizational	S. S. Centers	joined-up G.	national	international
Initiation	Integration	Horizontal border crossing	Hor./Vertical border-crossing	National data standardization	Cross national info-sharing
contagion	data-administration	interoperability	interoperability	interoperability	global data definitions

Figure 1: A Stage Model of Information Infrastructures.

The first stages of informatization took place inside the organizations of public administration. Computerization was initiated in different separate departments. This led to what is called “island automation”, since the ICT applications could not be connected, not on the level of functionality, nor with regard to the data. Mostly, the technical infrastructure was also based on different technical standards, which in

turn means that the knowledge and expertise of the IT staff could only be applied in a fragmented way.

In a following stage the organization as a whole introduced an information strategy and information policy, in line with the organizational strategy. A functional architecture and a data-model were derived, which determined the technical infrastructure. This enabled the IT-department to deliver products of a higher quality.

In the mid nineties three further stages were reached, which demonstrate that organizations start to cooperate with regard to their ICTs. This cooperation is started mostly within a certain sector by joined-up government, but may take place also between small governmental bodies at a local level, in the form of shared service centers. More recently we are witnessing national ICT-strategies (e.g. attempted by the British E-envoy), which try to create nation-wide standards and stimulate the development of e-government throughout all governmental sectors. The ideal is to see government as *one large enterprise*. As indicated before with respect to the European Union, we find in certain areas international cooperation not only with regard to data definitions but also concerning shared ICT-components.

An early example of such international cooperation, and a possible signpost for future developments in Europe, might be the general use of ISBN-numbers, which make every book with an ISBN traceable, but also the 10-digit ISDN system for phone numbers, the European standard for banking numbers, or the technical standards for reading smart cards or digital signatures.

The Indispensable Interoperability

Whenever people or organizations work together, their information facilities have to be attuned as well. The more differentiated the information systems of the parties, who want to work together, are, the more difficult it will be to make them interoperable.

Advance in interoperability is an essential requirement for a movement along the lines of the stage model described above. The concept of interoperability has different meanings. By more technical specialists interoperability is defined as *the ability of software and hardware on different machines from different vendors to share data.* A more general definition of interoperability is *the ability of two or more systems or components to exchange information and to use the information that has been exchanged.* Not only a possibility to share data is required, but also to use the data as relevant information. Both definitions are quite narrow as they are limited to communication. A broader definition, relevant for e-Government and public administration, extends beyond just communication. E-cooperation requires not only *technical* interoperability (as defined above), but also *semantic* interoperability (the partners in the cooperation have to give the same meaning to the terms used), *organizational* interoperability (the shared information has to fit the organizational routines of the participants), and *institutional* interoperability (the shared information systems must fit into the legal, cultural and professional codes of all participating parties). The requirements of all these kinds of interoperability have to be fulfilled for a cooperative deployment of ICT applications to be successful.

On the basis of a study of the barriers and challenges that managers of ICT projects experience, when they attempt to create conditions for fruitful e-cooperation inside and between organizations, the importance of interoperability for the functioning of inter-organizational systems can be demonstrated.

3. Barriers to Interoperability, as a Condition for E-Government

A management that tries to shape an effective, efficient and economic, service oriented and democratic public administration through e-cooperation will be confronted with some key barriers. These barriers are mainly technical, organisational and cultural and have to do with the growing interdependencies of the organisations in e-cooperation.

Technical Barriers and Challenges

Everybody who has experience with the introduction of sizable ICT innovations into public administration knows that it progresses with great difficulty and runs high risks. To fully realise e-cooperation through the technical and (inter)organisational networks, described before, technical measures have to be implemented at three levels:

1) intra-organisational and intra-sectoral with respect to *sharing of information*;
2) intra-sectoral with respect to *service delivery and client registration*;
3) inter-sectoral with respect to *overall information architectures*.

The *first* technical level is about electronic sharing of data related to clients and social situations. At this level problems and negotiations are at stake concerning the following aspects:

a. the definition of the shared data (problem: they are often further defined in local regulations);
b. the definition of messages required for the execution of tasks (problem: the definition of messages touches upon operational work processes, about which administrative departments wish to maintain a certain autonomy);
c. technical standards and protocols (to which administrations are accustomed and wish to stick);
d. the quality of data in terms of actuality (problem: they may differ quite substantially between the parties);
e. safeguarding the security of shared data by technical and organisational measures and authorisations (problem: the importance of security for the continuity of business, or for privacy, may differ between parties);
f. establishment of a control authority on the observance of the set of agreements with respect to data and messages;
g. the bearing of costs of the common facilities (problem: the unbalance of benefits and costs for some of the parties leads to protracted discussions and much delay);
h. object identification and numbering (problem: may be of major importance for statistical research and prevention of fraud, but not for all parties in an equal sense).

Commitment to the same objects, a common sense of direction, for a longer period of time, is often lacking in e-cooperative initiatives. Too many different functionaries, each with their own specialty and "trained incapacity", are participating in such projects. Without a strong management, too many partial decisions are taken, which are at cross purposes with the common design. The staffing is often discontinuous, the dependency on outside specialists intensive, and the documentation of the projects failing.

The *second* technical level concerns the transformation of service delivery, the client orientation, the portal functions and the registration of clients and citizens. When the functional bureaucratic orientation is replaced by a client orientation, different agreements have to be reached concerning

a. public services, which move in the direction of becoming parts of one-stop-shops, will have to agree on the portal-functions they will develop in common. Where will the common boundaries of the network of connections with other organisations be drawn?
b. the management of the content of the website has to be organised with regard to information about rights and obligations, procedures, contacts with sister organisations and independent experts, "what-if" questions, and calculations of the entitlements with respect to provisions;
c. content management systems have to be developed e.g. with respect to standardisation and possible changes by one of the partners in the network;
d. the required levels of identification and authentication for the different transactions via the net have to be determined. Questions about electronic signature, encryption, and Public Key Infrastructure present themselves;
e. differences between the participants at a one stop shop arrangement, with regard to freedom of information, active disclosure of policy initiatives, and existing databases have to be balanced.

A *third* technical level concerns the exchange of information between different sectors of public administration. If different sectors "feed" databases which are managed and used by other sectors, a need arises for an overarching information architecture for the whole public administration, as well as separate architectures for each of the sectors. In this overarching architecture a number of factors have to be established: where registrations will be kept, what kind of infrastructure will be built and maintained for the routing of the data, and how this infrastructure will be positioned. Every time regulations in one of the relevant sectors are changed, the effect on the overall architecture will have to be checked. On the basis of the architecture, the most practical solutions as to introduction, costs and administrative burdens can be chosen.

In my opinion it is evident, that these technical problems are extra consequential when international forms of e-cooperation are at stake.

Organizational Barriers and Challenges

In the foregoing parts of this paper, many forms of re-organization prompted by the introduction of e-cooperation are indicated. The American technology sociologist, Jane Fountain (2001, p. 27) emphasizes in her book about the virtual state the

importance of the role of standardization in bringing about organizational changes related to ICT.

> "First, standardization renders redundancies across agencies transparent. Second, standardization weakens the rationale for having different agencies collect and store highly similar or identical data elements. Third, data standardization suggests new forms of analysis that may lead to a change in the structure and organization of agencies. Fourth, structural changes in the federal bureaucracy are inevitable as redundant data collection, storage, and analysis by different agencies is eliminated." So, she contends a "virtual state" is being built "consisting of virtual agencies overlaid on a formal bureaucratic structure". (p. 99)

About the barriers which are involved in those re-organizations some short notices may suffice. Many of them are of a general nature and well known from the literature on organizations. Important are: a fear of loss of autonomy, a feeling of loss of "ownership" with respect to data, information and knowledge within repositories of the own organization, a one-sided view on social problems specific for the "trained incapacity" of experts, and general inertia or resistance. In the following excerpt from a German study, some more specifically ICT oriented organizational barriers in public administration are mentioned.

> E-cooperative behavior is hindered by the separation of powers, the tier structure of public administration and the right of self-determination at the different levels of government. The necessity to come to an agreement leads to compromises at the level of the lowest common denominator. The flexibility which is required by e-cooperation is opposed to the immobility of existing public authorities. The legal necessity to maintain off-line facilities makes on-line e-Government facilities extra- expensive. And finally, e-cooperative measures are too much directed at cost savings in the existing departments, instead of at interconnected *chains of activities*. (Reinermann & von Lucke, 2002)

Institutional Barriers and Challenges

Persistent institutional barriers with respect to e-cooperation have mental, legal and cultural backgrounds. From a mental point of view, public servants, especially those at street level, are incited to resist the downgrading of their jobs through information infrastructures, and through a knowledge management, which does not leave them any form of discretion. A source of legal resistance comes from the fact that ICTs lead to blurring of boundaries between organizations and muddled accountability relations. The moment information is shared between parts of public administration, responsibilities for the authenticity, accuracy and integrity of the information also become blurred. What is even "worse", the boundaries of the jurisdictions of public organizations, as the constituent parts of public administration, become blurred too. Other elements of e-cooperation may have the same kind of effect. Uncertainty may still exist about the validity of administrative acts via the internet, and of electronic signatories, or of electronic transactions. Apart from that, many laws have to be adjusted to the introduction of e-cooperation.

Finally, cultural resistance to e-Government as such may come from lack of confidence in the new technologies. The traditional carefulness, seen as a bureaucratic virtue, may turn to risk-avoidance, and a lack of innovation.

4. Success Criteria for E-Government

Given the broad range of political and administrative activities falling within the scope of e-Governance, only some general denominators can be mentioned as proxy parameters of the success of ICT applications in politics and public administration. The criteria, presented here, are a mirror image of the criteria, with which failures and fiascos of ICT projects are assessed. The following criteria may be mentioned.

Efficiency criteria, such as staying within the budget, staying within the set of time constraints, ease of use, speed of handling of cases, and cost savings.

Effectiveness criteria, such as attainment of goals of all kinds of stakeholders, inside and outside public administration (responsiveness), sustainment of knowledge management and collaborative decision making.

Legal criteria, such as equality before the law (no "digital divide"), protection of privacy and application of the principles of proper administrative behavior.

Democratic criteria, such as transparency of government policies, and opportunities to participate in political decision making.

Most of the time a trade-off between these criteria has to be found. This is quite normal for arrangements in public administration, where always a balance has to be struck between a political, a legal, an economic and a scientific rationality. (Snellen, 2002)

5. Relevant Conditions for the Success of ICT Projects and Programs?

It is, in general, easier to determine which conditions form a blockade for some developments, than to specify which conditions enhance the chances for success of e-Government projects and systems. On the basis of study of the literature, the research results of different research groups all over the world, contacts with (reflective) practitioners, and my own experience, I surmise that the following conditions have to be fulfilled:

First of all: trust and legitimacy have to be created. Without trust and legitimacy the afore mentioned organizational and institutional barriers, which have to be taken, will appear to be un-surmountable. Partners in an e-Government endeavor have to be convinced, that their viewpoints and the interests of their clients are well represented in the common ICT policy approach. In this respect the "principles of proper ICT use" developed by my legal colleague, Prof. Franken of Leyden University, could be useful signposts for the development of an acceptable policy. The principles, he developed, are related to:

- *accessibility:* information systems and the data they contain have to be accessible, because information in the public sphere has to be available for everybody (maybe on payment of a reasonable amount of money).
- *confidentiality:* the accessibility of information systems has to be restricted, if necessary, to protect natural or legal persons. The information systems and the data contained therein have to be adequately secured.
- *integrity:* the data and programs of information systems have to be accurate and complete, and consistently safeguarded. One has to be assured that no informa-

tion will disappear surreptitiously, or be changed.
- *authenticity:* certainty has to exist that a message in reality comes from the person, who in the message is presented as sender, and if personal data are stored in an information system, it has to be certain that this happens by, or on behalf of, the person who has identified himself as such.
- *flexibility:* adaptation to new user-requirements has to be easy and the specification of input data has to be so detailed, that the specific circumstances of the cases can be taken into consideration adequately.
- *transparency:* the working of information and communication technology has to be perspicacious and understandable, to make reconstruction, feedback and inspection of the ICT application possible.

If these conditions, by which trust is created, are fulfilled, many, but certainly not all, roadblocks for cooperation between parties in e-Government will be cleared. (Franken 1993)

Secondly, costs and benefits of ICT applications have to be kept in balance. Without an equitable balance the technical, organizational and institutional barriers will make themselves felt. Often the costs of information infrastructures, which are indispensable for cooperation between parts of public administration, are falling at different places and with different parties than the benefits. In these cases the "short-changed" party will have a disincentive to participate in a common information infrastructure, even if the benefits would be substantial. More and more modern policy making is taking place in networks and by chains of public and private parties. This is necessitated by technical and social developments. Because of this, there is a growing need for optimization of information relations at network level. In these circumstances the financing must not be left to the parties, but central financing of the information systems will ease the creation of cooperative information relations. Unacceptable retardation of ICT projects can be prevented, and uncertainty about the continuation of common ICT policies can be taken away. (See also the paper of David Brown about the situation in Canada.)

In some countries we find good policy examples in this respect.

In the UK a Capital Modernization Fund is created. In Ireland an Information Society Fund. And in France, as well as in Finland, the cooperation between ministerial departments is stimulated by removing financial barriers.

Thirdly, cooperation of partners in an ICT network requires the development of a common identity of the social network of the partners. An example based on experiences in the Netherlands may illustrate the importance of a common identity for a fruitful cooperation between partners in an e-Government arrangement.

Since a few years, the Dutch government is developing a policy, of which the leading idea is, that priority has to be given to "reintegration on the labor market" of people, who are unemployed, or who receive a benefit. To implement this policy Centers for Work and Income (CWI) are created through which a close cooperation between the bureaus of the labor exchanges, the municipal social security departments, and the unemployment offices would have to be realized. To support the implementation of the cooperative policy, a new common information infrastructure and architecture had to be built. However, five years after the cooperation was introduced the participants still followed their own routines. There are different reasons for this situation. As far as the

arrangement of information relations is concerned the differences between the partners in culture, expertise, professional points of view, and success criteria are important. The labor exchange bureaus are oriented to the estimation of job openings. Their activities and attitude are more characterized by a *liberal market orientation* than by a social security orientation. "Cream skinning" is a practice that fits their market orientation. The social security departments of the municipalities are characterized by a *social orientation* as subsistence providers in the last resort. The unemployment benefits offices are characterized by an *insurance orientation*: the correct, prompt and just payment of due allowances. Moreover, as the partners are afraid of losing jobs, they don't support the necessary flow of information between them, and they tend to avoid any interdependency and the sharing of information.

(The same kind of avoidance of information relations can be noticed in sectors like safety policy, the criminal law enforcement chain, youth policy organizations, and between police departments, nationally as well as internationally.)

Without a common identity at the network level the organizational and institutional barriers for productive cooperation will impede the growth of a common new policy orientation, in which this identity will be reflected. Without a shared sense of purpose, sense of consequence, sense of history, and sense of order, as elements of a newly developed identity, the ICT networks that have to support the common activities of the network as a whole will tend to fail. Much leadership will be necessary to inspire the network partners to share the same success criteria, which take the situation of the client as point of departure.

(An alternative route, chosen in Ireland has been to disentangle the Departments of Social, Community and Family Affairs and of Health and Children and to create a separate department for the common information relations. A comparable approach is followed in Canada, where separate Cluster websites are created parallel to the existing website relations of the departments with their clientele).

Fourthly, the success of e-Government projects may not be jeopardized by the application of non-proven technologies. As indicated before, it is attractive for private firms to push governments to take the role of launching customer with respect to advanced and experimental technologies. This leads not only to costly learning processes, but also harms the fulfillment of the basic tasks of the governments. It leads also to delaying feasibility studies and pilot projects, to contain the risks of the application of experimental technologies. Therefore, I think that governments have to make a distinction between their different roles, and to prioritize their primary tasks. Application of (at least internationally) proven technology prevents that "brilliant concepts turn into a bit of a nightmare".

Fifthly, Governments could learn from each-other. In this respect it is strange, that governments, even within the European Union, seem to learn so little from each-other's experiences. The Dutch government only recently started to realize that it could learn quite a lot from its Belgian neighbor. Almost all European governments are building comparable "one stop shop" facilities. They encounter the same problems and doubts. Just as the Irish government they may become aware that taking some time out, and looking over the hedges of their own domain, nationally as well as internationally, may be favorable for the final decisions to be taken. As I understand, in Canada a systematic

exchange of experiences with the UK and the USA in the field of e-Government is being started.

6. Some Findings and Suggestions

The ICT hype of last years is over. This may be a good opportunity to have a second look at the current development of ICT applications in the context of e-Government.

Many fundamental changes are taking place in the structure and functioning of public administrations all over the world. In some sectors of society government is being replaced by governance. National public administrative hierarchies are supplemented and partially replaced by forms of international cooperation. National authorities try to cope with the complexities of modern society by institutionalizing forms of horizontal and vertical joined-up government. Shared service centers are created to compensate for the lack of scale and scope of smaller public bodies, which are confronted with a growing need for expertise.

ICT applications are playing an essential role in the realization of these new forms of governance and cooperation. To fulfill this role, technical, organizational, and institutional interoperability between the different supporting ICT applications is required. As indicated in this chapter, every application, to become a success, has to meet some specific conditions. Next to these specific conditions, the overall success of e-Government arrangements depends on: the shaping of conditions of trust, a balanced cost-benefit equation, the creation of a common identity, a wise restraint towards hazardous ICT experiments in public administration, and finally readiness to learn from other countries.

References

Heeks, Richard (2003), *Most eGovernment for Development Projects Fail: How Can Risks be Reduced?* IDPM i-Government Working Paper no. 14, University of Manchester, UK.

Korsten, A.F.A., Schaepkens L. and L.J.M.J. Sonnenschein (2004), *Shared Services: Nieuwe vormen van krachtenbundeling bij gemeenten* Ministry of Home Affairs, inAxis, Den Haag.

Kroon, Nicole (1997), *Europese Informatiesystemen: grensverleggend?* (diss.) Erasmus University Rotterdam, Delft, Eburon, ISBN 90-5166-575-x.

Margetts, Helen (2003), *Electronic Government: A Revolution in Public Administration?* in Guy Peters *et al.* (Eds.), Handbook of Public Administration.

Raab, Charles d., Perry 6, and Christine Bellamy (2004), *Multi-Agency Working in the United Kingdom: Tensions Between Information Sharing and Privacy Protection*, Paper EGPA, Ljubeljana, Slovenia, 1/4-9-2004.

Reinermann, Heinrich and Jorn von Lucke (Eds.) (2002), *Electronic Government in Deutschland: Ziele, Stand, Barrieren, Beispiel, Umsetzung,* Spyerer Forschungsberichte 226.

Snellen, Ignace (2002), *Conciliation of Rationalities: The Essence of Public Administration*, in ATP Administrative Theory & Praxis, Volume 24, Number 2, June 2002, pp. 323–347.

Zuurmond A. (1994), *De Infocratie*, (diss.) Erasmus University Rotterdam, Phaedrus, Rotterdam.

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E-Government in the Republic of San Marino: Some Successful Initiatives

Giorgio Petroni and Leonardo Tagliente[*]

1. Introduction: Historical and Institutional Background of the Republic of San Marino

The Republic of San Marino is a very old and tiny European State and it is the world's oldest republic. Its earliest statutes date back to 1263, it was recognized by Napoleon in 1797 and by the Congress of Vienna in 1815. As the legend goes, it was founded by a Christian stonecutter named Marinus in 301 A.D.

San Marino is located in Southern Europe and is completely surrounded by Italy. The country's territory is characterized by rugged mountains, the highest of which is Mt. Titano, with its three pinnacles, and by the valley of the Ausa River. San Marino has over 29,000 inhabitants living on a territory of about 61 km^2.

Social and political trends in the Republic are very similar to those of its larger neighbour.

There are two heads of State, called *Capitani Reggenti*, whose mandate lasts for six months.

The legislative power is carried out by the *Consiglio Grande e Generale*, composed of 60 members. The executive branch is the *Congresso di Stato*, divided into 8 Departments, the members of which change any time a new Government is set up.

The official language, Italian, is spoken by the entire population.

In the Republic there are about 5,000 operating enterprises. The GDP in 2002 equalled about € 935,000,000 with an increase of 2.7% with respect to the previous year.

Tourism makes up about 50% of the GDP. In 2003 more than 3 million tourists visited San Marino. The key industries are banking, clothing, electronics and ceramics. The major agricultural products are wine and cheese. The per capita level of output and standard of living are comparable to those of the most prosperous regions of Italy.

There are about 20,000 employed people in San Marino, 4,000 of whom in the public sector. Moreover, there are about 5,000 people residing in Italy who come to the Republic every day in order to work in Sammarinese enterprises. The unemployment rate is less than 3%.

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2. Reference Conceptual Framework of the Survey

E-government can be defined as the transformation process of the Public Administration as a whole and of its interaction with people; this process, through information and communication technologies (ICTs), aims at optimising the provision of services, at increasing participation by citizens and enterprises and at enhancing the governing ability of the Public Administration itself in terms of efficiency and effectiveness (Centro Studi MIT, 2003).

The definition of e-government used here does not merely include implementation of on-line services, but also the use of state-of-the-art technologies of both *back-office* and *front-office*. Such approach is inspired by the concept that new technologies can improve the efficiency of Public Administrations and their interaction with citizens, not only by increasing the number of on-line services, but also by enhancing the efficiency of the activities carried out through a variety of channels and modes.

Therefore, this does not only offer citizens the possibility of shifting from "*being in-line*" to "*being on-line*" but it also entails the whole process of radical transformation of the Public Administration through a far-reaching implementation of ICTs (Fuggetta, 2002).

Both for the Public Administration and for citizens and enterprises, the development of e-government yields a whole series of benefits, in terms of increased competitiveness of the economic and social system, which can be summarised as follows:

- it improves the efficiency and effectiveness of the executive functions of the government, including the provision of public services;
- the governmental activity becomes more transparent, by providing citizens with a better access to an increasingly diversified set of information;
- it significantly improves the interaction between citizens and the organizations of the public sector that involve the democratic process and the structures of the government.

By considering all the different kinds of service, one can see how the quality increases as a result of the possibility of enjoying a timely, streamlined, and cost-effective provision of services at any moment ("accessibility service") and place ("proximity service"). Moreover, automation and the exchange of common data among different Administrations and among the various sections of the Public Administration make it possible to reduce the most operational activities of the *front-office* staff.

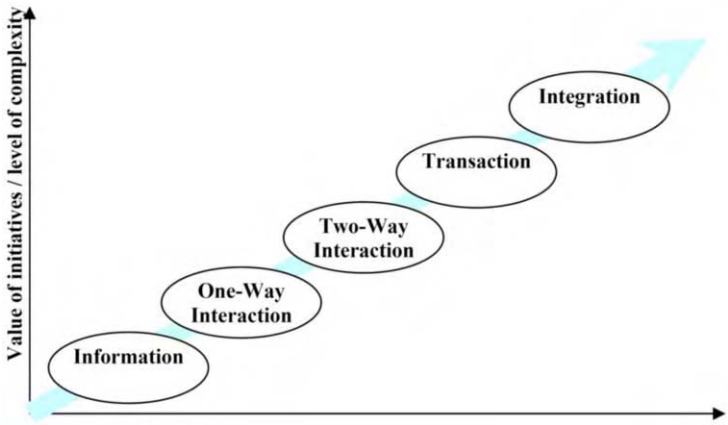
Therefore, the right e-government strategy should have the following priorities (Centro Studi MIT, 2003; Accenture, 2004):

- focus on citizens and enterprises, as well as the creation of services targeted at the priorities and the needs of the Public Administrations users;
- creation of strong foundations so as to make the Public Administration services equally available throughout the territory, while "hiding" their organisational complexity to users;
- creation of an electronic counterpart for the major national public systems (schools, health structures, employment centres, historical sites), in order to offer services with "an edge" that can perform much more than mere auto-

mated administrative and bureaucratic tasks;
- rationalisation and reduction of public expenditure;
- development and effective implementation of an "*e-government plan*" based on clearly-identifiable objectives, as well as models of governance shared by all the interested actors;
- concerted action with other institutions with respect to the main aspects of the innovation of the Public Administration: human resources, streamlining and revision of rules.

It is widely accepted (Deloitte & Touche, 2000; KPMG, 2001; McKinsey, 2001; NAO, 2002; Taylor Nelson Sofres/Abacus, 2003; European Union, 2003) that it is possible to evaluate the level of development of the e-government activities carried out in a State by categorising them according to different development stages and linking the *value* (and/or the relevant *level of complexity*), that e-government initiatives hold for the citizens/users, to the *intensity of interaction* between public bodies and citizens/users. As a matter of fact, it is possible to identify a positive correlation between these two variables: by strengthening the intensity of different kinds of interaction with their citizens/users, public bodies can optimise the provision of their services. This relationship can be seen both on an "electronic" and on a "physical" level; however, electronically-based connections and interaction levels and modes among the actors involved have proven to be much better.

According to a graphical interpretation of this conceptual model, there are 5 development stages of e-government:



a. *Informative stage:* only information (static and very general data) on how to access services is provided; the service is, by definition, only informative (e.g. the posting of the opening hours of an office). No form of interaction is possible.
b. *One-way Interaction stage:* it allows a user not only to obtain information on an issue of his/her interest, but also to download a form, which, however, will have to be filled-out and sent at a later, "traditional" stage (e.g. a form for the

notification of change of residency downloadable from the Internet but to be delivered in person, once filled-out, to the Registry Office).

c. *Two-way Interaction stage:* a user can access the service, find an electronic form, fill it out and send it electronically to the administration (e.g. the retrieving of personal data through the web). The posting of available data is now aimed at fulfilling the needs of each (real or potential) user: data is becoming more and more effectively personalized and customized (taking into account, for example, the type of user). The real potential of e-government is emerging: it allows citizens to participate in public activities.
d. *Transaction stage:* this stage is different from a simple two-way interaction in that it guarantees not only the electronic retrieving of data, but also their immediate processing, i.e. a timely modification of the key documents of the administration and the simultaneous provision of real time services. A particularly suitable example are on-line economic transactions, such as the payment of national or local taxes. The major advantage is an increased quality of services to the benefit of citizens/users, as well as the improvement, both in terms of efficiency and effectiveness, of Public Administration activities.
e. *Integration stage:* this stage is even more complex, as it relies on connections among administrations (and/or between administrations and other public and private organisations), which are completely transparent for users. In this case, the information systems of the various Public Administration sections communicate with each other (and with those of other organisations) in an absolutely neutral way for those who have requested the service: users are therefore "relieved" of a series of tasks which are directly performed by the Public Administration. Integration can apply to services provided both at the two-way interaction stage and at the transaction stage. Such integration is important because it encourages administrations to provide services based on each single "*life event*"; moreover, it contributes to the strengthening of the "*self-service*" model.

Therefore, from the first throughout the fifth stage of the development of e-government, citizens/users are no longer considered mere users of the Public Administration services, but they increasingly participate in the creation and provision of these services by influencing their quality and availability. This grants citizens important "contractual power" when dealing with the Public Administration.

Some significant e-government initiatives carried out by the Public Administration of the Republic of San Marino, classified according to the above-mentioned criteria, will be analysed hereunder, followed by some projects aimed at innovation and currently under scrutiny that exemplify the possible development of e-government in the Republic. Finally, on the basis of the conceptual framework adopted, some preliminary indications will be given concerning the steps so far taken to advance the development of e-government in San Marino and its desirable future progress.

3. Some Significant E-Government Initiatives Carried Out in the Public Administration of the Republic of San Marino

a. *Informative Services:*

Citylink

The *Ufficio Comunicazione Istituzionale e Relazioni con il Pubblico* (the office responsible for institutional communication and interaction with the public) was established in 1998 with the objective of improving the interaction between citizens and institutions. One of its tasks is to implement initiatives aimed at providing thorough information about the activities of the institutions and the Public Administration (participation, civic education, communication), but also at listening to users' requests, fulfilling the needs of every citizen (listening and monitoring), and at improving the quality of public services.

In particular, information and communication activities are aimed at:

- providing thorough information on laws in order to facilitate their application;
- informing about the activities carried out by institutions, as well as their functioning;
- enabling access to public services, by providing information thereof;
- raising awareness on relevant issues of public and social interest;
- promoting the image of the administrations and of the State in Europe and worldwide, by "advertising" local, national and international activities and events.

These activities are carried out in the following ways:

- creation and email distribution of a newsletter to all Internet users of the Republic;
- creation of informative teletext-formatted pages of institutional nature, accessible both through the State television (San Marino RTV) and through a web site (www.omniway.sm/omni_news/get_tele_news.php3);
- moreover, during political and administrative elections (and during the elections of institutions of direct democracy), an on-line informative service (web site www.elezioni.sm), makes it possible to view the vote counting and the final results in real time. This site also include: a historical archive of past elections and referenda (from 1998 till today); the relevant laws in force on the subject; a short chronicle of the main development stages of such Institutions.

Institutional Web Sites

Public bodies and offices also inform citizens and users about their activities through institutional web sites, which remain unaltered over time and contain general information. These sites are created by the following institutions:

a) *Consiglio Grande e Generale* (Great and General Council). The Parliament. (www.consigliograndeegenerale.sm):
   - it provides information on the members of and the activities carried out

by the Parliament;
- it allows to consult on-line an up-dated database containing all law provisions in force;

b) *Banca Centrale di San Marino* (San Marino Central Bank) (www.ics.sm): it provides information on:
- its activities (objectives and functions, organisational structure, official documents);
- the San Marino banking and financial system (operators, legislation);

c) *Ufficio di Programmazione Economica, Centro Elaborazione Dati e Statistica* (Economic Planning Office, Data Processing and Statistics Centre) (www.upeceds.sm):
- it briefly provides information on the institutional activities of the Office;
- it allows to consult on-line Statistical Bulletins and Statistical and Economic Reports drafted by this Office;

d) *Segreterie di Stato agli Affari Esteri* (Ministry of Foreign Affairs: www.esteri.sm), *al Lavoro e Cooperazione* (Ministry of Labour: www.lavoro.segreteria.sm), *all'Industria* (Ministry of Industry and Trade: www.industria.segreteria.sm):
- they provide general information on the organisation and activities of their Ministries.

b. One-way Interaction:

On-line Income Tax Return (www.igr.sm)

This service, developed by the *Segreteria di Stato per le Finanze ed il Bilancio* (the Ministry of Finance and Budget), allows San Marino citizens to deal more easily with tax authorities. Any individual, be it a resident or citizen of San Marino, legal person or economic operator, may use this service, provided that it has been previously activated.

In order to access the service, it is necessary to submit an application by filling out an on-line form available on the web site and by providing some personal data. Subsequently, a username and a password will be sent confidentially to the applicant by regular post.

Through this service, any kind of income tax return form may be easily filled out from home using one's own Internet browser: the form for individuals ("G" and "L"), associations ("M"), co-owned corporate income ("N"), tax substitutes ("O"), companies ("P").

Income tax returns, filled out on-line and stored in a database governed by the tax administration, must however be saved on the customer's PC and subsequently printed, signed and delivered to the office responsible for these tax matters. This makes it certainly easier for taxpayers to fill out a form, but it does not solve the problem of physically delivering income tax returns and of paying taxes. As a matter of fact, it is not possible yet to either send tax returns to the tax office via email or to pay taxes on-line.

The site provides a useful on-line help desk for filling out forms; moreover, the existing laws and regulations on tax matters are available and easily accessible.

c. Two-way Interaction:

On-line Labour Office

This service is mainly targeted at Sammarinese enterprises and professionals.

In order to meet the increasing needs of the community and by relying on the latest information technologies available on the market, Intelcom San Marino S.p.A. (a San Marino private company operating in the sector of telecommunications) provided the necessary and well-targeted technological support for this project which was launched by the Ministry of Labour.

The system is based on an advanced technological basis: users can access the service simply by connecting to the Portal of the Ministry of Labour (www.lavoro.segreteria.sm).

This system has been developed for two main purposes: one aim was to allow users to make the best possible use of the main, basic services provided, such as news, general information, services and forms, laws and regulations, FAQ, and a fast link to the most important information; the other aim was to offer users/surfers, trough an "*On-line service*," the possibility of becoming familiar with the most common authorised administrative procedures.

As a matter of fact, this service enables Sammarinese companies to fill out and submit the forms requested by the Labour Office directly from their headquarters, without having to go to the offices and without having to resort to paper. This makes it possible to fulfill easily and rapidly a whole series of bureaucratic tasks; moreover, since this service includes the possibility of carbon copying a document to more than one recipient, it is easier to disseminate and efficiently store information. Therefore, this is a useful instrument mainly for professionals, who can, in this way, inform the company that the document has been forwarded and that the person in charge will take care of refining it.

In order to access the service, companies must file an application by filling out a form in which they need to include the code identifying their economic operations and their personal data. After having verified these data, the system creates a password, necessary to perform the authorised web-based tasks, which unmistakably identifies the companies using the service.

Once registered, companies have the possibility of performing on-line a whole series of tasks (name-based request for staff, request for a certain number of employees, job termination, contract renewal for Italian workers employed in San Marino, tourism and hotels, the elderly, vocational training, special work permits).

The Portal of the Ministry of Labour also includes a section dedicated to *on-line job offer/demand* (www.cercalavoro.sm). This section allows:

- job seekers, to browse through the job announcements published by companies absolutely free of charge. The database includes various search keys: duties, category, schooling, contract type. Moreover, by adding their résumé into a database, job seekers can highlight their personal and professional skills, thus increasing the possibilities of being chosen by an interested company;
- employers to post a job offer and to read, free of charge, the résumés contained in the database, thus allowing them to identify the applicants who are most suited to their needs in a timely, fast, and cost effective way.

The technological platform on which the service is based can be expanded so as to adjust to the future developments of the labour market; indeed, this information system relies on a very flexible and customisable framework which can fully meet the increasing needs of the various actors involved.

d. Transaction:

Autonomous Philatelic and Numismatic State Corporation (www.aasfn.sm)

This Corporation is responsible for the study, planning, realisation and selling of the stamps, coins and phone cards issued by the State. It also set up a "deposit service" which allows collectors to receive all issued items, stamps, coins and phone cards, directly at home without having to order them any time a new item is issued, and without having to go to the place where they are sold. It also draws up an informative bulletin available only by subscription, which counts about 75,000 subscribers worldwide.

Although very few copies are issued, the Corporation registered, in 2002, a total turnover of more than € 11,000,000, also as a result of the introduction of the euro. The new currency accounted for the increase in the already high number of orders, mainly with respect to coins.

In 1997, the Corporation created its own web site. By consulting this site, collectors and lovers of stamps, coins and phone cards worldwide can:

- purchase the available goods on-line, by credit card, money order or cheque, and receive the goods directly at home;
- obtain information on all the philatelic and numismatic items being issued by the Republic of San Marino;
- subscribe, at no cost, to the informative bulletin, which will be sent by regular post to the subscriber's home address, so as to obtain real time information on all of the new items;
- obtain information on the main European philatelic and numismatic events (exhibitions, conferences, etc.).

The turnover of this "virtual" channel is still limited, but a strong growth is expected in the future because the world market and potential customers worldwide are becoming increasingly interested in the items issued by this tiny Republic.

The Corporation is extremely important for San Marino's Public Administration for two main reasons:

- it is a very important source of income: in 2002, for example, the operating income exceeded € 1,200,000 and the consolidated income was more than € 5,000,000. Selling some of the goods no longer in the traditional way but, rather, on the Internet should reduce the trading costs and, consequently, lead to an increased income;
- it serves as "shop window," a particular yet useful one, that can promote the image of the Republic of San Marino worldwide, by relying also on the web site.

e. Integration:

Carta Azzurra

Cartazzurra was introduced in 1992 as a result of a project jointly developed by the *Dipartimento di Stato alla Sanità e alla Sicurezza Sociale* (the Ministry of Health and Welfare known as *ISS*), totally financed by the *Cassa di Risparmio* bank of the Republic of San Marino.

Cartazzurra is a card provided with a microchip which allows holders to access the services provided by ISS; moreover, since it is sponsored by a bank, it can be used to access cash dispensers and POS (Point of Sale) terminals.

In the Republic of San Marino, the health care system is completely public-based. ISS (a public body) coordinates and governs the health and welfare services that are offered both to Sammarinese citizens and to residents; relying on its several structures, it serves about 26,000 people.

These structures include:

- 1 Hospital (endowed with its own laboratory for blood tests);
- 6 pharmacies (plus 1 pharmaceutical centre which coordinates the way in which drugs are supplied and delivered);
- 15 family doctors, assigned to one of the 10 health centres located throughout the territory of the Republic;
- 1 administrative office that manages health and welfare services.

Cartazzurra was introduced with the purpose of providing ISS with an innovative tool capable of linking efficiently and effectively all of the health and administrative sections of the Republic, to the benefits of people, the health system and the Public Administration in general.

To this end, a local network of about 120 terminals, among which are suburban health centres, hospital wards, specialist doctors' offices, pharmacies, administrative offices, and which are connected to a central server, was installed. In the summer of 1994, each entitled person received his/her own personal *Cartazzurra* card, (featuring a simcard and containing an authorisation key), which allows doctors and nurses (also provided with a special personal card) to access the patient's personal data by computer.

A computer-accessible database containing patients' information was then created. When a patient goes to any health centre (suburban health centre, a specialist doctor's office, hospital ward, etc.) he/she hands his/her personal *Cartazzurra* card to the doctor, who inserts it into a drive connected to a PC: in this way, the doctor can see the health information contained in that patient's file (medical visits and relevant diagnoses, blood test results, specialist doctors' reports, current appointments, certificates, health and pharmaceutical prescriptions, hospital admissions and discharges, etc.). After visiting the patient, the doctor can update his/her personal file and prescribe drugs by directly printing the prescription, make appointments for tests or visits with specialists and draw up certificates.

This system has the following advantages:

- for the citizen: movement of data and not of users; a more efficient and effective service; clinical data are managed more confidentially;

- for the health centre: more accurate and easily-retrievable information; retrieval of information from any work location; more efficient and effective health services;
- for the central administration: rationalisation of resources; better supervision of services and prescriptions; automatic integration of the health management with the other administrative activities.

Territorial Information System (SIT)

In the multi-faceted context of today's economic and social activities, the Public Administration, in order to take effective measures concerning the territory, needs to be able to plan, manage and supervise the current situation. Access to technologies that make it possible to activate and manage those processes that connect and link data from various types of databases, together with the possibility of graphically reproducing, in a digital format, the area of reference (thus facilitating the storing, processing and distribution of such documents), offer the possibility of creating an integrated information system capable of simulating or faithfully reproducing the covered area. As a matter of fact, by connecting and overlapping images, it is possible to create thematic charts, diagrams and histograms for any specific relevant aspect of territorial management. In computerised cartography, various information sources are used to produce charts and maps, from digitalisation of ancient cadastral maps to aerial or satellite images. Moreover, by using plotters, it is possible to reproduce the computerised version on paper or in another format.

The open system adopted by SIT is meant to be available to all users, both direct and indirect.

The programme currently used for processing cartographic and alphanumeric data is called SICAD and relies on Windows as an operative system.

SICAD makes it possible to store in a relational database (Informix) that information concerning the territory (vector-type data) and to interface it with other (alphanumeric) data. This programme features the most advanced tools and methods to access the data relating to own's own activity and create an overlap with the information concerning other users of the system.

The main objective of the Territorial Information System is to provide updated and integrated information on the territory of San Marino in terms of supervision of property (cadastre), town-planning measures (PRG – General Town-planning Scheme – and detailed schemes), public utilities (water, gas, electricity, sewerage system, public lighting, etc.), environment and civil protection.

Given the unique characteristics of the Republic of San Marino and of its Public Administration, it was possible, through this integrated information system, to meet the needs of the various sectors involved, by developing a working tool which proved useful, if not indispensable, also for other offices and private users.

4. Development Prospects of E-Government in the Republic of San Marino

a. San Marino Technological Infrastructures: Summary of the State of the Art and Developmental Trends

Transport Layer

Since the beginning of the information age, San Marino has made significant investments in order to build a strong infrastructure and to provide advanced services for the public sector.

In particular, in the late 80s, an ambitious project was launched to build a digital network that could serve the main centres of the Public Administration offices. This network was intended to carry both data and voice traffic, using the most up-to-date technologies available. It has gradually evolved in a full-fledged broadband digital network, providing voice, ISDN, xDSL, Ethernet and Fast Ethernet connectivity, with a few exceptions, to most premises. Given the size and the geographic extension of the network, it can be considered as a Metropolitan Area Network (MAN).

The network counts more than 450 km of fibre optic cables. Five main central nodes make up the backbone of the entire network. Fault tolerance is ensured by fibre redundancy at each node. In the best conditions, redundant fibres provide additional bandwidth through channel trunking. From the main nodes secondary connections depart to other nodes that provide service to more remote areas.

Although the huge traffic capacity of the infrastructure has not been fully exploited yet, it is important to stress that the investments made so far have provided the Republic of San Marino with an invaluable and strategic asset.

Computing Hardware

The main data centre (*Centro Informatico Statale*) has been recently renewed and restructured. Its main computing power is provided by a fault tolerance cluster, made up of a couple of high availability servers (Hewlett Packard 9000 L2000).

New applications are developed and tested on a smaller machine (HP 9000 L1000), which can be expanded to acquire the configuration of the machine of the main cluster.

All of the major applications revolve around Informix Dynamic Server, a Relational Data Base Management System with Online transaction processing capabilities. All data regarding the population, economy and territory is centrally stored in the database system.

A smaller server is being used as a Web Server coupled with an Applications Server. The use of such structures will provide a proper platform for the introduction of a new kind of applications, gradually shifting from client-server application architecture to multi-tier application architecture. This new architecture will make the applications accessible through a common web browser, without having to use and distribute client software for each application to each desktop.

Services and Applications

The availability of basic infrastructure, at various steps, has been the enabling factor for the development and the implementation of new services and applications,

directed both internally and to the citizens. Nowadays the Public Sector counts about 33 centralized applications, supporting most everyday administrative activities in a consistent and integrated way.

Networked PCs

At the end of 2003 there were 4,053 people employed in the Public Sector, ranging from low skill manual workers to high profile executives. According to the latest estimates, about 1,200 PCs are currently being used.

Advantages

This infrastructure has brought many advantages right from the start. It has been, first of all, the enabling factor for the development and the use of centralised applications, specifically tailored to the needs of a small community (that presents, however, the complexity of a sovereign state).

b. Some Projects Carried Out in the Republic of San Marino with the Purpose of Developing E-Government

Project Aimed at Developing an Internet-Based Portal for the State

This project aims at developing an official web site of the Republic of San Marino so as to create a single, technological interface for Internet-based communications between public bodies and citizens, and to provide the various Ministries and Public Administration offices with a shared methodology and structure with which to create and manage their own web pages. This structure is expected to develop into a real portal, which will allow, on one hand, citizens/users and economic operators to access the interactive services created by the various public offices and sectors; on the other hand, the portal will make it possible for the various Public Administration offices to exchange communications, documents and even cooperate on-line on a variety of administrative matters.

In order to implement effectively this project, it is necessary to implement the following steps:

- completion of an efficient intranet network through which Public Administration offices can exchange documents in a secure and official way;
- adoption of regulations and far-reaching application of the protocols concerning a digital signature and an electronic archive;
- identification and shaping of the processes to be supported electronically;
- development of a system capable of managing and electronically storing documents;
- implementation of a staff training programme (at all levels and in all sectors) which is consistent with the innovation process to be started.

Among the new interactive services to be introduced by the Public Administration for the benefit of citizens and companies, central importance will be given to the *citizen's card,* a smartcard providing authentication for accessing and digitally signing documents submitted to the Public Administration. This will allow the card holders to:

- consult in all security one's own personal information available to the Public Administration;
- submit on-line documents, acts, certificates, applications, etc. (income tax return, balance sheets, school enrolments, etc.);
- obtain remote certification of documents, i.e. receive via email electronic certificates issued by the Public Administration and authenticated by means of an electronic signature;
- pay on-line taxes, duties, contributions, fines, subscriptions, etc.
- consult remotely, be the holder a citizen, professional or another economic operator, the information resources (for free or by paying some money) managed by the Public Administration (cadastral surveys, etc.).

"RSM-WebCity" Project

This project aims at extending the Territorial Information System to the entire civic network of a city, by involving professionals and private citizens.

Its main objective is to provide consultation and certification for cartographic, cadastral and town-planning data, services which are still delivered on the basis of paper-based applications to be submitted to the office responsible for this task. Through the Internet it is possible to access these services "from home", thus facilitating the daily management of offices.

The implementation of this project requires a system able to guarantee controlled access with different levels of security and the ability to identify the person requesting the information.

This project is good for any kind of service because it relies on a common technological platform with different levels of access control and security that places a high premium on confidentiality and accessibility of posted data.

5. Conclusions

The Public Administration is a system aimed at meeting people's needs in order to create public value: public institutions legitimate their existence when they can produce value for society, when they prove, specifically, that they are able to obtain results deemed by citizens worth at least as much as the resources they use.

Public organisations are therefore committed to an ongoing improvement of the way in which they meet the needs of each single user, while maintaining a good balance between focusing on individual needs and pursuing more general interests, all this within strict budget limitations. Hence the need to develop new organisation and management models able to combine the key aspects of the traditional Public Administration with the theories and practices of today's business; this combination has often been called "third way" (Mintzberg, 1996; Stiglitz et al., 2000).

ICTs represent powerful tools available to public decision makers that are able to radically transform the way in which public services are provided and to change the very nature of governance, entailing, at the same time, reduced costs on the part of the community. E-government development offers an extraordinary opportunity to meet the increasing needs of a simple, modern, efficient, transparent Public Admini-

stration which provides services to users, both citizens and companies. However, the development of the interaction between citizens and Public Administration requires a reengineering (more or less radical) of administrative procedures and public services. In light of this, e-government development and a reform of the Public Administration go hand in hand and must integrate with the transformation of organisational systems, a good human resources policy, a focus on the streamlining of procedures and a careful management of transformation processes.

The innovation of the Public Administration, to which the adoption of new technologies is aimed, can only be successful if its structures and activities are concomitantly transformed. This requires the participation of all operators and people involved in the various Administrations as well as a refinement of their skills and professional profiles.

New information and communication technologies are deemed as tools which can considerably and positively influence the development process of the Public Administration. However, this does not mean that the only way in which the Public Administration can improve its activities is to change completely its interaction with citizens through a far-reaching introduction of ICTs. Rather, an integrated approach to this issue, based on the so-called "*click & brick strategy*" (CENSIS, 2003), seems to be preferable: besides focusing on the "*click*", that is to say, on the new ways of digitally providing remote services, it is necessary to pay attention also to the "*brick*", that is the physical office (its organisation, its procedures, etc.), for the improvement of which good innovation strategies must be developed. Therefore, services must be efficiently and effectively available, both physically and virtually, in order to meet the different needs and life styles of each individual user.

With regard specifically to the Republic of San Marino, although official data on the subject are not available yet, it is possible, on the basis of the conceptual framework outlined in paragraph 2 and in light of the initiatives presented, to draw up the following conclusions:

- the process involving e-government development was not the result of a far-reaching and general innovation project designed for Public Administration activities. The various services which have become accessible (also) "virtually" are the result of independent initiatives carried out by single sectors or offices, sometimes financially or technologically supported by private partners. Therefore, the extent to which activities and information within public offices and between these and citizens/users are currently being coordinated and shared is far from matching the several operative needs and from exploiting fully the potential of technology. In order to create a really effective "system effect", it is necessary to transform the way in which e-government initiatives are carried out and governed. The process should be efficient and not rely on one central group for decisions so as to guarantee a balanced investment plan, consistency in choices concerning technology and applications, ability to draw up and finalize plans;
- the extent to which Public Administrations and citizens/users interact "electronically" s still limited. Therefore, the Public Administration should promote among citizens and companies computer literacy and the adoption, an increased use of and consequently familiarity with new technologies, thus

fostering their development. As a matter of fact, the extended use of ITCs in everyday life does not necessarily mean that access to those beneficial "social effects" that could derive from their application are really shared by society as a whole. However, the inconsistency in adopting new technologies (the so-called "*digital divide*") that characterises the current e-government situation should not last long: as a matter of fact, people are increasingly feeling the need for innovated Public Administration activities: citizens deem innovation as central to improving the efficiency and effectiveness of public services in general, and enterprises consider it a business opportunity because it makes it possible to establish operative and strategic partnerships with the overall public sector;

– therefore, it is possible to say that the general e-government situation in the Republic of San Marino is in a transitional phase: from a development stage in which information services prevailed, San Marino is very gradually heading toward the development of increasingly interactive services. Future developments of the situation will be highly influenced by way the Government implements its programmes concerning the general reorganisa-tion strategies of the Public Administration and investments in new technologies.

In conclusion, there are good reasons to be optimistic about the future of e-government in the Republic of San Marino.

References

Accenture, *eGovernment Leadership: High Performance, Maximum Value*, 2004.

Cavalli, E., Leoni, R. and Spinelli, E., *Tecnologie internet, absorptive capacity e flussi di informazione e di servizi ai cittadini/utenti. Un'analisi della situazione nei principali Comuni italiani*, in "Studi Organizzativi", n. 3, pp. 131–168, 1999.

CENSIS (curated by), *Cittadini digitali. L'innovazione nella pubblica amministrazione: gli italiani, internet e i nuovi servizi*, 2003.

Centro Studi del Ministro per l'Innovazione e le Tecnologie, *Rapporto innovazione e tecnologie digitali in Italia*, 2003.

Comunicazione della Commissione al Consiglio, al Parlamento Europeo, al Comitato Economico e Sociale e al Comitato delle Regioni, *Relazione definitiva eEurope 2002*, 2003.

Deloitte & Touche, *At the Dawn of e-Government. The Citizen as Customer*, 2000.

Dipartimento della Funzione Pubblica – Ufficio Innovazione Pubbliche Amministrazioni, *Osservatorio sull'impatto delle ICT nelle amministrazioni pubbliche. Studio introduttivo*, 2002.

Dunleavy, P., Margetts, H., Bastow, S., Callaghan, R. and Yared, H., *Progress in Implementing e-Government in Britain: Supporting Evidence for the National Audit Office Report "Government on the Web II"*, LSE Public Policy Group and School of Public Policy UCL, 2002.

FORMEZ, *E-Government. Nuovi paradigmi organizzativi e formativi nelle regioni e negli enti locali*, FORMEZ, 2002.

Fuggetta, A., *e-Government*, in "Sviluppo & Organizzazione", n. 194, 2002, pp. 21–35.

KPMG*, Managing the Public Sector – Global Challenges*, 2001.

McKinsey, *Putting citizens on-line, not in-line*, 2001.

Microsoft, *E-Government: maggiore autonomia e iniziativa ai cittadini*, 2001.

Mintzberg, H., "*Managing Government, Governing Management*", Harvard Business Review, Vol. 74, n. 3, 1996, pp. 75–83.

NAO, *Government on the Web II*, 2002.

Stiglitz, J.E., Orsag, P.R. and Orsag, J.M., *The Role of Government in a Digital Age*, study commissioned by Computer and Communication Industry Association, 2000.

Taylor Nelson Sofres/Abacus, *Government Online Italia*, 2003.

UPECEDS, *Relazione Economico Statistica al Bilancio di Previsione dello Stato 2004*, 2004.

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Gateways and Clusters: The Government of Canada's Experience with Client-Oriented Single-Window Electronic Service Delivery[1]

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In its annual survey of e-government service delivery, the Accenture consulting firm has ranked Canada first among 22 countries surveyed in 2001, 2002, 2003 and 2004 (Accenture 2002, 2003, 2004). In both the 2003 and 2004 surveys, Canada was the only country to reach the top level of e-government "maturity", characterized by Accenture as "service transformation". An important dimension of this ranking was the Canadian government's progress in placing government services to the public "on line", making them available on the Internet using World Wide Web-based interactive tools. In particular, Canada was "the first government to place its citizens and businesses at the core of its strategy. It focused on target groups and matched appropriate services to those groups." (Accenture 2004: 9)

The purpose of this paper is to look at the evolution of this on-line strategy, and in particular a central element, the World Wide Web sites designed to meet the needs of identified client audiences in Canada and internationally. Known within the Government of Canada as "Gateways and Clusters", these sites are the driving element in the situation described by Accenture. They raise management and accountability issues in their own right, and they also have implications for the future direction of the Canadian public sector.

The paper has three parts. The first is a case study describing the evolution of the Government of Canada's Government On-Line initiative, the context in which the Gateways and Clusters have been adopted. The second discusses the Gateways and Clusters and their governance and presents the results of a survey of officials involved with their implementation. The third part comments on some of the implications of Gateways and Clusters, including for an international audience.

Government On-Line and Gateways and Clusters

In 1999, the Government of Canada announced its "Government On-Line" initiative, setting a target of 2004 (later moved to the 2005–06 fiscal year – in effect, March 31, 2006) for Canadians to have access to "all government information and

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services on-line at the time and place of their choosing." This goal has been central to the government's administrative modernization efforts since the original announcement.

Government On-Line (GOL) was rooted in earlier initiatives to make effective use of information and communications technologies, including the Government of Canada's primary Internet site (portal), the Canada Site: http://www.canada.gc.ca. First created in 1995, and several times redesigned, the Canada Site has since January 1, 2001 been structured into three "Gateways" – for Canadian citizens and residents, Canadian businesses, and for non-Canadians. Each Gateway is in turn divided into a total of 31 "Clusters" designed to provide a "single window" for electronic delivery of government services to identified client groups (figure 1). These Clusters are to provide a total of 135 government services on-line by 2005/06.

Canadians Gateway		
• Aboriginal Canadians • Canada and the World • Canadians Living Abroad • Children • Consumer Information • Culture, Heritage & Recreation • Economy	• Environment, Natural Resources, Fisheries & Agriculture • Financial Benefits • Health • Jobs, Workers Training & Careers • Justice and Law • Newcomers to Canada	• Persons with Disabilities • Public Safety • Rural & Remote Services • Science & Technology • Seniors • Taxes • Travel at Home & Abroad • Youth
Canadian Business Gateway		
• Business Statistics & Analysis • Business Start-up • E-business	• Exporting from Canada • Financing • Human Resources Management • Importing to Canada	• Innovation, Research and Development, Technology • Regulations • Selling to Government/ Tenders
Non-Canadians Gateway		
• Canada and the World	• Doing Business with Canada	• Going to Canada

Figure 1: Gateways and Clusters on the Canada Site (http://www.canada.gc.ca).[3]

The Clusters are intended to present a range of government services of interest to a given client group, cutting across the established boundaries of government ministries and programs. On the principle of "no wrong door", the Cluster sites exist separate from, but alongside, the Internet sites created by ministries and individual government programs ("business lines"), which are accessible through the Canada Site as well. They are also distinct from – but increasingly integrated with – other "channels" of service delivery to the public, such as telephone enquiry, mail and over-the-counter services.

By their nature the Gateways and Clusters are horizontal mechanisms existing outside the established hierarchy of government ministries, although ultimately dependent on them. Their introduction has required the development of new forms of service design and service provision and has forced a rethinking of the relationship

among the various service delivery channels, which historically have largely been managed and offered in isolation from each other.

Gateways and Clusters have raised a number of management and accountability issues that are discussed in this paper. Their emphasis on client-orientation rather than managerial authority or program structure has required the development of non-traditional governance and administrative mechanisms that are both more diffused and more collective in nature than those that emerged in the era of New Public Management. There have been continuing issues about financing for the Clusters and their place in the government's longer-term budgetary assumptions. And from the time of their inception, there have been questions about the relationship of the Clusters to traditional departmental programs. An increasingly central question is whether the Clusters represent the future of government service delivery – at least its backbone – or simply another vehicle among all the others.

I. The Evolution of Government On-Line and the Emergence of Gateways and Clusters

E-government in Canada can be traced through five periods of development. Each built on earlier administrative reform initiatives, reflecting the evolution of available information technology and related management thinking.

Before 1993 – A Foundation of Administrative Reform

Canadian public administration has a long history of internal reform and continuous improvement. Three recurring themes that paved the way for Gateways and Clusters have been cost-effective management, service to the public and learning from the private sector.

The most enduring foundation has been the report of the Royal Commission on Government Organization in the early 1960s, with its axiom that the government should "let the managers manage". Later studies of financial and human resources management all emphasized the importance of giving managers the tools they needed to carry out their responsibilities and the authority to use them, complemented by government-wide and departmental oversight and leadership.

Two other developments in the 1960s and early 1970s underpinned later efforts to improve service to the public. The *Official Languages Act*, passed in 1969, gave Canadians the right to ask for services from government in the official language (English or French) of their choice, in areas of "significant demand" for all government services and anywhere in the country for service to the travelling public. This forced the government for the first time to think systematically about what services it offered, what demand there was for those services and how they were provided. At the same time, the Federal Identity Program required all government institutions and documents to be identified to the public according to a common – and bilingual – graphic scheme. This was intended both to facilitate public access to government facilities and services and, by clearly identifying them, to make them more accountable.

Another important step was the Public Service 2000 reform initiative, launched in 1989. While much of PS2000 was concerned with reforming personnel management practices and renewed efforts to empower managers, one of its four themes was improved service to the public. A working group on service made a number of proposals based on the proposition that reform initiatives should be outwardly directed, towards the taxpaying citizenry, rather than focusing on the inwardness of government management systems and procedures.

1993–1999: The Emergence of the Information Highway

The rising prominence of the "Information Highway" – the convergence of communications and computing technologies into a single global network of networks – during the early 1990's served to heighten the expectation that information and communications technologies must serve as an integral component of future public infrastructure and policy directions.

In 1993, progressive conservative Prime Minister Kim Campbell on coming into office reorganized the machinery of government to create, among other measures, a new Department of Industry,[4] which has from that time taken the lead in e-government initiatives relating to the Canadian economy and society. At the same time a government chief informatics officer (CIO – later re-styled the chief information officer) was appointed within the Treasury Board Secretariat to lead efforts to position the government itself as a "model user" of the information highway and in particular to make aggressive use of technology in service delivery (Brown 1997: 19). The liberal government, headed by Jean Chrétien, that came into office later in the same year built on these measures, announcing at the opening of Parliament in January 1994 its commitment to developing a Canadian strategy for the Information Highway.

The first concrete measure came in the Spring of 1994. The government CIO issued a discussion paper, *Blueprint for Renewing Government Services Using Information Technology*, that proposed an approach to harnessing new electronic technologies in government management. It provided a simple vision for service renewal: "Government services that are affordable, accessible, and responsive." (Canada, Treasury Board Secretariat 1994) Recognizing public expectations for expedited service, the *Blueprint* built on best practices found in private sector service delivery, notably client-focused processes, resource sharing, standards development, access to information across organizational units, and human resource management.

The *Blueprint*'s principles for action were echoed in a discussion paper published by Industry Canada later in 1994 (Industry Canada, 1994). It laid out 15 policy areas to be addressed in policy development for the Information Highway. The topics ranged from regulatory policy to consumer awareness, and were to be resolved in light of 3 themes – job creation and innovation, Canadian culture, and universal access – and 5 guiding principles: interconnectedness and interoperability between networks; competition in facilities, products, and services; privacy protection and network security; collaboration between public- and private-sector developments; and lifelong learning as a key element of the Information Highway.

A 29-member Information Highway Advisory Council (IHAC), drawn from all walks of life, was asked to promote public debate on these issues. After holding wide-ranging public hearings and issuing nine discussion papers, it submitted its report in late 1995, with over 300 recommendations (Industry Canada, 1995). The government's May 1996 response, *Building the Information Society: Moving Canada into the 21st Century*, set out a four-part action plan that has been the basis of all subsequent developments (Industry Canada, 1996):

1. Build the Information Highway by creating a competitive, consumer-driven policy environment conducive to innovation,
2. Grow Canadian online content to strengthen national culture,
3. Ensure that all Canadians have the opportunity to participate in the Information Highway, and
4. Attain better levels of government services in an affordable manner and make government serve as a catalyst for Information Highway development across Canada.

Even before the publication of Industry Canada's action plan, however, the government began moving to build its on-line presence. In 1995, the Treasury Board Secretariat adopted its own government-wide Internet Strategy, encouraging departments to use the Internet in the course of normal business activities. The strategy established a common on-line identity, based on the Federal Identity Program, for the federal government and its departmental Web sites. In a related step, the Government of Canada's primary Internet access point, the "Canada Site" (http://www.canada.gc.ca) was launched. The federal government later established a number of service kiosks across Canada, in an early effort to integrate multiple service channels – in this case, in-person and electronic. This would later provide a model for the Service Canada initiative begun in 1999. The Canada Site remains the centrepiece of the federal government's Internet identity and at the heart of the Government On-Line initiative.

A number of steps were then taken to ensure universal access to electronic government information and services, the third element of the Industry Canada action plan. These were announced at the opening of the parliamentary session in September 1997:

> "We will make the information and knowledge infrastructure accessible to all Canadians by the year 2000, thereby making Canada the most connected nation in the world. This will provide individuals, schools, libraries, small and large businesses, rural and Aboriginal communities, public institutions, and all levels of government with new opportunities for learning, interacting, transacting business and developing their social and economic potential." (Canada Governor General, 1997)

Through "Connecting Canadians", as it came to be known, Canada was, by 2000, able to link every school and community to the Internet. This was coupled with "Strategis", a Web site jointly launched in 1996 by Industry Canada and the Department of Foreign Affairs and International Trade to provide electronic services to the business community and to encourage Canadian business to make greater use of ICTs in both domestic and export markets.

1999–2001: The Early Years of Government On-Line

In 1999, the federal government identified the establishment of an on-line presence as a priority, with a citizen-centred service strategy complementing electronic service delivery programs. Three new service programs were established: Service Canada, the Service Improvement Initiative, and the Government On-Line initiative (GOL). Service Canada established in-person service centres across Canada and launched a national telephone service centre (1-800-O-CANADA) as well as plans for re-developing the Canada Site as the federal government's main electronic access point. The Service Improvement Initiative, adopted in 2000, strengthened the mandate of Service Canada by establishing government-wide standards for service delivery based on periodic client satisfaction surveys, with a view to ensuring equal levels of service to Canadians whatever their preferred channel of communication with government.

The centrepiece of the government's service vision for the new millennium, however, was Government On-Line (GOL), which was "… all about using IT to provide the best possible service to Canadians and to spur economic growth in the global e-commerce marketplace." (Communication Canada, 2003)

At the opening of Parliament in 1999, the government further emphasized its dedication to Internet-enabled service delivery: "By 2004, our goal is to be known around the world as the government most connected to its citizens, with Canadians able to access all government information and services on-line at the time and place of their choosing." (Canada Governor General, 1999) With explicit political support, Government On-Line soon became a high-profile government initiative. Although originally launched and managed as a separate initiative, GOL eventually absorbed both Service Canada and the Service Improvement Initiative into its general mandate. In many ways, the accomplishments of Service Canada and the SII laid the foundations for the multi-channel, "no wrong door" approach to service delivery that is now an integral element of Canada's e-government strategy.

In its original design, GOL applied to the 28 major ministries and agencies of government in three phases (eventually all federal departments and agencies were brought under the GOL mandate). Tier 1 was to make available on-line information about government and government services by December 31, 2000. Tier 2 was to provide on-line key "transactional" services that in the Canadian federal system are provided by the national government, ranging from payment of income taxes to booking campgrounds in national parks. This would involve accelerated use of ICTs to deliver interactive, secure electronic services to the Canadian public by the 2004-05 fiscal year. Tier 3 called for the extension of electronic delivery of services collaboratively with the 10 Canadian provinces and other levels of government to common client groups. In principle, Tier 3 was to proceed in parallel with Tiers 1 and 2.

Although at times criticized for not being precise in what it encompassed or in what it aimed to do, GOL has provided a framework for a wide range of activities, involving a significant commitment of resources, in all government departments and agencies. An early measure sought to re-develop the Canada Site through "Common Look and Feel" guidelines establishing design standards inspired by the Federal

Identity Program for the appearance, accessibility and usability of government Web sites. By the end of 2002 all sites had implemented measures ranging from common branding and navigation standards to electronic features that cater to the visually impaired.

A parallel effort was made to reorganize the content of government sites, based on client needs. Extensive focus testing with a cross-section of Canadian and international clients affirmed GOL's organizing principle, that all government information and transactional services must be organized based on the needs of specific client groups. As a result, client-centricity became GOL's most important service priority.

In 2000, Treasury Board – the Cabinet Committee responsible for government management issues – approved a *Cluster Blueprint* to serve as the framework for reorganizing GOL services into three access "Gateways": for individual citizens and residents ("Canadians"), the business community ("Canadian Business"), and international clients ("Non-Canadians"). Within these major groups, numerous portals ("Clusters"[5]) organized and re-positioned the information and services found on departmental Web sites to provide access to government by subject (e.g., the environment), by audience (e.g., youth), and by life-event (e.g., retirement). Ultimately, the navigation structure was designed to provide a "single window" for the provision of a total of 135 government services: 88 for Canadians, 39 for Canadian business, and 8 for international client groups. This has remained the framework for Gateways and Clusters, although Cluster organization has more recently been streamlined to reflect only subject- and audience-oriented service offerings

In support of these measures, secure funding commitments were made for GOL in the 2000 federal budget. A total of $160 million (approx. US$120M) was set aside over 2 years in support of four GOL priorities: the redevelopment of the Canada Site to include the Gateways and Clusters model of content delivery; the launch of more than 80 "Pathfinder" projects to accelerate the public's adoption of high-volume electronic services (for example, on-line tax filing and a national on-line job bank); the design of a common technical infrastructure, to enable secure online interactions across government and with the public (later known as the Secure Channel); and the formulation of government policies and frameworks relevant to GOL, including public service training, service improvement, and management of government information (Communication Canada, 2004).

By the end of 2000, GOL was gaining momentum. Tier 1 objectives were completed in December 2000, as all departments and agencies made available electronic content and forms over the Internet. Similarly, Tier 2 initiatives, with the help of Pathfinder funding and contracts to develop the Secure Channel, were underway. The Canada Site redesign based on the Cluster Blueprint and consultations with the public was near completion, and solid financial resources had been allocated to enable future service improvement.

2001–2003: Building Partnerships

Based on extensive client consultation and public opinion research, including biennial *Citizens First* reports first published in 1998 by the Canadian Centre for

Management Development, the Canada Site was re-launched on January 1, 2001[6]. Incorporating the Gateways and Clusters client-centric organizational structure, the new primary Internet access point was designed for speed and clarity. The next two years were characterized by efforts across government to build partnerships – between departments, jurisdictions, and with the private sector – and move towards the ultimate goal of service transformation, while dealing with ongoing concerns about procurement procedures and the internal governance mechanisms for GOL itself (Brown and Brook 2001a/b).

The 2001 federal budget earmarked "Investment Strategy Funding" to be used for the remainder of the GOL mandate. This included support for 55 departmental projects already approved for Tier 2 implementation as well as additional funds to promote key service priorities, as determined by the senior official-level committee overseeing GOL (Communication Canada 2004).

In the Fall of 2001 the target deadline for GOL completion was moved back to the end of the 2005–06 fiscal year, in effect March 31, 2006, based on advice from a number of sources, including the private sector. Unanticipated challenges, such as emerging issues of privacy protection, technological obstacles encountered during Secure Channel development, and ongoing internal governance issues, forced GOL planners to rethink their electronic service delivery timelines.

In a related move, the Government of Canada established a Government On-Line Advisory Panel (GOLAP) with knowledgeable experts from business, universities and the voluntary sector serving as a sounding board for the President of Treasury Board on GOL progress (Government of Canada, 2001). The Advisory Panel published two reports: a preliminary evaluation in 2002 and a final report in 2003 (GOLAP, 2002 & 2003). The 2002 report made a number of recommendations for the continued success of GOL, including: re-casting the GOL/SII as a major, "whole-of-government" priority; consultation and outreach with other jurisdictions, civil society and the private sector to accelerate the pace of progress; and increasing political leadership for GOL, specifically Prime Ministerial sponsorship (GOLAP, 2002).

These measures, in the Panel's view, had to be complemented by a comprehensive public communications program to promote awareness of GOL and drive its take-up across Canada. For, as the Panel emphasized: "There is a parallel between service satisfaction and satisfaction with government." (*ibid.*) Thus, incentives for public take-up, such as faster tax refunds if filed online, should be pursued.

A final issue in this time period was to address growing public concerns about the protection of personal information over the Internet. Reflecting new federal legislation extending privacy protection to all Canadian commercial enterprises (Justice Canada, 2000), Treasury Board issued a Privacy Impact Assessment Policy (Canada, Treasury Board Secretariat, 2002b) requiring all departments and agencies to forward privacy impact assessments of their service offerings to the Office of the Privacy Commissioner of Canada before implementing the services in question. The assessments are then posted on-line, along with the views of the Privacy Commissioner.

Most services at the time, however, were still contending with basic obstacles such as lack of funding and technology problem-solving. By the end of 2002, a

study by the parliamentary auditor found, only 14 of 48 government services targeted for maximum transactional capacity had reached their service goals (Office of the Auditor General of Canada, 2003: 10). Furthermore, of the 135 services predicted to be online by 2005, only 31 services were completely on-line (Public Works and Government Services Canada, 2003: 5).

2003–2006: Service Transformation and Sustainability

Initially, GOL was seen as a distinct service initiative focused solely on the provision of electronic services over the Internet. But as the Government of Canada continued to conduct public opinion research on Canadian expectations of and preferences for government service delivery, the scope of GOL was expanded to act as the key enabler for delivering multi-channel, government-wide service improvement. First believed to hold promise only as a mechanism for cost-cutting and service efficiency in the face of severe budgetary constraints, electronic service delivery visions have since moved beyond fiscal objectives toward what is described as "service transformation".

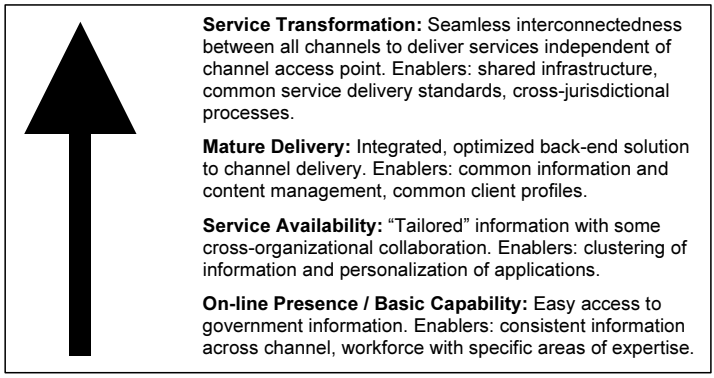

Figure 2: Levels of Service Transformation. **Source: Treasury Board Secretariat.**

As noted in the 2004 GOL report to Parliament, "The foundation for fundamental service transformation (is) the integration of services federally and across jurisdictions to significantly increase benefits to clients." (Public Works and Government Services Canada, 2004: 26) This potentially has profound implications. As the GOL Advisory Panel noted in its 2002 report: "Moving from vertical, program-driven service delivery to a more horizontal, user-centric model will require a substantial review of existing legislation, regulations, policies, processes, and protocols and eventually a fundamental overhaul of the basic machinery of government." (GOLAP, 2002: 15)

The 2002 GOL Investment Strategy Funding criteria were used to prove the cluster concept. "Transition" Clusters, those that were not previously targeted as priority initiatives, were subject to four categories of evaluation criteria: demonstrated or imminent potential for service integration, program integration or service delivery within the cluster; demonstrated or imminent potential for impact and reach (based on statistics, site traffic, and metrics); recent focus testing and client feedback; and

mapping against priorities identified in major government statements at the opening of Parliament and in the annual government budget (Canada, Treasury Board Secretariat, 2002a).

Clusters that could not demonstrate their service value based on these criteria were denied funding earmarked for the enhancement of cluster projects through to fiscal year 2005–06. As a result, only 17 Clusters – out of a total 31 – continued to receive central GOL funding and the remainder were required to rely on partnerships with federal departments and collaboration with other Clusters to compensate for funding shortages. While a painful measure for some, this was seen as providing an incentive to increase innovation and co-operation as Clusters moved into a further transitional period.

The Government On-Line Advisory Panel's final report, in December 2003, argued that the changing service needs of Canadians – heightened expectations of speed, access, and value – necessitated a reform of "business-as-usual" government processes: "The days in which it was possible to make relatively clear distinctions between the responsibilities of different orders of government are long gone." (GOLAP, 2002: 15) In the Panel's view, government needed to refocus its organizational resources along four lines: stronger leadership from the Prime Minister and an effective central management agency; a 5–10 year long term plan to transform public and internal services; measures to revitalize the public service to become a genuinely citizen-centred organization; and significant efforts to engage Members of Parliament, business, the public and the media on implementing the GOL service vision.

At the same time, the legislative auditor expressed little enthusiasm when analyzing the cost of service transformation. The November 2003 Auditor General's report on GOL represented the first major audit of the GOL initiative. Commenting that "With two years remaining in the six-year Government On-Line initiative, the government needs to devote immediate attention to dealing with some important risks" (Office of the Auditor General of Canada: 1), the report highlighted three major areas for improvement: the need to incorporate specific outcomes, such as comprehensive service targets, into GOL strategic planning; the need to strengthen governance and accountability of GOL, including clearly establishing GOL governance mechanisms as the framework for all electronic service delivery initiatives in the government; and the need to strengthen funding and financial reporting. The Report also criticized the government for under-funding GOL, contrasting the original estimate of over Cdn$2 billion (US$1.5 billion) for fully implementing all GOL service goals with an allocation to date of $880 million to GOL projects and infrastructure retrofitting. In response, the federal government stated that it expected the remaining funds to be made available through internal cost savings and departmental reallocation of funds.

While both Accenture (Accenture 2004: 14) and Treasury Board (GOLAP 2003: 16) point to cost efficiencies and savings from electronic service delivery, the Auditor General commented on the dilemma that government departments and agencies cannot be expected to invest their own funds into a program which has no explicit priority in their mandates, unless the priority is internally defined. At the same time, the March 2004 GOL report to Parliament claimed significant increases in GOL take-up and noted that GOL targets were well on their way to being met by the end of the 2005–06 fiscal calendar.

The GOL report also speculated on the future direction of GOL, characterized as "integrated service" and consisting of four objectives: streamlined government procedures to eliminate "red tape"; the alignment of programs and policies across government at all levels to eliminate inconsistencies in service delivery; greater cost-effectiveness through shared service delivery across departments; and public access to comparable levels of service regardless of channel preference. This underscored the importance and difficulty of the service transformation agenda.[7]

An integral element to the future progress of GOL is inter-jurisdictional collaboration in government service delivery. From the outset, a number of Clusters had begun to collaborate with their provincial counterparts, and GOL planners took a major step in this direction in 2003, agreeing to lay out an incremental plan for inter-jurisdictional engagement by the Gateways and Clusters. Preliminary planning focused on four key areas of collaboration: hyper-linking, metadata, content management systems, and shared services. In addition, an interdepartmental committee was established to act as a forum within the federal government for continued collaboration and discussion of inter-jurisdictional issues with respect to GOL.

A final challenge facing Gateways and Clusters was that of longer-term sustainability. Central GOL funding was scheduled to end by March 31, 2006 in an effort to put pressure both on the Gateways and Clusters and on departments and their traditional programs to find ways to continue the process of service integration and transformation. Recognizing the inherent tensions involved, the senior interdepartmental committee of officials overseeing GOL in early 2004 endorsed Gateways and Clusters – as opposed to ministerial and program Web sites – as the preferred vehicle for electronic service delivery. To that end, they also endorsed a sustainability strategy with several key elements, including: a whole-of-government strategy, awareness and engagement at the political and senior officials levels, reoriented governance tools incorporating the use of performance measurement and accountability frameworks, new horizontal funding models, shared information and communication technology infrastructures such as the secure channel and Content Management Systems and measures to facilitate information sharing and interoperability, use of common supports in the communications and public opinion research area, regular re-adjustment and review of Gateway and Cluster information and organizational architecture, formulation of an inter-jurisdictional engagement strategy, and development of a comprehensive evaluation framework.

This approach built on organizational changes made in December 2003 by the incoming liberal government led by Paul Martin. The chief information officer in the Treasury Board Secretariat was given a strengthened strategic policy role and the GOL Project Office was recast as an operational unit within the Department of Public Works and Government Services (PWGSC), focused on service delivery and systems operations. Communication Canada, which had previously managed the Canada Site, became the Government Information Services Branch of PWGSC, while the provision of information technology services to government was consolidated in a new IT Services Branch of PWGSC. The February 2005 budget announced a further consolidation of services to Canadians, in all channels including the Canadians Gateway, in a new Service Canada agency, an independent body under the Minister of Human Resources and Skills Development. These measures were linked to a

next-generation service strategy, building on the Gateways and Clusters experience and looking beyond March 31, 2006, that Treasury Board Secretariat presented to Cabinet in the Fall of 2004.

It would appear, then, that the GOL label will be retired at the end of the 2005–06 fiscal year but also that the Gateways and Clusters model has become a central element of any future developments. The open question is whether the government will follow through with the extensive, and potentially difficult and risky, measures required for comprehensive service transformation – in the terms described above – to occur.

II. Gateways and Clusters: The Citizen-Centred Catalyst

The Gateways and Clusters only emerged part way through the seven-year life cycle of GOL, but they rapidly became one of its central features. Earlier sections of this paper describe how they are organized and the steps that were taken to guide their development in an area of public administration with few precedents. This section of the paper begins with a description of the governance structures that were part of this evolution and then presents the results of a survey of federal government managers who were closely involved with GOL and the Gateways and Clusters in particular.

Gateway and Cluster Governance Structure

A distinct set of management and governance mechanisms evolved for Gateways and Clusters (figure 3), with some variation among Clusters. Some Clusters have dedicated management units with full-time staff; in other cases they are administered as an adjunct to other responsibilities. Some come under the chief information officer of the host department, others are in the public communications area, and yet others in program units.

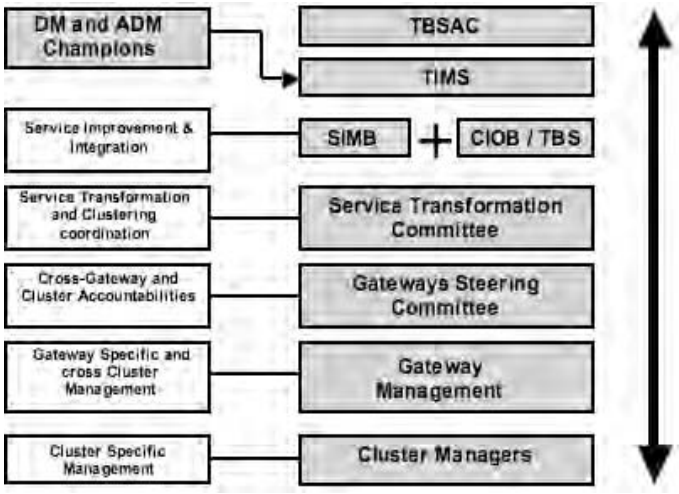

Figure 3: Gateway and Cluster Governance Structure. **Source: TBS GOL Project Management Office.**

While there is considerable variation within departments – and in the degree of identification with a given department – the Clusters do have certain governance arrangements in common. Each Cluster has a designated Cluster manager, who represents the Cluster at quarterly All-Cluster Managers' Meetings chaired by the central GOL office, which have served as a major information sharing, co-ordination and planning mechanism. Each Cluster also participates in a variety of committees and working groups for the Gateways to which they belong, including regular meetings of the Cluster managers and a series of working groups addressing common issues within the Gateway.

Each Gateway has its own office, headed by a director and hosted by a related government department.[8] A Gateway Directors Committee, made up of the three Gateway directors and the director of the Canada Site and chaired by the Director of Gateways and Clusters in the central GOL office, meets weekly and provides the most sustained management focus on the Gateways and Clusters. Increasingly strategic, but less concentrated, attention is provided by three interdepartmental committees at progressively higher levels: the Gateways and Clusters Steering Committee (made up of the Directors General hosting each of the Gateways and chaired by the CIO branch of Treasury Board Secretariat); the Service and Information Management Board (SIMB), which has an overview at the Assistant Deputy Minister level of all aspects of the GOL initiative; and TIMS, which addresses the same issues at the deputy ministerial (i.e., permanent secretary) level.

TIMS includes the deputy ministers for the departments that host the three Gateways as well as designated "champions" for specific aspects of the larger GOL effort – for example the National Archivist is the champion for information management reform. Formally TIMS is the information management subcommittee of the Treasury Board Senior Advisory Committee (TBSAC), which is chaired by the Secretary of Treasury Board and which has an overview of reform initiatives in all areas of management in the Government of Canada.

Public Policy Forum Research Study on Gateways and Clusters

The Public Policy Forum (PPF) is part of a research consortium on "Information in the Public Sector" led by Professor Sandford Borins of the University of Toronto. During the consortium's three years (2003–06), its goal is to identify and assess experience with the application of information and communications technologies in various aspects of Canadian public administration and governance.

The Public Policy Forum study is divided into a three-year research cycle: Year 1, which is the focus of this paper, is an assessment of the state of and issues relating to the Gateways and Clusters, in particular their relationships within headquarters administration in the Government of Canada. Year 2 looks at relationships between the Gateways and Clusters and other public sector entities that provide similar electronic services to the public or have a partnership role to play. These include other levels of government in Canada and regional offices of the Government of Canada. Year 3 looks at the relationship with non-governmental (private and not-for-profit) actors in greater detail and at the final year of the GOL initiative.

As a first step in its study, PPF conducted an on-line survey in October and November 2003, using the WebSurveyor software.[9] 200 headquarters-based Government of Canada officials were invited to respond to the survey. These officials were at all levels, many directly involved in administering the Gateways and Clusters but including managers of government programs – for whom the Clusters are one program delivery vehicle among many – and senior managers, including departmental chief information officers and deputy ministers. There were 64 responses, a rate of 32%. The results of the survey were then probed through interviews and group sessions with officials representing various perspectives on the management of Gateways and Clusters.

Survey Findings – Gateways and Clusters Taking Root

The survey respondents can be considered to be a knowledgeable group. While the majority considered that the Clusters were a successful innovation, this was tempered on a number of grounds, primarily to the effect that they were not fully realizing their potential and that there were unresolved management issues. The survey was conducted at the time when Clusters were engaged in bidding for new funding for 2005–06, the final year of GOL special funding, and at the beginning of the process for developing a longer-term sustainability strategy, so this timing may have influenced the results.

Successes

Respondents considered that the Clusters had been most successful in providing: information about government services (92.2%[10] of respondents), electronic links to other government sites including those of other governments (78.1%), and on-line access to government publications (70.3%). They also received high marks for meeting the Canadian government's management policy objectives in three areas: providing electronic services of equal quality in both English and French, Canada's two official languages (85.9%); maintaining a "common look and feel", i.e., a common brand identity as Canadian government sites (73.4%); and in achieving a high level of accessibility by groups that risk being left behind by the rapid pace of Internet technological development, including people with disabilities and those living in remote communities or having limited access to up-to-date technology (59.4%).

From an administrative perspective, the Clusters' greatest strength was identified as their integration with the broader Government On-Line initiative (82.5%), of which Clusters had become an increasingly central part. In addition, respondents cited efforts to link client service delivery across a range of service delivery channels (64%) and the working relationships among Clusters (54.7%). In the interviews and workshops, respondents also referred to the collaborative, group-based (by Cluster managers and staff) development of common tools for use by the Clusters, in particular a content management tool that provides a standard format for Cluster content, a tool for measuring website use, and public opinion survey methodologies and instruments for measuring client needs and preferences. The latter are the product of extensive polling activity, which has become a routine element of Gateway and Cluster management.

Governance, Accountability and Relationships

A major focus of the survey was the governance and accountability issues raised by the Clusters and the management of the numerous horizontal relationships that they entail. By their nature the Clusters have developed a governance structure that is outside and often cuts across the traditional ministerial hierarchy (see figure 3 above and related discussion). Survey respondents were lukewarm about whether the inter-ministerial committee structure provides the necessary leadership and co-ordination. The most influential committees were described as the Gateway Directors (the managers of the three Gateways and the Canada Site, chaired by Treasury Board Secretariat) and TIMS, the top management steering committee for the larger GOL initiative. Both have played significant roles in resource allocation and design of the Cluster and Gateways program, the former in bringing together collaborative proposals to senior management and the latter taking decisions on behalf of the government as a whole.

Cluster accountability was also a concern. To a considerable extent, the Clusters represent a "bottom-up" model, with much of the initiative and most of the technological understanding coming at the working level. In both the survey and the interviews there was a view that the Clusters represent a new form of horizontal collaboration that will be an important model for public service leadership in the future (77.7% of the survey respondents). At the same time, they exist within a public service environment in which the demands of ministerial accountability provide a significant "top-down" set of forces. The dilemma that this creates is illustrated by the results of parallel survey questions that provided the view that Clusters are fully accountable for their work but that top management is not accountable for them (figure 4). On the other hand, some of the interviewees suggested that this might be part of the Clusters' success!

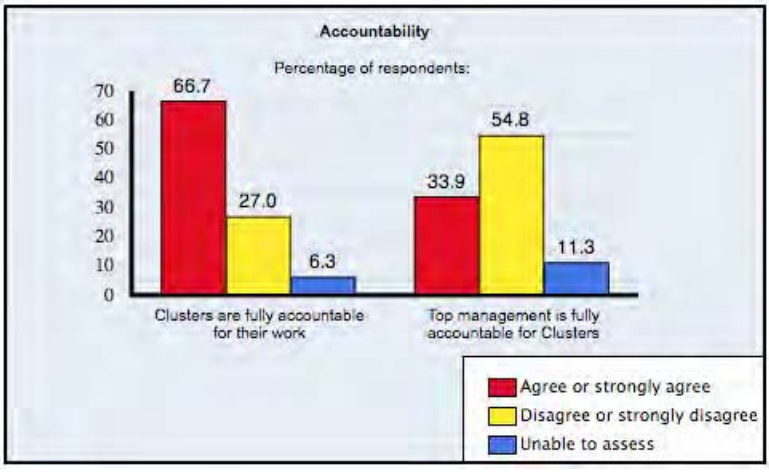

Figure 4: Accountability of Clusters and of Top Management (DMs, ADMs, Central Agencies).

Another suggestive result was that the division of responsibility for content (i.e., the subject matter boundaries) among the Clusters is not clear (54.7%) – which is

perhaps understandable when the starting point is the client perspective rather than ministry mandates.

The survey looked at two sets of relationships that are central to the work of the Clusters. The provinces and territories provide services to the same client groups, often similar services. The respondents rated working relationships and partnerships with the provinces as the single most important working relationship for the future development of Clusters (93.8%), ahead of relationships within ministries (93.7%) and well ahead of relationships with the private sector (58.7%). The state of integration with the services of other jurisdictions was given low marks (63.5% negative), however (figure 5).

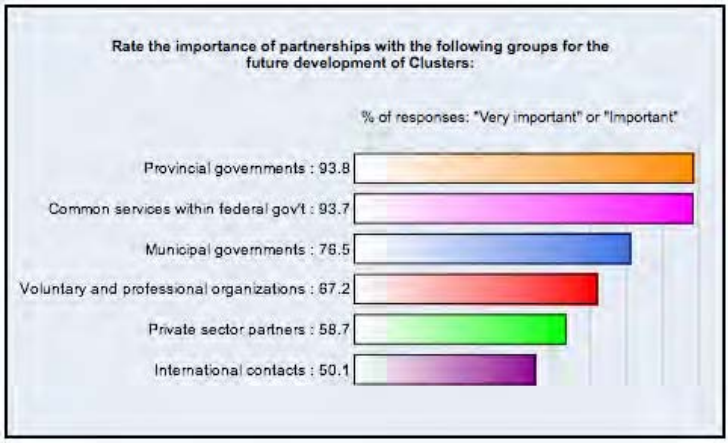

Figure 5: Most Important Relationships for the Clusters' Future Development.

The second important set of relationships is with federal government ministries. There was a general view that the Clusters will emerge in time as the preferred vehicle for electronic service delivery to the public, as opposed to the Web sites and other electronic services, such as kiosks, of the ministries as a whole or those of individual government programs and services (51.6%) – although interviews suggested that all three types of Web sites will continue to co-exist and in fact become increasingly integrated.

The survey group was divided, however, on whether the Clusters should simply be a series of "hotlinks" to material on ministerial and program sites or whether they should have the authority to create content in their own right that would not be generated by ministries in the normal course of events. A plurality (39.1% vs. 23.4% for links only) favoured authorizing them to create their own content. This division of views may be seen as reflecting the fact that there is a spectrum of Clusters, ranging from ones that are closely related to the program mandates of the sponsoring ministry (for example the Tax Cluster, which largely mirrors the mandate of the Canada Revenue Agency) to those that represent a client group or theme that cuts across ministerial mandates or even creates a new focus of public policy (e.g., the Environment, Natural Resources, Fisheries and Agriculture Cluster, which has sub-sites on matters such as water for which there is no organizational focal point in the Government of Canada).

Sustainability and Financial Management

Respondents were concerned about the sustainability of the Clusters beyond fiscal year 2005–2006, when current funding expires (65.6% assessed the prospects as fair to poor), their integration with government financial planning (54.7% fair to poor) and their alignment with established government programs and services (54.7% fair to poor). In the budgetting area, respondents saw greater integration with established programs as the best prospect for maximizing financial resources (65.6%). On the other hand there was a low level of support for approaches such as cost recovery or user fees (12.5%), public private partnerships (12.5%), or advertizing (also 12.5%) as major sources of longer term financing.

Information Management, Privacy and Security

Although high marks were given to provision of information as a service to the public (cited by 92.2% of respondents), the respondents were very concerned about the state of information management within the government, the "backroom" of electronic service delivery (32.8% positive). A slightly better approval rating was given to privacy measures (50.7%), perhaps reflecting steps taken across government in recent years to protect personal information, but respondents also saw an unresolved tension between the premise of information-sharing within government that is inherent in the concept of client-oriented single-window service delivery and statutory protections for personal information and restrictions on data re-use (50.7% agreed with the proposition that there was a tension). Similarly there was criticism of the limited integration between the Clusters and initiatives to introduce the encryption-based "secure channel" as part of the government information technology infrastructure (44.4% had a negative view, with another 38.1% unable to assess). These and the larger issues of data and information management (96.9%) were listed as the top "drivers" for the future development of the Clusters, even ahead of financial and program design considerations (figure 6).

Future Directions

In looking to the future, there was a general view that Clusters should become *a* primary vehicle for government service delivery (51.6% agreeing), although integrated with other service channels (also 51.6%), notably telephone/wireless and in-person services. This was tempered by concerns about financing and planning. Respondents felt that priority should be given to bringing on-line "transactional" services to a full level of maturity, with the three most highly ranked on-line capacities being to submit completed forms (cited by 57.8%), conduct financial transactions (57.8%), and handle personal and commercially sensitive information (42.2%) – the latter two requiring secure Internet infrastructure.

The most important "drivers" for the future development of the Clusters were considered to be data and information management and user demand. Government policies, finances and user capability were also considered to be important, well ahead of technological improvements. Globalization was given the lowest rating as a driver but also received the highest rating of "unable to assess" (figure 6).

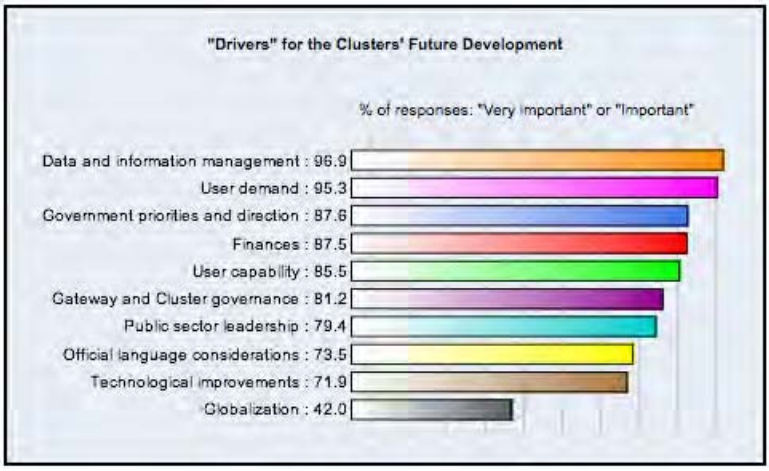

Figure 6: "Drivers" for the Clusters' Future Development.

III. The Implications of Gateways and Clusters

Gateways and Clusters and Administrative Reform – a Participant Perspective

The interviews that followed the survey explored the question of the role and benefits of the Clusters from a public administration perspective. The interview participants, corroborated by a meeting of all the Cluster managers, saw several important benefits of Clusters. A key role that they have assumed is as a focal point for defined client groups who may not have a coherent point of access to government.[11] They have also been important in engaging other levels of government with respect to issues relating to common client groups. In the Government of Canada, the Clusters have been a catalyst for organizing information more systematically and for filling information and organizational gaps, notwithstanding the frustration expressed in the survey with the state of information management.

A further benefit of Clusters has been as a mechanism for identifying opportunities for "transforming" government services through the catalyst of a stronger client orientation. In the context of the Canadian government's decentralized approach to accountability for management, Clusters have to a certain extent provided a substitute for common technology infrastructure across the government. An unexpected benefit that was cited for the Clusters was that they created pre-built relationships for responding to crises, for example, natural disasters or the 2003 SARS crisis.

The Clusters model grows to a certain extent out of the culture and accountability assumptions of the Canadian government. Ministries have enjoyed a generally high degree of autonomy in managing technology and there has been relatively little mandatory common infrastructure, although that situation is changing with the steps taken by the Martin government since December 2003. As a result the government's approach to the introduction of client-oriented single-window Web-based services has to a considerable extent been one of channeling and harnessing the "bottom-up" energies of working-level enthusiasts. The primary "top-down" incentives have been

selective use of budgetary tools (the GOL fund) or a relatively limited number of mandatory government-wide management policies in areas such as "common look and feel" (branding) and official languages.[12] More recently, deputy ministers have had support for Clusters with which they are associated included in their accountability contracts with the Cabinet Secretary.

This approach has probably contributed to the early success of the Clusters, as it has given considerable latitude to technologically literate – but also relatively junior – staff and permitted a significant amount of innovation. The success of the approach – as evidenced by the Accenture rating – means that it will be changed only with caution. At the same time, the interviews have revealed a view that the Clusters are a transitional phase in the broader process of service transformation and they will need to be integrated more closely into the government mainstream in order to realize their full potential.

By the same token, established programs will need to adapt to the Clusters. While some degree of integration is inevitable, the open-ended question is how far will it go and in particular whether the Clusters will simply become an interesting variant on the organization of government services or whether they will be a force for transforming the government itself. These were seen as issues that needed to be decided at the political and senior management level, in effect to determine whether the creative energies at the working level will be harnessed to the reform energies of the government as a whole. The evidence of the February 2005 budget – which looked beyond the March 31, 2006 end of GOL – suggests they will have an important lasting effect.

The interviews revealed one other line of thinking. The same internet "portal" model that underlies the design of the (supply-oriented) Canada Site and the Gateways and Clusters can itself be adapted to become a tool in the hands of individual citizens and companies. Individuals can structure their own portals based on their needs and interests, linking to whatever sources of information and services that are useful to them, including the federal and provincial governments, but also those of municipalities, community groups, businesses and the wider range of social and economic actors in Canada and internationally. Such a customized, demand-based, approach places even greater importance on information management and gathering tools, including search engines, and personalized portal templates are easily available, including on the home page of the Canada Site. Such a development will not eliminate the Clustering approach, but may well set it in a different context.

Perspectives for an International Audience

The Gateways and Clusters approach arises from the historical development of the Canadian public service and is conditioned by its particular approach to management and accountability. It is a product of features of Canadian society, including a high rate of Internet usage and the presence in Ottawa of extensive private and public sector research networks in relevant fields, including telecommunications and computer security. As the case study of GOL suggests, there has also been a significant element of trial and error in the Canadian approach, although also a history of building on past experience and continuous improvement. In any case, there are a

number of aspects that an international audience might find pertinent and worth monitoring as Gateways and Clusters continue to evolve.

The first is the integrated service model that Clusters in particular represent – the focus on clients and audiences (to a lesser extent life events), as opposed to the traditional ministerial and programmatic model for organizing government activity. The ultimate extension of this model is convergence across ministerial boundaries and between government jurisdictions that serve the same clients, especially when they provide similar or complementary services. The convergence does not stop there, however, as the clients may see – and act on – other linkages, including with non-governmental service providers, which in fact provide many of the services that citizens use.

A second area of potential interest is the leadership and governance model provided by Gateways and Clusters. Although this has been criticized from a number of points of view, one of its strongest characteristics is team-based horizontal management – a source both of innovation and of risk. A big part of the success to date of Gateways and Clusters has been the willingness of senior management to give considerable latitude and weight to such teams, and some of the most successful initiatives – notably the development of common tools and the allocation of investment funding – have been conducted by such local initiative operating in an "enterprise" context.

Gateways and Clusters also highlight some emerging management models. These include the juxtaposition of what might be described as virtual organizations (Clusters) alongside more permanent and slower moving, often statutory, organizations. The tension this creates can be creative, but needs to be understood and managed. A second model is the hybrid of public sector and private sector service provision – to government and even to the public. While there is less of the latter present in the Canadian example, this is an increasingly important part of the equation. The third, and in the longer run possibly the most important, is the role played by information as both the medium and the content of the services that government provides, not just on the Internet but especially in that environment. This has been identified by the Gateway and Cluster participants as the area of greatest challenge, both for their own environment and for government at large.

References

Accenture (2002), *eGovernment Leadership: Realizing the Vision*. http://www.accenture.com/xdoc/en/industries/government/egov_april2002_3.pdf

Accenture (2003), *eGovernment Leadership: Engaging the Customer*. http://www.accenture.com/xdoc/en/industries/government/gove_egov_leadership.pdf

Accenture (2004), *eGovernment Leadership: High Performance, Maximum Value.* http://www.accenture.com/xdoc/en/industries/government/gove_egov_value.pdf

Borins, Sandford, et al. *Information in the Public Sector*, http://www.publicsectorit.ca.

Brown, David (1997), "New Information Technologies in Canadian Public Administration." in *New Public Management and Public Administration in Canada,* Mohamed Charih and Arthur Daniels (Eds.).

Brown, David and Brook, Brook (2001a), *Making Government Procurement Work in Support of Government On-Line*, Public Policy Forum. February 2001.

Brown, David, and Brook, David (2001b), *The Governance of Government On-Line.* Public Policy Forum. March 2001.

Canada, Governor General (1997), *Speech from the Throne to Open the First Session, Thirty-Sixth Parliament of Canada.* 23 September 1997. http://www.pco-bcp.gc.ca.

Canada, Governor General (1999), *Speech from the Throne to Open the Second Session, Thirty-Sixth Parliament of Canada.* 12 October 1999. http://www.pco-bcp.gc.ca.

Canada, Treasury Board Secretariat (1994), *Blueprint for Renewing Government Services Using Information Technology.* Ottawa: Supply and Services Canada. Unofficial version also available at: http://www.ifla.org/documents/infopol/canada/tb-bp.txt.

Canada, Treasury Board Secretariat (2002a), *Criteria for Cluster Evaluations*. Internal working document, March 2002.

Canada, Treasury Board Secretariat (2002b), *Privacy Impact Assessment Policy.* May 2002 http://www.tbs-sct.gc.ca/pubs_pol/ciopubs/pia-pefr/paip-pefr_e.asp.

Canada, Treasury Board Secretariat (2003a), *The Government of Canada Gateway and Clusters: Bringing it all Together, The Canadian Way*. March 2003.

Canada, Treasury Board Secretariat (2003b), *Government of Canada Service Vision for Canadians*. June 2003.

Communication Canada (2002), *The Government of Canada and the Evolution of an Internet Site*.

Communication Canada (2003), *Government On-Line*. http://www.communication.gc.ca/gol-ged/gol_overview.html.

Communication Canada (2004), *Government On-Line Funding*. 4 Feb. 2004. http://www.communication.gc.ca/gol-ged/gol_funding.html.

D'Auray, Michele (2001), "Behind the Portal: Revealing the Challenges of Service Integration." *ICA Information* 74 (June 2001): 1–13.

Government of Canada (2001a), *GOL Advisory Panel Mandate*. 4 Sept. 2001. http://www.gol-ged.gc.ca/pnl-grp/mandate/mandate-mandat_e.asp.

Government of Canada (2001b), *Government of Canada in the E-World: Transforming Services for Citizens*. September 2001. http://www.gol-ged.gc.ca/pub/ica/icapr_e.asp.

Government On-Line Advisory Panel (GOLAP 2002), *Transforming Government to Serve Canadians Better: Second Report of the Government On-Line Advisory Panel*. http://www.gol-ged.gc.ca/pnl-grp/reports/second/transform/transform_e.pdf.

Government On-Line Advisory Panel (GOLAP 2003), *Connecting with Canadians: Pursuing Service Transformation, Final Report of the Government On-Line Advisory Panel*. http://www.gol-ged.gc.ca/pnl-grp/reports/final/final_e.pdf.

Industry Canada (1994), *The Canadian Information Highway: Building Canada's Information and Communications Infrastructure.*

Industry Canada (1995), *Connection, Community, Content: The Challenge of the Information Highway – Report of the Information Highway Advisory Council.*

Industry Canada (1996), *Building the Information Society: Moving Canada into the 21st Century.* Ottawa: Supply and Services Canada. Unofficial version also available online at: http://www.ifla.org/documents/infopol/canada/ic96-1.txt.

Industry Canada (1997), *Preparing Canada for a Digital World: Final Report of the Information Highway Advisory Council.*

Justice Canada (2000), *Personal Information Protection and Electronic Documents Act*, Statutes of Canada 2000, chapter 5.

Malloy, Jonathan (2003), *To Better Serve Canadians: How Technology is Changing the Relationship Between Members of Parliament and Public Servants.* The Institute of Public Administration of Canada.

Office of the Auditor General of Canada (2003), "Chapter 1: Information Technology: Government On-Line." In *Report of the Auditor General of Canada to the House of Commons.*

Porter, Michael E. (2003), *The Economic Performance of Regions: Measuring the Role of Clusters*. 19 Sept. 2003. http://www.competitiveness.org/filemanager/download/85/pres-mporter-economic-performance.pdf.

Public Works and Government Services Canada (2003), *Government On-Line 2003.*
Public Works and Government Services Canada (2004), *Government On-Line 2004*.
TNS Consultants (2003), *Government Online: A Global Perspective 2003, Global Summary*. http://www.legermarketing.com/documents/TenInt/031219eng.pdf.

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[1] This paper is based on one that was prepared for presentation to *Workshop II – E-governance: changes in administrative structures and processes* at the Congress of the International Institute of Administrative Sciences held in Seoul, Korea, in July 2004. A fuller report on the research described in this paper is available on the Website of the research consortium on "Information in the Public Sector": http://www.publicsectorit.ca/. The support of the Social Sciences and Humanities Research Council of Canada is gratefully acknowledged.

[2] The author wishes to thank his two Public Policy Forum research assistants, Milena Isakovic Gabe Eidelman for their considerable help.

[3] Three pairs of sites on this list are grouped as single Clusters: Importing to Canada and Exporting from Canada; Travel at Home and Abroad and Canadians Living Abroad; and Going to Canada and Newcomers to Canada. In addition, Canada and the World is found in both the Canadians and Non-Canadians Gateways.

[4] Known as Industry Canada.

[5] The concept of Clusters owes its origins, at least in part, to the microeconomic concept of clustering developed by Michael Porter, of Harvard University, in his book *The Competitiveness of Nations*, published in 1990. He later argued that whereas old models for economic development generally dictated that government drives economic development through policy decisions and incentives, new cluster-based models show that development may stem from a collaborative process across all levels of government as well as with outside partner organizations. (Porter, 2003).

[6] Subsequent 2000 and 2002 *Citizens First* reports were conducted by the Institute for Citizen-Centred Studies, sponsored jointly by the federal and provincial governments. This has been followed by a second research project, *Business First*.

[7] For a skeptical view of whether service transformation is achievable, see Malloy 2003: 54.

[8] Human Resources and Skills Development Canada/Service Canada for the Canadians Gateway, Industry Canada for the Canadian Business Gateway, and Foreign Affairs and International Trade for the Non-Canadians Gateway. The Canada Site is hosed by the Government Information Services Branch of Public Works and Government Services Canada.

[9] http://www.websurveyor.com/home.asp. The questionnaires were distributed as an e-mail attachment and the responses were entered directly on a central server. This greatly facilitated administration and analysis of the results. There were, however, challenges in ensuring that potential respondents did not lose sight of the survey in the daily avalanche of e-mail and "spam" to which they are generally subjected.

[10] Respondents were asked to provide ratings on two bases: to use a four point scale, with two degrees of positive assessment and two of negative, or to cite examples from a list. In the former case, the results reported in this section are the sum of the two degrees of positive or negative rating, as the case might be. In the latter case, the rating is the percentage of respondents who cited a particular feature of Gateways and Clusters. The full survey results are available from the author on request.

[11] There was little questioning of whether the list of Clusters is the right one, perhaps because of the extensive public surveying before the list was established. In addition, many participants felt that the regular polling of Gateway and Cluster users ensures that they continue to adapt to client needs and profiles. This flexibility also makes a virtue of the unclear boundaries between Clusters that was identified in the survey.

[12] This approach contrasts with the more unified model adopted by the Province of Ontario, Canada's largest. The Ontario government has structured its sites along more conventional organizational lines, but has placed considerable emphasis on search engine capability. A significant degree of integration is also provided by the fact that ministries with common programs and client groups have been assigned a common technology support unit and Chief Information Officer (called "Cluster CIOs"), who in turn have a line reporting relationship to the government CIO. The comparisons between the two governments will be a subject of the larger research consortium study.

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The Development of the Spanish Electronic Administration

Dr. David Sancho[*]

Abstract

This paper analyzes the Spanish electronic administration policy. First of all, it is studied the policy formulation and the contents of the government action plans concerning the IS in the 1990s. Secondly, it is analyzed the present situation of the Spanish electronic administration. The governmental eGovernment programs have not managed to promote a coordinated strategy of electronic administration services. The different Ministerial departments have placed their electronic services, designed to solve very specific problems without having a general coordination model. Even so, there are very successful experiences as the State Agency of Tax Administration, or the Internet Social Security. Finally the paper examines the local and regional governments' IS policies, paying special attention to the electronic Administration initiatives. In this case, the variety of the initiatives and the degree of success is very different. The paper focuses on the multilevel nature of these public action strategies.

1. The First Steps Toward the Spanish Electronic Administration Development

European IS Programmes had been a determining factor of policies on the Spanish national level electronic administration policy. The programme "eEurope: An Information Society for All", established the European top priorities intervention in the area of the IS. Through an agreed and coordinated process of definition, specific objectives, commitments to action plans and deadlines were considered for the first time. It was a far-reaching plan of action, which employed a method of open coordination between states and included a comparative evaluation of national initiatives. One of the key factors of eEurope was to obtain state consensus to carry out activities to promote the IS following predetermined schedules. Hence the eEurope initiative implied the acceptance of political commitments on the part of States. The objectives of eEurope could only be achieved if the member states, the European Parliament and the European Commission coordinated the formulation of priorities and plans of action (Thatcher, 2000). In this way, an initiative by the European Institutions combined different national plans on a global scale.

The content of eEurope also served as a model for the design of promotional activities on a national scale and was based on three central ideas for action: a) to introduce all European citizens to the digital age and facilitate their access to the web, b) to spread digital literacy throughout Europe and to above all introduce it into the business culture; and c) to ensure that the introductory process of the IS was socially

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inclusive and adhered to the trust and safety of the citizen. Without a doubt, the influence of the European IS-promotional programmes played a fundamental role as a conditioning factor for the Spanish position. Firstly, by acting as a stimulus for various actors through specific programmes, secondly, by encouraging institutional change through sectorial liberalisation and thirdly, the generation of isomorphism in sectorial policies by presenting a model of planning to follow concerning IS-promotion policies.

Spain's adoption of IS-related policies came about through a fragmented process, which was quite heavily influenced by the 'top-down' factor of European initiatives (Jordana / Sancho, 2004). The predominance of Telefonica in the Spanish telecommunications sector and its close historical links with the government (being a private company under public control) meant that sectorial agents had limited access to the defining process of policy making in the area of IS and telecommunications until well into the 1990s (Jordana 2002). For this reason, Spain's IS policy was characterised for many years by Telefonica's independent initiatives such as the promotion of new programmes in this sector through a foundation of theirs called Fundesco. This situation was quite convenient for the government and at least until 1996–1997, the introduction of competition to the telecommunications sector in Spain and the promotion of a "national champion" led to a certain 'forgetfulness' with regards issues related to the promotion of the IS. Leaving aside Fundesco's activities, government action, without being completely inexistent, was characterised by a certain dispersion of initiatives carried out by different ministries and the emergence of a nucleus of promotional activities within the General Management of Telecommunications.

Moving back in time, it should be pointed out the earliest initiatives concerning the IS appeared in Spain in the mid-'80s, and were closely connected to policies concerning industrial promotion (Sancho, 2000). Telefonica played a key role in stimulating industrial telecommunications policies. At the beginning of the '90s, the Spanish government initiated some of its own programmes aimed specifically at promoting the IS. Of particular interest were the programmes ARCO/TELEMÁTICA (1992–1994) and ARTE/PYME (1995–1999). These programmes aimed at helping small and medium-sized companies, by co-funding projects which involved the use of advanced telecommunications services. There were also specific research and development initiatives for the promotion of telecommunications technology and equipment (PlanSAT 1994–1997, PlanTVD 1996–1998) and an initiative to promote and identify the Emerging Advanced Telecommunications Services (PISTA and PISTA-Cable). This initiative promoted the use of ICT in various sectors such as education, healthcare, administration, industry or transport through pilot schemes. However, as we have already mentioned, in the 1990s, the IS activities spearheaded by the different ministries were dispersed and uncoordinated. These, and similar programmes, were technology-oriented and suffered from the lack of an integrated plan to take advantage of economies of scale, which might have resulted in their coordinated management.

2. The Info "XXI" Plan

An attempt to achieve integrated planning of electronic Administration and IS-related policies appeared for the first time in 1999, when the government decided to set up a process to define the national strategy for IS development, thus preventing the duplication of uncoordinated efforts by the different Ministries. In line with this plan of action, the Interministerial Commission of the Information Society and New Technologies was set up, incorporating representatives from different Ministries. Finally, towards the end of 1999, the Government passed a plan called "Info XXI: The Information Society for All" for the period 2000–2003. This plan consisted of numerous initiatives (more than 300 actions and projects), which were to be carried out by the different ministries in the 2001–2003 period, using their own budgets. At the same time, an attempt was also being made to set up projects requiring the support of the private sector. With a certain rhetorical tone, different objectives, deadlines, leaders, collaborators and means of funding the principle action lines making up the initiatives of the action plan were established. In all probability, the elaboration of the Plan 'Info XXI' represented a direct reaction to the proposals of the e-Europe initiative, passed in the same year.

The 'Info XXI' Plan had three important underlying concepts, which were a reproduction of the model for action in other European countries: the promotion of the telecommunications and IT sector, the creation of a market and competition and the strengthening of electronic administration and access by all to the Information Society. Hence, by copying the philosophy of the 'e-Europe' initiative, both the concept of an economic IS was promoted and a social perspective was also included to justify the government's role in this sector (Sancho, 2002). Finally, as in the other countries analysed, the 'Info XXI' Plan covered measures of a regulatory nature as well as specific plans of actions and projects for promotion.

The implementation of the different Info XXI programs was very low, being executed less than the 50% of the predicted budget (a total of 4.958 million euro for 2001–2003). The problems that affected the development of this plan were that the Plan wasn't a coordinated aggregation of different Ministerial Departments programmes. These programmes were not designed in a single integrated vision. In second place, the plan lacked political leadership in its establishment. In third place, the Info XXI Plan did not have a objectives monitoring and control system. Finally, the management of some of the Info XXI programs was deficient. Some examples: There was a prevision of a 1.000.000 of participants in a internet use formation programmes, but the participation barely involved the 100.000 participants. The Mail agency should install 625 ciberpoints of public access, but it ended to 25 by 2002. Another of the symbolic projects of Info XXI was Internet in the school, destined to endow of wide band connectivity and equipment to all the Spanish school centres. The total investment was of 258 million euro and should be initiated the 2001, but the execution of the programme would not be initiated until 2003.

The poor results of the Plan Info XXI motivated that the Government appointed a Special Commission for the IS, known as Commission Soto. This Commission had the mandate to analyze the Spanish IS situation and to propose measures for its development. The Commission presented its recommendations in April of 2003. This recommendations emphasized: first, the need of a new Strategic Plan for the devel-

Table 1: Info XXI Objectives

Lines of action	Priority Action
Education	— Infrastructure and equipment for schools
	— Educational portals on the Internet
	— New training models through the use of ICT
	— Training of teaching staff
	— Promotion of education in Spanish especially focussed on South America
Creation of jobs	— Promotion of training for workers in the use of ICT
	— Incentives for the purchase and maintenance of ITC equipment
	— Incentives for telecommuting
Innovation	— Elaboration of experimental networks with a high communication capacity
	— Simplification of regulations and economic incentives to facilitate innovation in small and medium-sized companies
	— Encouragement of Spanish companies to participate in EU innovation programmes
	— Programmes related to cable, television and computer applications infrastructures
	— Creation of an observatory for industry in the information area
Promoting efficiency	— Introduce digital services to the Internet
	— Guarantee a digital signature
	— Train state employees in ICT
	— Create an observatory for outstanding on-line services
	— Promote B2B and B2C services
	— Develop information systems for environmental issues
Social cohesion	— Introduce ITC to the area of justice
	— Elaborate services procedure guidelines for citizen information
	— ITC for the education of social sectors with problems
	— ITC for the elderly
	— Develop information systems for job hunting
	— Telemedicine and communications networks for hospitals
Quality of life	— Programmes for secure communications
	— Connect remote areas of population
	— Promote public library networks
	— Train library staff
	— Promote services in the area of tourism
	— Publish 20,000 books by Hispano-American authors on the Internet
	— Improve museum catalogues and set up virtual exhibitions
Culture and exterior image	— Standardise and develop the Spanish language on the Internet
	— International initiatives for the development of the Internet in Hispano-American countries
	— Offer cultural and artistic services

Source: Info XXI, Ministerio de Ciencia y Tecnología (1999)

opment of Spanish IS, with valuable objectives, sufficient resources, concrete actions and mechanisms of effective monitoring. Second, it is needed sufficient political leadership with the direct control of the Government's President and the participation of all the Spanish Public Administrations. Third, it was proposed to constitute an institutional structure of coordination programs. Finally, the new plan should have a specific communication strategy.

In relation to the electronic Administration, the recommendations were: to accelerate the development of a electronic identity document; to publish periodically a list

of eServices available by citizens and businesses; to transform the external and internal Public Administrations communications toward electronic channels; to offer packages of software and hardware to all the public employees.

3. The España.es Plan

In base to the Commission Soto recommendations, the Department of Science and Technology presented in July 2003 the new Spanish IS Program known as "Spain.es" (España.es). The duration of this new program is established for two years (2004–2005) and has a budget close to the 1.029 million euro. España.es proposes a economic contribution of the State Government (63% of the budget), the regional governments [Comunidades Autónomas] (26% of the budget) and private sector (11% of the budget). The global budget is smaller that the previous one Info XXI, but in this case only is referred to new programs, and does not add, as in the previous case, programs of the different ministerial departments. As opposed to Info XXI, España.es concentrates on three basic axes: Education, electronic Administration and the small and medium businesses. These axes are complemented with access of citizens and businesses promotion measures. The Government Delegate Commission for Economic Matters is the institution that takes charge of the new plan implementation coordination.

The new plan has received the criticism of some policy network agents, as the Association of Internet users (AI) that criticizes the plan because of its scarce ambition. On the other hand, the Spanish technological management association (Sedisi) thinks that the plan lacks sufficient budgetary concreteness, and does not present a clear system to measure the achievement of its objectives. Other problems of the new plan are the lack of agreement strategies between the public and the private actors. There is no consensus about the plan-financing guarantee.

Specifically for the development of the electronic Administration, España.es presents an investment of 180 million euro, and the intention to execute an urgent action plan: "Plan de Choque". The measures that contemplate are grouped in four action axes: first, to facilitate the public access to the users. Second, to prompt the development of services for the users. Third, to facilitate the information exchange among Public Administrations and finally, to support the internal re-organization of the Public Administrations. The measures of the "Plan de Choque" are linked with the basic public utilities defined in the eEurope action Plan 2005. In this case, the Department of Public Administrations carries out the measures general coordination. In December 2003, was promulgated the electronic firm Law that has summarized the process of identification and certification of the telematic transactions with the Administration.

The implementation these new initiatives presented in the Plan España.es can be negative affected by lack of priorities, objectives and specification of the necessary resources. It's also negative the inexistence of a timetable to achieve each objective. It would be necessary the definition of an indicators system to measure the present situation of the electronic administration. It would be also very useful for the plan evaluation a list of indicators taking into account the European indices.

Table 2: "Plan de Choque" objectives

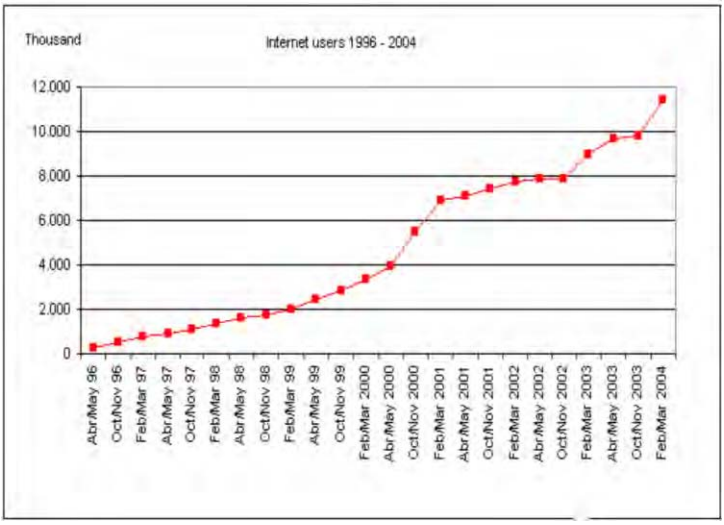
Measures of the "Plan de Choque"
1. electronic identity document
2. Free and public access to Internet
3. Development of the basic public utilities of eEurope 2005
4. Quality charts of electronic services
5. Permanent development of the access of the citizen
6. Utilization of the co-official languages
7. Accessibility of the web pages
8. Internet transaction process
9. Security
10. Internet payments
11. Telematic certificates of data
12. Website for local governments
13. Re-engineering of internal communications
14. Website of the public employee
15. Data protection
16. Coordination with the regional governments
17. Re-engineering of the administrative procedures
18. Services of technical support to the Ministerial Departments
19. Systems of electronic documentation.

Source: "Plan de choque", Consejo Superior de Informática y para el impulso de la Administración electrónica 2003.

4. Spanish Electronic Administration Today Situation

A first approximation to the Spanish electronic administration requires the analysis of the IS development. We can use different indicators. The first one (Graphic 1), shows us the Internet users number in Spain to March of the 2004. There are 12 million persons over 14 years linked to Internet. The tendency continues growing despite the relative stabilization produced in the year 2003.

Graphic 1



Source: Asociacion de Usuarios de Internet, 2004.

In the Table 3 we can observe the Internet penetration in the Spanish homes. We see that the Spanish scores are situated under the European average. One of the reasons of this low penetration is the greater cost of Internet access, especially the relative cost of the wide band or ADSL (Table 4).

Table 3

Internet domestic access
Home percentage

	Spain	Germany	France	Ireland	Italy	Portugal	UK	UE-15
2000	9,6	13,6	12,9	17,5	19,2	8,4	24,4	18,3
2001	23,4	37,9	26,2	46,2	32,9	23,4	46,5	36,1
2002	29,5	43,3	35,5	47,9	27,3	15,9	49,7	38,9
2003	25,2	51,2	–	35,6	30,9	21,7	55,1	45,1

Source: OCDE/Eurostat. Indicators

Table 4

Internet access prices (ADSL mensual cost 1 megabit/second)
Euros

	Spain	Germany	France	Ireland	Italy	Portugal	UK	UE(*)
2001/11	130,71	42,7	76,84	–	99,24	107,95	124,35	–
2002/05	111,92	45,31	67,88	172,30	85,72	90,16	63,75	78,84
2002/11	111,56	75,17	79,44	268,14	65,73	60,80	58,98	83,26

(*) UE, without Grece

Source: DG Information Society. Internet Access Report. (Teligen 2001–12; 2002–05 y 2002–11)

In comparison with these data, the mobile phone system penetration index in Spain is very high (Table 5). This sets a good base for the mobile phone electronic administration services.

Table 5

Mobil telephony / 100 inhabitant

	Spain	Germany	France	Ireland	Italy	Portugal	UK	UE-15
1995	2,4	4,6	2,3	4,4	6,9	3,4	9,8	5,8
1996	7,6	6,7	4,3	8,0	11,2	6,7	12,3	9,0
1997	11,0	10,1	10,0	14,9	20,4	15,2	15,0	14,1
1998	17,9	17,0	19,2	25,6	35,6	30,9	25,2	24,0
1999	37,7	28,6	36,6	44,3	52,6	46,8	45,8	40,8
2000	61,1	58,7	49,5	65,2	73,2	65,4	72,9	63,4
2001	73,9	68,4	62,6	77,6	88,6	77,7	77,3	74,5
2002	83,0	72,8	65,0	77,2	91,4	82,5	82,6	79,7
2003	92,1	78,5	69,9	85,8	97,6	89,8	83,7	83,5

Source: Spansh Science Ministery 2003

The electronic administration services, which are more utilized, are the related with the search of information. In a smaller degree, the administrative forms discharge, the e-education, the e-public health and the processing of administrative pa-

pers (Table 6). The first telematic services interaction phases (information and bidirectional communication), are the most developed, while the complete service processing is poorly developed.

Table 6

Internet services use. Last 3 month **Percentage**			
	2002	**2003**	**Diferencia 2003–2002**
Search of information on goods and services	49,4	81,5	32,1
E-mail	78,2	78,8	0,6
Obtain web pages information	**31,6**	**52,0**	**20,4**
Media	44,5	49,9	5,4
Leisure	47,3	48,6	1,3
Chats, conversations	31,6	34,7	3,1
Discharge official forms	–	**27,2**	–
Electronic Banking	23,0	26,4	3,4
Tourism	17,4	25,6	8,2
eLearning	**17,7**	**20,5**	**2,8**
Health information	–	**19,6**	–
Messages to mobile	–	18,7	–
eCommerce	–	17,5	–
Send complimented forms	–	**15,2**	–
eJob searching	–	**13,4**	–
Courses	–	9,2	–
Internet telephony	–	8,0	–
Sales	–	5,8	–
Other	–	5,5	–

Source: Spanish National Statistical Institue 2003.

The e-Europe 2005 plan defines 20 basic public utilities that the European Union member States have to promote. In the report of Cap Gemini, Ernst&Young carried out for the European Union, the Spanish position is situated above the European average. In the Table 7, we can observe the comparative data of seven European countries.

Table 7

Administrative basic services "on line" **Percentage**							
	Spain	**Germany**	**France**	**Ireland**	**Italy**	**Portugal**	**UK**
2001	50,4	40,1	48,8	68,4	38,9	51,4	50,2
2002	64,0	48,0	63,0	85,0	57,0	58,0	62,0
2003	64,0	52,0	73,0	86,0	59,0	65,0	71,0

Source: European Commision (Cap Gemini Ernst & Young, 2003)

Table 8

Administration web use. Information. Percentage	Spain	Germany	France	Ireland	Italy	Portugal	UK	UE-15
2001/02	39,8	48,2	42,4	50,6	41,9	15,6	39,6	44,3
2001/06	37,2	29,9	41,2	25,0	37,4	22,3	21,6	32,6
2002/06	41,0	34,0	48,0	25,0	36,0	27,0	27,0	37,0
2002/11	42,0	37,0	48,0	30,0	38,0	32,0	26,0	38,0

Source: Flash Eurobarometer (97, 2001/02), (103, 2001/06), (125, 2002/06), (135, 2002/11)

Table 9

Administration web use. e-Mail Percentage	Spain	Germany	France	Ireland	Italy	Portugal	UK	UE-15
2000/10	10,5	26,3	7,9	19,9	13,3	9,9	28,3	21,8
2001/06	12,2	16,9	16,4	18,0	15,3	7,0	18,4	18,0
2001/11	11,1	17,7	26,2	20,4	17,1	7,8	17,3	20,2
2002/06	13,0	21,0	27,0	19,0	15,0	14,0	25,0	23,0
2002/11	13,0	21,0	25,0	23,0	15,0	17,0	23,0	22,0

Source: Flash Eurobarometer (88, 2000/10), (103, 2001/06), (112, 2001/11), (125, 2002/06), (135, 2002/11)

Table 10

Administration web use. Transaction. Percentage	Spain	Germany	France	Ireland	Italy	Portugal	UK	UE-15
2000/10	10,3	7,6	5,6	5,6	9,3	11,1	7,1	10,1
2001/06	10,4	19	19,6	16,3	17,8	10,5	23,2	20,1
2001/11	11,6	24,6	23,5	18,1	18,6	12,9	18,7	21,6
2002/06	14,0	28,0	31,0	18,0	16,0	21,0	30,0	27,0
2002/11	17,0	32,0	31,0	26,0	19,0	24,0	30,0	29,0

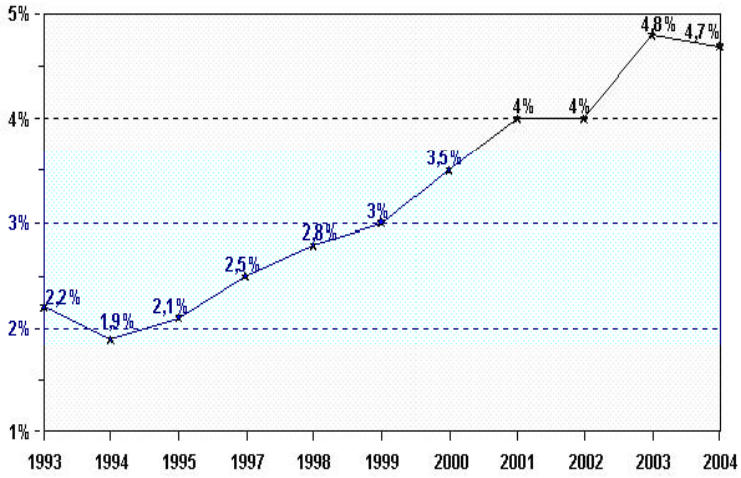
Source: Flash Eurobarometer (88, 2000/10), (103, 2001/06), (112, 2001/11), (125, 2002/06), (135,2002/11)

We can also see that the Spanish position has a medium position in relation with the EU countries concerning to the use of the Administration webs for searching information. (Tables 8, 9, 10)

In relation with the investments and equipment for the Electronic Administration we can analyze the Central Administration budget evolution for the use of the information technologies. For the year 2004, the budget is 1400 million euro (4,7% of the total State budget). This figure includes the current expenses, the investments and the human resources.

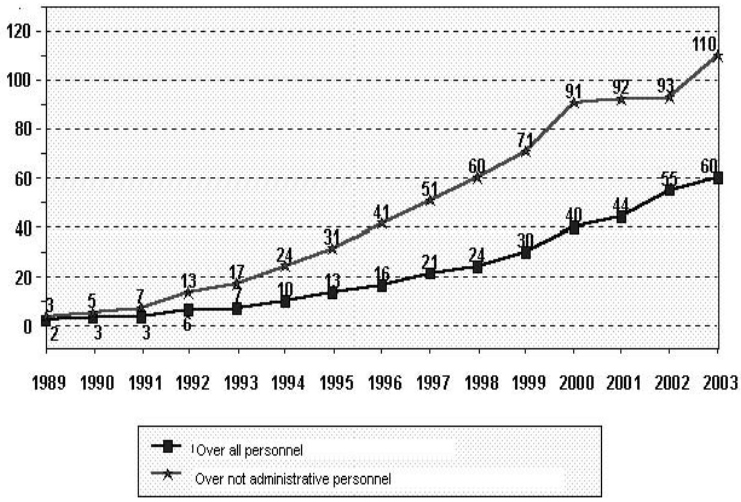
The State Administration, in the 2003 has a number of personal computers (307.762), which supposes 110 available computers by each 100 public employees, although only a 23% of them had access to Internet (Graphic 3 and 4).

Graphic 2: IST Administration Budget / Total Administration Budget Evolution 1993–2004.



Source: Consejo Superior de Informática 2004

Graphic 3: Computers / 100 public employees.

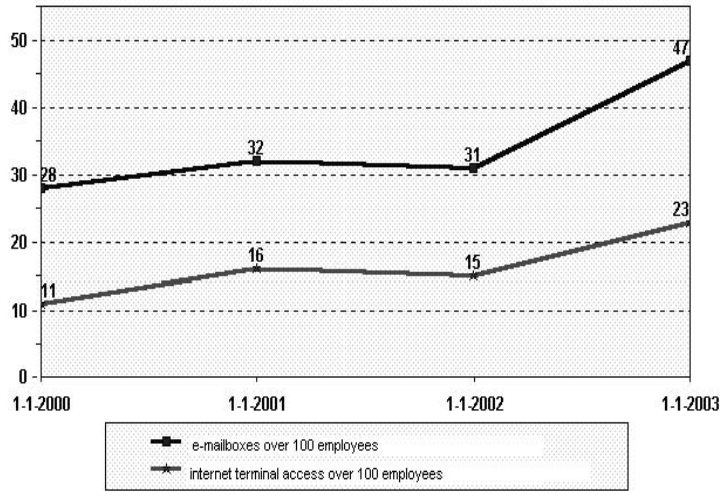


Source: Consejo Superior de Informática 2004

Electronic Administration in Spain: The Local and Regional Levels

Spain is politically divided in 17 autonomous regions (Comunidades Autónomas) that possess legislative capacity and autonomous government. This level of regional Administration has been very active on electronic Government initiatives. Independent of the State Plans, the Comunidades Autónomas have developed processes of planning and implementation of public IS promotion programs. These initiatives have been very ambitious. In many cases the level of development reached has sur-

Graphic 4: Public employees e-mail and Internet access.



Source: Consejo Superior de Informática 2004

passed the Central State programs. The same thing can be said for the electronic government programs promoted by local governments. The large municipalities, and the "Diputaciones" (local supra-municipalities administrations to support the municipalities) have developed initiatives that have obtained international recognition. In some cases, they have defined global action plans with cross vision, with the pretension to coordinate the different interventions in the IS promotion. In other cases, the actions have been more a sum of singular actions whose objective is to obtain social visibility.

The local world, by its citizen proximity, is an appropriate environment to generate micro actions relating to the promotion and diffusion of the new communication and information technologies. The local institutions are characterized for being direct citizen services providers. The use of the new technologies is a mechanism of improves services. In this sense, the direct relations between Administration and citizen are considered by the Spanish local perspective as an element of change (Salvador, 2002). It also offers a twenty-four hours citizens' service.

The regional and the local Spanish eAdministration initiatives are very different in their objectives and in their implementation strategies. There is a great dynamism in the local and regional level on strategic electronic administration planification. We can observe at the Table 11, 263 action initiatives to the year 2003. They present different forms: global strategic plans, sectorial or intersectorials programs, singular actions or initiatives of administration re-engineering. The thematic of the public actions constitutes a very diverse assembly that extends to the majority of the traditional intervention areas of the public administrations.

Table 11: Regional eGovernment initiatives. Percentage distribution

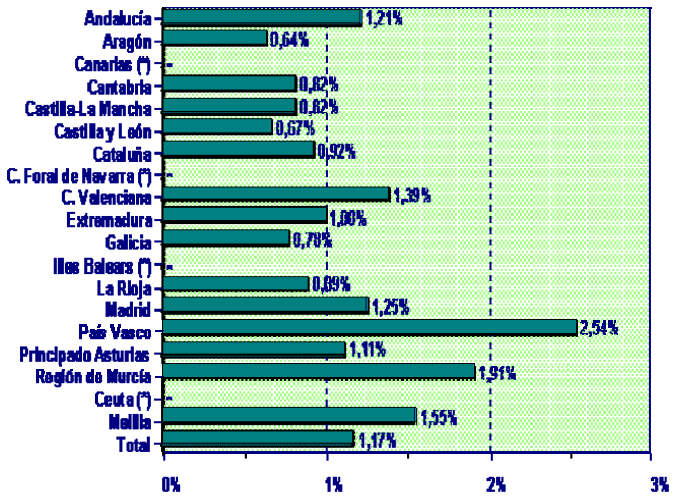
	Strategic Plan	Sectorial Program	Intersectorial Program	Singular Action	Organizational change	Other action	Total
Cataluña	4,1%	16,3%	4,1%	57,1%	6,1%	12,2%	100% (49)
Valencia	8,1%	5,4%	2,7%	67,6%	8,1%	8,1%	100% (38)
Aragón	–	66,7%	–	–	–	33,3%	100% (3)
Murcia	–	–	–	45,5%	4,5%	50%	100% (22)
Baleares	–	28,6%	14,3%	57,1%	–	0%	100% (7)
Andalucía	11,1%	22,2%	–	–	–	66,6%	100% (9)
Canarias	12,5%	12,5%	75,0%	–	–	0%	100% (8)
Extremad.	32,1%	38,5%	–	23,1%	7,7%	7,7%	100% (13)
Castilla-La Mancha	–	–	–	100%	–	–	100% (1)
Madrid	33,3%	33,3%	–	–	–	33,3%	100% (3)
Castilla-León	16,7%	25,0%	8,3%	33,3%	16,7%	0%	100% (12)
Rioja	3,8%	38,5%	15,4%	23,1%	15,4%	3,8%	100% (26)
Navarra	5,3%	10,5%	–	68,4%	15,8%	0%	100% (19)
País Vasco	8,0%	8,0%	–	68,0%	12,0%	4%	100% (25)
Cantabria	11,1%	2,0%	8,3%	58,3%	8,3%	60,0%	100% (12)
Asturias	–	75,0%	25,0%	–	–	0%	100% (8)
Galicia	–	16,7%	–	66,7%	–	16,7%	100% (6)
Sin datos	–	-	–	–	–	–	100% (2)
TOTAL	6,8%	18,6%	6,8%	46,8%	8,0%	18,3%	100% (263)

Source: Jordana, Sancho et al. (2003)

An indicator of the local and regional dynamism is that while the Spanish Public Administration number of webs was of 2.608 in September of 2003, only 196 were of the State Administrative level. The 2412 remainders webs corresponded to the regional Administrations and to the local ones (Diputaciones and Municipalities).

The economic capacity of the different Autonomous Communities and the degree of implication to the e-government initiatives is also very different. This we can be observed analyzing the percentage of budget dedicated to IS policies by the different regional governments (Graphic 5).

Graphic 5: IST Regional Budget / Total Regional Budget 2001.



Source: Consejo Superior de Informática 2004

The local and regional context shows that each public administration develops strategies to promote the digital development of its economy. According to its capacities, competences and economic possibilities, the different levels of government play a role on the IS policies development.

5. Spanish Electronic Administration Successful Experiences

We should mention two initiatives of the Spanish electronic administration that have obtained a greater international recognition. They represent two success lines in the introduction of the intensive use of information technologies in Public Administration. One of them corresponds to the State Agency of Tax Administration (AEAT). The other corresponds to a local and regional initiative, the Open Administration of Catalonia (AOC).

State Agency of Tax Administration (AEAT)

The State Agency of Tax Administration (AEAT) is one of the Spanish pioneering institutions using electronic Administration. It has a systematic direct service "on line" for citizens and businesses relating to the processing and the control of the tax obligations. Its virtual office (www.aeat.es) has the possibility to deal integrally the procedures of all the Spanish taxes typologies and services: Rent and Patrimony Taxes; Business Taxes; Value Added Tax; Consultations of debts; information of postponements; Customs and Special Taxes.

The total accesses to the Virtual Tax Agency web page in the year 2003 were elevated more than 46 million. The growth of the electronic processing of tax expedients has been clear. For example, the Rent Taxes had in 2003, 1.700.000 Internet processing. It means the 11,6% of the total processing in the year. The Business Taxes had in the same year the 10,2% of the total processing presented for Internet. The AEAT has received a lot of international recognitions and prizes for its electronic public utilities. One of the most recent it is the "e-Europe for and-Government" offered by the European Commission in July of 2003 by its project on the transfer of electronic certificates to other Public Administrations to avoid the presentation of tax certificates by the citizens.

The Administration "Oberta" of Catalonia (AOC)

One of the experiences with greater local impact is the one developed in Catalonia. Catalonia is a historic nationality with an autonomous government (Generalitat of Catalonia). Catalonia has six million inhabitants population and is one of the greater social and economic development regions of the Spanish State. In July of the year 2001 an institutional pact in the Catalonian Parliament was signed between the Generalitat and Localret (institution that groups the Catalonian municipalities in IS issues). In the agreement was decided to prompt the creation of a single Administration Website for the public eAdministration transactions: Administració Oberta of Catalonia (www.cat365.net). The communication channels presented for the services distribution are open: Internet, mobile or fixed telephone and fax, with the forecast that new interaction mechanisms can be incorporated.

The second agreement was the creation of the Catalonian Agency of Certification, responsible for guaranteeing the management of the electronic firm and the development of a public network to access to Internet and organize formation programs. The Institutional Pact of July of 2001 collects also a set of administration organizational transformation initiatives. There is a finance line to optimize the Catalonian Administrations through the coordination of their re-engineering processes, their administrative contracting, and their human resources management.

One of the "strong points" of the Catalonia experience on electronic Administration has been the consolidation of a work framework for the regional government and the local governments. The consortium Localret is formed by 782 Catalonian municipalities, that include the 99% of the Catalonian population. The local world is linked in a common agency that constitutes a direct counterpart and has facilitated the agreements on electronic Administration in Catalonia.

6. Conclusion: Factors of Success of the Spanish Electronic Administration Initiatives

In Spain the initiatives of electronic administration have presented a very uneven development. On the one hand, the planning programs of the central government have not managed to promote a coordinated strategy of electronic administration services. The different ministerial departments have looked for their own competences and responsibilities. They have designed electronic services "from its own perspective", designed to solve their very specific problems, without having a general coordination strategy model. Even so, we find successful experiences, as that of the State Agency of Tax Administration, or the Social Security papers processing one. On the other hand, the local and regional governments have developed a strong implication in the IS promotion policy. In this case, the variety of the initiatives and the degree of success has been very different. It is a sample of the multilevel nature of this public action strategies and a sample of the need of a different administration level integrated work to develop successful electronic services projects.

The Spanish experience shows us the complexity of the electronic administration strategies and the need of a high degree of Administrations re-engineering to integrate this electronic services (Andersen, 1999). The transformation that requires an electronic Administration is not only regulatory. It requires technical evolutions (equipment, networks, connections, applications), training, organization and process (new administrative circuits, processes re-engineering) (Ramió, 1999), and especially cultural strategies (Fountain, 2001). The electronic administration initiatives are an opportunity and a danger at the same time. It is an Opportunity to introduce a change and a transformation of the Administration. It will have consequences in terms of services improvement, price decreases and citizens impact. But it also runs the danger that the project remains without a real impact, if there are not done necessary organizing changes, if there is not sufficient political leadership to confront the change resistances that undoubtedly appear, or if there are not sufficient resources available.

The Spanish case shows us that the introduction of the intensive use of the information technologies in the Public Administrations generates an impact in the

structure and in the administrative processes. The impact is also high in the human resources and in the organizational culture. Special consideration has to be given to the labour profiles transformation and the needs of programmes training. The motivation incentives and the training are two basic elements for the success of the establishment of an electronic administration initiative. It is necessary to implicate all the members of the organization in the strategy of change. At the same time is important to obtain their participation in the design of the new administrative circuits.

Analyzing the Spanish initiatives in the electronic administration area, we can mention success factors that public servers should have present in the electronic government programs: First, the importance of the re-organization, to introduce organizing changes, training, human resources motivation and processes re-engineering. Second, the need of citizen's demands studies, and the guarantee of specific citizen groups not exclusion. Third, a strong political leadership should exist at the higher level. It will help to surpass the change resistances, guarantee the horizontal establishment of the projects, and ensure economic resources, but also resources in terms of knowledge and training of officials and managers. Finally, the initiatives of electronic government should be inserted inside the general programs of public administration improvement and modernization. It has to be kept in mind the legal and institutional changes that should be carried out.

References

Andersen, K. (1999), *Reengineering Public Sector Organisations Using Information Technlology*, in R. Heeks (Ed.), Reinventing Government in the Information Age, London: Routledge.

European Commission (1994), *Action Plan Concerning Europe's Way to the Information Society*, Brussels, 19 July 1994, COM(94) 347.

European Commission (1999), *eEurope. An Information Society for all*, Brussels, COM (1999) 687final.

Fountain, J. (2001), *Building the Virtual State. Information Technology and Institutional Change*. Whasington: Brookings Institution Press.

Jordana, J. (2002), "The Persistence of Telecommunications Policies in National States: Portugal and Spain in the European Arena", en J. Jordana (Ed.), *Governing Telecommunications and Information Society in Europe* (pp. 86–109), Cheltenham: Edward Elgar.

Jordana, J. and Sancho, D. et al. (2003), *Planificando la Sociedad de la Información*, Bacelona: Generalitat de Cataluña.

Jordana, J. and Sancho, D. (2004), "Policy Networks and Market Opening: Telecommunications Liberalization in Spain", *European Journal of Political Research* (in press).

Ministerio de Ciencia y Tecnología (1999), *Plan de acción 'Info XXI': La Sociedad de la Información para todos*, Madrid: Ministerio de Ciencia y Tecnología.

Ramió, C. (1999), *Teoría de la Organización*, Madrid: Tecnos.

Salvador, M. (2002), Gobierno electrónico y Gobiernos locales: Transformaciones integrales y nuevos modelos de relación más allá de las modas. Lisboa. CLAD 7º International Congress.

Sancho, D. (2000), "Politics and Institutional Networks in Spanish Telecommunications Policy", in *South European Society and Politics*, Vol. 5, Num. 1 Summer. (pp. 25–53).

Sancho, D. (2002), "National platforms for the Information Society development" En Jordana, J. *Governing Telecommunications and Information Society in Europe*, Glasgow: Edwar Elgar.

Thatcher, M. (2000), "Cross-national Linkages and Regulatory Reform in Europe: The Case of Telecommunications", Annual Meeting of the American Political Science Association, Washington, August–September.

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La modernisation digitale de l'Administration publique

Antoine Maniatis[*]

Introduction : La modernisation du pouvoir à travers les systèmes digitaux et d'autres techniques

Le pari neuf de l'administration publique consiste en une utilisation progressive des appareils de la haute technologie. Aussi s'avère-t-il opportun de jeter un œil critique sur les expériences en cours dans divers milieux étatiques, marquées surtout par la consécration de systèmes digitaux. Une analyse sur l'avenir de l'appareil exécutif ne saurait porter uniquement sur le devenir électronique mais aussi sur la question plus ample de gestion. Donc, il convient d'examiner la modernisation technologique de la procédure administrative, qui de son tour méritерait d'être enrichie d'une approche spécialisée sur la modernisation informatique du pouvoir, en particulier face aux diverses préoccupations et activités de la société.

A. La modernisation technologique de la procédure administrative

La modernisation est au-delà de la simple adoption de l'usage des ordinateurs et des satellites d'espace ; en effet, elle touche tout l'univers du secteur public et s'inscrit dans le programme plus ample de réformes administratives à travers pas seulement les hautes technologies mais aussi celles conventionnelles, comme la téléphonie, et aussi les techniques de gestion. Ces dernières ont un tel impact sur le mode de fonctionnement de l'appareil exécutif que l'on peut constater même des cas d'inversement authentique des relations administratives classiques. Cela est, par exemple, le cas :

1. De l'information des administrateurs envers les intéressés, traditionnellement purement passive et de nos jours de plus en plus active, à savoir sur l'initiative de l'État lui-même ainsi que.
2. De l'inversement opérationnel de la pyramide hiérarchique des services publics, chose qui signifie que les fonctionnaires faisant formellement partie de la base de celle-ci ont la faculté de prendre des initiatives dans leur contact avec le public, ensuite ratifiées par leurs supérieurs.

Dans ce cadre de changements de structure, il serait intéressant de focaliser sur la mise à jour de la procédure devant les autorités administratives à travers les technologies de l'Information et de la Communication, surtout dans l'ordre juridique hellénique.

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Il est à clarifier que le cas particulier de satellites, malgré sa dynamique à des domaines de majeure importance, comme la défense nationale et les communications, n'a qu'un impact restreint sur le profil général de la procédure administrative, à savoir contre la « paperasse » bureaucratique. Il faut quand même tenir compte de la contribution des satellites à la mission des services publics, comme cela est le cas du premier satellite de la Grèce et de la Chypre, « Hellas Sat ». Envoyé à l'espace le 12 mai 2003, il est chargé des fonctions telles que la transmission par télévision des Jeux Olympiques d'Athènes en 2004 dans le monde entier.

Comme la modernisation technologique du pouvoir ne regarde pas seulement la procédure devant les autorités administratives mais à un certain degré presque la totalité de processus aboutissant à la prise de décisions publiques de nature législative ou ayant caractère exécutoire, il convient d'examiner en particulier le cas de divers processus outre le parlementaire, avant d'analyser la modernisation administrative.

I. La modernisation technologique des fonctions étatiques

Il existe des domaines délicats auxquels la gestion électronique a du mal accru à pénétrer. Cela est bien le cas des domaines outre le droit administratif matériel, comme le suffrage politique et le rendement de Justice.

a. Le suffrage politique

Pour la première fois, aux élections simultanées pour les collectivités locales autant de premier que de second degré, du 13 et 20 octobre 2002, les citoyens grecs tirèrent profit de la modernisation technologique, qui resta quand même restreinte, tandis que l'expérience issue des élections parlementaires nationales du 7 mars 2004 et de celles européennes du 13 juin 2004 est pareille.

L'automatisation impliqua la première mise à jour des listes d'électeurs il y a quatre décennies et la suppression du livret d'électeur. À l'instar du livret de Vignettes de Sécurité Sociale, le livret électoral n'était pas exempté de problèmes, comme le nombre limité de pages et l'impossibilité insurmontable du citoyen de voter en cas de perte de son document au jour du suffrage.

La suppression en cause fut accompagnée de l'acquisition volontaire d'une carte plastique pour faciliter l'identification du titulaire et l'informer sur son nouveau Bureau de vote, en vue de la redistribution survenue des électeurs. Ce gadget individualisé pourrait être conçu comme substitut du livret d'électeur mais son émission est d'utilité douteuse. En effet, d'une part l'État a chargé le budget par la création de cartes pour tous les inscrits aux listes électorales tandis que les citoyens pouvaient trouver leur Bureau et y voter même sans en être munis. Dans le cadre de réformes administratives des dernières années, il existe cette mode de donner des cartes non-électroniques, comme une sorte de carte spéciale d'identité, aux usagers de services publics. Quant aux élections locales, c'était le représentant de l'autorité judiciaire dans chaque Bureau qui pouvait bénéficier de la suppression des livrets car il était exempté de la charge de signer l'indication de chaque livret que l'électeur vota. De sa part, le citoyen est désormais tenu de demander une attestation en cause, bien entendu s'il en a vraiment besoin.

L'ironie du sort est là, que pendant les mêmes jours le Brésil fut le premier pays dans le monde entier qui organisa des élections électroniques. En effet, cet état fédéral a atteint la transformation d'un processus traditionnel massif en automatisé. Au début d'octobre 2002, l'élection du Président du pays constitua le premier suffrage électronique officiel dans l'histoire, attirant la participation d'un tel grand nombre d'électeurs. Le suffrage digital donna la réponse adéquate aux problèmes dus au pourcentage élevé d'analphabétisme touchant le corps électoral.

Les premiers tests du système en cause se datent de 1996 tandis que pour sa mise en marche on installa 406.000 urnes électroniques, une par Bureau de vote. Les électeurs avaient la faculté de choisir en regardant les candidats sur le moniteur et en appuyant sur les boutons correspondants. Les votes furent copiés à des disquettes dans chaque Bureau et puis concentrés à des points centraux. Les résultats définitifs furent annoncés à peine peu d'heures après la clôture des urnes.

Bien que dans certains bureaux lointains le courant électrique vint de batteries d'automobiles, l'élection brésilienne se considère comme la plus conforme aux standards de la haute technologie. Pourtant, il convient de tenir compte que des efforts correspondants, des programmes pilotes et des comités spéciaux existent aux États-Unis d'Amérique et à de nombreux pays européens.

Selon les supporteurs des élections électroniques, un tel processus pourrait avoir comme résultat :

- l'augmentation de la participation des citoyens, en particulier dans les ordres légaux qui ne prévoient pas le suffrage comme obligatoire et
- l'élimination de doubles inscrits.

Au contre-pied, il existe de divers arguments comme

- la probabilité d'altération des résultats du suffrage,
- les agressions provenant de « hackers » ou de terroristes,
- les dysfonctionnements d'ordre technique tels que le collapsus des ordinateurs et la coupure du courant ainsi que
- le manque d'accès d'une grande partie de la population à la technologie.

Si l'urne électronique est destinée à remplacer la transparente, les obstacles institutionnels et techniques pour atteindre ce but restent graves. Par contre, les sondages et les manifestations politiques via Internet constituent des pratiques déjà valables. À titre indicatif, l'organisation écologique internationale «WWF» organisa en automne 2002 la première manifestation électronique dans l'histoire européenne, qui portait sur la révision de la Politique Commune de Pêche par le Conseil de Ministres de l'Union européenne le 16 décembre de la même année.[1]

b. L'application du droit

Quant aux fonctions étatiques d'application du droit en vigueur, la juridictionnelle reste à un grand degré dépourvue des facilités de la haute technologie tandis que l'appareil exécutif constitue le cas le plus avancé d'automatisation des relations entre l'État et le citoyen.

Le processus juridictionnel grec est en train de se moderniser par l'usage du magnétophone pour bien noter les actes de la discussion de procès. Dans neuf autres

[1] Via le site http://panda.org/stopoverfishing/petition.

pays de l'Union européenne,[2] l'accomplissement électronique des procès, à travers le courrier électronique et les téléconférences, fait partie du droit en vigueur et voire il constitue une pratique courante sous réserve du consentement de toutes les parties prenantes.[3]

En étant à son étude ou même chez-lui, l'avocat est doté de la faculté de déposer au Tribunal des documents de procès et des pièces de preuve via son ordinateur. Les versements préalables des frais correspondants peuvent se régler à travers sa télécarte de crédit. En plus, les témoignages de personnes qui habitent à un lieu outre le siège du tribunal se passent par téléconférence. Plus spécifiquement, les témoins rendent visite au service spécialisé du tribunal de leur lieu de domicile et y sont examinés à travers des appareils télévisés qui se trouvent aux bureaux du juge dirigeant la procédure et des avocats.

Si cela constitue une réalité charmante pour des pays communautaires, cela semble encore un scénario plutôt « futuriste » pour le système juridictionnel hellénique. Comme l'automatisation reste en dehors du parquet, l'avocat est tenu de disposer beaucoup de son temps de travail pour des règlements sur place. Compte tenu de cet anachronisme, le procès grec décourage le justiciable étranger qui a la tendance d'assurer d'avance la juridiction de sa patrie. En effet, les étrangers qui passent des contrats avec des entrepreneurs grecs y incluent la clause que les éventuels procès résultant de leurs échanges vont se dérouler devant les tribunaux de leurs propres pays.

En outre, contrairement à des forces mondiales dans le domaine de l'Informatique,[4] la Grèce a fait des progrès spectaculaires surtout dès l'an 2001 en matière de la mécanisation avancée du fonctionnement de l'appareil exécutif. Néanmoins, la culture administrative et surtout la disponibilité des ressources étatiques constituent encore des questions ouvertes dans la perspective de perfectionnement de la qualité des services publics.

Plus spécifiquement, la circulaire du 19^{e} février 2001 du Ministère des Affaires Intérieures établit des standards historiques pour la gouvernance électronique, dans le cadre du Programme opérationnel « Société d'Information ».

Les objectifs à atteindre au cours de l'an 2001 étaient les suivants :

Tout service public est tenu de :

1. Appliquer le protocole électronique dans tous les cas prévus par la Circulaire,
2. Généraliser l'usage du fax et du courrier électronique,
3. Utiliser des programmes d'élaboration de texte pour la création de documents en tout cas et
4. Envoyer les textes à publier au Journal Officiel de gouvernement en forme électronique et voire par la disquette correspondante.

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2 Sur les quinze pays membres avant l'adhésion de dix autres pays en 2004.

3 Voir C. Beys, *Procès électroniques ; pourquoi pas? Une modernisation nécessaire*, Elephtero-typia mercredi 18 septembre 2002, p. 9 (en grec).

4 Comme le Japon, voir Y. Kaneko, *Efforts towards « Electronic Government » and the Use of Information Technologies in the Government Statistical Activities,* Intervention au Sous-thème II du XXVème Congrès International des Sciences Administratives, Athènes, Grèce, 9–13 juillet 2001, en particulier « *4. Efforts toward E-Government* », pp. 2–4.

Il ne faut pas perdre de vue les dysfonctionnements variés qui ne cessent pas de marquer le devenir administratif, comme la négation habituelle des services publics de la capitale d'envoyer des documents par fax aux intéressés qui habitent en province. En d'autres termes, un schéma leitmotiv des problèmes en cause réside chez la non-correspondance de l'indispensable possibilité matérielle (technologique ou financière) à la paire juridique « droit des intéressés et obligation de l'administration ».

Le développement pendant est l'introduction de la signature digitale de tout utilisateur de service public, déjà légalement consacrée.[5] Cela signifie que chaque usager va former sa cote personnelle pour entrer au site et sa demande ou son document va être transmis d'un service à l'autre. La signature électronique est équivalente à la traditionnelle et admise comme pièce de preuve devant la Justice. Ce développement est de majeure importance car il va rendre la procédure aboutissant à l'émission d'un acte administratif pleinement automatisée, tout en substituant la poste et même le fax.

II. La modernisation technologique de la fonction exécutive

La modernisation de la procédure administrative à travers les nouvelles technologies de l'information et de la communication se manifeste tant à la mission d'information des citoyens qu'au processus classique d'émission d'actes administratifs.

a. Les services spécialisés d'information

Une des techniques typiques du mouvement d'information active de part de l'appareil exécutif est la création et le fonctionnement de services d'information. Ce qui constitue le modèle le plus avancé, c'est le service spécialisé pour la procédure administrative en général.

L'Union européenne a consacré l'accès pratique, par téléphone[6] et Internet, à un « Service d'Orientation » sur les politiques communautaires.[7] Ce processus récemment établi vise à faciliter l'accès aux informations des intéressés sur un faisceau de dispositions qui est à la fois gigantesque et complexe. À titre d'exemple, il faut tenir compte du fait que la moitié de la production législative annuelle dans les ordres juridiques nationaux a une provenance communautaire. Ce qui rend les choses plus difficiles, le droit de l'Union constitue une branche légale autonome et particulière, dont les effets touchent les citoyens européens directement sans qu'ils ne possèdent les mécanismes d'information et de dialogue institutionnalisé en la matière.

Le service d'orientation est complété par un réseau neuf de résolution de problèmes de citoyens, dénommé « SOLVIT ». Le réseau est compétent pour des cas d'application incorrecte de la législation européenne par les pays-membres. Tous les deux services correspondent surtout à la matière de la libre prestation de services et à d'autres questions relatives aux allocations sociales, à la sécurité sociale et à la

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5 Par les dispositions de l'article 14 de la loi 2672/1998.

6 0080067891011.

7 Voir http://europa.eu.int/citizensrights/signpost/front_end/signpost_en.htm.

fiscalité. Les intéressés peuvent poser leurs questions et attendre une réponse dans toute langue communautaire officielle dans un espace de trois jours ouvrables.

Il est indéniable que les initiatives en cause constituent des pas essentiels vers la consécration de principes de transparence et de bonne administration.

En outre, les Centres de Service de Citoyens constituent l'avant-garde du renouveau administratif au niveau national et local. Si le Japon dans son programme pour la réalisation de la gouvernance électronique en l'an 2003, adopté en mars 2001, prévoyait le système « one-stop shop » de gouvernement, qui consiste en prestation de services publics pendant 24 heures sur 24, disponible aux maisons, offices ou à des points d'accès dans des locaux publics comme les bureaux de poste, la Grèce a fait preuve d'une agilité notable quant à l'introduction du modèle de « guichet unique ».

Prévus par l'article 31 de la loi 3013 du 1er mai 2002, les Centres susmentionnés, qui s'incorporent aux collectivités locales du premier et du second degré, pas seulement sont tenus de procurer les citoyens avec le nécessaire faisceau d'informations mais ils reçoivent aussi les demandes des particuliers pour en donner la suite appropriée auprès des autorités compétentes. Cette institution comporte aussi le service téléphonique d'information 1564, qui fonctionne 24 heures sur 24. Il est notable qu'elle a progressé vers le modèle électronique lorsque son fonctionnement se base surtout aux contacts personnels et téléphoniques. Plus précisément, à titre indicatif les intéressés peuvent :

- trouver toute information sur les services publics et voire dans tout domaine de compétence matérielle, dans la page électronique correspondante,[8]
- poser des questions complexes qui regardent éventuellement des problèmes relatifs à leurs échanges avec le pouvoir en recevant des réponses dans le délai d'avant-garde de 24 heures,
- soumettre leurs propositions envers l'administration, chose qui renforce la démocratie, et enfin,
- une fois réglée la question susmentionnée de la signature digitale, compléter leurs demandes et les envoyer via le Centre de leur région à tout service public compétent, au lieu de recourir à une visite sur place.

En septembre 2004 le gouvernement fit un premier bilan de la productivité des Centres, qui ne s'avère pas satisfaisant. Il est indicatif que presque six fonctionnaires sur dix n'accomplissaient qu'une affaire maximum par jour.[9]

b. La méthodologie de dépôt de la déclaration fiscale de revenu des personnes physiques

En Grèce, dans le domaine de finances publiques l'on peut constater l'apport le plus avancé au profil de la procédure administrative. Cela est le cas de la substitution récente des Vignettes de sécurité sociale par des catalogues automatisés.

En outre, il convient d'analyser la multiplicité de processus actuellement disponibles pour la préparation et le dépôt de la déclaration fiscale de revenu annuel.

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8 http://www.kep.gov.gr.

9 Voir D. Maris, *Aux limites du…zéro la productivité des Centres de Service de Citoyens*, Le Monde de l'Investisseur, samedi 4 dimanche 5 septembre 2004, p. 42 (en grec).

La déclaration à déposer pendant le premier semestre de l'an 2003 donna au particulier pour la première fois l'ample faculté procédurale de tirer profit d'une gamme de processus alternatifs, soit conventionnels soit modernes.

D'abord, il existe une série de voies qui peuvent de nos jours être regroupées comme méthodologie conventionnelle. Cela est bien le cas de :

1. Rendre visite sur place au Service Financier Public,
2. Comptable et
3. Envoi postal en recommandé.

Chacune des méthodes traditionnelles est caractérisée par ses propres avantages et désavantages. Plus spécifiquement, le contact personnel du contribuable avec l'autorité fiscale permet le contrôle sur place de la déclaration complétée pour bien localiser et corriger des erreurs éventuelles mais l'usager doit faire la queue et respecter l'horaire du service. Il est à signaler que cette voie classique fait preuve de modernisation en cours puisque pendant le premier semestre de l'an 2004 il existe des mécanismes internes suivant le modèle de service « one-stop », à savoir les « Stations de Service de Citoyens » à un petit nombre de services fiscaux.

En ce qui concerne le concours d'un comptable, il s'agit de la forme qui semble d'ordinaire la plus avantageuse. En effet, c'est le professionnel qui assume la tâche de rédaction et de dépôt et voire il peut s'avérer très utile pour que le contribuable non-expert ne paie pas de montants évitables. Qui plus est, dans la pratique administrative il est doté d'une sorte de prolongement informel du délai de dépôt, chose qui favorise pas seulement son client mais avant tout le service public financier lui-même, inondé de déclarations dans l'espace de temps prévu. La seule charge du particulier consiste en la rémunération du comptable, d'ordre de 50 à 100 euros. Ces honoraires semblent presque négligeables car le professionnel ne compte pas sur le prix mais notamment sur le nombre de déclarations à traiter.

Enfin, le courrier constitue une voie classique, disponible dans tous les bureaux de poste du pays. Néanmoins, il faut tenir compte qu'il se peut que les contribuables fassent la queue à la poste et risquent d'être convoqués au service fiscal pour la correction d'erreurs.

Le développement le plus intéressant est là, que l'entreprise publique de Postes Helléniques va au-delà de la simple réception d'une enveloppe. Outre la technique d'envoi en recommandé ou non, il existe le nouveau produit original du service « TaxisPOST » qui consiste en une enveloppe de dépôt de la déclaration fiscale à frais payés d'avance, disponible dans tout bureau de poste au prix fixe de 3 euros. Le contribuable peut compléter aisément son nom et coordonnées ainsi que les éléments du destinataire, à savoir du service fiscal, dans les régions en couleur de l'accusé incorporé de réception. Ayant mis la déclaration complétée et signée et toutes les pièces nécessaires à l'enveloppe, il la soumet au bureau de poste pour ratification du dépôt et envoi.

Cette méthode présente les avantages suivants :

1. Le contribuable économise du temps car il est exempté du déplacement et de la perte de temps pour l'achat d'une enveloppe et de timbres.
2. Il existe un prix unique, indépendamment de poids, grâce auquel l'envoyeur évite le processus de mesurage et de détermination de prix.

3. L'accusé que le contribuable reçoit de la poste est unique à travers une numérotation spéciale (selon le système connu « Barcode ») et regarde exclusivement sa propre déclaration.

Il convient de signaler que cette entreprise vient de lancer une innovation pareille généralisée, à savoir une enveloppe en recommandé à frais payés d'avance.

Quant à la méthodologie innovatrice, récemment mise en marche, consiste en l'utilisation de :

1. Internet et
2. Centres de Service de Citoyens.

D'abord, l'usage du site[10] spécialisé du Ministère compétent offre un droit à réduction d'ordre de 2,5% (sous réserve de plafond 118 euros), exemption d'horaires, de queues ainsi que d'embarras pour le dépôt, et une liquidation très rapide. Au contre-pied, il faut signaler qu'Internet n'est pas encore très répandu parmi les Grecs et donc seulement 300.000 intéressés pouvaient en tirer profit en 2003. Ce qui est pire, les contribuables doivent faire une visite supplémentaire, soit au site soit sur place, pour soumettre, le cas échéant, d'autres documents fiscaux tels que les formulaires « E2 » (liste de loyers d'immobiliers) et « E9 » (changement de la fortune immobilière).

Il convient de signaler que suite aux développements technologiques survenus pour le dépôt de 2003 les comptables sont emmenés à être connectés avec le site en cause tandis que juste l'an précédent, ils avaient la tendance de décourager leurs clients d'utiliser la voie électronique, initialement dotée de réduction d'impôt d'ordre de 5%, surtout par l'argument qu'un contrôle de l'autorité fiscale serait probable en vue du nombre restreint des usagers.

En outre, les environ mille Centres dans le pays entier offrent la possibilité précieuse d'esquiver les queues et en plus la réduction précitée. Pourtant, les citoyens sont tenus de les contacter sur place de deux à trois fois car ils ont à déposer par voie électronique premièrement leur demande d'enregistrement au système informatique « TAXISnet », ensuite leur déclaration et enfin, le cas échéant, les documents supplémentaires susmentionnés. Il convient de signaler que l'immixtion des Centres se situe au processus de dépôt électronique en vue du gouffre digital et non pas à la soumission physique.

Qui plus est, vers la fin avril 2003 on lança un programme pilote de liquidation fiscale informelle. Plus précisément, le contribuable peut avoir accès dans le site susmentionné au formulaire déjà reçu par poste et le compléter. Grâce au programme, il a la faculté de se rendre compte des erreurs ou des omissions éventuellement commises afin de ne pas les faire pendant la soumission normale de la déclaration. En outre, l'usager du programme est doté de services tels que le compte de la taxe ou de la somme à lui rendre ainsi qu'une note de liquidation informelle.

B. La modernisation informatique du pouvoir

D'une part, il convient de tenir compte du fait que l'attentat d'informatiser l'administration n'est pas exempté de graves problèmes, causés ou accrus par

[10] http://www.taxisnet.gr.

l'usage de nouvelles technologies. D'autre part, il est probable que les approches scientifiques portant sur les divers dysfonctionnements en cause offrent des solutions adéquates, dont les administrateurs pourraient tirer profit afin d'améliorer l'accomplissement de leur mission.

I. Les problèmes liés aux nouvelles technologies

Comme la nouvelle ère de l'information est marquée d'une série de problèmes variés qui rendent le champ digital moins amical, il serait intéressant d'analyser les catégories de problèmes et voire d'examiner leur impact pour le statut territorial de l'administration publique.

a. La physionomie des problèmes

Les sources de risque émanant de l'usage de nouvelles technologies pourraient être purement techniques. En effet, il existe toujours une menace inhérente au fonctionnement de machines de tout type, comme la coupure du courant électrique. D'autre part, le danger le plus inquiétant regarde des perturbations délibérées des infrastructures ainsi que des systèmes ou des services de technologies avancées.

Le premier groupe d'acteurs visant les moyens hi tec est celui de « hackers ». Si la préhistoire de perturbateurs concerne la vieille institution de postes, les « amateurs » modernes sont connus dans le monde de cyberespace. En effet, ils inventent et font usage de diverses techniques afin de provoquer des désordres au monde digital. Aussi s'avère-t-il dicté par la dynamique de choses d'instaurer des méthodes efficaces contre les agressions de ce type.

Si la création de la défense informatique sert de mesure de protection contre les tricks de « hackers », elle est de majeure importance à l'égard du terrorisme. La nouvelle crise issue des agressions du 11 septembre 2001 aux États-Unis d'Amérique par un réseau international d'islamistes fanatiques, a dramatiquement changé l'état des choses. La possibilité de terrorisme électronique par le lancement de virus occupa le bloc occidental peu après les événements de force qui eurent lieu dans le monde physique et voire partiellement par transmission télévisuelle directe.

Mais l'impact le plus important est là, la force américaine et ses alliés souffrent d'une profonde insécurité. La politique publique sur les nouvelles technologies consiste en la production de règles ainsi que l'exercice de contrôles de légitimité en la matière. Toutes les deux catégories d'actions, en particulier dans le monde actuel ayant des incertitudes et des insécurités manifestes, sont étroitement liées au risque susmentionné.

Dans cet ordre d'idées, il convient de signaler que la crise mondiale courante a emmené les gouvernements concernés à des mesures augmentées d'intervention publique dans un univers d'instabilité et de vulnérabilité, chose qui implique une augmentation du budget militaire des États-Unis, assortie de mesures interventionnistes et protectionnistes. En effet, plusieurs gouvernements ont adopté une politique de contrôle plus centralisé et des restrictions de la sphère privée quant à l'utilisation des technologies en cause. À titre indicatif, le développement le plus récent consiste en le projet de mise en marche d'un système électronique avancé assurant aux agents américains l'accès à des archives gouvernementales et

commerciales provenant du monde entier. En même temps, le gouvernement a l'intention d'exiger une photographie de personne et l'empreinte digitale pour les visas dont les visiteurs étrangers sont obligés d'être munis. Même les citoyens de pays exemptés d'émission de visa seront tenus d'avoir leur empreinte digitale sur leur passeport. Cette politique, qui auparavant pourrait être dénoncée comme xénophobe, a ses racines à l'incapacité des autorités de prévenir le coup multiple du 11 septembre vu que plusieurs parmi les 19 terroristes disposaient d'un visa expiré ou ils étaient entrés au pays en faisant usage des visas dont les données n'avaient pas été attentivement contrôlées par les instances.

Cette attitude, qui pousse les possibilités technologiques à l'extrême, a déjà provoqué des réactions politiques. En février 2003 le Congrès demanda la description complète des projets que l'Autorité de Programmes de Recherche Avancée sur la Défense traite, laquelle avait développé la technologie d'Internet. En plus, le Centre pour la Démocratie et la Technologie déposa un rapport à une sous-commission parlementaire spéciale, dans lequel il explique pourquoi il n'existe pas encore une protection légale suffisante des données provenant d'actes commerciaux, auxquelles le gouvernement peut avoir accès.

Par conséquent, il en résulte en même temps dans beaucoup de pays du bloc occidental une baisse considérable des standards :

- de providence sociale, due à l'augmentation drastique des investissements en faveur des forces de sécurité nationale et publique ainsi que
- de protection des droits individuels des justiciables en invoquant, une fois plus, des raisons de sécurité.

Qui plus est, l'on peut ajouter à la liste déjà inquiétante le problème suivant :

- une baisse, sinon une négligence subversive, des standards des relations internationales car la seconde guerre du Golfe Persan, qui éclata en mars 2003 et résulta en la conquête de l'Iraq par les forces militaires alliées des États-Unis et de la Grande Bretagne, avait un caractère préventif et voire tout à fait dépourvu de l'approbation indispensable du Conseil de Sécurité des Nations Unies.

Outre les circonstances politiques internationales, il convient de signaler que la société d'information a besoin d'une réglementation systématique. En effet, malgré le fait que de nombreuses études démontrent l'usage croissant d'Internet dans les pays européens, il est toutefois surprenant que les citoyens ne semblent pas généralement conscients de ce qui pourrait arriver ou de ce qui pourrait résulter de leurs activités en ligne. De plus, il faut tenir compte du fait que selon le principe fondamental de prévision légale de l'action administrative, l'appareil exécutif ne saurait satisfaire aux standards de la gouvernance électronique sans l'adoption de règles spécifiques.

b. L'impact territorial des problèmes sur l'administration publique

Les développements digitaux peuvent causer des changements dans le rôle et la position des organisations administratives en terme du contrôle à exercer sur les activités sociales et voire, au plus haut niveau, même de l'État-nation.

Le pouvoir central est doté de la possibilité de bien gérer les affaires de son champ de compétence grâce aux moyens de haute technologie, celle des satellites d'espace incluse. En effet, l'État a l'opportunité d'accomplir sa mission non-décentralisée en tirant profit du potentiel susmentionné, comme cela est le cas de la défense nationale. De nos jours, les pays développés procèdent à des rythmes spectaculaires à la consécration de la gouvernance électronique pour l'administration de tout niveau territorial.

Néanmoins, il faut tenir compte que le pouvoir concentré subit des pressions intenses à deux sens contraires malgré le fait que depuis la crise courante de terrorisme il existe un renforcement du poids spécial de la gouvernance centrale.

D'une part, l'État-nation a la tendance de perdre d'attributions en faveur de la collaboration à l'univers international. Il est évident que l'état contemporain de nouvelles technologies favorise la collaboration et la coopération d'ordre pas seulement transnational mais aussi intergouvernemental. La toile mondiale pourrait être caractérisée comme le véritable symbole de l'ère courante de mondialisation lorsque l'intégration européenne est à un grand degré facilitée par le progrès technologique, comme les programmes électroniques de traduction de documents d'une langue officielle à l'autre.

D'autre part, les forces centrifuges à l'intérieur des pays sont renforcées à travers l'automatisation offerte par la civilisation technique actuelle. D'abord, quant à la politique de décentralisation, en principe la haute technologie est propice de favoriser ce mouvement de rapprochement du simple citoyen par les autorités compétentes. En effet, par exemple de nos jours une Université de province peut profiter de nouvelles technologies pour étaler ses Facultés à des villes de la région correspondante, au lieu du modèle traditionnel de se limiter à la capitale de cette unité administrative locale. Pourtant, il convient de signaler que le mouvement de décentralisation nécessite une politique globale sur le personnel et les moyens de l'administration.

Les problèmes causés ou accrus par l'usage des technologies avancées, comme le risque de dysfonctionnements, dictent la nécessité d'une agilité de l'appareil administratif, chose qui implique dans un grand nombre de cas la décentralisation territoriale de services publics. Par exemple, en Grèce le Corps de Poursuite de Crime Financier constitue un service décentralisé qui est tenu de contrôler, parmi d'autres, les entreprises commerciales disposant de locaux à des jeux électroniques interdits.

En outre, la question de principe est de renforcer la position institutionnelle des collectivités locales face à la structure étatique, sous forme tant du gouvernement que des autorités décentralisées de celui-ci. Ce mouvement de démocratisation du pouvoir implique en principe la création de degrés supérieurs au premier existant dans tout pays tandis que l'indispensable surveillance administrative, exercée par l'autorité étatique décentralisée, est facilitée par la transmission électronique des documents administratifs correspondants.

Il ne faut pas quand même perdre de vue le problème de tendances centrifuges qui menacent l'intégrité territoriale du pays concerné. En effet, une conséquence néfaste de l'ère de mondialisation est la création ou le renforcement de mouvements d'autonomie de régions et notamment de minorités ethniques.

II. La question de modernisation à travers les théories sur les problèmes liés aux nouvelles technologies

De nombreuses études scientifiques s'effectuent en essayant de donner des réponses adéquates aux problèmes précités de risque, de réglementation et de contrôle.[11] Il convient donc de signaler quelques cas dans lesquels la doctrine suggère des solutions tant pour les particuliers que pour les administrateurs.

a. Les activités privées

Plusieurs activités sociales sont marquées à une grande étendue par des pratiques électroniques illégales qui doivent être pas seulement punies mais aussi efficacement prévenues.

En mai 2003 le réseau de Centres européens de Consommateurs annonça les résultats de sa recherche effectuée aux 15 pays de l'Union européenne pendant le second semestre 2002. Selon cette expérience basée sur 114 commandes de produits, malgré le fait que la Directive communautaire sur les ventes de distance prévoit que le consommateur peut changer d'avis et de rendre le produit sans aucune motivation, une entreprise électronique sur quatre demanda au consommateur de motiver sa décision. À titre indicatif, il convient d'ajouter que presque la moitié des entreprises ne donnait pas de renseignements suffisants sur la protection des données personnelles de leurs clients.

Il en résulte que la réglementation communautaire n'est pas pleinement respectée dans le domaine commercial et donc les autorités doivent elles-mêmes exercer un contrôle continu sur le commerce électronique, qui reste à la marge de la crédibilité du marché, et voire l'État doit donner le bon exemple par ses propres entreprises. Ce qui est pire, les pays de l'Union européenne ont du mal à incorporer la Directive 2000/31[12] du Parlement Européen et du Conseil sur certains aspects juridiques des services de la société de l'information, notamment du commerce électronique, au marché intérieur.[13] Cela est le cas de l'ordre juridique grec, dans lequel le texte ne fut transcrit que par le décret présidentiel 131/2003, ayant force rétroactive, à savoir à partir du 17.1.2002.

Qui plus est, le commerce constitue le point faible d'Internet car des pratiques telles que le « spamming » et la publicité incontrôlée constituent des phénomènes fréquents. Il est à signaler sur ce point que les travailleurs perdent une partie notable de leur horaire pour s'informer sur le courrier reçu par la messagerie.

Outre le domaine commercial, même la commission de crimes par voie électronique est une question délicate qui requiert une approche spécialisée.

À titre indicatif, il convient de signaler que :

1. Les cas de crime électronique augmentent à des rythmes spectaculaires.

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11 Voir V. de Magistris, *The Diffusion of Innovation in Public Administration via the Web Site*, Intervention auprès de Groupe de Travail III de la Conférence de l'Association Internationale des Écoles et Instituts d'Administration, Athènes, Grèce, 7–13 juillet 2001, p. 3 et ss.

12 EEL. 178/1 du 17.7.2000.

13 Voir sur les problèmes de l'intégration européenne A. Maniatis, *Le recours parlementaire dans l'Union européenne*, Éditions Ant. N. Sakkoulas 2000, p. 53 et ss.

2. Le traitement d'une affaire en cause ainsi que les facteurs qui pèsent dans un procès diffèrent de ceux du crime physique.
3. L'investigation, la collection, la garde, la présentation et la preuve des pièces digitales de preuve sont des travaux difficiles par excellence et requièrent des connaissances techniques, outre les juridiques.[14]

À titre d'exemple, les praticiens doivent tenir compte du fait que ce qui est sauvé dans une archive électronique reste à jamais. En été 2002 le service antiterroriste de la police grecque accomplit une mission de renommée mondiale, à savoir il commença les arrêts de suspects pour participation à l'« Organisation Révolutionnaire 17 novembre ». Dans un refuge du groupe terroriste qui ne pouvait pas être révélé depuis 27 ans, la police découvrit un ordinateur associé aux archives de l'organisation mais à peine dépourvu de « disque dure ». Pourtant, l'ordinateur de la cachette est censé s'avérer utile à travers un programme spécial dont les autorités britanniques disposent. En général, il est notable que la police hellénique doit à un grand degré son succès historique au concours des services homologues américains et surtout britanniques, tant au niveau de méthodologie qu'au niveau de technologie. Il en résulte que les opérations digitales de criminels peuvent se convertir en des pièges à leur détriment.

b. Les activités publiques

Si le mécanisme policier et judiciaire pour la poursuite de crimes a besoin de nouvelles technologies, cela est également valable pour l'appareil administratif, tant à l'égard des citoyens qu'à son intérieur.

Un des principes fondamentaux que la théorie recommande pour la réforme administrative est la simplicité face à des structures complexes de la bureaucratie traditionnelle. La suppression de règles et de modalités strictes et superflues rend le fonctionnement du pouvoir exécutif plus agile et souple, chose qui ne facilite pas seulement la mission des administrateurs eux-mêmes mais avant tout favorise le bon service des citoyens.

À titre d'exemple, cela implique l'automatisation des relations État-Citoyen, comme cela est le cas des cartes d'usager. Au-delà de la pratique de ces mémorandums individualisés, l'administration a récemment commencé de progresser vers le modèle avancé de « cartes intelligentes ». Ce gadget disposant d'un chip et une zone magnétique et ayant la taille classique d'une carte de crédit, constitue le type de carte de l'avenir car il combine les avantages de la carte plastique avec le potentiel de l'Informatique. Le Ministère grec d'Agriculture annonça en août 2002 que grâce aux ressources provenant de l'Union européenne il met en marche un programme d'émission et de gestion de la « Carte d'Agriculteur » pour les personnes physiques qui s'occupent de la production agricole et va renforcer un grand nombre d'agriculteurs et de pêcheurs pour l'adoption de nouvelles technologies de l'information, dont l'accès à Internet.

Qui plus est, le standard de simplicité administrative, qui met en avant un esprit d'économie d'institutions et de moyens publics, va être satisfait par le projet

[14] Il s'agit de conclusions du premier Congrès Panhellénique sur le Crime Électronique qui eut lieu à Athènes en novembre 2002.

gouvernemental d'instaurer une carte ingénieuse unique. Plus précisément, parallèlement à l'initiative du Ministère d'Agriculture, le Ministère d'Administration Publique prépare l'introduction de la Carte de Citoyen. À titre d'exemple, on a examiné sur place le cas de Finlande qui a mis en marche ce gadget à 17 emplois depuis l'an 2000. En deux premiers ans environ 30.000 citoyens ont «acheté» la carte lancée par l'État, au prix de 39 euros.

Un autre principe fondamental, outre la simplicité, consiste en la subsidiarité recommandée pour tout niveau de l'action administrative. En effet, l'appareil exécutif devrait donner l'occasion au potentiel de rang inférieur d'accomplir sa mission et voire en prenant les initiatives nécessaires.

D'une part, quant à la gestion du personnel, le pouvoir devrait renforcer ses fonctionnaires au lieu d'appliquer le système traditionnel de bureaucratie. Cette approche de l'école de pensée du Nouveau Management Public peut tirer profit du support disponible de haute technologie. À titre d'exemple, de nos jours les travailleurs acquièrent des expériences accrues grâce à la multiplicité de moyens et de techniques de contact avec les usagers de leur service et voire ils ont un accès privilégié à une source d'informations spécialisées, par exemple à travers la connexion du service avec Internet. Donc, ils méritent d'avoir une ample faculté discrétoire procédurale pour bien accomplir la mission de leur unité.

D'autre part, même les autorités de l'administration locale devraient être renforcées tout en appliquant les principes de décentralisation et de démocratie. Les développements récents, tels que la gouvernance électronique, peuvent faciliter la modification du concept territorial, basé à un grand degré sur des critères de conditions de transport, pour bien instaurer des ensembles administratifs en pleine correspondance avec le contexte géographique et politique. D'autant plus, il serait recommandable que les régions révisées se reproduisent sous forme de collectivités locales de troisième degré, à établir pour la première fois.

Conclusion : Le pouvoir virtuel entre atteintes technologiques et illusions politiques

Ce qui se dégage de cette étude est que le pouvoir public se trouve devant un grand pari ; les administrateurs peuvent tirer profit de neuves technologies de l'information et de la communication tout en accomplissant mieux leur mission ou bien donner l'impression d'une modernisation technologique qui ne répond quand même pleinement ni aux revendications sociales ni aux besoins du potentiel administratif.

D'une part, la réglementation spéciale en cause est encore inachevée et voire elle n'est pas pleinement observée, comme cela est le cas de la législation de provenance communautaire sur le commerce électronique dans l'Union européenne ainsi que du droit portant sur la protection de données personnelles. En plus, les développements qui surviennent dans le monde digital influencent la physionomie territoriale de l'administration, partiellement d'une manière néfaste tout en facilitant les forces centrifuges. Dans ce contexte, il existe un scepticisme croissant chez les citoyens sur le coût financier et l'enjeu politique au sujet de l'invention et la consécration de mécanismes de technologie avancée dans un milieu international d'exclusion sociale.

D'autre part, il ne faudrait pas perdre de vue que la technologie est neutre et donc la société est historiquement tenue d'exercer le contrôle démocratique sur le pouvoir exécutif, qui se transforme en un appareil presque omnipotent à travers la gouvernance électronique. Si la modernisation à travers la technologie s'institutionnalise et se matérialise de plus en plus, en particulier dans les pays industrialisés, cette réforme ne devrait pas porter atteinte à la civilisation juridique classique, dont les principes fondamentaux de l'État de droit et de la protection de la sphère privée des individus.[15] D'autant plus, la communauté internationale devrait manifester activement sa volonté de sauvegarder la paix mondiale en vertu du droit international et réserver l'usage de la haute technologie à l'accomplissement des idéaux classiques de respect et de protection des droits fondamentaux ainsi que de démocratie. Pas seulement les activités hors le champ classique de l'Administration, telles que la diplomatie et la Justice, méritent d'être modernisées mais ce processus recommandable s'avère de majeure importance au service du simple citoyen.

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Le pouvoir public virtuel se balance entre les atteintes de haute technologie et les promesses politiques inaccomplies, donc il reste de lutter pour qu'on le rende moins illusoire et voire plus visionnaire.

Références

Beys, C., *Procès électroniques ; pourquoi pas ? Une modernisation nécessaire*, Elephterotypia mercredi 18 septembre 2002, p. 9 (en grec).

Kaneko, Y., *Efforts towards « Electronic Government » and the Use of Information Technologies in the Government Statistical Activities,* Intervention au Sous-thème II du XXVème Congrès International des Sciences Administratives, Athènes, Grèce, 9–13 juillet 2001.

de Magistris, V., *The Diffusion of Innovation in Public Administration via the Web Site*, Intervention auprès de Groupe de Travail III de la Conférence de l'Association Internationale des Écoles et Instituts d'Administration, Athènes, Grèce, 7–13 juillet 2001.

Maniatis, A., *La règle de droit et les administrations publiques dans un contexte mondial. Nouvelles bases pour l'État de droit et les droits de l'homme*, Revue Hellénique des Droits de l'Homme 19/2003, pp. 767–787.

Maniatis, A., *Le recours parlementaire dans l'Union européenne*, Éditions Ant. N. Sakkoulas 2000.

Maris, D., *Aux limites du…zéro la productivité des Centres de Service de Citoyens*, Le Monde de l'Investisseur, samedi 4 dimanche 5 septembre 2004, p. 42 (en grec).

[15] A. Maniatis, *La règle de droit et les administrations publiques dans un contexte mondial. Nouvelles bases pour l'État de droit et les droits de l'homme*, Revue Hellénique des Droits de l'Homme 19/2003, p. 767 et ss.

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The Use of Space Technologies for More Effective and Efficient Public Administration

Yuko Kaneko[*]

1. Introduction

With the advancement of information and communication technologies, information and telecommunication equipments such as computers have become user-friendlier and their prices have been down considerably. New networking technologies can establish high-speed network infrastructure that enables distributing a large amount of information regardless of time and distance. These two elements made the private sector to introduce computer and communication equipments connected to the telecommunication networks and to conduct businesses by making use of these equipments and networks. Ordering and receiving orders among companies came to be carried out via the Internet or individual consumers can buy goods and services by accessing to the websites of suppliers. Thus, the way of business and daily lives of ordinary people are changing rapidly and such changes force our economies and societies to change.

On the other hand, comprehensive approach to make use of information and communication technologies in every area of the society had just started in the beginning of the 21st century in Japan.

The Basic Law on Formation of an Advanced Information and Telecommunications Network Society (IT Basic Law) was implemented in January 2001, which obliges the government to work out a basic strategy to promote the formation of an advanced IT network society.

Based on the stipulations of the IT Basic Law, an IT Strategic Headquarters was established and an e-Japan Strategy was adopted at the first meeting of the Headquarters in January 2001. The e-Japan Strategy aimed at making Japan the world's most advanced IT nation within five years. To implement the e-Japan Strategy, an e-Japan Priority Policy Program was approved in March 2001. The Program is a specific blueprint for achieving the national goal of becoming the world's most advanced IT nation and includes details of the government actions that need to be implemented expeditiously and intensively, as well as the target date. Realization of e-government is one of the policy areas for the government to take concrete actions.

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The Japanese government is now actively promoting necessary measures to realize the goal of e-government. Space development and utilization measures are included in the whole measures for realizing an e-government. The relevant Ministries and public corporations have been carrying out space development and utilization measures based on the e-Japan Strategy and the e-Japan Priority Policy Program (http://www.kantei.go.jp/foreign/policy/it/index_e.html) since 2001.

In this paper, space development and utilization efforts in the government are focused in the context of improving efficiency, effectiveness and responsiveness of the government.

Talking about space technologies, there are various technologies relevant to the space from rocket transportation to artificial satellite telecommunications. The satellite technologies are focused in the following because some of these technologies have already been utilized in public administration in Japan.

In the following, as many as possible examples are introduced here, focusing administrative areas suitable to the use of satellite technologies; briefly outlining the history and institutional arrangement of space development and utilization in Japan; showing how the satellite technologies are utilized in public administration; analyzing the costs of satellites; introducing technology transfer and the private sector's activities in the Japan's space development and utilization; making preliminary evaluation of the satellite technology utilization; and in conclusion suggesting future challenges for promoting the use of satellite technologies in public administration.

2. Classification of Government Activities[1]

The modern government conducts various activities from national defense to managing museums and housing construction. Various historical experiences and social backgrounds had made the government carry out certain distinctive functions. It seems that there is no absolute definition to separate government functions from those to be executed by the other sectors.

As the society and economy have become more complicated with the globalization deepening and difficult social problems have arisen, the general public has come to demand more government services and involvement into collective problems of the society. On the other hand, government fund has its own limitations and so are the activities to be conducted by the government. In this circumstance, the classification of government activities helps us to identify which activities should be carried out by the government.

Some scholars of administrative and political sciences have been trying to develop classifications of government activities based on the criterions such as core/auxiliary and extra/intra government. Among these classifications, the classification developed by Mr. Charles Debbasch is based on the actual behaviors of the governments. He classified government activities into four categories as follows (Debbasch, 1976).

- Sovereign functions: national defense, diplomacy, police, court, political activities, etc.

[1] Comprehensive deliberation on government activities classification is conducted by Mr. Kataoka (Kataoka, 1978).

- Economic functions: national currency control, economic control, job training, investment, trade, etc.
- Educational and cultural functions: education, science, information, culture, etc.
- Social functions: health, housing, urban construction, social welfare, etc.

Satellites primarily play roles of transmitting communications, broadcasting, generating signals for positioning and observing the earth. Thus, they are highly useful in carrying out certain national policies. As for the sovereign functions of the government, satellites are utilized in national security and crisis management. In the economic areas, they are exploited for developing advanced new technologies. Such developing maneuver is highly risk-taking but may produce the seeds of new industries for the next generation. In performing the educational and cultural functions of the government, satellites are used for increasing intellectual assets of human being on the origin of space as well as for fostering intellectual curiosity by lecturing from the space. As for the social function, the earth observation function of satellite is utilized for forecasting global warming and weather changes, and positioning functions are practically utilized for deploying basic navigational infrastructure.

3. Brief Glance on Space Development and Utilization History in Japan

Basic research and development on space technology was initiated by the national universities in 1950s. Taking account of the results of this earlier effort, the government officially began its space development and utilization programs by establishing a specialized space development public corporation as well as by entering the international treaties and agreements governing space-related activities in 1960s. In 1970, the government succeeded in launching its first satellite to become the world's fourth nation that could launch its own satellite. Practical use of the meteorological and communications/broadcasting satellites was started in late 1970s.

The earlier efforts and associated activities to date are shown below.

- 1960 Establishment of the Space Development Council.
- 1964 Establishment of the Space Development Headquarters at the Science and Technology Agency, Prime Minister's Office.
- 1967 Entry into The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.
- 1968 Creation of the Space Activities Commission (SAC).
- 1969 Establishment of the National Space Development Agency of Japan (NASDA).[2]
- 1970 Launch of Japan's first satellite (Ohsumi).

[2] The National Space Development Agency of Japan (NASDA) was established in October 1969 under the National Space Development Agency Law, to act as a nucleus for the development of space and to promote the peaceful use of space. Its responsibilities included development of satellites and launch vehicles, launching and tracking the craft. NASDA was combined with the other space research institutions to become the Japan Aerospace Exploration Agency in October 2003.

- 1971 Launch of the first earth observation satellite (Shinsei).
- 1977 Launch of the first geostationary weather satellite (Himawari).
- 1978 Launch of the first geostationary broadcasting satellite (BS) (Yuri).
- 1983 Launch of the first communications satellite (CS) for practical use (Sakura).
- 1989 Launch of the communications satellites (CS) by communication carriers.

During the earlier stage of development, namely from1960s to 1980s, the government took initiatives of space development and utilization by mobilizing a national research institute, a public corporation and private enterprises. Large amounts of public funds had been allocated to the space development and utilization projects and a lot of space technologies were introduced from the other countries.

Around 1990, Japan had been steadily filling the technological gap between Japan and the United States and European counties in space technology. From late 1980s, some trade negotiations had been carried out between the Government of Japan and Government of the United States. As one of the results of such negotiations, the both governments reached an agreement concerning satellite research & development and procurement. The Japanese government established open, transparent and non-discriminatory policies and procedures for the procurement of non-R&D satellites based on "the Policies and Procedures regarding satellite R&D/Procurement" in June 1990. After this agreement, non-R&D satellites are procured through open procedures so that the government has only participated in R&D satellites projects since then.

4. Institutional Arrangement of Space Development and Utilization

Before the reorganization of the central government in January 2001, the Space Activities Commission of the Prime Minister's Office played a key-coordinating role of space activities among the relevant Ministries and Agencies. The Commission formulated the Mid-/Long-Term Policy of Japan's Space Activities in December 2000, and based on this Policy, the Ministries and Agencies concerned together with related public corporations carried out development and utilization activities.

The Council for Science and Technology Policy (http://www8.cao.go.jp/cstp/english/s&tmain-e.html) was established in January 2001 within the Cabinet Office. The Council is one of the governmental top councils comprising the Prime Minister, the other Cabinet members and experts from the outside. The Council is in charge of making basic science and technology policies as well as coordinating policy matters from the overall and panoramic viewpoints among the Ministries concerned. The Council established an Expert Panel on Space Development and Utilization in October 2001, and instructed the Expert Group to deliberate a basic framework for space development and utilization with a view to strengthening international competitiveness of Japan as well as to improve the people's quality-of-life by use of space-related technologies. The Expert Panel submitted to the Council its report, and based on this report the Council decided the Basic Policy for Development and Utilization of Space in June 2002.

Presently, the relevant Ministries such as the Ministry of Education, Culture, Sports, Science and Technology, Ministry of Internal Affairs and Communications, Ministry of Environment, Ministry of Land, Infrastructure and Transport and Ministry of Agriculture, Forestry and Fisheries have been making efforts to actually implement necessary policy measures based on the Basic Policy for Development and Utilization of Space in cooperation with the related public bodies such as public corporations.

As for research institutions inside the government, some of them were transformed into incorporated administrative agencies outside the government in April 2001. The reform aims at ensuring more autonomous and independent operation of the research institutions.

In implementing space development and utilization measures, it is usually the case with the relevant Ministries to secure financial resources down to the incorporated administrative agencies such as the former National Aerospace Laboratory and the former Communications Research Laboratory, public corporations such as the former National Space Development Agency of Japan (NASDA) and the former Institute of Space and Astronautical Science in order to conduct specific research and development projects.

Once a certain technology is established as a result of governmental research and development projects, such technology is open to the private sector through the intellectual property right system for possible industrialization.

The reform of the major research and development organizations was carried out in October 2003. The Japan Aerospace Exploration Agency was newly established by merging the Institute of Space and Astronautical Science, National Aerospace Laboratory of Japan, and National Space Development Agency of Japan. The former three aeronautical and space agencies had been operated individually in their respective special areas. By merging those three organizations, we now have an agency that can operate all the process from basic research and development through utilization within one organization.

5. Characteristics of Satellite Technologies and Feasibility of Their Use in Public Administration

Artificial satellites are in orbit around the earth so that they can continuously observe the earth from the outer space; transmit/relay radio frequency telecommunication signals to/from the earth. Therefore, three functions, namely communication/broadcasting function, earth observation (remote sensing) function and positioning function are identified as feasible for the use in public administration. As is common to these three functions, it can be said that a satellite deployment depends largely on a success of launch vehicle (or rocket) and actual level of operations must comply with the international coordination processes and provisions. There are specific kinds of satellites corresponding to these functions. They are communication satellites, weather and earth observation satellites and navigation and positioning satellites.

In the following the characteristics of each function and feasibility of their use in public administration are described.

The characteristics of communication/broadcasting function are:

- Communication/broadcasting network is quickly deployed without huge investment unlike the nation-wide optical fiber network.
- Network can be built almost on a disaster-resistant basis and also can serve back-up network to the ground telecommunication network.
- Simultaneous distribution (or multicasting) of signal to every point of interest is possible.
- It is rather easier to prepare satellite communication/broadcasting equipments for the people living in such areas as ground telecommunication network has not yet been constructed.

Next, the characteristics of earth observation function are:

- Simultaneous observation of wide-range of the earth surface can be easily done.
- Conditions of the earth such as physical state of water, atmospheric/sea-surface temperature, vegetation and density of carbon dioxide can be detected all together.

This function is widely used for weather forecast and environment protection in public administration. Weather information gathered and transmitted by the weather satellites improves the quality and accuracy of weather forecast. Moreover, research activities are underway to utilize this function for agriculture production forecast, fishery inquiry, cartography and drift ice monitoring. On the other hand, earth observation data needs from the private sector are not so strong partly because of expensive costs in Japan. In case an earth observation industry is to be developed, the people's needs for such service should be fostered; simple methods of exploitation should be developed; analytical procedures should be standardized and so on.

The characteristics of positioning function are:

- Very accurate position information of ships, aircrafts and land vehicles can be provided.
- Position information can be given on a disaster-resistant basis.

In the Japanese case, the positioning is achieved by combinational use of the Global Positioning System (LEO-positioning by satellite radio signal) and D-GPS signal. The Global Positioning System (GPS) through satellite is utilized for the car navigation systems to confirm vehicle location in Japan. This positioning is achieved by utilizing radio signals transmitted from 24 satellites in geo-orbit. This technology was originally developed by the U.S. Department of Defense during the Cold War for military purposes, with location being determined by calculating the differential between the time of satellite radio transmission and the time of on-ground reception.

6. Use of Satellite Technologies in Public Administration

Among the three functions of satellites mentioned above, communication function is widely used in public administration. The telecommunication carriers deliver communication services via satellites.

The earth observation function is provided both by the R&D satellites launched by the public sector and the commercial satellites launched by the private sector.

This function is widely used by the public sector in such fields as weather forecast, research and development and disaster monitoring.

As for the positioning function, a geodetic survey satellite called "Ajisai." was launched by the former National Space Development Agency of Japan and has been being operated.

The several examples of the practical use of satellite technologies in the field of public administration are illustrated in the following paragraphs along with the expected utilization.

Transportation area

The Japan Highway Public Corporation (http://www.jhnet.go.jp/english_new/index.html), which is in charge of constructing and maintaining highways throughout Japan, has been making use of the Global Positioning System in managing its highways located at the remote areas in Japan.

The Civil Aviation Bureau of the Ministry of Land, Infrastructure and Transport (http://www.mlit.go.jp/koku/koku.html) is planning to introduce a sophisticated air navigation system called the CNS/ATM (Communication, Navigation, Surveillance and Air Traffic Management) system starting from fiscal year 2004. This system utilizes the Global Positioning Satellites, aeronautical communication satellites and latest communication technologies and is intended to help improve safety, capacity and economics of flight operations. Two Multi-functional Transport Satellites (abbreviated as MTSATs) will perform a key role in the CNS/ATM system as aeronautical communication satellites. They are composed of two satellites, namely MTSAT-1R and MTSAT-2. MTSAT-1R was to be launched in fiscal 2003 but the launch was delayed because of the bankruptcy of the satellite manufacturer. MTSAT-1R is to be launched in fiscal 2004. Both satellites have meteorological and aeronautical missions. These two missions will share a same satellite bus, thereby saving manufacturing and running costs of the satellite as well as the positions of the geostationary orbit of 140 degrees East.

National Security (Territory management) area

Information Gathering Satellites (IGS) are playing sovereign roles of gathering earth observation data necessary for national security and territory management, preventing and early-warning of wide-scale disasters and so on. A total of four satellites were launched to complete the IGS system. Earth observation function of satellite is now being made available in the territory management.

In this area, satellite images taken by a private earth observation satellite are also purchased from a private company and exploited in information gathering inside the government.

Agriculture and fishery area

Receiving earth observation data from the satellite and analysing them and presenting the results of the analysis for practical use in public administration has not yet been realized in this area. The Ministry of Agriculture, Forestry and Fisheries has been carrying out research and development projects to utilize satellite observation data in grasping the current state of agriculture plantation and fishery

resources. The Ministry has been conducting various research activities to exploit various satellite data supplied not only by the Japanese earth observation satellites but also by the satellites operated by the other countries.

In December 2002, the Advanced Earth Observing Satellites-II (ADEOS-II) (http://www.nasda.go.jp/projects/sat/adeos2/index_e.html) nicknamed as "Midori-II" was launched. Midori-II is equipped with two core sensors, AMSR (Advanced Microwave Scanning Radiometer) for observing various physical state of water such as water vapour and precipitation regardless of weather and daylight conditions, and GLI (Global Imager) for observing sea surface temperature, sea ice, earth surface temperature, vegetation distribution, ice distribution, ocean photo plankton, etc. with high precision.

Midori-II is expected to acquire date necessary to understand the circulation of water and energy, as well as the circulation of carbon in order to contribute to the studies of global environment changes.

Resource exploration area

As for natural resource exploration, the Japan Aerospace Exploration Agency has been developing the Advanced Land Observing Satellite (ALOS) (http://www.nasda.go.jp/projects/sat/alos/index_e.html) equipped with three remote-sensing instruments. ALOS is scheduled to be launched in fiscal 2004. Data acquired by ALOS will be utilized to make an unidentified natural resources distribution map and a tropical forest distribution map. ALOS is also expected to deliver useful data for cartography, regional observation, disaster monitoring and so on.

Cartography area

The Geographical Survey Institute of the Ministry of Land, Infrastructure and Transport (http://www.gsi.go.jp/ENGLISH/index.html) is responsible for conducting basic surveys and preparing for basic maps to be used in Japan. In conducting basic surveys, the Institute makes use of the geodetic survey satellites as well as the Global Positioning System. The Institute has been promoting a Global Mapping Project in close cooperation with the national mapping organizations of more than 100 countries. The purpose of this project is to develop globally consistent digital thematic maps that are essential for implementing multilateral environmental agreements and addressing sustainable development issues. In this project, earth observation data are utilized with the assistance from some satellite operating agencies. Part of the Global Map has been developed and disseminated to the general public via the Internet.

The Japan Coast Guard (Hydrographic and Oceanographic Department of the Japan Coast Guard (http://www1.kaiho.mlit.go.jp/jhd-E.html) is in charge of preparing sea maps and charts of territorial seas and baselines of Japan; accurate positioning of the Japanese islands. In carry out its responsibilities, it makes use of geodetic survey satellites as well as the Global Positioning System to acquire necessary data for making accurate maps and positioning. Geodetic survey satellites provide distance and direction information concerning two points on the earth and by measuring two points simultaneously from a satellite in orbit, distance and direction can be measured.

Disaster prevention area

The Cabinet Office (http://www.cao.go.jp/about_cao/frame2-3-1.htm) has constructed satellite communication networks to be used at the time of disasters such as wide-scale earthquakes, volcanic eruptions and typhoons. The networks connect the official residence of the Prime Minister, Ministries and other public bodies to ensure the means of information gathering and transmission.

The Local Authorities Satellite Communications[3] has been constructing satellite networks connecting all the local governments in Japan. The networks are used for strengthening the present wireless disaster prevention networks of the local government branch offices, optimizing transmission of administrative information and transmitting local information between local governments.

When some natural disaster occurs, the Geographical Survey Institute carries out such works as emergent analysis of continuous observation data on crustal deformation and earth observation satellite data, post-disaster monitoring, restoration of control points and revision of topographic maps. When the Mid Niigata Prefecture Earthquakes occurred on 23 October 2004, the Institute conducted the immediate analysis of crustal deformation by making use of the data collected through GPS points of reference and distributed the results to relevant government organizations as well as to the press. Such activities greatly contributed to the prompt rescue efforts and post-disaster measures.

The Japan Coast Guard conducts surveillance and observation of sea bottom crustal deformation by making use of the Global Positioning System in order to prepare basic information for predicting earthquakes and volcanic activities.

Communication networking area

Satellite communication is made use of at ministries, local governments and public organizations. They have constructed satellite communication networks inside their organizations as well as among the organizations concerned.

The Japan Post, a postal services public corporation, has constructed P-SAT network connecting post offices scattered around Japan via communication satellite.

The Ministry of Education, Culture, Sports, Science and Technology has been operating the el-NET (http://www.mext.go.jp/english/org/lifelong/04b.htm) covering social education facilities and public schools.

The National Center for Teachers' Development[4] has established satellite communication networks to be used in the training sessions and courses for teachers organized by the local governments.

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[3] The Local Authorities Satellite Communications is a public-interest institution for the local governments to establish and manage communication network via satellite for transmitting disaster-related information established by the Civil Code in 1990. Its mission is to construct and operate satellite communication facilities and networks.

[4] The National Center for Teachers' Development is an incorporated administrative agency established outside the government in 2001. It is in charge of conducting training seminars and courses for school principles and teachers.

The Association for Promotion of Satellite Education[5] has established a satellite medical information network to transmit advanced medical procedures conducted at a certain national university hospital to other national university hospitals.

Moreover, the Ministry of Justice, the Ministry of Health, Labour and Welfare and the National Police Agency utilize satellite communication networks for simultaneous transmission of information, back-up communication lines in case of emergency and so on.

Pilot projects on the use of earth observation data[6]

Some local governments and the Japan Aerospace Exploration Agency have been jointly conducting pilot projects in which earth observation data are made use of in the fields of environmental assessment of wide-scale land development, coastal fishery information gathering such as sea surface temperature, water resources management, coral reef monitoring and land use information gathering.

The joint projects on the experimental use of earth observation data are carried out by the ministries concerned and the Japan Aerospace Exploration Agency in the following fields.

- Cartography
- Disaster management
- Fishery inquiry
- Agriculture production forecast
- Survey of vegetation distribution
- Drift ice monitoring

7. Cost Analysis of Satellites[7]

Geostationary satellite cost mainly consists of four components; 1) cost of a satellite bus (i.e. satellite main body, consisting of attitude/orbital control, power generation/control, telemetry/command control, thermal control etc.) and 2) mission equipments (sometimes referred to as payload), and 3) the cost of launching a satellite. For a commercial launch of satellite owned by a private company, additional cost of launch insurance may be added.

It should be noted that each element of satellite cost varies significantly according to a satellite type (commercial or experimental) and a satellite mission (communication, broadcasting or positioning etc.).

Cost of satellite bus and mission equipments

A typical commercial geostationary communication satellite costs about 10 billion yen (=U.S. $80M) to design mission equipments on a standard satellite bus. Commercial satellite manufactures usually own its unique satellite bus to

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5 The Association for Promotion of Satellite Education is a public-interest institution established by the Civil Code in 1994. Its mission is to promote educational activities by use of satellites at the educational and academic and cultural organizations.

6 These experimental projects are described in the NASDA NOTE of 2003.

7 The cost figures are estimates based on the expert's suggestion.

accommodate a customer's need. As for a technology demonstration or experimental geostationary satellite, it often costs more than U.S. $400M. Again, a satellite cost is totally different from mission to mission.

Cost of launching a satellite

A rocket (or launch vehicle) will carry a geostationary satellite into space. Actually, a rocket usually places a satellite into geostationary transfer orbit (GTO) and separates a satellite. Then, a satellite fires on-board apogee engine at the apogee of the GTO and arrives at a final geostationary orbit. Several countries developed a launch vehicle. A typical rocket cost is approximately from U.S $50M to $70M for a single satellite launch. Again, the cost changes from rocket to rocket.

Cost of controlling a satellite

Once a satellite reaches geostationary orbit, a satellite will not stay there but tends to drift in either east or west depending on its orbital location (most satellites above Japan will drift west), and orbital inclination increases in north/south direction at the averaged speed of about 0.85 degrees/year (again, actual rate depends on a launched year). In addition, satellite attitude will change as a result of solar radiation force and magnetic field of the earth etc. This is the reason why orbit and attitude control is required. A typical cost of satellite control is approximately U.S. $2M per year for an on-station geostationary satellite. In the case of earth observation mission, additional several million U.S.$ is necessary to analyze acquired data.

Cost of launch insurance

For a commercial launch, it is usually the case with a private company to pay for launch insurance. An insurance coverage can be designed as a customer package. In addition to a satellite manufacturing cost, it is up to a customer if he/she would like to include a re-launch cost, insurance cost, or even business damage into his/her insurance package in case of a launch failure. A market insurance rate will usually vary depending on a launch vehicle and its reliability in terms of success ratio, and is approximately 5 to 20 percent.

Thus, cost-effectiveness and profitability is a key issue in commercial satellite business as it costs a huge amount of money to construct, launch and control a satellite.

As for communication satellites, satellite telecommunication carriers launch and control their own satellites and deliver communication services in the market. The government and other public sector make use of the private services in constructing their own satellite communication networks. Such companies have been growing and expanding their business in Japan.

The weather satellites have earth observation functions and can provide earth observation data necessary for weather forecast. This kind of satellite is owned by the government agency in charge of weather forecast.

The earth observation satellites other than the weather satellites are roughly classified into two categories, namely atmospheric and marine monitoring satellites and land observation satellites. As for the former category, the main mission of a

satellite is to acquire necessary data for the studies of global environmental changes such as global warming. The users of such data are mostly researchers working in the public research institutions. As for the latter category, a new land observation satellite is being developed by the Japan Aerospace Exploration Agency and analytical procedures should be developed to understand the data to be collected by this new satellite. Therefore, funding and staffing of earth observation satellites are mostly done by the government in Japan up to now. In Japan, commercial services concerning earth observation are not profitable currently but some business activities have just started to foster this market in Japan.

8. Technology Transfer

As mentioned above (see Section 4), based on the Basic Policy for Development and Utilization of Space, the relevant ministries such as the Ministry of Education, Culture, Sports, Science and Technology, Ministry of Internal Affairs and Communications, Ministry of Environment, Ministry of Land, Infrastructure and Transport and Ministry of Agriculture, Forestry and Fisheries have been securing and distributing funds for space research and development to public research and development organizations.

Using such funds provided by the government, the public institutions have been conducting research and development projects. In conducting these projects, private companies are often involved as contractors. The public institutions or the private companies may apply for patents of the technologies invented during this process.

As for the patents obtained by the public institutions, some institutions have constructed technology transfer systems through which acquired technologies on satellite and/or launch vehicle will be easily used by the private sector.[8]

For example, rocket technologies developed by the former National Space Development Agency of Japan have been transferred to a big manufacturing company for industrialization.

9. Activities by the Private Sector

In the satellite communication industry of Japan, several telecommunication carriers are providing satellite communication/broadcasting services in the market. Broadcasting services are provided to mass market by a public corporation and several commercial companies. Satellite communication services are provided by the private sector.

Currently, total turnover of the satellite communication and broadcasting services amounts to about 384 billion yen (=U.S. $3B) and occupy about two percent in the total turnover of communication and broadcasting industries of Japan.[9]

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[8] The former National Space Development Agency of Japan constructed its technology transfer program and the new agency has succeeded to this program. http://www.nasda.go.jp/projects/spacebiz/index_e.html.

[9] Turnover figures are estimates based on the profit/loss statements and other financial documents of the telecommunication/broadcasting enterprises by the business expert.

A private company sells high-resolution images taken by satellite. The company uses an earth observation satellite, named Ikonos, launched by a U.S. private company in 1999. Objects as small as one-meter across can be distinguished in their images, from parked cars to trees. Some other companies affiliated to American or European companies currently have started to deliver satellite image services in the Japanese market.

As for the satellite earth observation data services in Japan, business is low partly because most of the users are public bodies suffering from the budget constraint and the price level of the services is quite high. In addition, there are few demands from the private sector.

10. Results of the Use of Satellite Technologies in Public Administration –Accomplished and Expected Results–

It cannot be said that exploitation of satellite technologies has been widely carried out in public administration in Japan. With the help of advanced information and communication technologies in general, now is the time we should promote the use of satellite technologies in various fields of public administration.

In the following, satellite technology exploitation examples are highlighted and the accomplished and expected results are evaluated from the viewpoints of efficiency and effectiveness.

1) Use of the Global Positioning System in highway management has successfully reduced the maintenance workload of the relevant sections of the Japan Highway Public Corporation and has improved the swiftness expected in the case of natural disasters such as floods or massive land slides.
2) It is expected that, through the introduction of the CNS/ATM system by the Ministry of Land, Infrastructure and Transport, air safety, capacity and economics will be greatly enhanced for the airplanes flying the north pacific (NOPAC) and Asia-Pacific routes. Operations will start in fiscal year 2004. The enhancement is not possible without the use of the Global Positioning System and the communication, surveillance and navigation functions provided by the aeronautical communication satellites (MTSAT-1R and MTSAT-2).
3) More than five thousand civil servants are in charge of surveying the current state of rice, wheat, vegetables and so on. Research activities are presently under way to monitor a most current state of agriculture plantation by the active use of earth observation satellites. If the use of satellite data turns out effectively useful, the relocation of those manpower could become possible to another high priority jobs within the government, thereby helping increase the efficiency and effectiveness of the government.
4) As for disaster monitoring area, the satellite communication networks constructed by the Cabinet Office and the local government satellite communication networks by the Local Authorities Satellite Communications have successfully improved the swiftness of the public bodies concerned and have contributed to conducting better monitoring measures in case of natural disasters such as earthquakes and volcanic eruptions.

5) The use of multiple geodetic satellites (Ajisai, LAGEOS etc.) in conjunction with the Global Positioning System has efficiently improved the accuracy and swiftness of map-making process and procedures since 1986. And also, it has become much easier and faster to get vital information on crustal deformation of the earth caused by earthquakes or volcanic eruptions.
6) Holding social education seminars and various training sessions via satellite communication networks has improved the efficiency of such meetings. In fact, the lecturers of these meetings can make presentations and speeches once and these presentations are simultaneously transmitted via satellite to multiple seminar locations worldwide.

11. Conclusion

The Japanese government has been promoting the space development and utilization programs since 1960s. The Basic Policy for Development and Utilization of Space of June 2002 stipulates that the ministries and local governments should aggressively deliberate every method how to make use of space technologies in such areas as national security; global environment protection; telecommunication/ broadcasting; positioning; natural resources exploration; agriculture and forestry and fisheries; and land management.

The satellite technologies should be used in wider areas of public administration with a view to making the most of public funds spent in space development. However, systematic approach to make a best use of space technologies in public administration has not been fully taken in the government organizations in these days.

Therefore, taking these circumstances into account, future challenges for promoting the use of satellite technologies in public administration are suggested as follows in order to make more effective, efficient and responsive government.

1) Public entities in charge of research and development have been carrying out their satellite technology development projects without spending sufficient consideration to practical application and taking close communication with users after 1990 when the government limited its role in space development and utilization based on the results of trade negotiations. In order to exchange current technological and operational information and to deliberate expected use of satellite technologies in specific administrative fields, a public forum, namely the Space Utilization Promotion Conference started its activities from May 2002. In this conference, space development agencies, relevant Ministries and private companies are involved to reflect users' views and needs in space development and utilization. The functions of this conference should be strengthened further so as to utilize space technologies from the viewpoints of improving efficiency, effectiveness and responsiveness of public administration. An organization in charge of administrative reform in the government may be involved in this conference.
2) Artificial satellites in orbit around the earth are indispensable infrastructures in utilizing satellite technologies. There are a lot of satellites in orbit, launched by the Japanese government, by the public corporations, the private companies, the international organizations and the foreign countries. The

most optimal role sharing among these bodies in providing government organizations with necessary services should be made clear in satellite launching and operation.

3) Space development programs need voluminous public funds because they need wide-scale facilities, a large amount of manpower and advanced acquisition of necessary equipments. The government should seek the support of the people to the government space development programs by clearly showing and explaining the effects and benefits created by the programs.
4) Research and development units, including government units, incorporated administrative agencies and public corporations, should publish more understandable and comprehensive information on the technologies they developed and those being developed so as to ensure their accountabilities to the people. As by-product of those public conscious activities, it hopefully stimulates young people's interest into space activities. Especially important is that they should pick up and foster the needs from the society and industry trend and set their research target in a sound manner.

References

Cabinet Office (2004), *2004 White Paper on Disaster Management*, Tokyo: National Printing Bureau.

Debbasch, Charles (1976), *Science Administrative*, Dalloz: Troisieme Edition.

Iida, Takashi, Cost Consideration for Future Communications Satellite, Paper presented at the 53rd International Astronautical Congress, Houston, 10–19 October 2002.

Ishizu, Mitsuo (2002), "Airborne/Spaceborne Laser Altimeter", *Review of the Communications Research Laboratory*, Vol. 48. No. 2. Tokyo.

Japan Coast Guard (2004), *2004 Japan Coast Guard Annual Report*, Tokyo: National Printing Bureau.

Japan Space Forum (2003), "2003 NASDA NOTE," Tokyo.

Kataoka, Hiromitsu (1978), *Gyousei no Sekkei (Design of Public Administration)*, Tokyo: Waseda University Printing Bureau.

KDDI Engineering and Consulting (November 2001), *2001 Yearbook of Satellite Communication*, Tokyo.

Meteorological Agency (2004), *Current Works at the Meteorological Agency in 2004*, Tokyo: National Printing Bureau.

Ministry of Education, Culture, Sports, Science and Technology (2004), *2004 White Paper on Science and Technology*, Tokyo: National Printing Bureau.

Ministry of Health, Labor and Welfare (2004), *2004 White Paper on Health, Labor and Welfare*, Tokyo: National Printing Bureau.

Ministry of Internal Affairs and Communications (2004), *2004 White Paper: Information and Communications in Japan*, Tokyo: National Printing Bureau.

Ministry of Land, Infrastructure and Transport (2004), *2004 White Paper on Land, Infrastructure and Transport in Japan*, Tokyo: National Printing Bureau.

Mizutani, Kohei (2002), "Space-borne coherent Doppler lidar." *Review of the Communications Research Laboratory*, Vol. 48. No. 2. Tokyo.

Remote Sensing Technology Center of Japan (June 2002), RESTEC No. 49, Tokyo.

Part II

Bridging the Public Administration Digital Divide

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New Technologies in Public Administration
G. Petroni and F. Cloete (Eds.)
IOS Press, 2005

Introduction

Fanie Cloete[*]

The second part of this volume focuses on the relationship between information technology and development. Not only had the role of technology in public administration and management become indispensable in a very short period of time, but it had also become fashionable as an official instrument for development in international organizations like the World Bank, the United Nations and other international organisations (eg http://www1.worldbank.org/publicsector/egov/ and http://www.unpan.org). This last-mentioned trend is still a controversial one, and resulted in the decision of the organisers of the IIAS congress in Seoul, South Korea in 2004 to organise a special panel on the experiences of developing countries with the new technologies. After the congress, the Rapporteur of this session, Mr Gordon Draper of Trinidad & Tobago, started to compile a special volume of selected papers on this topic, but tragically died before completion of this task. The publication of this section is therefore also intended as a tribute to his dedication to good governance in the developing world and to his initiative to disseminate these ideas wider in print.

Some of the reasons for the controversy about the role of technology in development include the following recent conclusions:

- The full implementation of e-government in the United Kingdom has been plagued by a surprising lack of interest among British citizens in UK in the online offerings of governmental services in that country (http://topics.developmentgateway.org/ict/rc/ItemDetail.do~1035079?intcmp=700). This is a clear illustration that the short term benefits of electronic government in more developed nations have not materialised to the extent envisaged.
- Lesser developed countries further exhibit substantially weaker levels of technological infrastructure than exist in their more developed counterparts, leading to serious questions about the suitability of transplanting already mixed e-government experiences in the industrial world to developing societies, and
- Other major developmental differences that exist between lesser and more developed societies (including differential levels of democracy, social and cultural modernisation and economic development), have reinforced the perception that the application of sophisticated technologies in developing contexts might at best be counter-productive, and at worst be doomed to failure.

It has therefore become increasingly fashionable to identify a so-called "digital divide" between poorer and richer countries, obstructing such poorer countries to apply the new technologies effectively and efficiently in their societies.

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The last four papers in this volume highlight different dimensions of the concept of a "digital divide". These analyses attempt to bring more clarity about the nature of the "digital divide" and how this phenomenon is dealt with in general in developing societies, and in particular in the African and Latin-American contexts. The first two papers take a generic approach to selected issues, while the last two illustrate relevant issues through an assessment of two different case studies.

Cloete's contribution focuses on both the positive and negative implications of e-government for sustainable development in developing countries in general. It identifies strategies to maximise the contribution of e-government in achieving durable developmental goals. The so-called digital divide is conceptualised as a skills and resource access gap between digitally literate and digitally illiterate classes in society. It is argued that this divide is not new. Just the digital element is new. The digital divide is in many respects the great equaliser between developing and developed nations. It aggravates traditional functional illiteracy, but technology as the basis of the digital divide can also facilitate the achievement of functional literacy if it is used optimally. Technology can be both an obstructive and a facilitative factor in development, and its application must therefore be done in circumspect ways in order to maximise success with developmental efforts.

Traditional methods of service delivery in developing countries have further frequently proved to be ineffective in achieving developmental objectives. Governments in developing countries are increasingly realising that, whether they want to do so or not, they may have no other choice but to attempt the difficult policy route of migrating to electronic means of service delivery (e-government) if they are serious in their attempts to achieve sustainable developmental outcomes (ie migrating to e-development). The paper concludes that the new paradigms of e-government and e-development are currently still taking shape, evolving and consolidating into different patterns that will probably become clearer in future. It also concludes that no government will be able to avoid migrating soon to the new global technological application standards that are rapidly emerging, if they want to participate in mainstream international activities.

Nzouankeau also deals in a generic way but in more depth with the potentially sensitive issue of the impact of traditional value and cultural systems on electronic government in African countries. This contribution largely supports Cloete's arguments that the main obstacle to effective e-government in developing countries is not necessarily the absence of an appropriate technological infrastructure and high levels of poverty and illiteracy. It is rather the lack of an entrenched democratic culture and supporting liberal value systems in African countries. The centralized nature of many African governments and the dominating role that small groups of political elites play in African politics does not allow for the application of e-government to the full benefit of those societies. According to Nzouankeau, this situation complicates but does not completely obstruct e-government in these countries. Full benefits for African societies will only materialise within cultural environments that are more conducive to accept the openness and transparency that the internet provides. In contrast to Cloete, Nzouankeu does not assess the transformational role of e-government strategies in more repressive societies, that could lead to an acceleration of liberalization processes in such societies.

Njunwa takes this discussion one step further, and makes a preliminary evaluation of the efforts of the Tanzanian government to strengthen its public administration through the introduction of electronic governance. He reviews major policy steps that this country has taken so far to create the required framework within which effective e-governance could be pursued as well as the constraints that it wrestles with in pursuing that endeavor. He argues that, despite serious challenges and constraints, e-governance presents immense potential benefits in terms of longer term improved government performance as well as expanded citizen participation in governmental decision making processes. The strategic role of technology in potentially transforming the nature of government and improving services delivery in the public sector, is clearly illustrated. Despite a desperate need for more basic poverty alleviation measures, this consideration justifies for Njunwa a strategic re-allocation of public resources in order to migrate over time to an electronic standard of services delivery, following global trends in this regard.

The article encourages political and administrative elites to think innovatively and to champion the introduction and strengthening of e-governance through sufficient budgetary allocations as well as empowering citizens to migrate in due course to e-governance as a new service delivery mode. Mainly through education and training as well as through preferentially reduced prices of computer and related equipment, leading to wider access to better quality public services.

Ruediger & Zouain conclude this section with an assessment of the progress achieved in Brazil with electronic government through an analysis of the e-procurement system. Using the *Benchmarking E-government* 2002 report of UN/ASPA as an analytical reference point, they examine how e-procurement has been used as a tool for promoting process integration and restructuring of the state, as well as the way it has promoted accountability, transparency and policy feedback mechanisms for checks and balances of administrative performance.

They conclude that Brazil has the required basic conditions in place for effective application of e-government, but that two major issues still complicate e-procurement as an indicator of e-government reform. The first is a need for improved design and implementation of a more comprehensive agenda for e-government, containing more appropriate information for civil society and wider access, both physical and educational, especially for low income citizens. The second issue is a need for improved community participation in these design and implementation processes, in order to integrate e-government initiatives better into mainstream governmental activities in Brazil and to encourage community use of these services. The authors therefore also emphasize issues of democratic and participatory governance as well as the establishment and promotion of effective access to e-government systems as prerequisites for success.

A recurrent theme throughout all four contributions, is the fact that the resource access divide is a complicating factor in the establishment of e-government in the developing world, but that this problem is not sufficiently serious to prevent such a transformational strategy in those countries. All four authors further accept the long term potential and real benefits that e-government can provide to developing societies, and each assesses specific requirements to maximize these benefits in the different contexts that have been used as frameworks for analysis. All the contributors

also seem to agree that issues of political will, culture and commitment are potentially as influential in determining the outcomes of e-government experiments, as the technical e-readiness of those societies proves to be.

Reports

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New Technologies in Public Administration
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Maximising the Potential of Transforming Policy Failure into Policy Success: E-Government, the Digital Divide and E-Development

Fanie Cloete[*]

Abstract

The paper focuses on both the positive and negative implications of e-government for sustainable development. It identifies strategies to maximise the contribution of e-government in achieving durable developmental goals. The paper starts by conceptualising and contextualising the concepts of development, the digital divide, e-development and e-government.

The so-called digital divide is conceptualised as a skills and resource access gap between digitally literate and digitally illiterate classes in society. It is argued that this divide is not new. Just the digital element is new. The digital divide is in many respects the great equaliser between developing and developed nations. It aggravates traditional functional illiteracy, but technology as the basis of the digital divide can also facilitate the achievement of functional literacy if it is used optimally. It is further argued that technology is just another tool like other policy instruments that can be employed constructively or abused by government in trying to achieve its goals. It can be both an obstructive and a facilitative factor in development, and its application must therefore be done in circumspect ways in order to maximise success with developmental efforts.

Traditional methods of service delivery in developing countries have frequently proved to be ineffective in achieving developmental objectives. Governments in developing countries are increasingly realising that, whether they want to do so or not, they may have no other choice but to attempt the difficult policy route of migrating to electronic means of service delivery (e-government) if they are serious in their attempts to achieve sustainable developmental outcomes (ie migrating to e-development). Different case studies are used to illustrate the viability and sustainability of the emerging e-development paradigm, and also the technological determinism driving this global phenomenon.

The paper concludes that the new paradigms of e-government and e-development are currently still taking shape, evolving and consolidating into different patterns that will probably become clearer in future. It also concludes that no government will be able to avoid migrating soon to the new global technological application standards that are rapidly emerging, if they want to participate in mainstream international activities.

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Maximising the Potential of Transforming Policy Failure into Policy Success: E-Government, the Digital Divide and E-Development

This paper focuses on the implications of e-government for sustainable development. It attempts to identify strategies to maximise the contribution of e-government to achieving durable developmental goals. The paper starts by contextualising the concepts of development, e-government, e-development and the digital divide, proceeds to an assessment of policy failure and conditions for success in developing countries, and concludes with an assessment of both the potentially positive and negative roles of technology in policy success in developing countries.

Conceptual Clarifications

Development is used here as an outcome of governmental interventions in society that succeeds in empowering people to consider feasible options in their lives and to make informed choices for the future (Sen 1999). These choices relate to any action, from satisfying basic needs to consolidating middle class lifestyles to eventually being able to fulfil higher level personal and abstract needs and desires. Three different consecutive levels of development that build on each other are therefore conceptualised for purposes of this paper:

Developmental level 1: Satisfying basic needs above the indigent line: food, water, shelter, clothes & personal safety.

Developmental level 2: Consolidation of a middle class life style: Sanitation, health services, jobs, churches, recreation, schools, culture, shops, life cycle services.

Developmental level 3: Fulfilling higher level personal and abstract needs and desires: the opportunity to live an enriched life according to one's own preferred alternative lifestyle (eg Clark 2003:28). This higher order developmental level includes specialised **individual** interests and preferences (eg travel, music, culture, sport, hobbies, etc.).

Governments in developing countries constantly struggle to achieve and then to maintain the first two levels of development, while the focus of governments in more developed countries is on achieving and maintaining over time the third and highest order of development. In both cases, the traditional service delivery mechanisms of governments seem to be increasingly ineffective in achieving these objectives.

E-government is conceptualised here as a new approach to public services delivery in the form of internal public management, external service delivery and democratic interaction with society, primarily through electronic means (eg UN-DPADM 2003:3).

E-development is used as an umbrella term comprising the deliberate developmental application of e-government. It can therefore be conceptualised as the mainstream integration of electronic tools with other developmental tools in internal public management, external service delivery and democratic interaction processes between government and society, to empower individuals and communities to make informed choices among a range of feasible alternative courses of action, and in that way to enable them to develop their full potential in life in a more effective and sustainable way.

The **digital divide** is conceptualised here as a skills and resource access gap between digitally literate and digitally illiterate classes in society and among societies (see also Warschauer 2002. Chen & Wellman 2003:2, Bridges.org 2004:4 and Fink & Kenny 2004:1 also identify various usage and impact gaps in the literature and professional practices concerned across the globe). It is further not a new phenomenon. Just the digital element of the various divides is new. It further does not only exist between fully developed and developing states, but exists even within highly developed countries (bridges.org 2004). "*There is not one digital divide; there are many divides*" (Chen & Wellman 2003:2). It has created a new class of illiterate citizens in every society. Many elderly people in all societies are electronically functionally illiterate while younger people (even in developing countries) are becoming increasingly electronically literate. This phenomenon has significant implications for government and development.

Policy Failure and Policy Success

The public policy process can be compared to a journey that is to be undertaken: a clear destination exists (policy objective), but different potential routes and vehicles to reach that destination can be taken (policy means and implementation strategies). Each alternative route or vehicle has its own advantages and disadvantages. Each alternative route or vehicle might therefore be the most suitable or appropriate choice, depending on its level of compliance with the dominant criteria or preferences of the intended user (eg costs, scenic attractions, time, comfort, etc.).

Optimal travel policy success necessitates the combination of the most appropriate route, the most appropriate vehicle and the most appropriate driving strategy and schedule to match the user's preferences and constraints. To use another driving metaphor: the fastest car does not always win the race. The combination of the most appropriate car and driver is crucial for success. Material resources therefore facilitate successful outcomes, but they are not necessarily input conditions that determine success. The successful track records of small, resource-poor countries like Botswana, Chile, Ireland and Singapore are sufficient examples that prove this point.

Traditional methods of service delivery in especially poorer developing countries have, however, frequently proved to be largely ineffective in achieving middle class developmental objectives and even basic needs in the short, medium and longer term. The experiences of many African states after decolonisation processes started in the late 1950's until today, is testimony of not only a lack of progress with developmental objectives but in many cases even a reversal of developmental levels and a deterioration of living conditions and standards. In many former colonies the construction of major new office and residential complexes of a similar standard as occurred in colonial times, is for example a rare sight, while existing, well-functioning infrastructural services like roads, water supplies, storm water drainage and sewage systems have been allowed to deteriorate to the point of destruction.

The main reasons for this state of affairs are multi-dimensional, including:

- seriously low levels of education among the population (compared with more developed nations), leading to
- a lack of higher level professional capacity in the labour market,
- vulnerability to external economic exploitation,

- an existential economy with a lack of creativity,
- an accompanying lack of social cohesion and commitment,
- a fragmented political culture prone to exploitation by inexperienced rent-seeking governing elites, resulting in
- bad policy design,
- bad policy implementation strategies, and
- a waste or abuse of scarce resources (rather than the lack of resources in many cases).

It is normally clear **what** needs to be done to maintain services and facilities and to meet new needs, but the knowledge and experience **how** to do it in the most cost-effective and cost-efficient way, and the necessary leadership commitments to do it, are frequently lacking. A growing realisation is emerging that the main culprits in current policy failures in developing countries are in most cases bad management of existing resources that are to a large extent within the control of decision-makers (eg budget under-spending, waste, corruption, inefficiency, ineffectiveness, low productivity, etc.). The most serious incidences of policy failure occur as a result of a lack of:

- Visionary ideas, moral and ethical commitment, integrity and leadership;
- Strategic management prioritisation, co-ordination and integration;
- Financial discipline and control;
- Operational project management approaches, and
- Optimal use of technology to maximise efficient and effective outcomes.

In summary: Policy failure in developing countries normally occurs as a result of:

- a lack of internal, domestic capacity for realising good governance outcomes, rather than systematic foreign exploitation;
- policy implementation failure rather than policy design failure, and
- bad resource utilisation rather than a lack of resources.

The most obvious solution to policy failure is committed, appropriate education and training programmes in these fields and effective monitoring and follow-up programmes to ensure transformation progress to inculcate and then consolidate good governance lifestyles in policy processes. In these educational processes it is crucial to convey the message that good governance outcomes do not occur spontaneously or automatically but are the results of dedicated, hard work over a long period!

The rest of this paper will be devoted to an assessment of how the potential of technology in the form of e-government and e-development to transform almost certain policy failure into possible policy success can be maximised by reducing and even turning around negative conditions currently increasing the risk of policy failure in developing countries. The use of technology will, however, not guarantee policy success, but needs the existence of and adherence to strict boundary conditions for success. These conditions will also be detailed later.

The Transformational Role of Technology in the Mechanisation of 19th Century Agricultural and Industrial Society

Developmental successes in industrial nations are generally attributed to successful implementation of integrated and synchronised policy strategies in various policy sectors, leading to sustainable developmental outcomes (Weaver, Rock & Kusterer 1997, Cloete 2000). One of the contributing factors in this regard, in addition to the crucial empowering role of education in increasing literacy levels and providing alternative possibilities for policy-related choices, is the significant role that technology had played in modernising and transforming outdated practices and processes in those societies.

In the nineteenth century mechanisation revolutionised agriculture, manufacturing and industry across the world. It required a gut-wrenching adaptation to entrenched ways of life, and generated high levels of resistance from conservative interests in different societies. The obvious efficiency and effectiveness benefits of the new way of doing things with the assistance of mechanised tools, and in many cases even substituting machines for human interventions, soon built up a linear momentum of social, economic and institutional transformation that was unstoppable. It is generally accepted that the relatively high and sustainable levels of development that have been achieved in the industrial nations would not have been achieved without *inter alia* the crucial intervention of mechanisation. Those societies that did not adopt these emerging technologies at an early stage, and re-prioritised their public spending targets accordingly, developed much slower than their counterparts who adopted these new tools, sometimes at the cost of delaying the establishment or upgrading of other basic services and facilities. Many of those societies that had lagged behind in this way have not yet caught up with their more progressive neighbours. The impact of ideological socialist centralism and peasant-focused command economies in countries like Albania, Bulgaria and East Germany, as well as the continuation of traditional rural development approaches still found in most African countries, support this conclusion.

Today mechanisation has not yet even been achieved in many developing countries. However, where it had been successfully introduced and sustained, it increased productivity, efficiency and effectiveness of processes and products in different sectors as happened in the more developed world. In this process, it also contributed significantly to what is generally regarded as higher levels of developmental outcomes in better developed countries (eg the quality of construction techniques and product outcomes). Failures of mechanisation applications in the developing world can generally be attributed to the conditions contributing to policy failure that were summarised above, ie a too low literacy base, incorrect implementation strategies and a lack of sustainable integration of these technologies into other societal sectors.

Mechanisation, however, has not only had positive consequences for society. In the industrial nations it increased unemployment, brought about impersonal, mass-based social lifestyles that alienated individuals from their families and from each other. It also turned out to be the primary cause of global pollution, with detrimental effects on personal and environmental health. Despite these and other negative consequences, where mechanisation had been applied successfully, it made a significant contribution to a spectacular rise in the quality of life and general empowerment of

people, and its negative fall-out can be effectively regulated if governments apply appropriate policy remedies to those problems.

The Transformational Role of Electronic Technologies in 21st Century Knowledge Society

Exactly the same arguments as those put forward about the role of mechanisation in industrial development, are applicable to the current impact of electronic technologies in society. The application of electronic technologies is a recent phenomenon. The first mass-produced personal computer only materialised in the early 1980's in industrial countries. By the start of the 21st century, however, it was already clear that electronic technologies are following a parallel development path to mechanisation a century earlier. There was a dramatic increase in the use of knowledge and information technologies in society over the last decade, and a general international trend towards a closer integration of information technology with virtually every policy sector imaginable (even to extent of placing electronic bar codes into refuse bags to determine contents and ownership, for charging user fees). The increase in the application of information technologies in government is accompanied by strong dissenting perspectives about its utility in different settings, and about the alleged linear path of technological innovation (eg Kakabadse, Kakabadse & Kouzmin 2003).

Evidence of the sustainability of potential and real benefits of electronic technology to society is only now slowly starting to emerge (egov4dev 2003, UN-DPADM 2003:4, UNPAN 2003:7). Although there is no general agreement yet that electronic services delivery is more cost-effective than traditional delivery systems, strong indications exist that this is the case (Heeks 1999:18, Digital Opportunity Initiative 2001). The Third Global Forum on Reinventing Government concluded in 2001 that e-government can consistently improve the quality of life for citizens and can create a sharp reduction of costs and time (UN-DPEPA 2001:4–5).

"*E-government must be given serious consideration also in the developing countries not only for its potential for stronger institutional capacity-building, for better service delivery for citizens and business (thus increasing local social and economic development), for reducing corruption by increasing transparency and social control, but also for 'showing the way' to the civil society and business community*" (UN-DPEPA 2001:5). The UN report on e-government further stated explicitly that decision-makers and public sector professionals were of the opinion that e-government "*...transforms governance like no previous reform of reinvention initiative. E-government potentially empowers individual citizens by providing them with an alternative channel for accessing information and services and interacting with government*" (UN-DPEPA 2001:6). This statement obviously also refers to the crucial sustainable development objective of all developing governments. IT is from this perspective also used as an important development agent to induce citizens to become more literate in order to benefit from the advantages presented by technology (UN-HDR 2001, Bhatnagar 2001).

Where appropriately introduced in lesser developed countries, IT has also had a beneficial impact on work processes by automating and transforming these processes into more efficient and effective processes and the resulting products into more

competitive outputs. This is true both for the private sector and for public and voluntary sector service delivery systems both in lesser and more developed countries (eg Splettstoesser & Kimaro 2000 about the successful application of decision support technologies in Tanzania, one of the poorest countries in Africa, and Wagner, Cheung & Fion Lee 2003 about illustrations of successful knowledge management projects in developing countries). Despite these successes, many cases of failure have also been recorded (egov4dev 2003). Many of the reasons for these failures also correspond to the above-mentioned policy failure scapegoats (DPADM 2003:6).

Because it is such a recent phenomenon, the negative consequences of technological modernisation are only now slowly starting to emerge. The biggest negative impact so far seems to be potential personal health problems ranging from detrimental physical symptoms as a result of sitting still in a cramped position for long hours or using the digital mouse for long periods, to alleged electro-magnetic radiation by computer display screens and cell phones to a similar psychological alienation of individuals from others that is the long term result of the mechanised (Fordist) society. At societal level the substantial expenses to effectively digitising work processes have severe opportunity costs especially in developing countries, and can obstruct the provision of other basic services and facilities to poor communities.

As was the case with industrial era mechanisation, current governments in developing countries, however, are increasingly realising that, despite the complexities involved in such a new policy approach, they might have no choice but to migrate to electronic means of service delivery if they are serious in their attempts to achieve sustainable developmental outcomes. Business enterprises have already realised this fact of economic life, and have started their migration to electronic foundations of management in the late 1980's and early 1990's. In a similar way the public sector will also have to succumb to the inevitable if it wants to fulfil the expectations of its citizens, and provide public services of the required quality and quantity.

A general acceptance of this point of view, has so far been delayed and complicated by:

- Insufficient appreciation of the utility of such tools;
- open suspicion of and even deliberate resistance against the increased use of electronic tools in public management, linked to
- the complexity of digitising existing programmes, and
- low levels of computer literacy,
- serious resource constraints in the face of different priorities, especially in developing countries.

The use of electronic management tools can, though, provide important benefits to public management outcomes, including:

- the education of public officials in information technology, and through this,
- achieving more systematic management design, implementation and assessment of public programmes,
- facilitating the development of a culture of transparent performance,
- capacity-building for more effective and efficient service delivery, and
- fulfilling better the governance functions of the state (Cloete 2003).

Impact of the Digital Divide on Development

As explained at the beginning, the so-called digital divide is conceptualised as a skills and resource access gap between digitally literate and digitally illiterate classes in society. Global data patterns indicate that younger people in all societies are more digitally literate than older people, although the lack of access to technology obviously aggravates the digital illiteracy in developing countries much more than in more developed countries. The digital divide aggravates the traditional functional illiteracy ratios that are normally regarded as the literacy divide between lesser and more developed nations. This leads many observers to despair about the potential to close this developmental gap between the haves and the have-nots.

Technology as the basis of the digital divide can, however, also facilitate the achievement of functional literacy if it is used optimally (for example the uncontested role of technology in self education and distance education in developing countries, eg Ingle 2003). Technology is therefore both a strength and a weakness for purposes of development (eg Sciadas 2003). Contrary to general wisdom and certain findings (eg Chen & Wellman 2003:24–25), the digital divide is according to a growing number of experts, not expanding but in fact slowly closing:

"*...in* relative terms *developing countries show faster rates of growth in network development than developed countries. This suggests that at present ICT growth rates, the developing world would eventually catch up to the developed world, in absolute levels. Moreover, when employing a per-income measure of access to a variety of ICTs, we find that developing countries already 'digitally leapfrog' the developed world.*" (Fink & Kenny 2004:1, bridges.org2004. See also Sciadas 2003).

The main reason for this gradual decline in the digital divide, is the inevitable exposure of young children even in developing societies, to technology. As they grow up, become increasingly e-literate and get accustomed to the use of technological tools to facilitate life for them, they accept the digital society as a given and expand their use of such tools. This lack of built-in resistance to technological change that many adults face, even transforms into a demand by younger people for more technological improvements and functionalities, as they realise the benefits inherent in these tools to facilitate life for them further. The result is that even in lesser developed societies where technology is increasingly establishing a foothold due to the impacts of the global networked society, younger people in those societies are becoming increasingly digitally literate (in many cases this result is self-taught – Ingle 2003). This probably happens at a faster rate than the rise of digital literacy among older people in established industrial countries in Europe and North America. The digital divide is therefore in many respects the great equaliser between developing and developed nations.

Technology-Assisted Policy Success and Failure

The application of electronic technologies must be done in circumspect ways in order to maximise success with developmental efforts (OECD 2003a). If used appropriately, technology can facilitate development by increasing literacy (and paradoxically assist in bridging the so-called digital divide), as well as providing more effective access than traditional service delivery systems to resources for poor communities. These resources include easier and cheaper access to information from

government, communication and interaction with government and conclusion of transactions with government, through electronic channels, integrated services and roaming services (see also Digital Opportunity Initiative 2001). This meets the requirements of e-development.

The technological and information revolutions are sweeping the world and are fast becoming universal standards, as indicated above (eg DPADM 2003, UNPAN World Pub Sector Report). Globalisation increasingly enforces these electronic standards in different ways on all nation states that participate in international activities (eg the speed with which e-mail and cellular phones have replaced the landline telephone and fax machine as preferred communication instrument even in poor communities, and the growing significance of the internet as marketing tool). Technology is becoming cheaper and more powerful at the same time, which makes it affordable even in poor countries.

Technology has proved to be an extremely effective instrument for development. This includes new developments such as smart cards, the increasing use of cell phones for diverse purposes (Burrows 2003), TV and internet access and the increasing technological convergence phenomenon (eg Nokia's new security webcam linked to their cell phones), the Indian hole-in-the-wall experiment that has been successfully replicated elsewhere (Philp 2003:10), and the development of a flu detection chip in Singapore (ITWeb 2003). India has conducted a fully electronic voting and ballot counting exercise in the world's second largest country with more than a billion citizens relatively successfully at the end of April 2004. "*Decision support systems can be developed to plan the provision of basic services such as education, drinking water, roads and telephones in rural and urban areas*" (Bhatnagar 2000:1). In these ways technology has already proven its potential to empower the poor to take action by themselves and to provide them with alternative courses of action to improve their futures more effectively and efficiently. E-development is an emerging new development paradigm. It is also a significant future challenge to governmental systems in developing countries, because of the failure or ineffectiveness of traditional delivery mechanisms.

Technology can, however, also be a serious impediment to development. Costs can sometimes be prohibitive, while low levels of general literacy and a lack of appropriate levels of technological infrastructure, expertise, commitment and resources, have also proved to be significant obstacles to technological development, especially in the developing world (bridges.org 2004:7–8). The combined effect of still-developing technologies, a lack of a critical mass of technological infrastructure and the insufficient appreciation of the utility of such instruments, referred to above, resulted in a situation that is not at the moment fully conducive to widespread adoption of electronic management assessment support tools in governments across the worlds, even in countries regarded as leading e-government advocates (Cloete & Needham 2002). The situation in developing countries is even worse.

Various comparatives studies have highlighted how the appropriate and inappropriate use of technology have caused many developmental and e-government projects to succeed or fail in the past (egov4dev 2003, UN-DPADM 2003, Heeks 2002, Bhatnagar). One of these studies has identified the following main causal factors contributing to failure:

- An absence of internal drivers.
- An absence of any long-term vision, a lack of guidance, and lack of linkage between ends and means, frequently caused by ever-shifting senior staff and/or ever-changing policy and political environment.
- Poor project management and dispersed responsibilities due to multiple ownership of projects; absence or weakness of controls and ineffective procurement.
- Poor change management and a lack of support from senior officials, causing lack of resource allocation and negative messages to other groups), as well as a lack of stakeholder involvement (causing lack of ownership).
- Political self-interest in the form of a focus of key players on personal needs and goals, often related to 'playing politics', with symptoms like infighting, resistance where loss of power is feared, 'me too' copying of e-government solutions for image purposes, obsession with electoral impacts and short-term kudos, and corruption.
- Poor design caused particularly by lack of inputs from key local stakeholders, leading to designs that are over-technical, over-ambitious, or mismatched to local environment (culture, values) and needs that occur particularly where foreign donors, firms and consultants are involved. Other design problems include an absence of piloting and a fit to appropriate organisational structure.
- An absence of IT knowledge and skills among developers, officials and users/operators, and a lack of local knowledge among developers.
- A lack of sufficient computers or networks, and
- The inability of computerised systems to interchange data (egov4dev 2003).

It is extremely significant that the above drivers of failure are mostly the consequences of bad management practices, resulting in bad governance. Conversely, the same study identified the following factors contributing largely to e-government successes:

- A drive for reform from outside government, e.g. from civil society.
- A drive from key government officials for reform and for achievement of e-government goals.
- An overall vision and master plan for good governance and for e-government, identifying 'where we want to get to', interpreting IT as the means not the end, and integrating IT with broader reform objectives.
- Effective project management, including clear responsibilities, good planning and consideration of risk, good monitoring and control, good organisation of resources, and well-managed partnerships between public agencies, and public-private alliances.
- Effective change management, including leadership with a project champion, use of incentives to create commitment to and ownership of e-government projects, and stakeholder involvement to build support and minimise resistance.
- Effective design in the form of an incremental/piloting approach with feasible objectives and quick, scalable outcomes and participatory involvement of all

stakeholders, leading to designs that meet real user needs and match real user contexts.
- Requisite competencies in the form of the necessary skills and knowledge, especially within government itself of both management and IT skills and knowledge.
- Adequate technological infrastructure, as well as
- luck, perseverance, and adequate funding (egov4dev 2003).

Despite these implementation problems, international standards of management, service delivery and even democratic engagement with citizens are increasingly based on a seamless integration of electronic technologies into mainstream traditional governance processes (OECD 2003b). In many cases technology-based services like distance education, electronic personal identification systems, internet-based services, etc, may prove to be the only way in which those governments will be able to meet their own service delivery targets. These policy innovations are fast becoming delivery standards across the world. Developing nations cannot do without them if they want to provide sustainable good governance. The UN Social & Economic Council's Committee of Experts on Public Administration stated explicitly in its first report that public sector organisations should become learning organisations with the objective of exploring "…how to create a dynamic culture that could be conducive for the developing countries to 'leap-frog' over stages of development and to leap more rapidly the benefits of a nascent knowledge economy" (UN-CEPA 2002b:6).

At the moment many governments in developing countries further cannot meet the needs, expectations and demands of their citizens through their current service delivery programmes, for the range of traditional delivery weaknesses summarised above. As stated above, it is an open question whether any government that does not embrace the new technologies will be able to provide the required levels of services, compete with other service providers in an environment of open, global competition, or even survive as a government in future.

Governments that do not accept the emerging benefits of technology and still cling to their traditional delivery systems, face a very stark range of choices. The first choice is to attempt to improve their current, traditional policy implementation capacities and mechanisms to the extent that they will be able to meet the needs, expectations and demands in their respective societies sufficiently to stave off political instability and loss of power. In most cases this objective of good governance is beyond their capacity, because of current systemic defects that they seem unable to reverse. Another complication is that the effects of globalisation *inter alia* necessitates the closure of the existing digital divide between wealthy and poor nations – a requirement that is, in the short term at least, beyond the capacity of any government in a developing state to achieve.

The second choice they face is to accept the inevitability of insufficient performance and to try to stave off political instability for as long as possible, through increasing authoritarian actions and internal security operations. The course that the Zimbabwean government has been taking in the recent past is an illustration of this desperation to survive politically. This not sustainable good governance, but a recipe for national disaster.

The only feasible alternative for a government in a developing country to achieve good governance outcomes, is to accept the inevitability of the global technological revolution (which is as inevitable as the mechanisation revolution of the 19th century), and to initiate, as soon as possible, appropriate general literacy and specialised computer literacy programmes to reduce the digital gap between it and the industrial world See also Grindle & Hildebrand 1995).

"*...it has been argued that there are in fact no alternatives to leapfrogging. If countries do not attempt to update their technologies, they face exclusion from the mainstream economic trends of the world, continuing deprivation and poverty for their peoples…(but)…(t)here is no point empowering people if they neither understand why they are being empowered nor know what they are going to do differently…there is a real risk that countries leapfrog to a place where the majority of the people living in a country don't know what to do next...*" (Davison, Vogel, Harris & Jones 2000:8).

This implies a major paradigm shift in public policy and spending priorities to utilise technology optimally as a major policy instrument to facilitate the provision of basic services, and, simultaneously prepare the citizens to utilise these new empowerment opportunities optimally. This challenge does not only exist in the use of technology for development, but is a general requirement for any successful development initiative.

The argument so far is contrary to the conventional wisdom that technological change is not deterministic (eg DPADM 2003:2). Determinism should, however, not be confused with irreversibility. The argument in this paper is that technological development is as deterministic as mechanisation proved to be during the previous centuries, but that it is not necessarily irreversible (eg in situations of major social and political upheavals where regimes are overthrown and social, political and economic instability lead to dramatic reversals in knowledge and experience levels, developmental levels and resource availability).

Another important conclusion of this paper is that the most significant obstacle to the optimal use of technology in government, is not resource-related. It is a mental obstacle, namely an unwillingness to accept the inevitable impact of the global technological revolution on governance. Despite massive technological development aid that may be provided in future to developing countries that lag behind the technologically better endowed states, the digital divide will not be reduced if accompanying mental paradigm shifts are not made in such countries. Fortunately, there is an implicit, emerging acceptance of the inevitability of the transition to an electronic standard of management and service delivery.

Preconditions for Successful E-Development

Against the background of the above discussion, the following main preconditions for successful e-development can now be identified:

Socio-political

- An openness among political, bureaucratic and social elites to the adoption of new technologies in management and community affairs in order to establish

a culture of electronic literacy and attempt to reduce the digital divide as soon as possible.
- Both personal & political commitment over time at leadership levels to modernise services delivery systems at all levels of government; and
- a willingness at the highest decision-making levels in government to allocate sufficient resources to technological upgrading of such delivery systems.

Technological

- Prioritising the creation of the necessary hardware support infrastructure at the earliest possible stage is crucial. This implies reliable & stable electricity networks, telecommunications linkages, computer workstations and networks, appropriate bandwidth, and the necessary support systems for maintenance and upgrading of services.
- Appropriate software infrastructure to record, process & publish data, interact & transact safely & reliably, including the promotion of open source software development.
- Existence of multiplier effects, eg other practical applications of technology adding value to investments in technological training and infrastructure development.
- Appropriate content: digitised policy information across a wide spectrum, contributing to the multiplier effect of technology (eg Cape Gateway 2004), and
- An appropriate managerial implementation strategy phasing in the digitisation of public services over time as resources allow (eg possibly by firstly providing one way electronic information, then enabling two way electronic communications and transactions to be conducted, followed by electronic transaction completion and payment for as many as possible public services that can feasibly be provided better in this way than via traditional delivery mechanisms.

Educational

- Electronic infrastructure development aimed at maximum educational impact in society through the establishment of networked computer systems in strategic community locations like local government service centres, community centres, libraries, NGOs, schools, etc.
- The optimal strategic educational use of recent progress in TV/phone/PC convergence technologies & satellite linkages as they become available, affordable and more user-friendly.
- A deliberate prioritisation of both general and computer literacy training programmes at the earliest possible stage in all educational institutions in order to attempt to reduce the digital divide as soon as possible.

Financial and economic

- Committed national re-allocation of spending priorities to support the strategic e-governance focus of government. This could be difficult to do in cases

where basic services and facilities in developing countries (housing, sanitation, water and electricity supplies) have to be regarded as higher priorities. A country has to be e-ready in order to benefit in a sustainable way from e-development strategies.

- The World Bank Institute and the UNDP have accepted in principle that they have crucial supporting roles to promote & fund general developmental outcomes of the this nature, especially in the provision of expensive technological infrastructure like bandwidth, networks & satellite linkages, in support of developing countries' initiatives (eg in poor regions like Sub-Saharan Africa and Asia. These development support programmes should received higher priority in those institutions, given their own policy commitments to the use of e-government as an important developmental instrument.
- More multiplier effects: stimulating the spill-over effects of electronic technologies into the rest of the domestic economy (eg prioritising cell phone communication networks in poor areas instead of fixed landline systems that are inflexible, based on outdated analog technologies and more prone to theft and piracy.

This provisional list of boundary conditions for sustainable e-development can be expanded in more detail (see also *inter alia* Digital Opportunity Initiative 2001:42, Chen & Wellman 2003:27–29 and bridges.org 2004:5–6). It is, however, suggested that the main principles and policy strategies needed for success are largely captured above.

The Emerging New Paradigm: E-Development as Empowerment Through Technology-Assisted Asset Creation or Capacity-Building

From a liberal democratic perspective, policy success with development initiatives can be conceptualised as the creation of value in the form of different types of capital assets that improve the quality of life of individuals (eg UNPAN 2003:3). These capital assets include the following outputs and outcomes:

- **Intellectual capital:** creative visions to develop individuals and society in constructive ways and to develop appropriate, pragmatic and feasible policy programmes to achieve such visions (see also Karp 2003:20),
- **economic capital:** those concrete access opportunities and routes to appropriate material resources to achieve the desired policy objectives of the developmental visions summarised above (eg Serageldin 1996),
- **social capital:** appropriate human knowledge, experience and commitment to realise the desired developmental visions (Karp 2003:25),
- **institutional capital:** effective and efficient organisational structures with the capacity to produce the desired services and other outcomes (eg UNPAN 2003:3),
- **cultural capital:** appropriate value systems, norms, standards and practices conducive to, facilitating and promoting (and not hindering) the achievement of the desired policy objectives,
- **technological capital:** appropriate levels of technology to achieve the required results, and

- **political capital:** successfully mobilised trust, loyalty, support and cooperation of citizens around the prevailing vision for society (eg UNPAN 2003:3).

Critics of a capitalist-based development strategy like the above, prefer to use the concept of capability or capacity-building rather than asset-building to explain what they regard as an alternative approach to development (Fine 2003, Sen 1999, Clark 2003). Capacity can be conceptualised as the ability to achieve stated objectives by performing appropriate tasks for that purpose effectively and efficiently. Capacity-building is used here as improvement in the ability of individuals or organisations, either singly or in co-operation with others, to achieve stated objectives by performing appropriate tasks for those purposes (eg Grindle & Hildebrand 1995).

Assets and capacities are both instruments that are applied to attempt to achieve specific objectives. Assets consist of material productsor resources that are created or produced, in contrast to capabilities/capacities which are potential sources of energy that can be generated and that can be released to achieve desired results. Whatever approach we prefer to adopt to illustrate our ideas about development, the latest conception of development that has been summarised above, namely empowerment to make informed choices about the future, is a central concept or theme in both of these approaches.

If a minimum critical mass of intellectual **capital or capacity** resources exist in the form of a clear vision of what to achieve, the secret of success boils down to good governance: ie good leadership and sensible management of the transition processes put in motion to transform society into the desired outcome (bridges.org 2004:7–8). A strategy that embraces technology for development might prove to be the only option for governments to meet the long-term developmental needs, demands and expectations of their citizens, especially in developing countries.

Such development strategies can therefore potentially have a direct impact on the improvement of public policy and services delivery at grass roots levels, especially in developing countries, as policy decision-makers at all levels are empowered to take more informed and confident decisions about complex policy issues, by using increasingly standardised electronic management support systems appropriately.

The Emerging New Paradigm: Electronic Technologies in Management Are Changing the Nature of Management

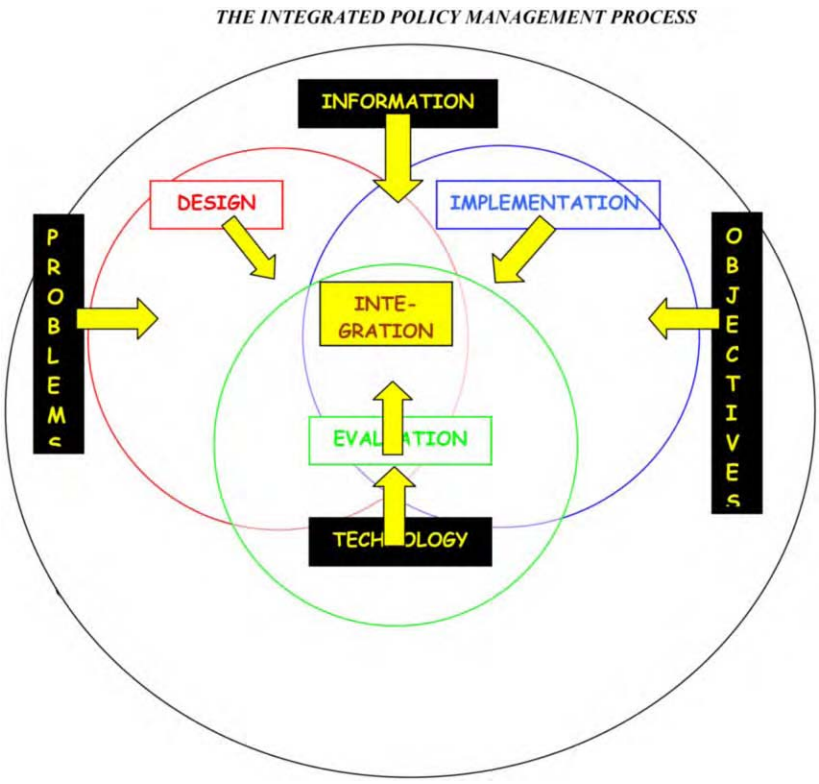
An early functional approach to Public Administration conceptually distinguished strategic and operational management processes, as well as other analytically distinct and systematic sub-processes that consecutively follow on each other largely in linear fashion (eg POSTCORB). The Policy Sciences approach in turn identified similar linear policy management stages labelled policy formulation, implementation & evaluation, all designed as rational, systematic procedures to optimise intended outcomes.

Information technologies are bringing about a paradigm shift in our perceptions about the nature of management by fundamentally changing the contents and sequence of the above management processes. Over the last decade, new developments in IT have firstly caused a **blurring of the traditional conceptual boundaries** between strategic and operational management, as well as between the different conceptual stages of the policy management process. These IT breakthroughs have

also secondly enabled us to conceptualise many management sub-processes as **simultaneous, complex, non-linear and parallel processes instead of a relatively simple, consecutive, linear progression of process phases**. This reconceptualisation of management processes results in a more accurate perception of the nature of management. Planning, implementation and assessment can now be done simultaneously and continuously, while **re-designed integrated management processes** can with the assistance of technology thirdly establish direct, empirical and measurable linkages between certain vision/mission statements, objectives, implementation programmes and outcomes, as well as between budgets, resource availability and control measures. This enables explicit empirical, evidence-based policy assessments.

This emerging paradigm shift in the conception and application of the phenomenon of management, is only now possible by emerging ICT's, that is starting to create for the first time the conditions to fulfil the promise of rational Public Administration and Management theory in practice. It is now starting to become possible to achieve a situation where "*…all the elements of corporate and information strategy are aligned, so that an organisation's information resource is placed to support that organisation's strategic and ultimately, operational activity*" (Clarke 2001:91).

One way of visually depicting this still emerging new e-management paradigm at this early stage, is the following:



The digital divide gap is not cataclysmic and it is closing, not growing (Fink & Kenny 2004:17). The evolving e-government and e-development paradigms are currently being consolidated in various forms and guises in different countries across the globe in Europe, the Americas, Australasia and Africa. These paradigms will be shaped by different social, economic, cultural and political contexts. Current indications are, however, that the unifying force of globalisation is a deterministic force that has already started with the development of a system of minimum international standards and instruments of public services performance and delivery. Governments of both more developed and lesser developed countries will have to consider the implications of these unfolding events very seriously if they want to stay in the mainstream of international activities and if they want to empower their citizens to be first rate instead of second rate global citizens. Adopting the right policy approach, the current **digital divides** can be transformed into **digital dividends** (Chen & Wellman 2003:27).

Conclusions

In conclusion, the main arguments pursued in this paper are the following:

- Traditional, non-technology driven developmental strategies have largely failed across the world, except in those few countries that have so far successfully embraced the potentially positive applications of technology for development as integral part of mainstream good governance strategies.
- Driven by forces of globalisation, technology is the norm for the future, whether we like it or not. Governments therefore have little choice but to use it for good governance outcomes.
- Technology can obstruct or facilitate governance, development, service delivery and management, depending on how it is used. Technology is just another tool for development like other tools, subject to appropriate or inappropriate use. Like any other policy instrument it is subject to normative or utilitarian abuse by ruthless power elites. Applied correctly, it is crucial for developmental success as had been proved over time in developed nations.
- Existing obstructions to the wider application of electronic technologies in development is not insurmountable: Good governance practices and examples indicate an effective facilitative impact of technology on development if applied appropriately.
- The achievement of sustainable development is in future only possible in the format of e-development, within the context of good governance practices.
- Adopting the e-development paradigm has serious implications for strategic decisions about re-allocation of resources and visionary and strong leadership and management practices in developing nations in order to transform policy failure into potential policy successes.
- Developmental empowerment leading to capital asset creation or capacity-building in the different sectors of society seems to be the best way to proceed.
- Technology and e-government have crucial roles to play in this regard, and governments have to ensure the existence or creation of specific boundary conditions to maximise the potential of policy success in this regard.

- Technology is therefore a catalyst towards an emerging paradigm shift in the conception of what management entails and how it should be applied in practice to achieve developmental objectives.
- The new paradigms of e-government and e-development are currently still taking shape, evolving and consolidating into different patterns that will probably become clearer in future. All governments have to consider the implications of these developments very seriously.

References

Bhatnagar, S. (2000), "Social Implications of Information and Communication Technology in Developing Countries: Lessons from Asian success stories", *Electronic Journal on Information Systems in Developing Countries (EJISDC)* 1(4):1–10, http://www.ejisdc.org/, 23 April 2004.

Bhatnagar, S. (2001), The future of e-government in developing countries, paper presented at a World Bank/Development Gateway Conference on E-government in developing countries: Achievements and Prospects, held on 11–12 June 2001 in Washington, DC, http://www1.worldbank.org/publicsector/egov/June01conference.htm/, 30 March 2002.

Bridges.org (2004), Spanning the digital divide, a report by bridges.org, http://www.bridges.org/, 23 April 2004.

Burrows, Tracy (2003), Mobile key to African telecoms growth, ITWeb, http://www.itweb.co.za/, 17 October 2003.

Cape Gateway (2004), Integrated access portal to services and facilities provided by the Western Cape Provincial Government in South Africa, at http://www.capegateway.gov.za/, launched on 6 April 2004 in Cape Town.

Chen, Wen Hong & Wellman, Barry (2003), Charting and bridging digital divides, AMD Global Consumer Advisory Board, Canada, http://www.amdgcab.org/, 23 April 2004.

Clark, David Alexander (2003), *Visions of development: A study of human values*, Cheltenham, UK: Edward Elgar.

Clarke (2001), *Information Systems Strategic Management – an Integrated Approach*, London: Routledge.

Cloete Fanie (2000), *At Full Speed the Tiger Cubs Stumbled: Lessons from South East Asia about Sustainable Public Service Delivery*, Pretoria: HSRC.

Cloete, F. & Needham, A. (2002), Fulfilling the promise?: Spatial technologies and local government management in South Africa, unpublished paper presented at an IIAS Conference, 5–9 November 2002, New Delhi, India.

Cloete, Fanie (2003), *Strategic Management Support Technologies in the Public Sector*, Stellenbosch: African Sun Media.

Egov4dev (2003), Cases of e-government success and failure from developing/transitionalcountries, http://www.egov4dev.org/causefactor.htm/, 22 April 2004.

Davison, Robert, Vogel Doug, Harris, Roger & Jones, Noel (2000), "Technology leapfrogging in developing countries – an inevitable luxury?", *Electronic Journal on Information Systems in Developing Countries (EJISDC)* 1(5):1–10, http://www.ejisdc.org/, 23 April 2004.

Digital Opportunities Initiative (2001), Creating a Developmental Dynamic, Final report of the Digital Opportunities Initiative, July 2001, ACCENTURE, New York, USA: Markle Foundation & UNDP.

Fine, Ben (2003), "Social capital for Africa", *Transformation* Vol. 53, 29–52.

Fink, Carsten & Kenny, Charles J. (2004), W(h)ither the Digital Divide, report for the WSIS, http://www.itu.int/wsis/docs/background/themes/digital_divide/fink-kenny.pdf, 23 April 2004.

Grindle, M.S. & Hildebrand, M.E. (1995), "Building sustainable capacity in the public sector: what can be done?", *Public Administration and Development* 15:441–463.

Heeks, Richard (Ed.) (1999), *Reinventing Government in the Information Age: International Practice in IT-Enabled Public Sector Reform*, London: Routledge.

Heeks, Richard (2002), "e-Government in Africa: Promise and practice", *Information Polity* 7: 97–114.

Ingle, Roy (2003), WiFi, satellite can help bridge Africa's digital divide, ITWeb, http://www.itweb.co.za/, 17 October 2003.
ITWeb (2003), Singapore develops flu detection chip, ITWeb, http://www.itweb.co.za/, 6 October 2003.
Kakabadse, A. Kakabadse, N.K. and Kouzmin, A. (2003), "Reinventing the democratic governance project through information technology? A growing agenda for debate", *Public Administration Review* 63:44–60.
Karp, Tom (2003), "Is intellectual capitalism the future wealth of organisations?", *Foresight* 5(4):20–27.
McGee J.V. & Prusak L. (1993), *Managing Information Strategically*, New York: Wiley.
OECD (2003a), Checklist for e-government leaders, OECD Policy Brief, September 2003.
OECD (2003b), Integrating Information and Communication Technologies in Development Programmes, OECD Policy Brief, November 2003.
Philp, Rowan (2003), Curiosity cures the knowledge gap, Sunday Times, South Africa, 10 Jan 2003:10.
Sciadas, George (Ed.) (2003), Monitoring the digital divide and beyond, research report by Orbicom, Network of UNESCO Chairs in Communications, UNESCO.
Sen, Amartya (1999), *Development as Freedom*, Oxford: Oxford University Press.
Serageldin, I. (1996), *Sustainability and the Wealth of Nations, First Steps in an Ongoing Journey*, ESD Series no. 5, Washington, D.C.: The World Bank.
Splettstoesser, Dietrich & Kimaro, Fred (2000), "Benefits of IT-based decision-making in developing countries", *Electronic Journal on Information Systems in Developing Countries (EJISDC)* 3(3):1–12, http://www.ejisdc.org/, 23 April 2004.
UN-CEPA (2002), Report of the First Meeting of the Committee of Experts on Public Administration, Committee of Experts on Public Administration, UN Social & Economic Council, E/2002/84, 26 July 2002, http://www.unpan.org/conf_groupexperts.asp.
UN-DPADM (2003), E-government for development, Newsletter 1(106), Division of Public Administration and Development Management (DPADM), United Nations Department of Economic and Social Affairs, New York.
UN-DPEPA (2001), Benchmarking E-Government: A Global Perspective, United Nations Division for Public Economics and Public Administration, New York.
UN-HDR (2001), Making Technologies Work for Development, 2001 Human Development Report, United Nations, New York: OUP.
UNPAN (2003), E-Government at the Cross-Roads, World Public Sector Report 2003, United Nations, New York.
Wagner, Christian, Cheung, Karen & Fion Lee, Rachael (2003), "Enhancing e-government in developing countries:managing knowledge through virtual communities", *Electronic Journal on Information Systems in Developing Countries (EJISDC)* 14(4):1–20, http://www.ejisdc.org/, 23 April 2004.
Warschauer, M. (2002), Reconceptualizing the Digital Divide, First Monday, Vol. 7(7), www.firstmonday.org.
Weaver J.H., Rock M.T. & Kusterer K. (1997), *Achieving Broad-Based Sustainable Development: Governance, Environment and Growth with Equity*, West Hartford, Connecticut: Kumarian Press.

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Les résistances culturelles au développement de l'e-gouvernance dans la contexte africain

Plaidoyer pour une e-gouvernance universelle

M. Jacques Mariel Nzouankeu[*]

Introduction

L'un des événements de ces dernières décennies est sans aucun doute l**a gestion des affaires par Internet**, quelle que soit la dénomination qu'on lui donne : e-gouvernment, gouvernement électronique, administration électronique, ou encore gouvernance électronique (e-gouvernance). De quelque côté qu'on appréhende ce phénomène, il s'agit de la gestion électronique des affaires. Toutes les affaires : publiques et privées. A tous les niveaux et sur tous les plans : politique, économique, administratif, social, culturel, scientifique, technique, international, régional, national, local, etc.

Du coup apparaissent les enjeux de ce phénomène pour les pays en développement. L'espoir était ainsi né que le développement était possible ; que, grâce à Internet, ces pays allaient combler plus rapidement que prévu le fossé qui les sépare des pays industrialisés.

Un tel espoir était d'autant permis que les méga-rencontres internationales, dont le Forum global est le prototype, se donnaient pour thèmes les questions fondamentales du développement : promouvoir la démocratie et le développement par l'E-gouvernance (3è Forum global) ; la réinvention du gouvernement (5è Forum global). Les débats autour de ces questions concernaient les stratégies et les actions à mettre en œuvre afin que profitent aux pays en développement les avancées de l'Internet dans les domaines tels que la santé (E-health), la démocratie (i-démocratie), le télétravail, les télé-procédures, etc.

Mais, pour profiter de cette révolution de la communication, le principal défi qui semblait s'imposer jusqu'à présent aux pays en développement était celui des infrastructures. L'absence, l'insuffisance ou l'inadaptation des infrastructures de communication semblait être le principal, voire le seul obstacle qu'il fallait lever. Faute de le faire, c'est l'accès même à Internet qui est limité, parfois même refusé à certains de ces pays.

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Depuis, des efforts ont été faits dans le domaine des infrastructures et beaucoup de pays en développement ont pu avoir accès à Internet.

Toutefois, on s'aperçoit de plus en plus que la question était mal posée. En effet on avait raisonné comme si l'accès à Internet était **la seule condition** pour que ces pays en profitent de tous les bienfaits. En d'autres termes, on croyait de bonne foi que le renforcement des capacités en équipements informatiques, et même la maîtrise des nouvelles technologies par ces pays, constituaient la condition suffisante pour qu'ils profitent des bienfaits du développement.

Mais on s'est aperçu que cette condition ne suffit pas. Le développement de l'Internet dans ces pays se heurte à de fortes résistances culturelles, les unes liées au niveau de développement culturel de ces pays, et d'autres à la nature même des valeurs culturelles.

I. Les résistances liées au niveau de développement culturel des pays en développement

On s'était mépris sur la nature des technologies de l'information et de la communication (TIC). On croyait de bonne foi qu'elles pouvaient conférer le savoir, voire se substituer à lui.

Par exemple, on s'aperçoit que les TIC ne peuvent pas créer la démocratie là où elle n'existe pas. Ainsi, un pays en développement peut posséder des infrastructures ainsi que la technologie pour créer des télé procédures ou organiser le vote électronique. Pour autant, ce pays ne deviendra pas démocratique comme par enchantement, si le niveau de son développement culturel, notamment en ce qui concerne la formation, n'est pas satisfaisante. Les TIC peuvent seulement faciliter l'exercice de la démocratie au niveau culturel ou elle se trouve ; elles ne sont pas une fin en soi , mais un outil de facilitation de l'apprentissage de la démocratie.

Ce qu'on observe en ce qui concerne la démocratie semble se vérifier pour ce qui est du développement en général.

Ainsi, l'exigence de transparence qui à coup sur est une condition du développement, peut aisément être remplie dans la plupart des pays en développement. Mais ce ne sont pas les techniques pour garantir la transparence qui manquent, mais la volonté de promouvoir une société transparente.

Cet obstacle n'est pas seulement politique, c'est-à-dire lié aux manœuvres de certains dirigeants pour conserver le pouvoir par des pratiques de corruption, mais il s'explique surtout par le niveau de développement des pays concernés.

En effet, le système institutionnel et politique des pays en développement correspondant à l'étape actuelle de leur développement économique et social, n'intègre pas les préréquis de l'Internet. A cet égard, il ne faut pas perdre de vue qu'Internet avait été créé par des pays industrialisés pour des sociétés non seulement déjà largement décloisonnées, mais ayant aussi intégré dans leurs cultures des paramètres communs ainsi qu'une philosophie commune de la communication. Internet correspondait donc à leur manière de penser et de communiquer, mais également au type d'instrument susceptible de véhiculer leurs valeurs communes dont les principaux fondements sont la liberté et la responsabilité individuelles, la

valeur marchande des biens, une conception de l'évolution fondée sur le temps linéaire, le partage du savoir, etc.

La situation est tout à fait différente dans les pays en développement. Les principes culturels qui régissent leurs sociétés ne sont pas tous en harmonie avec la philosophie d'Internet. Pour prendre une analogie, la situation peut être comparée à celle d'un véhicule qu'on importe dans une zone pour laquelle elle n'était pas destinée. Il ne suffit pas alors de créer des infrastructures pour son utilisation, il faut aussi s'assurer que les biens qu'il va transporter sont compatibles avec son architecture. De même, en ce qui concerne Internet, il ne suffit pas de créer des infrastructures pour son utilisation ; il faut encore s'assurer que les biens culturels qu'il va véhiculer ne sont pas des **anti-valeurs** par référence à ce qu'ils étaient supposés être.

L'ignorance de cette réalité explique bien des difficultés que rencontre la mise en œuvre du gouvernement électronique.

Par exemple, il est évident que les inventeurs d'Internet n'avaient pas imaginé tout le parti qu'en tireraient les terroristes, ou encore, qu'il servirait de caisse de résonnance et d'instruments de propagation des valeurs anti-démocratiques comme l'intégrisme et les doctrines racistes. Cela explique les difficultés de contrôler Internet ou de censurer les informations qu'il véhicule, parce que le système, conçu par les occidentaux et pour véhiculer leurs valeurs, n'était pas fait pour être censuré, ou verrouillé. C'est un effet pervers s'il est finalement utilisé pour véhiculer les anti-valeurs, ou comme arme de guerre contre la démocratie.

Comme le phénomène de l'Internet a créé une situation de non-retour, l'un des défis qu'il doit relever, c'est de faire évoluer les sociétés des pays en développement vers le modèle occidental, et c'est précisément cette prétention qui ravive les résistances culturelles, et élargit le fossé numérique entre le Nord et le Sud.

II. Les résistances liées à la nature même des valeurs culturelles

Parmi les valeurs culturelles qui font le plus obstacle au développement de *l'e-gouvernance* dans l'espace africain, on peut noter **le consensus, le partage et la solidarité.**

Ces valeurs n'ont pas été inventées par les africains et ne leur sont pas exclusives. On peut même dire qu'elles sont universelles en ce sens qu'on les retrouve dans toutes les sociétés du monde, certes plus ou moins développées, où elles constituent toujours le fond des traditions et des coutumes.

Mais on peut dire qu'elles sont plus manifestes dans l'espace africain, peut-être parce qu'ici, il s'agit de sociétés moins industrialisées que celles du Nord, ou peut-être du fait que, pour des raisons historiques ou autres, ces sociétés sont restées plus près de leurs traditions et de leurs coutumes. C'est la raison pour laquelle on peut les considérer comme valeurs dominantes.

Ces valeurs sont également dominantes en ce sens que chacune d'elle domine une composante de *l'e-gouvernance*. Ainsi, le consensus est le fondement d'un type de démocratie ; le partage se réfère à un modèle d'Administration, et la solidarité est le fondement d'un système juridique.

Pour apprécier l'impact de ces valeurs comme facteurs de résistance au phénomène de l'e-gouvernance, on peut d'une part, les examiner globalement comme fondement d'un système de gouvernement, ensuite comme révélateurs du niveau de développement culturel des sociétés concernées.

A. Le système du Gouvernement fondé sur certaines valeurs résiste à l'e-gouvernance

Les valeurs dominantes de consensus, de partage et de solidarité, considérées comme composantes d'un système de gouvernement, produisent des effets opposés, voire contraires à ceux de *l'e-gouvernance* tels qu'ils résultent de l'application ou de l'utilisation des Technologies de l'Information et de la Communication. Ainsi :

a) La démocratie consensuelle, très largement partagée en Afrique, considérée presque comme le mode naturel de gouvernement, est à l'opposé même de la démocratie pluraliste majoritaire, a fortiori virtuelle, telle qu'on la pratique dans les pays occidentaux. Le consensus s'oppose au vote, au décompte arithmétique des voix, à la pluralité des partis politiques. C'est ce qui explique les difficultés d'application du suffrage universel, l'échec des systèmes électoraux, et c'est ce qui explique que malgré le coût très élevé des élections, la plupart des pays africains les organisent pour la façade, mais n'en tirent pas les conséquences quant à l'exercice du pouvoir. Les efforts faits pour garantir la transparence des urnes, améliorer par le vote électronique, sont des principes d'une philosophie individualiste qui s'opposent à la démarche consensuelle, et à une autre conception de la transparence, celle du vote public, sans passage par l'isoloir, considéré comme conférant une plus grande légitimité au pouvoir.

b) Le partage s'oppose à la bureaucratie wébérienne qu'on est en train d'améliorer et de faire évoluer vers la bureaucratie virtuelle. La bureaucratie wébérienne, comme *l'e-bureaucratie* virtuelle elle-même, sont fondées sur le principe de la hiérarchie. Le pouvoir s'exerce toujours du haut de la pyramide vers le bas. Pour que les tentatives de faire remonter le pouvoir de la base vers le sommet de la pyramide aboutissent, il faudrait reconnaître le droit de sécession aux collectivités de base, ce qui suppose une remise en cause totale de la théorie de l'Etat.

Le modèle administratif du partage n'est pas la pyramide, mais un cercle de pouvoirs autonomes qui gravitent autour d'un pouvoir central. Le pouvoir est alors, non seulement très décentralisé, mais même démultiplié, chaque pouvoir autonome devenant le centre de gravité d'autres pouvoirs périphériques.

L'e-gouvernance, construite selon le modèle hiérarchique, reste un système centralisateur. Malgré les affirmations et les efforts pour que l'Etat du 21ème siècle soit un Etat décentralisé, la logique même de l'internet prédominera et renforcera le caractère centralisateur de l'Etat. C'est aussi la raison pour laquelle une Administration construite sur le principe du partage continuera d'être un facteur de résistance à *l'e-gouvernance.*

c) La solidarité comme fondement du droit et des relations sociales, donne également naissance à des mécanismes parfois contraires à ceux qu'instituent *l'e-gouvernance.*

Contrairement à l'usage qu'on en fait dans plusieurs démocraties occidentales, la solidarité est le fondement du pluralisme juridique, c'est-à-dire d'un système qui reconnaît la validité, au sein d'un même groupe social, d'une pluralité d'ordres juridiques. C'est cela qui explique en grande partie toute l'efficacité des systèmes sociaux traditionnels de protection.

La solidarité, c'est aussi le fondement *du repli identitaire ou communautaire*, c'est-à-dire des valeurs qu'Internet, en raison de son caractère universel, peut difficilement promouvoir. La solidarité est en effet celle du groupe, de l'ethnie, du clan, souvent basée sur des rites initiatiques et secrets, difficilement compatibles avec la transparence d'Internet. C'est aussi le fondement *de la responsabilité collective*, incompatible avec la philosophie individualiste qui est à la base d'Internet, et qui, d'une certaine manière, explique l'absence de prisons dans la plupart des sociétés traditionnelles.

B. Les effets pervers de l'e-gouvernance révèlent le niveau de développement culturel de certaines sociétés

L'un des effets pervers de l'e-gouvernance, en rapport avec la résistance des valeurs culturelles, c'est le paradoxe de l'auto-exclusion.

Le paradoxe consiste en ce que certains groupes sociaux (ex. minorités ethniques et linguistiques, acteurs de l'informel) que la gouvernance avait pour objectif de maintenir dans la chaîne de solidarité nationale, s'excluent eux-mêmes de cette chaîne,…précisément au nom de la bonne gouvernance. D'une manière générale, cela signifie que l'un des objectifs prioritaires que l'on assignait à la bonne gouvernance, à savoir la lutte contre l'exclusion, s'est mué en fondement de la légitimation de celle-ci. C'est un paradoxe et un effet pervers, parce qu'il s'agit là d'un résultat totalement opposé aux intentions de départ.

En effet, ce phénomène s'oppose aux objectifs que *l'e-gouvernance* s'était fixés. Les progrès récents ont conduit à considérer le partage des responsabilités en matière de gouvernance comme un moyen d'appuyer les politiques de développement. Cela signifie que, grâce à Internet, la gestion des affaires publiques dans les pays en développement, doit cesser d'être l'apanage, le monopole du seul gouvernement central des Etats. De même qu'en matière d'organisation administrative, la centralisation excessive n'a pas donné de bons résultats pour le développement, de même, en matière de gouvernance, responsabiliser un seul acteur, l'Etat, ne permettrait pas, pour les pays en développement, d'atteindre des objectifs prioritaires que sont, entre autres, la lutte contre pauvreté et l'exclusion.

C'est cette idée qu'on tente de réaliser dans la mise en œuvre des programmes de gouvernance, par le partage des responsabilités entre différents acteurs du développement, notamment avec les citoyens et la société civile, qu'on appelle désormais groupes du secteur civique. La gouvernance partagée désigne cette nouvelle stratégie de la gestion publique. Le paradoxe que l'on relève s'applique surtout à certaines composantes du secteur civique dans ce sens que la gouvernance partagée avait pour objectif de les responsabiliser, de leur donner les moyens de réparer la fracture sociale et de combattre l'exclusion dont ils sont victimes afin qu'ils s'intègrent mieux dans la chaîne de solidarité nationale, alors qu'ils se servent

des nouveaux pouvoirs dont ils sont dotés ou des progrès des technologies de l'Internet pour revendiquer la reconnaissance et la légitimation de leur marginalité.

Ce paradoxe ne surprend que parce qu'on ne voyait qu'une face de la gouvernance, la face apparente, construite avec la logique qui caractérise la plupart des œuvres occidentales, semblable à un manteau sans trou dont on recouvre la société, avec l'intention généreuse qu'en assurant une protection égale à toutes les composantes de celle-ci, on exorciserait les démons de la division et du déchirement du tissu social.

Mais lorsqu'on retourne la chose, et qu'on en examine la face cachée, on s'aperçoit qu'il s'agit en fait d'une vaste opération de compromis inachevés, de malentendus et de non-dits qui méritent d'être élucidés et qui nécessitent une refondation de toute la stratégie. Du coup, la part de responsabilité dans la gestion de la gouvernance qui revient à certains groupes de ce secteur légitime leurs revendications qui sont de trois types : la revendication identitaire, qui n'est pas une illusion, et qui conduit à la problématique de la diversité (tribus, clans, ethnies, minorités, etc.) ; la revendication communautaire résultant, surtout dans les milieux urbains, des difficultés d'intégration des groupes dominants, minoritaires ou marginaux, de nationaux de différentes générations (d'origine, naturalisés), d'étrangers, d'autochtones ou d'allogènes, c'est-à-dire de personnes qui ne sont pas natives de la localité ; la revendication territoriale qui, mal gérée, conduit à des mouvements sécessionnistes.

Conclusion

L'objectif de cette analyse n'est nullement d'élaborer, ni de promouvoir un modèle culturaliste de *l'e-gouvernance à l'Africaine*, mais de montrer l'ampleur de la cassure numérique entre le Nord et le Sud, et de faire voir l'immensité des tâches à accomplir pour la réduire, par quelques propositions concrètes.

En premier lieu, l'utilisation de plus en plus fréquente de l'ordinateur dans les pays en développement ne doit pas faire illusion. Certes, dans les villes et de plus en plus en milieu rural se développent des cyber-cafés et autres structures formelles ou informelles permettant l'accès à Internet. Mais ces outils sont utilisés, parfois pour le divertissement notamment en ce qui concerne les jeunes, plus souvent comme outil de travail pour vivre ou survivre, mais en raison des profondes résistances de l'environnement socio-culturel, ils ne sont pas véritablement utilisés comme moyen d'épanouissement moral et individuel, ce qui, après tout est, ou devrait être l'objectif ultime de *l'e-gouvernance.*

En deuxième lieu, l'espoir que l'on forme, c'est que la technologie aide à résoudre ces difficultés en transmutant ces valeurs de résistance en valeurs universelles, et en les intégrant dans une véritable *e-gouvernance universelle*.

Pour cela, les défis que la technologie doit relever sont les suivants :

a) Restaurer le champ de solidarité entre le pouvoir d'Etat et les acteurs sociaux

Pour cela, on pourrait tenir compte des revendications ci-dessus dans les nouveaux programmes de gouvernance, élucider les rôles respectifs de l'Etat et du

secteur civique, démocratiser le secteur civique, et le raccorder au droit international pour assainir le désordre qui se développe en son sein. Mais s'il s'avère effectivement que ceux qu'on considère comme des exclus revendiquent leur exclusion et en font le fondement de la légitimité de leur action, et que les valeurs dont ils se prévalent sont les plus partagées, alors, au nom de la gouvernance démocratique, il faudra bien repenser l'organisation du pouvoir d'Etat en Afrique, et en tirer les conséquences pour le nouveau partage des responsabilités entr e les acteurs du développement.

b) Concilier l'inclusion et la diversité

La société est caractérisée par une grande diversité dans tous les domaines et sous différents aspects : sexe, âge, attitudes et comportements, religion, langue, race, aptitude ou inaptitude physique, valeurs culturelles, rang social, formation, expérience, etc. Les exclusions se nourrissent du reste de cette diversité. La tentation est forte de ramener la lutte contre les exclusions à une politique d'assimilation ; de croire par exemple qu'il suffit de contourner, voire de supprimer l'élément de la diversité qui fonde l'exclusion, pour éradiquer celle-ci. Une telle politique d'assimilation ou d'intégration peut donner l'impression de sauvegarder un certain équilibre social, mais elle ne peut pas s'inscrire dans la durée parce qu'elle se heurtera toujours à la diversité dont la croissance est forte et irrésistible. La société sera toujours diversifiée, non monolitique. Dès lors, pour lutter contre les exclusions, l'action doit porter non pas sur les éléments de la diversité, comme pour les uniformiser, ce qui serait illusoire, mais sur leur interaction et leurs interférences.

c) Gérer le phénomène de l'auto-exclusion

On a relevé que certains groupes sociaux qu'on considère comme des exclus revendiquent leur exclusion et en font le fondement de la légitimité de leur action. C'est aussi la responsabilité des acteurs de la gouvernance de réfléchir à ce phénomène en réévaluant leurs propres conceptions de l'exclusion.

d) Restaurer et soutenir les chaînes traditionnelles de solidarité

Finalement la solidarité reste le maître-mot dans la promotion de *l'e-gouvernance.* Partager les richesses, mais aussi le savoir constituent quelques manifestations de ce principe de solidarité. Encore faut-il bien prendre conscience des limites de la pratique actuelle.

En effet, si l'on raisonne sur l'exemple de l'urbanisation et de l'exode rural, qui constituent l'une des nombreuses causes de l'aggravation de la pauvreté et des exclusions en Afrique en particulier, on observe qu'il en est ainsi, entre autres, parce qu'ils ont porté un coup fatal aux chaînes traditionnelles de solidarité qui assuraient l'équilibre de la société, tels que les réseaux d'entraide, les mutuelles, le bon usage des médecines traditionnelles, les liens complexes entre la propriété et les structures familiales, etc.

Le phénomène est d'autant plus paradoxal que l'urbanisation n'a pas créé, pour la plupart des populations, une véritable culture urbaine. Sauf en ce qui concerne quelques élites assimilées, c'est la culture rurale qui reste dominante dans les villes.

Les infrastructures urbaines ont certainement désorganisé les modes d'action, mais, pour la très grande majorité des populations, ont très peu affecté les modes de vie. Mais la rupture ainsi réalisée a été suffisamment forte pour briser la plupart des chaînes traditionnelles de solidarité.

Néanmoins, malgré cette rupture, force est de constater que pour combattre la pauvreté et les exclusions dans le contexte africain, le chemin le plus court et le plus efficace pour les populations démunies, consiste à restaurer et à soutenir les chaînes traditionnelles de solidarité, au lieu de vouloir instaurer un type de solidarité lié à des valeurs culturelles et à des règles d'organisation économique qui ne sont partagées que par une minorité nantie de la population.

L'un des défis majeurs que devrait relever la *gouvernance partagée*, c'est de faire coexister dans le même espace plusieurs types de solidarités de nature à garantir la cohésion sociale, dans le respect de la diversité.

Alors et alors seulement seront remplies les conditions de l'émergence d'une *e-gouvernance universelle.*

Références

Bulletin de l'UNDESA, octobre 2003, vol. 1, n°106, consacré au gouvernement en ligne et à l'application des technologies de l'information et des communications dans le secteur public. www.unpan.org.

L'e-administration et ses métiers, revue Service public, n°100, octobre-novembre 2003, Paris, Ministère français de la fonction publique, de la réforme de l'Etat et de l'Aménagement du Territoire.

Les enjeux juridiques de l'Internet in Problèmes politiques et sociaux, n°893, octobre 2003, Paris, La documentation Française.

Les non-dits de la bonne gouvernance, Haut Conseil de la Coopération Internatiionale, Karthala, Paris 2001.

Lettres du Groupe Sud, 14 Lettres publiées de mars 2003 à avril 2004, www.ofpa.net www.diplomatie.gouv.fr.

New Technologies in Public Administration
G. Petroni and F. Cloete (Eds.)
IOS Press, 2005

Strengthening Tanzania's Public Administration Through Electronic Governance: Prospects and Problems

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Summary

This chapter makes a preliminary evaluation of the efforts of a third world country that strives to strengthen its public administration through the introduction of electronic governance. By focusing on the Tanzanian case, the chapter reviews major policy steps that this country has taken so far to create the required framework within which effective e-governance could be pursued as well as the constraints that it wrestles with in pursuing that endeavor. It is argued that e-governance presents immense potential benefits in terms of improved government performance as well as expanded citizen participation in governmental decision making processes. It is recommended that leaders ought to be in the forefront in championing the introduction and strengthening of e-governance through sufficient budgetary allocation as well as empowering the citizens to espouse e-governance through, for example, education and training as well as preferentially reduced prices of computer and related ancillaries.

Introduction and Problem Addressed

The last two decades have been a period of critical challenges to public administration. On the one hand, budgetary crises, declining public administration performance, and citizen apathy towards public administration almost halted the processes of government. On the other hand and related to the above challenge, politicians and bureaucrats have been compelled to rethink and redefine the role of the state and its relationship with its citizens in order to make the government more responsive to the people's needs as well as make it work much more efficiently and effectively. These challenges have partly been addressed by states'adoption of various administrative innovations that governments believed would improve the processing and the provision of public goods and services, including the facilitation of citizen involvement/participation in the affairs of the state. Citizen involvement in governmental processes has strongly been viewed as one of the critical prerequisites for the successful implementation of governmental development programs (Zanetell and Knuth, 2004).

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One of these administrative/technological innovations that has engulfed almost the entire world and continues to gain momentum has been the application of the Internet and the WorldWide Web to strengthen public administration-citizen interactive relationships or, briefly, *e-governance*. This chapter therefore seeks to address this issue of e-governance by making a preliminary evaluation of Tanzania's current efforts to make its public administration responsive to its citizens' concerns and needs through the introduction electronic governance. It further explores the opportunities that e-government creates for the Tanzanian citizen to improve their participation in governmental processes. A statement will also be made about the extent to which e-governance can reduce the public administration digital divide. This evaluation will entail, firstly, a review of major policy steps that the Tanzanian government has so far taken to create the required framework within which e-governance could effectively be pursued. Secondly, the prospects that presently exist in Tanzania to facilitate the application of the Internet and the World Wide Web (WWW) to governmental processes will be explored. Thirdly, some of the major constraints that are likely to impede the implementation of e-governance in Tanzania's administration processes will be highlighted. Finally, some suggestions on how the adoption of e-governance in Tanzania could effectively be pursued will be presented.

It is considered that the significance of this chapter lies in two aspects. Firstly, the Tanzanian case typifies a situation of a poor, aid-dependent country that is compelled to embrace a technical innovation, not because that particular innovation is immediately critical to her current array of development priorities or local conditions. But the country is compelled to do so largely in response to technological pressure exerted by the forces of technological globalization. Secondly, this article may help to bring to the fore and therefore help us to recognize the kind of dilemmas and challenges that politicians and administrators in the developing/transitional countries are compelled to wrestle with as a result of externally induced/imposed development priorities. Such recognition could compel introducers and exporters of administrative/technological innovations to review their perceptions about the causes of failure of externally induced administrative innovations/reforms in developing/transitional countries.

Conceptual Issues

Before we begin to describe the context within which e-governance is pursued in Tanzania it is important to define the conceptual framework within which this paper has been written. The concepts that have briefly been reviewed include *Information and Communications Technology* (ICT), *governance* including its associated terms (i.e. *e-government* and *e-governance*) and public *administration*. Information and Communication Technology is fundamental to facilitating every electronic application. According to Tanzania's National Information and Communications Technology Policy (2003: p. iii) ICT "is a generic term used to express the convergence of information technology, broadcasting, and communications among which the prominent example is the Internet." The Policy (2003) thus defines Information Technology (IT) as the system that "embraces the use of computers, telecommunications and office systems technologies for the collection, processing, storing, packaging, and dissemination of information."

Heeks (1999), also defines ICT as an electronic means to collect, process, store and communicate information, especially through computer hardware, software and networks. Hornby (2000) provides a much broader definition of ICT as to mean both the study and the use of electronic processes and equipment, especially computers, to store, analyze and send out information of all kinds, including words, pictures and numbers.

It can be noted from the foregoing that ICT is not a field limited only to practical applications. It is also both a science and a field of study, with specific working concepts as well as methodological procedures of research. Secondly, it can be observed that ICT is the mother of all electronic applications that have presently permeated almost all fields of activity in the areas of commerce, politics, liberation, trade, law, etc. In fact, it is this ICT revolution that has facilitated the globalization of the economy, business, finance, and culture (Berleur, 1977; Heeks, 1999).

Governance is another term that has presently assumed great prominence. According to the United Nations institutions and the American Society for Public Administration (2002), governance is defined as the "manner in which power is exercised in the management of a country's economic and social development." Governance, as espoused by these multilateral organs, is leadership under which the regime concerned respects the rule of law, accountability, transparency and permits the enjoyment of human and civil rights. Ngware (1999: 9) defines governance as the "exercise of social, political, economic and administrative authority to manage a nation or municipal affairs." To Ngware, good governance involves practicing democratic values, administrative and political accountability, transparent decision-making mechanisms, transparent and incorrupt administration, respect for the rule of law and holders of public office being accessible to the people regardless of their gender, class, ethnicity, income status, education and position in society.

In view of the foregoing it can be noted that governance is an interaction between two groups of people – the leaders and the led. This interaction involves certain mechanism of communication that facilitates leaders' delivery of information in a form of services, rules, policies, and guidance to the citizens. At the same time, this interaction has some mechanism that enables the led to feed back to their leaders about the way those rules and policies have affected them. Up until recently, and in most of the developing countries, this interaction was characterized by or dominated by non-electronic forms of communication such as verbal delivery of information and print media (files, letters, newspapers, official gazette, etc.). Today, this interaction has been, or is increasingly being transformed " electronically." That is what has been called electronic-governance to which we now turn our attention.

The United Nations (UN) and the American Society for Public Administration (ASPA) have defined e-governance as "utilizing the Internet and the world-wide-web for delivering government information and services to citizens" (UN/ASPA, 2002:1). Tanzania's ICT Policy (2003:5) distinguishes between *e-government* and *e-governance*. According to this policy *e-government* refers to the situation where government ministries, directorates, and departments have transformed their operations by deploying ICT. On the other hand, e-governance is possible only when there is already in place an effective e-government infrastructure through which the public service can communicate internally and with the intended beneficiaries of its

services. Budhiraja (2002:2) defines e-governance as "putting the citizens at the center of government and giving them the choice of when and where they can access government information and services." In current literature most definitions of e-governance are loaded with its advantageous or virtuous connotation. For example, e-governance is considered a system of governance that represents 'good governance', that 'works better and costs less', that 'enhances responsiveness', that 'promotes civil society', and that is Simple, Moral, Accountable, Responsive and Transparent (SMART) (Dev, 1999; Ministry of Information and Technology, 2001).

In view of the foregoing the following conclusions may be made. Firstly, e-government and e-governance are two sides of the same coin. The former refers to the hard and soft ICT infrastructure which government ministries, commissions, departments, agencies, etc must put in place for fast data retrieval, quick decision making and instant feedforward and feedback of inputs. The latter (e-governance) means the application of the ICT infrastructure to the functioning of government. That is, the outputs and outcomes of technology-assisted public provision of services and facilities, This means that the existence of e-governance presupposes the existence of the ICT infrastructure. Secondly, e-governance is conceived within the administrator/leader-led context. Thirdly, e-governance is perceived as an advanced form of interactive communication, which is characterized by the values of efficiency, transparency, accountability, and responsiveness. Finally, since ICT is a field of practical activity, a science as well as a field of study, e-governance is possible where both the leader/administrator and the led have access to, and possesses a working knowledge of the ICT infrastructure.

Public administration, both as a field of academic study and governmental activity, has been a concept that has been subjected to several critical analysis and stud But it still remains an area of almost endless critical debate and discussions. Public administration is defined to me mean the process of implementing policies, rules, and regulations that have been declared or formulated by authoritative persons or organs. Public administration is considered to be constituted of five features namely, the implementers (people), institutions, processes, procedures, and beneficiaries. The underlying value in all the five factors is the value of communication. That is, communication amongst the implementers themselves over what ought to be done, where, and how it should be done. Then, there is communication between the implementers and the beneficiaries (citizens) over the kind of benefits, information, and services that are due for delivery. Finally, there is communication amongst the beneficiaries themselves over how the implementers could enhance the delivery of benefits, information and services to the citizens. Traditional public administration has been criticized for being sluggish (red tape), rigid, and unresponsive to citizen concerns. It is now believed that the coming of e-governance will revolutionize orthodox public administration through fast interactive communication. It is therefore the communication factor that underlies e-governance. So, e-governance and public administration are two sides of the same coin. The former plays the role of energizing the latter to deliver information and services to the citizens in an efficient and effective manner.

Background to Tanzania's Adoption of E-Governance

Tanzania became independent on December 9, 1961 after a sixty-eight years of German (1889–1918) and British (1919–1961) colonial administration. The late Mwalimu Julius Nyerere became the first President of Tanganyika (later Tanzania). As it has often been argued the state in Africa is Europe's political bequest to the new rulers of Africa. This means that colonial states (Tanzania included) were structured to serve the interests of the colonial rulers. It was largely due to this realization that the nationalist leaders embarked on a number of steps (administrative reforms) to reorient the inherited government structure to reflect the new needs of independence such as the promotion of the economy and democracy as well as citizen participation in public decision-making and implementation.

The first move towards administrative restructuring of the nationalist government happened in 1963. The newly independent government abolished the native authorities system that was established by the colonial administration in 1926. The native authorities system had not been popularly elected. It did not promote democracy nor did it allow citizen participation in public decision-making processes. It was the creation of the British colonial administration whose major tasks were to rule, control, and exploit. The Nationalist government replaced the native authorities system with elected district councils for each district and town councils emerged in urban areas (Warioba, 1999). The nationalist leaders hoped that the newly created policy and administrative structures would promote participatory democracy as well as administrative efficiency at the sub-district levels. But they did not. Lack of accountability, financial mismanagement, political squabbles, and sectarianism flourished. The government tried to resolve this problem by adopting the second set of reform measures.

In 1972 the government took the second restructuring move by abolishing the local authorities following the introduction of the Decentralization Policy (Nyerere, 1972). This move brought in place a deconcentrated system of government administration in which resources and many responsibilities passed to regions (administered by directorates whose status was similar to that of central ministries) and districts. Development councils and committees that spurned to the village level replaced the former local authorities. Essentially, the objective of decentralization policy was to have a coherent system for the implementation of development policies throughout the government (McCourt and Sola, 1999).

Despite the fanfare with which the decentralization policy was launched, it failed to attain the anticipated levels of effectiveness. Ten years later (1982) the system was abolished and the elected councils were reintroduced in 1984. Several reasons contributed to the death of "Decentralization." Firstly, the government did not have sufficient resources (financial, personnel, etc.) to implement its ambitious plans. Secondly, rather than enhancing popular participation the administrative/ bureaucratic structures under decentralization frustrated popular initiatives and participation in decision making (Max, 1991).

In 1993 the Civil Service Reform Program (CSRP) supported by the World Bank was launched after the Nsekela Commission reported in 1987 that the civil service was oversized, underpaid, short of skilled people and demoralized. It did report that

only 33% of civil servants in 1988 had post-primary education qualifications, and only 5.57% of them had a post-secondary qualification (Mukama, 1995). Under the CSRP, the government sought to review organization and efficiency, create effective structures of incentives and differentials, control and reduce public sector employment, build capacity and retrain the staff who remained as well as reforming the local government system (under the Local Government Reform Program 1996–2006). Like the previous strengthening initiatives the CSRP did not produce satisfactory results. However substantial achievements were attained as can be noted hereunder.

Between 1993 and 2002 fiscal discipline improved significantly and inflation was brought to under 5.7%. Central government revenue collection increased following the establishment of the Tanzania Revenue Authority in 1997. However, real per capita yields from local government taxation fell since it was reintroduced in 1984 (Therkildsen, 2000). There was a 24% reduction in the size of the civil service, from 355, 000 in 1992 to 270,000 in 2000. Control over employment levels improved significantly, so that the aggregate wage bill is now kept within budget (2% over budget in 1996 against 40% in 1994). There has been a 75% increase in average civil service real salaries with higher increases at the bottom of the civil service but, of course, still far away from the pay levels of the early 1970 (Stevens, 1994: 69). A 25% reduction in ministerial divisions has slimmed the senior management structures of ministries. Finally, the executive powers of regional administrations have been reduced substantially and their staff reduced to 20% of previous levels (Government of Tanzania, 1998).

On June 20, 2000 the Public Service Reform Program (PSRP) was officially launched by President Benjamin Mkapa in Dar es Salaam (New Utumishi Journal, 2000: 4) and was estimated to cost US$97 million (Therkildsen, 2000:64). It was planned that this program would be implemented through three phases namely, installing performance management systems (2000–2004), instituting a performance culture (2005–2008) and instituting quality improvement circles 2009–2011). Essentially, the PSRP was not significantly different from the earlier Civil Service (1993) and the Local Government Reform Programs of 1996. It was simply an extension of earlier reform efforts. It specifically sought to "complete and sustain the structural and institutional reforms started during the CSRP, and launch a strategic process for progressively transforming the role, capacity and performance of the public service on a sustainable basis' (Rugumyamheto, 2000: 12).

The international context of the PSRP was and still is the New Public Management movement that is seeking to restrict the role of the central government to policy making as well as to major regulatory tasks such as national security, defense and foreign relations. Moreover the movement seeks to introduce competition or market logic into public organizations so that they can work better and cost less (Gore, 1995). That is largely why the launching of the PSRP accelerated the creation of Executive Agencies which are expected to carry out essential public functions not deemed appropriate for provision through government ministries (Caulfield, 2002). Executive agencies are expected to be substantially autonomous and ought to run their operations with the efficiency of markets. This year (2004) Tanzania has 13 executive agencies in place and this number is expected to increase to 50 by 2005.

The foregoing has been a brief review of previous reform initiatives that the government of Tanzania has adopted to strengthen its public administration. It can be noted that these initiatives largely focused on administrative structures (creating or reducing government ministries, departments, executive agencies, etc.), capacity building (training of personnel, record keeping, increasing tools of work and mobilizing financial support), and employee motivation (pay raise, allowances, etc.). The area of e-governance did not receive as much focus. Moreover, citizen participation in the affairs of the state has not been effective enough through previous reform initiatives. Openness, transparency, and fast administration-citizen communication still leaves a lot to be desired. The questions therefore that we must now try to address are, how has the Tanzanian government performed in espousing the e-governance revolution so as it can strengthen its operations, and be able to interact more effectively with the citizens? How can e-governance address the limitations left unattended by previous reform initiatives? What prospects does the government have to succeed in this endeavor? What are some of the major constraints that the government is likely to encounter? What are the implications of e-governance for citizens in a country where the vast majority of the people live on less that a dollar per day and significant social differentiation exists? These questions are addressed in the next sections.

E-Governance in Tanzania: Current Initiatives

The adoption of e-governance in Tanzania should not be looked at as unique and in isolation of previous reform initiatives. The introduction of e-governance in Tanzania is a continuation of previous governmental reforms discussed earlier on. They all sought to make Tanzania's public administration as well as citizen involvement in governmental matters much more effective. Between 1990 and today (2004) some ground had been laid by way of establishing a legal and policy framework within which practical and effective e-governance activities could be pursued. For example, in 1993 the Communications and Broadcasting Acts were enacted. These Acts made it possible for private individuals to operate broadcasting/communication infrastructure and services such as radio and television stations, mobile cellular services and internet services. In 1997 the National Telecommunications Policy (NTP) was launched. Again, this helped to accelerate the spread of telecommunication services in the country, especially in urban areas.

In 2001/2002 financial year, the government abolished all taxes and duties on computers and peripherals. This move has made computers and related ancillaries relatively cheaper and therefore within reach of many Tanzanians. In 2003 the Ministry of Communication and Transport, on behalf of the government, issued the National Information and Communications Technology Policy. The policy clearly states that "Tanzania has to become a hub of ICT infrastructure and ICT solutions that enhance sustainable socio-economic development and accelerated poverty reduction both nationally and globally" (ICT Policy, 2003:.2). The Tanzanian Commission for Science and Technology (COSTECH) as well as the Ministry for Science, Technology and Higher Education have been assigned special roles of sustaining the growth of e-government/e-governance in Tanzania. These seem to be prom-

ising e-governance signs of success. But what prospects stand in favor of Tanzania's initiatives?

In 2003 Tanzania announced its Information, Communications Technology (ICT) Policy. The policy sought to computerize critical information and data required for fast decision making by government officials. The policy also sought to link all governmental ministries, commissions, executive agencies and local government authorities through a network of computers in order to facilitate both intra- and inter-ministerial information/data access. Moreover, the policy through people's representatives (councilors and members of parliament), sought to sensitize and encourage ordinary citizens to develop an interest in accessing government information through the internet. Whereas the policy's intentions were definitely impressive the situation on the ground presented a totally different picture. In the following section, we try to assess the prospects for e-governance to succeed in Tanzania.

Assessment of E-Governance Success in Tanzania

Although the legal and policy framework appears to be in place the prospects for e-governance to succeed in Tanzania do not seem to be adequately apparent at this stage. Let us briefly examine a few areas that have hampered progress so far and constitute barriers to successful e-governance in Tanzania.

Establishment of Websites

We mentioned earlier in this paper that e-governance is possible where sufficient e-government is already in place. This means that for e-governance to work institutions of public policy formulation and implementation (e.g. parliament, government ministries, departments, commissions, executive agencies, regional and district administration, as well as local authorities) must establish well information-stocked Websites, which provide an option for citizens to send feedback and suggestions to administrators and politicians through e-mail. In February 2002 Tanzania established the National website (http://www.tanzania.go.tz). In March 2004 Tanzania's National Assembly too created its website (www.parliament.go.tz or www.bunge.go.go.tz).

Unfortunately, the overall government performance in this area is still disturbingly inadequate. For example, today (2004) 6 out of the 24 government ministries have established a web site and an e-mail address. Only one of the 114 local authorities has managed to establish a website. 4 out of 13 executive agencies have created a web site and an e-mail address. None of the 21 and 105 regional and district administration respectively has established a website. The few websites that have been created so far have an information orientation. That is, the websites are embedded with a variety of information (e.g. on demographics, economy, administrative reforms, etc) without regard to categories or orientation of users such as students, citizens, visitors, business community, farmers, etc.

Some e-government experts have argued that the development of e-governance must pass through 5 stages before it can be considered fully mature (Moon, 2002). Stage one of the e-governance development process involves simple information

dissemination (one-way communication). Stage two is a two way communication described as an interactive mode between government and constituents (request and response). In stage 3 the government allows online services and financial transactions (e.g. renewing licenses, pay fines, etc) by completely replacing public servants with web-based self-services. Stage 4 involves the integration of various government services vertically (intergovernmental integration) and horizontally (intragovernmental integration) for the improvement of efficiency, user friendliness and effectiveness (Hiller and Belanger, 2001). According to Layne and Lee (2001) vertical and horizontal integrations push information and data-sharing among different functional units and levels of governments for better online public services. At stage 5 the government promotes Web-based political participation in which online voting, online public forums and online opinion survey become possible. It can, clearly be noted that Tanzania's e-governance development is still in its infancy stage. The country is still grappling with the initial e-governance challenges before she can even think of going to stage one.

Dominance of the English Language

It has been found out that of all the web pages in the world, about 86.9% are in English, followed by 4.5% in German, 3.1% in Japanese, 1.8% in French, 1.2% in Spanish, 1.1% in Swedish, 1% in Italian and less than 0.4% in all other languages (Norris, 2001). Tanzania's population is currently 34 million. According to Tanzania's National Bureau of Statistics (NBS) (2002) only 2.4% of all adult Tanzanians have a working knowledge of the English language. Moreover, a quarter of Tanzanian adults has no education and 29% can neither read nor write. Some 30% of Tanzanian adults in the rural areas have no education. Clearly, due to the dominance of the English in ICT/e-governance the prospects for the majority of Tanzanian citizens to avail themselves of the e-governance benefits seem to be fairly remote.

Accessing the ICT Facilities

Although the government has abolished taxes on computers and related ancillaries it is still very hard for an ordinary citizen to buy a computer, a printer, software material, etc. This author's survey showed that the average price of a good reconditioned computer (desktop) with 32MB, Pentium I, 200 MHz, and a few more features was Tshs.230, 000 (US$230). Very few Tanzanian citizens can raise this money to acquire a reconditioned computer. In public institutions of higher learning too, student access to computers is still very difficult. For example, current computer-student ratio at the University of Dar es Salaam with a student population of 10, 000 is only 1 to 10 (Aziz, 2002), Mzumbe University with 2000 students has a 1 to 29 computer-student ratio. At Sokoine University of Agriculture the ration is 1 to 9 with students numbering 4, 000. At the Institute of Finance Management the ratio is 1 to 11with a student population of 1500 (Mrina and Njunwa, 2003). In other places such as public libraries, municipal offices, community centers, primary and secondary schools access is extremely difficult as computers are yet to be made adequately available to these places. Access situation is much worse in the rural areas

where over 84% of Tanzanians live. So, access is still a big stumbling block to successful e-governance in Tanzania.

Internet Services

A few enlightened Tanzanian citizens are strongly motivated to make use of the ICT/e-governance services. But their enthusiasm is frustrated by the extreme paucity of Internet service providers. Presently (2004) there are only 23 Internet service providers in the entire country of 35 million people. According to the ICT policy, there are currently 1000 Cyber Cafes all over the country, mostly accessible to urban residents in Dar es Salaam, Morogoro, Arusha and Mwanza. The bulk of rural and township residents (i.e. 85% of the population) do not have access to these services.

Electricity

Slightly over 84% of Tanzanian citizens live in the rural areas where most households do not have access to electricity. Moreover, most rural residents live on less than a single dollar per day. Limited rural income makes it difficult for rural residents to afford monthly electricity bills. According to the National Bureau of Statistics (2000/2001) only 8.5% of all Tanzania Mainland residents have access to electricity. Moreover the supply of electricity in Tanzania today is so irregular and so poor that it is hardly possible to run e-governance facilities on a sustainable basis. Apart from non-reliability of power supply, tariffs are too high for the majority of rural and township citizens to afford. These are the citizens who are expected, under e-governance, to surf the national and ministry websites to know what the government is doing and be able to dispatch their feedback to their representatives and administrators. They surely need to have electricity connected to their homes under reduced tariffs. Only then can they install a telephone, a computer, charge/recharge a cellular phone for instant communication with their leaders. Overall, lack of electricity is seriously limiting the success of e-governance in Tanzania.

Reflection of Issues Underlying the Introduction of E-Governance in Tanzania

The Tanzanian case reflects the kind of challenges and dilemmas that politicians and administrators in developing countries wrestle with in public decision-making processes. In the vast majority of cases, these officials find themselves pulled between two contending forces of local development needs and limited local capacity (financial, personnel resources, etc. to pursue and realize those needs. The introduction of e-governance in Tanzania promises immense benefits both to the people and government processes. However, it has far- reaching implications in the areas of economics and politics.

Firstly, we have noted that the development of e-governance is still in its infancy stage. This means that the government needs to invest heavily in e-government to create the required socio-economic and technological infrastructure for e-government to take off. However, Tanzania is one of the highly indebted countries in the world. In 2003 Tanzania spent Tshs.143.8 billion to service its external debt

which left the country with insufficient resources to invest in local socio-economic development. For example, presently Tanzania spends only 3% and less than 1% of its annual budget on education and health respectively. Any attempts to supplement its locally generated financial resources through foreign loans further aggravate the already burdensome indebtedness.

Secondly Tanzania suffers from a generalized phenomenon of poverty. Close to 70% of all Tanzanians live below the poverty line (i.e. less than a dollar per day). This severely limits peoples' ability to pay for their basic needs, let alone acquiring a computer, pay power tariffs, settle telephone bills, pay Internet services, etc. These are the people who do not know how to read and write, and whose major preoccupation is survival. Issues of e-governance are, to them, considered a luxury. In the final analysis, poverty reduces the pressure that would have been brought to bear on the politicians and administrators had the citizens been financially capable to present their e-governance demands. The leaders therefore wrestle with tough choices between investing in poverty reduction and education first or, in e-governance, second.

Thirdly, in Tanzania today following the introduction of a market economy [where access is based on *the ability to pay*] there has emerged a disturbingly conspicuous phenomenon of social differentiation (classes). Income disparities have significantly increased. The rich are getting richer and therefore gaining greater access to national development benefits. The poor are getting poorer and therefore reducing their ability to access various development gains. Accordingly, the introduction of e-governance in Tanzania presents a potential for the reinforcement of the already existing social classes (the computer-literate and the computer-illiterate) which, in fact, corresponds with citizen access to public benefits. In this case, the administration digital divide is not narrowing but widening. In the short-term this may not pause serious problems. However, in the long-term, it creates a potential for political upheavals as the poor and the illiterate will definitely fight the imposed marginalization and humiliation.

Recommendations and Conclusion

E-governance presents great opportunities to developing countries for improved government performance as well as expanded citizen participation in governmental decision-making. However, the local socio-economic conditions in which these countries find themselves present a variety of stumbling blocks to effective e-governance. Indebtedness, poor infrastructure, poverty, poor policy-making and implementation, social differentiation are some of these stumbling blocks. However, as the Tanzanian case has shown, the potential for e-governance in these countries does exist. That potential demands commitment to be turned into a reality. The first step towards effective e-governance is for the leaders to exhibit the required political will by way of appreciating the potential benefits of e-governance as well as mobilizing their followers to do the same. As Dickson (1974) has shown, the development of technology is essentially a political question.

Secondly, within the limits of resource constraints the leaders need to look at e-governance as an essential strategy to reduce poverty and ignorance. This means that there is a need for a review of resource allocation so that e-governance too receives

priority budgetary allocations alongside with education, health, and agriculture. Such allocations would be used to train personnel, and purchase of the required computer infrastructure. There are case of misuse of public funds by public leaders and administrators. If such wasteful tendencies were curbed significant savings would be made and ultimately invested in e-government/e-governance infrastructure development.

Thirdly, there is presently a disproportionately distribution of cybercafes in favor of towns and cities. The government needs to look into the possibilities of motivating cybercafe owners (e.g. through reduces taxes) to build these facilities close to where the vast majority of the citizens live (townships, villages, etc.). These citizens must then be empowered in terms of education and training as well as making computers and Internet services available to them at preferentially reduces prices and fee.

Fourthly, there is a need for institutions of government to establish an ICT department to oversee the development of e-governance in each individual institution. Competent employees ought to be appointed to advise respective institutions on the best approaches to pursue the issue of e-governance.

In conclusion, the Tanzanian case somehow shows that, development countries are always enthusiastic in trying to adopt administrative and technological innovations to improve the performance of their governments. Sometimes, most of this enthusiasm is externally induced and, therefore does not emerge from a locally developed capacity. Moreover this enthusiasm is normally an enthusiasm of the elitist class (politicians, bureaucrats, scholars, the business community, etc.). Given the generalized social inequalities that exist in these countries, electronic governance is likely to reinforce these social classes; that is widening, rather than bridging, the digital divide. Despite these odds, the government has the responsibility to assist its citizens to espouse e-governance. Subsidizing the prices of computers, encouraging private enterprises to invest in e-government, reducing taxes for owners of cyber cafes, assisting public libraries, schools, colleges and universities to acquire computer facilities are some of the steps that the government can take to make e-governance take root in Tanzania.

References

Aziz, R. (2002), "Public, Private Sectors urged to cooperate in ICT", *The Guardian* No. 2378, July 15 p. 5 (www.ippmedia.com).

Berleur, J. (1997), "Culture and Democracy Revisited in the Global Information Society", *Information Technology in Developing Countries* 7 (1).

Budhiraja, R. (2002), "Electronic Governance: A key issue in the 21st Century", *Electronic Governance Division*, Ministry of Information Technology, Government of India.

Caulfield, J. (2002), "Executive Agencies in Tanzania: Liberalization and Third World Debt", *Public Administration and Development*, 22 (3): pp. 209–230.

Dev, B. (1999), "E-governance: India in the 21st Century", *Cyber India Online Ltd.* (http://www.ciol.com/content/services/egov/).

Dickson, D. (1974), *Alternative Technology and the Politics of Technical Change*, Glasgow: Fontana.

Heeks, R. (1999), "Information and Technologies, Poverty and Development. Development Informatics", *Working Paper Series*, *Working Paper* No. 5. Manchester: Institute for Development Policy and Management, University of Manchester.

Hiller, J. and Belanger, F. (2001), *Privacy Strategies for Electronic Government,* E-Government Series, Arlington, VA: Pricewaterhouse Coopers Endowment for the Business of Government.

Hornby, A.S. (2000), *Oxford Advanced Learner's Dictionary*, Oxford: Oxford University Press.

Layne, K. and Lee, J. (2000), "Developing Fully Functional E-Government: A Four Stage Model", Government Information Quarterly 18 (2): pp. 12–136.

Max, J. (1991), *The Development of Local Government in Tanzania,* Dar es Salaam: Educational Publishers and Distributors.

McCourt, W. and Sola, N. (1999), "Using Training to Promote civil service reform: A Tanzanian local government case study", *Public Administration and Development* 19 (1): pp. 63–75.

Ministry of Information Technology (MIT) (2001), *About electronic governance,* MIT, India. (http://egov.mit.gov.in).

Moon, M.J. (2002), "Does the Perception of Red Tape Constrain IT Innovativeness in Organizations? Unexpected Results from Simultaneous Equation Model and Implications", *Journal of Public Administration Research and Theory* 11 (3): pp. 327–352.

Mrina, D.M.N. and Njunwa, M.H.M. (2003), *A Survey of Student-Computer ratios in Tanzania's Public Institutions of Higher Learning.* Unpublished Report, Mzumbe University.

National Bureau of Statistics (2000/2001), *Household Budget Survey*, Dar es Salaam.

New Utumishi (2000), Journal of the Tanzanian Public Service Reform Program: Special Issue. Dar es Salaam: Civil Service Department.

Ngware, S.S. (1999), *Participatory Assessment of Civic Participation in Municipal Governance in Tanzania,* Institute of Development Studies, University of Dar es Salaam.

Nyerere, J.K. (1972), *Decentralization*, Dar es Salaam: Government Printer.

Rugumyamheto, J. (2000), "PSRP is unique in design and comprehensive in scope", *New Utumishi-Special Issue,* Dar es Salaam: Civil Service Department, pp. 11–15.

Tanzanian ICT Policy (2003: 5), *Ministry of Communication and Transport*, Dar es Salaam.

Therkildsen, O. (2000), "Public sector reform in a poor, aid-dependent country, Tanzania", *Public Administration and Development* 20 (1): pp. 61–71.

United Nations/American Society for Public Administration (UN/ASPA) (2000), *Benchmarking E-government*: *A Global Perspective*, New York: UN/ASPA.

Warioba, M. (1999), *Management of Local Government in Tanzania*, Mzumbe: Research, Information and Publications Department, Mzumbe University.

Zanetell, B.A. and Knuth, B.A. (2004), "Participation Rhetoric or Community-Based Management Reality? Influences on Willingness to Participate in a Venezuelan Freshwater Fishery," *World Development* (32) 5: pp. 793–807.

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E-Government and Political Challenge: Digital Divide as a Public Policy Field in Brazil

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1. Introduction

State Reform has been on route in many countries since the last decade, in a process that pool together academia and public sector, aiming to change the relation between the State and civil society (Kettl: 2000; Barzelay: 2001). Although the reform initiatives tended to be positive in many in many of its aspects, there were always some difficulties in terms of the institutionalization and sustainability of these experiences, as well as, the inducement of a broader accessibility to State apparatus from civil society, both in terms of policy design and, more specifically for our analysis, of accessibility to the web resources in terms of governmental data disclosure and lack of participation in the policy design process. Brazil, following this reformist tendency, went through a broad-spectrum public administration managerial reform, inspired to that of various other countries (Pereira, Spink: 1998), relying in a very strong way on the use of information technology to broaden the scope of its reform. Therefore, as we will discuss bellow, since our primary concern is to focus on developing countries and the use of technology to improve civic participation and governmental reform, our analysis will be based on the Brazilian experience, given its importance in Latin America and its role as one of the "BRICS"[1] countries.

In Brazil, the implementation of these administrative reforms was started in the 1990s through the creation of MARE – the State Administration and Reform Ministry with the support of academics that hold key positions on the reformist government. One of the pillars of the State reform implemented by MARE was the intensive use of information technologies to enhance State responsiveness and accountability. In fact, although many of the policies implemented by MARE administration had been developed before the intensive deployment of electronic government systems, those systems contributed as a key instrument to accelerate the reforms pro-

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posed by the Ministry and, in certain sense, became very successful. However, the State reform in Brazil had also many problems, especially those concerning the provision of adequate information trough the program of electronic government[2] and asymmetries in the access of governmental systems from the majority of population, characterizing a truly digital divide. Both are the cornerstone of our present analysis.

In resume, the e-government systems implemented on that period could be considered the symbolic and objective representation of the reforming *ethos* that ended in 2002, after the election of a new president from an opposition party. In the same way, its design and broadness was a representation of the political will of one concept, politically marked, of social inclusion in the informational world in Brazil. Consequently, from observing the e-gov experience on that period, we expect to devise the aim of a reforming State and the achievements and failures of a consistent tentative of enlarge the provision of civic access to public information through the use of informational technology. Moreover, it highlights the difficulties to transpose from the academia to the reality of public administration, key theories of reforming the government and promote a broader republican participation to the mechanisms of the State. Obviously, this is not a closed agenda, though part of the initial energy linked to state restructuring has lost some of its focus.

Today, the agenda of digital government is still in place, although linked to a different set of priorities under a new federal administration that comes up from 2002 presidential elections. In this sense other questions, such as the extensive usage of free software – LINUX – divide the efforts of the current administration in the continuation of implementing electronic government. In other words, it appears that the momentum for this reengineering of the State was lost, at least temporarily, in the intention of using electronic government as an instrument for deep restructuring the State. This original view was routed in the necessity of a smaller state apparatuses and a more efficient output of the public policies. The new agenda, instead, are more concerned to the dependency of the Sate to some scope of suppliers. It is, anyway, sustained in terms of the recognition of the importance of e-government. However, although this issue regarding different concepts of the e-government agendas and political change is certainly important, we will, on this opportunity, concentrate on the experience of the 90s reform and the relationship between civil society and State in the use of technology.

In this respect, first and foremost, one of the key element to be considered are the obstacles faced by the public manager in the promotion of a transition from either an institutional structure, often featuring inefficient processes and routines, excessively bureaucratized and averse to integration, to other structure that aim to afford greater coordination and communication capacity. The cost of losing momentum on a complex process of restructuring must also be taken into consideration. New processes and routines within the scope of State reform need to continuously incorporate clear and efficient standards and accountability. This would then have a repercussion not only in terms of services rendered, but also in the structure that supports such services, with high quality levels of information supplied. These obstacles were, therefore, essentially of a political and organizational nature, related to the fields of internal and external power of the organization (DiMaggio, 2001). The construction of a Virtual State effectively requires this difficult adaptation, which may incorporate the

alterations that permit strengthening governance mechanisms both in real and virtual terms (Castells, 1996; Mechling, 2002). Thus, as was observed by Fountain (2001):

> [...] The structure of the state will change largely to the extent that changes in information infrastructure catalyze modifications in communication, coordination, and control. I use the language of the state to indicate that the Internet signals not simply more efficient, effective government structured largely according to present arrangements, but deeper institutional change. Building the virtual state is about the process and politics of institutional change rather than a set of predictions about the end result. And this process is partially about rethinking the role of the state in relation to the economy and society. (Fountain, 2001, 203)

We can say that e-gov is a tool evidently aimed at stimulating the restructuring of the public apparatus. It is no mere coincidence that OCDE (1999) noted in its report on electronic government that the potential of the new electronic technologies applied to government procedures must be accompanied by other parallel modifications. Such modifications include the appearance on the scene of a new generation of technically qualified leaders; the enhancement of interactive, feedback and workgroup technologies; greater priority given by the decision makers to the extensive use of these resources; greater demands from civil society for transparency, participation and efficiency. Specially, it must be considered the access to the virtual government from the standpoint of the common citizen, which seems in our case study a very sensitive problem. Taken together, these questions have a tremendous impact on the balance of power and special interests in administration and society, depending more on political resolutions than on *stricto sensu* technological solutions to advance in a republican view of the state apparatuses and policy design.

Therefore, we perform our analysis by discussing next some theoretical issues and the international benchmark on e-government elaborated by UN/ASPA,[3] with a special interest on the Brazilian case. We then proceed to focus on results in the implementation of e-procurement systems as a proxy of the e-government initiative. In addition to this, we also examine to what extent the basic ideas of e-government as applied at federal level have been disseminated throughout public administration, including sub-national levels, and discuss the problem of the digital divide *vis-à-vis* state reform principles of accountability and transparency. We conclude with considerations on the benefits and difficulties for academics and public administrators in creating actionable knowledge that is sustainable and inductive of a stronger republican participation of citizenry in the state affairs.

2. The UN/ASPA Benchmark and a Critical Assessment of E-Gov in Brazil

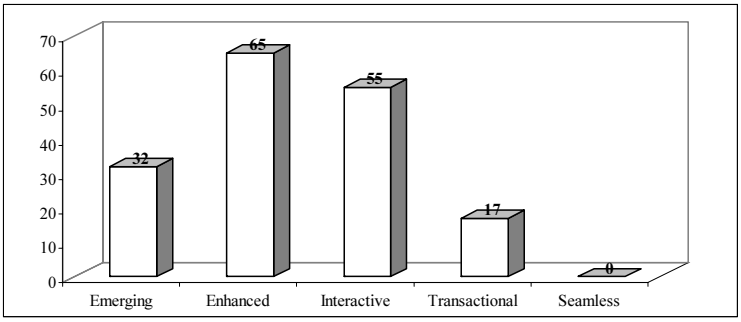
In this segment, we will concentrate on a more in-depth study of the questions discussed above, by empirical observation of the potentialities and difficulties of electronic government implementation as a democratic experiment in the field of public authority related to state reform.

As stated earlier, we will follow the discussion with critical analysis of the UN/ASPA 2002 report applied principally to spheres other than exclusively the federal level, comparing several e-government portals in terms of the criteria of the aforesaid benchmark. With regard to the conceptual criteria contained in the aforesaid report on analysis of the government portals and their functions, we may simply

state that, on the whole, this classification places a given country at a certain stage of development in the use of these virtual mechanisms of governance.

Graph 1 below refers to these stages and the number of countries included in each group. The description of the stages is explained in Table 1, immediately below. Together with a group of 16 other countries, Brazil is classified as being in the transactional category, namely the most advanced stage reached by national electronic government systems implemented to date.

Graph 1: Stages of E-gov Development by Countries.



Source: UN/ASPA (2002)

Table 1: Stages of E-Government Service

Situation	Description
Emerging	Presence on the Web with basic, limited information and statistics.
Enhanced	Dynamic supply of information, using means such as georeferencing of data, animation with images, among other features.
Interactive	Potential for interaction, by means of which users may obtain forms, certificates and other administrative instruments.
Transactional	Users may pay services and taxes, or effect financial transactions online, with interface to the banking system.
Seamless	Total integration of e-government services through a "virtual agency", without demarcations between government agencies.

Source: UN/ASPA (2002)

Brazil's position as a transactional player in terms of e-government implementation is based on a set of performance and design criteria. Although we will not detail the UN/ASPA criteria or describe the major Brazilian government portal, we will present some results in terms of one of the most successful Brazilian e-government systems, related to e-procurement.

In general terms, one of the main objectives of the Brazilian e-government program is transparency and speed, as well as, supporting and meeting targets related to dismantling bureaucracy; standardizing models and procedures; digitizing public administration; improving managerial expense controls; increasing competition in tender processes and reducing costs. In terms of Internet usage, the program seeks to support initiatives promoting State reform, reducing the Government procurement

time cycle; improving efficiency; reducing costs; optimizing communication channels through procurement portals; improving internal processes; making available a single point of access; integrating processes that go beyond the public sectors; and finally, promoting collaboration between different government organs and sectors.

The e-procurement system that we use here as a proxy, is one of those systems that compose the global scope evaluated by UN/ASPA in 2002. Known as "Compras Net" (i.e., "Purchase Net"), is interrelated with other strategic public administration systems within the electronic government development program. Among its proposed themes:

- To provide Public Administration with tools aimed at Contract and Procurement Management.
- To simplify the acquisition process for goods and services.
- To reduce purchase processing time.
- To offer suppliers a greater chance to participate in tender processes.
- To provide a tool aimed at using a default auction mode for the procurement and contracting of common goods and services.
- To promote total transparency in public sector procurement.

In this sense, the services offered by the procurement system have a very broad range of functions related to the principles established by State reform, such as: tender process results; contract statements; proof of payment; communication via e-mail by interest profile and preference lists; specialized discussion forum on legislation and themes of interest to the users; besides a payment gateway. Above all, this system has capillarity and links with various critical government systems. In terms of results achieved, our proxy presented a promising picture after approximately three years of experimental use, since its initial pilot phase, until 2002. The numbers below summarize these results. The following statistics were observed:

- Portal accesses: 2.1 million
- Notices published: 29 thousand
- Suppliers registered: 150 thousand
- Subscribers: 40 thousand suppliers
- Published tender processes: 160 per day
- Published tender processes – 41,000 in 2001

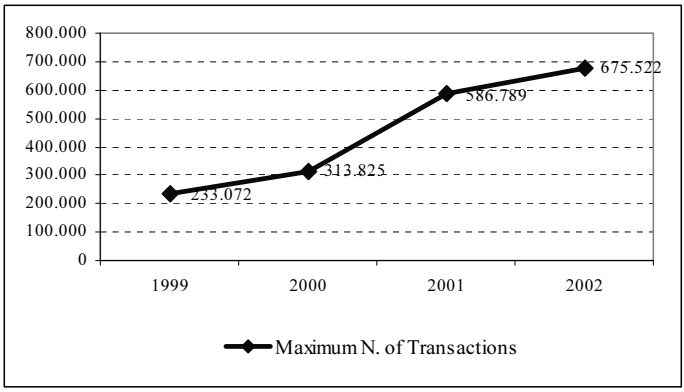
Specifically regarding procurement auctions, we can be state that this government procurement mode was established in order to obtain better prices through a specific limit linked to the procurement item. Two alternative auction modes have been used, the electronic auction and the audience auction, with both promoting strong real-time competition between the suppliers. The results demonstrate a strong positive impact since the adoption of this type of procurement mode, with extraordinary repercussions for the Web version. In summary we have the following example table:

- Total expenses with acquisition of goods and services: R$ 14.2 billion in 2001 (US$ 4.7 billion).
- Of this total, 5% were acquired through audience auctions, in 2001, equivalent to R$ 693.8 million (US$ 231 million).

- Estimated direct savings of 25% of expenses, or R$ 173.4 million (US$ 58 million).
- 4,228 auctions were held up to April 30, 2002.
- R$ 1.065 billion (US$ 355 million) in acquisitions through auction up to April 30, 2002.
- Increase in the volume of procurements performed in competitive modes and a decrease in the time needed for a tender process.
- Greater transparency, increased chance for participation, more agility and dismantling of bureaucratic procedures.

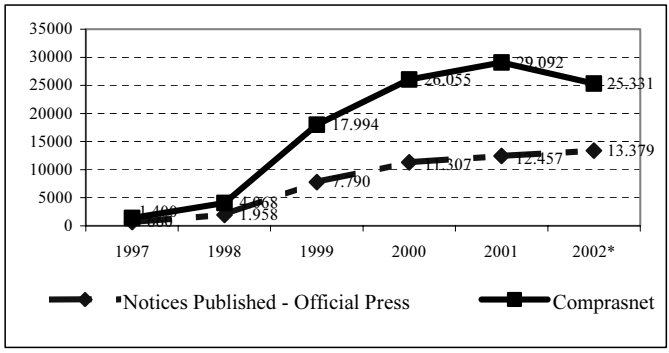
Graphs 2, 3, 4 and 5 show the system's numbers in terms of its evolution.

Graph 2: Evolution in Quantity of Tender Process Notices Published: 1997–2002.



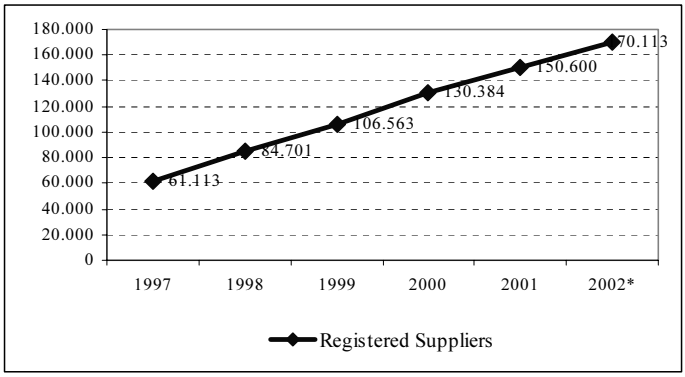
Source: Secretaria de Logística, Ministério do Planejamento, Governo Federal

Graph 3: Evolution in Quantity of Tender Process Notices Published: 1997–2002.



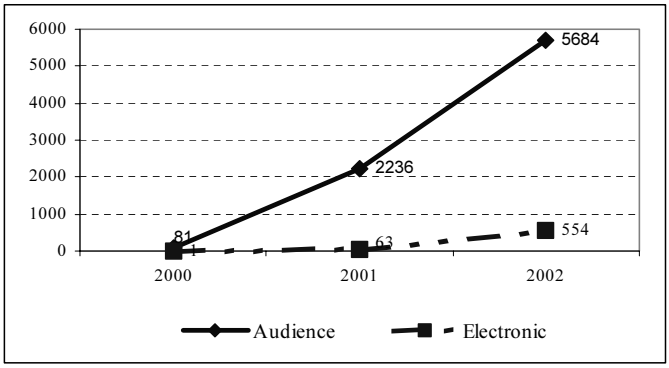
Source: Secretaria de Logística, Ministério do Planejamento, Governo Federal

Graph 4: Evolution in Quantity of Suppliers Registered: 1997–2002.



Source: Secretaria de Logística, Ministério do Planejamento, Governo Federal

Graph 5: Quantity of Auctions Held: 2000–2002.



Source: Secretaria de Logística, Ministério do Planejamento, Governo Federal

Nonetheless, although the results are in essence highly auspicious, two questions deserve particular attention at this juncture. The first relates to other web portals at national and regional levels. It means how broad and effective is the experiment of e-government in Brazil? In this respect, how would they be classified using the analytic scheme similar of the criteria of UN/ASPA? Did they show analogous positive behavior to the national portals analyzed, or did they behave differently? As we will discuss below, the processes that sustain this level of expected sophistication and interactivity might well never be effectively reproduced in other systems. This would lead us to believe that institutional engineering for State restructuring along the lines suggested here under the State Reform in Brazil, and in accordance with the presuppositions of the authors quoted above, could still be far from being ready to be implemented to the extent of the proxy example. The second question focuses on the level of accessibility and the problem of digital divide. Given the existing digital accessibility asymmetry, this can be applied to other systems that jeopardize the use of information technology as a catalyst for governmental restructuring and governmental accountability. Together, these two questions could be interpreted as a proxy,

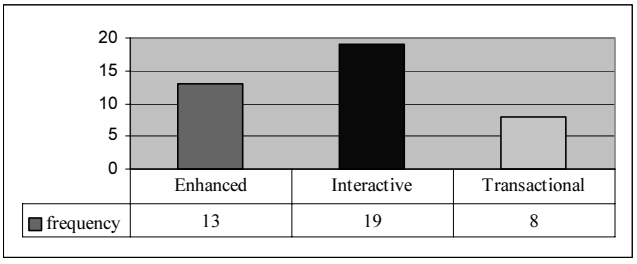
in some extension, of the difficulties and inconsistencies of implementing complex reforms as originally designed. Next, we will explore these questions.

3. Beyond the UN/ASPA Benchmark

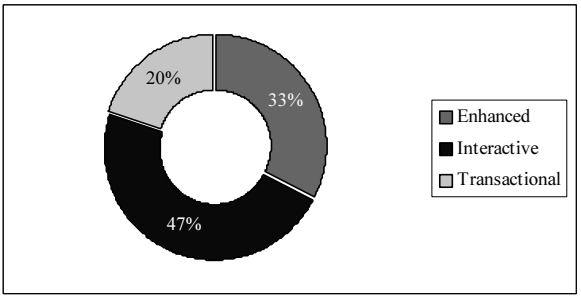
For the purposes of this empirical exercise, we selected 40 government sites or portals chosen by random sample from the universe of 130 important Brazilian governmental institutions registered in 2002 for the National Electronic Government Awards, sponsored by the Brazilian Association of State IT Companies (ABEP). These portals are representative of other national and subnational e-government portals and were analyzed at the time we perform this study, and compared with the 2002 UN/ASPA report results. Before proceed with our empirical exercise, we should mention at this point that we will present next a first cut analysis of the primary results of our research project. Naturally, these results will be looked at in greater depth as the research work progresses.

Among the criteria we drawn, we singled out other items as well, namely: **relevance** [presence on the site of one or more of the following critical sectors: education, health, employment, labor, welfare and social services, financial services and security]; **user-friendliness and navigability** [cognitive simplicity, organization and location]; **content** [information about the institution, links, etc. and **innovation** [truly pioneering communication or service characteristics]. Based on this set of criteria, we established the following general configuration of the selected sites, as shown in Graphs 6 and 7 below:

Graph 6: 40 Selected Sites and Portals by UN/ASPA Criteria.



Graph 7: 40 Selected Sites and Portals by UN/ASPA Criteria.



From Graphs 6 and 7 above, we obtained a different picture for Brazil to that portrayed in the UN/ASPA 2002 report, according to which Brazil was classified in the transactional group. Among the portals analyzed we include a sample drawn from federal, state and municipal portals, where 47% were at the stage immediately preceding the transactional stage. This result, therefore, does not tally with Brazil's overall classification according to the United Nations study. In fact, the result leads us to a relevant question about the correct understanding of the extent of development of these mechanisms and the level of internal structuring which exists, in relation to the transactional degree of service interactions and the internal organization of data and procedures. When one also considers that 33% are at the even less sophisticated interactive stage, while only 20% are effectively at the transactional stage as per the report, the chances of reaching the Virtual State as we discussed before seems fairly slim.

To put it another way, we could say that the structure and degree of development attained in the federal systems observed in the UN/ASPA report are not fully replicated in the broader field of government initiatives at municipal and state levels, and, also, in several sectors at federal level. Furthermore, we must also conclude that this scenario is not exclusive to Brazil, since the magnitude of the total number of users and the complexity of the systems of electronic government observed in the UN/ASPA study, as we shall see below, would lead us to suppose that this result is a *proxy* of the reality not only for Brazil, but also for other countries classified in the transactional group.

In essence, we may tentatively infer that this discrepancy in the results observed in the classification in the UN/ASPA report is mainly due to a dichotomy of "political wills", linked to the political culture and private strategies of a large segment of the bureaucracy active in different organs and different levels of public administration. The fact is that the perception of the importance of IT as a tool for State reform at the federal level differs in the degree of commitment to getting more deeply involved in the process, and, finally, in working towards the standardizing and restructuring of initiatives that must necessarily be carried out in a successful reform. In this respect, although electronic government in Brazil has produced remarkable results, particularly in the area of e-procurement (Fernandes, 2003), it seems that it has as yet been unable to spread to all levels of administration.

This question, which is central to the possibility of application of theoretic State reform principles in real structures of administrative apparatus, may be understood as the incapacity to promote sustainable change simply by transplanting academic models to a complex reality without previously act on a cultural level in terms of building and spreading a conceptual hegemony through out key actors on organization structure. However, there is an element of idiosyncrasy between the proposed reform plan and the concrete possibilities of applying its concepts to the reality of administration. Additionally, even when concrete advances were obtained in modernizing the State, like the e-procurement system we have analyzed, these outcomes appear to be closely connected with certain high profile administration personalities, while they were in power, but lost momentum as soon as they left office. On this regard, we perceive that building a previous consensus, although time consuming, could be a fundamental step toward a process of assimilation by bureaucrats on the

importance of reform, and, as well, to prepare academic to the rudeness of the reality of the political process.

In this way, the institutionalization and legitimization of reform as a deep and transforming trend in the public sector, within the dynamics of the reforms themselves irrespective of the leaders in power, became problematic. With the intention of exploring this intuition, we held a series of in-depth interviews, performed during the year of 2002, on this topic, with key spokespersons of the Brazilian federal government involved with State restructuring and the electronic government program. We summarize below some of the key points that are more relevant to our present discussion. From the outset, it is clear that tension exists between the implementation of structural reform vectors, such as electronic government systems, and an acceptance of structural changes that affect established power and control relationships in the machine. Along these lines, one of those interviewed observed that:

> "We are still in a naive phase where electronic government is perceived as technology, and everyone is excited about technology. Electronic government is a pleasant innovation, but the moment when this novelty starts to bring about changes in the processes and the structure I am certain that it will encounter a great deal of resistance".

Another fundamental point centered on the fact that systematic restructuring in the horizontal administrative processes of the government, and a vertical readjustment in different organs had taken place, promoting a certain reconfiguration in the matrix of administration. The interviewees affirmed that there was no significant reengineering of processes by various organs, because electronic government occurred mainly in a management sphere independent of global planning. This would suggest that the deployment of e-government in the network until now has been occurring through isolated initiatives in peripheral fashion that, with few exceptions, share little interconnectivity.

The interviews confirmed that these structural changes have not yet occurred because electronic government is in practice still a set of disconnected processes, without an overall strategic plan aimed to restructuring and integrate the whole State structure, and above all, aggregate large segments of bureaucracy around the key concepts of State reform. In terms of e-government this is mainly because the sites were created by the IT area of each organ, which is an undervalued, intermediate area in the hierarchy. But, for electronic government to truly fulfill its role and effectively act as government, some 'steps backward' will be needed, and this may come to represent an indomitable institutional barrier. However, the interviewees look forward, in the future, to the institution of in-depth electronic government mechanisms, as well as to a certain extent, predominantly civilian participation, giving electronic government a broader structural character connected to a systemic perception of government. As stated by on interviewee:

> "There are a series of projects and ideas coming out of the Bresser[4] reform. These ideas appeared at a moment when electronic government was in its infancy. We need to arrange things such that the legacy of the Bresser plan meshes with the idea of electronic government, because the idea of electronic government has an inherent component of management. [...] In fact, we currently have the Management Secretariat and the STI (Secretary of information Technology). Perhaps an alternative would be to merge the two and create something larger than the combination of the two. Maybe an alternative would be to place this in the hands of the President of the

> Republic.... One of the major problems of the Bresser reform was the fact that all formulation and coordination of the reform policy was headquartered in a single Ministry […]."

Also, during the interviews, it became clear that the bulk of the progress made was linked in large part to the individual action of some charismatic leaders with a double participation in the public sector agenda, namely both academic and managerial. Despite the fact that this can be perceived as a comparative advantage, in terms of cognitive capacity to comprehend and intervene in the processes, this positive factor did not transform into practical incorporation of central reform policies in the *ethos* of civil service. That depended on broad-based charismatic managerial leadership and did not include the possibility of autonomous sustainability in reform processes. In this form, as was commented:

> "There were times when the Ministry [of reform] site succeeded in having more hits than the Treasury because the Minister [Bresser], Chief of MARE, demanded that the meeting agendas containing decisions about reform and, especially those related to any decisions about civil service, all be published on the Internet. Since the Minister set this requirement and enforced it, constantly verifying compliance, other organs have come to proceed in the same way".

Therefore, our analysis suggests that the portals and web sites observed, although in many cases impressive in terms of their functionality and scope, still do not reflect a common desire of the bureaucracy to equip administration for more effective interlocution between the government and society. In these terms, the experiment of reform, at least until the present time, has achieved only partial success restricted to some specific organs of the federal administration.

In summary, we examined above the provision of information and the current limitations involved in e-government systems. However, we should discuss whether this difficulty in sustainability merely involves a problem of hegemony of ideas and concepts. Building democratic e-government seems a complex task, and some internal barriers need the support of civic engagement to overcome internal vetoes to restructuring. In this sense, one condition for managerial reform is the democratization of information and governmental transparency on the web; both conditions being linked to accountability and the establishment of policy feedback mechanisms, which are crucial principles of state reform. In this regard, complementing our analysis, we will next survey the effective provision and limitations of civil society access to information on the web.

4. Accessibility and the Digital Divide

The problem of physical accessibility to electronic government systems is, undoubtedly, a complicating factor for the questions discussed above. It is the reverse of the token since it is essentially related to the societal demands of accountability and responsiveness from the State to civil society. Although this complication is significantly more acute in developing countries, like those in Latin America, it is also a problem for developed countries (Norris, 2001). In this way, the result of asymmetric access to new information channels can be immediately felt, as it affects services, infrastructure and quality of life, thereby signaling an increase rather than a decrease in socio-economic and spatial disparities. At worst, these can have a negative effect on the competitiveness of a city or even a country, and certainly on the government in terms of providing public goods to its citizenry.

In this analysis, the essential aspect we will focus upon is the fact that the specific nature of very asymmetric societies such as that of Brazil leads us to a triple divide, as we like to named it, since we are not only dealing with a digital divide and a spatial divide, but also a social divide. By examining Table 2 below, there are different perceptions of this very same reality. Thus, as we see more accurately, despite access in absolute terms being highly significant in Brazil, this number is far below the average for developed countries in relative terms. On this regard, judging from Table 2 below, it is clear that the 16.84 million Brazilian web users represents a sizeable grouping, which places Brazil among the countries with the highest population of Internet users in the world. However – and this is a fundamental point – when we examine these numbers comparatively and not only from the point of view of absolute values but also in terms of the ratio of web users and the general population, we see that Brazil has one of the worst ratios in the selected group. Which means that, in Brazil, this translates into less than 5% of the population, while in Canada, for example, the total is approximately 50%.

Table 2: Population of Selected Countries and Internet Users

Selected Country	Population	Internet Users (Source)
Argentina	37.4 millions	3.88 millions (Nielsen NetRatings)
Brazil	174.5 millions	16.84 millions (Nielsen NetRatings)
Canada	31.6 millions	14.2 millions (Media Metrix Canada)
Chile	15.3 millions	3.1 millions (Int'l Telecom. Union)
Finland	5.2 millions	2.69 millions (Taloustukimos Oy)
France	60 millions	16.97 millions (Mediametrie)
Japan	126.8 millions	51.34 millions (NetRatings Japan)
United Kingdom	59.6 millions	34.0 millions (Nielsen//NetRatings)
United States	278.0 millions	165.75 millions (Nielsen//NetRatings)

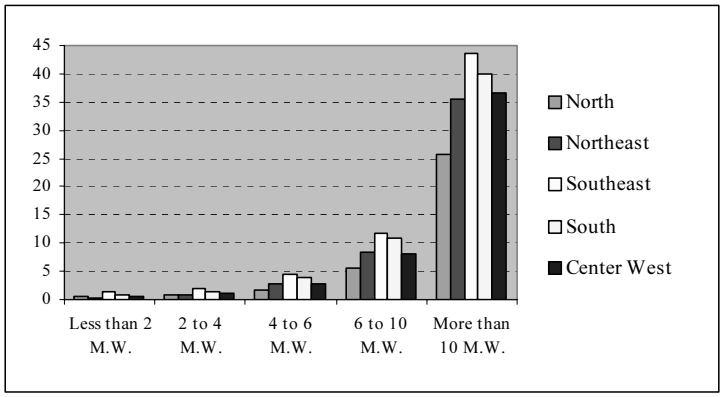
Source: NUA (2002)

Furthermore, we should remember that democratization of the Virtual State and its policies by information and communication technologies begins of necessity with the possibility of a multiplicity of interest groups and common citizens having access to these information channels. We can see from the graph below that there is not only a very low correlation between users and the population in the Brazilian case, but also a high correlation between higher social status sectors with the possibility of more intense use of ICT (access to information and communications technologies). This would suggest a higher level of accessibility to information and services precisely by those segments that are already over-privileged in this aspect in Brazilian society. This discussion regards one of the policy questions, which seeks to achieve democratization of access to State mechanisms, and even to private ser-

vices, via ICT, as a standard of the increasing influence of public action that should necessarily be added to the public agenda. The graph and the map below seek to survey this situation.

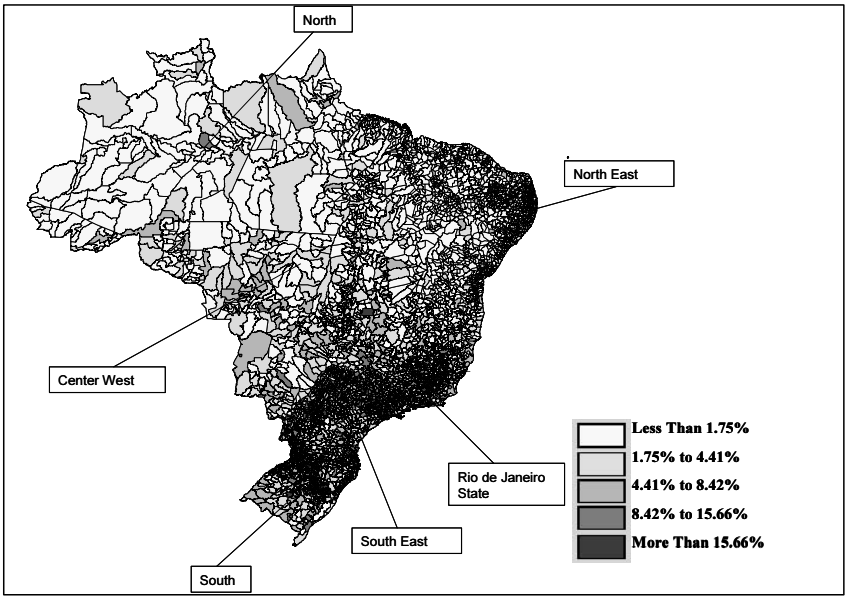
In the first figure, Graph 8, we see a division in regional terms in Brazil with respect to access to the Internet, in terms of region and income and those residences that simultaneously have a telephone and a computer. We should point out that the north and northeast are the poorest regions and the south and southeast the wealthiest. The correlation between potential Internet access and income is obvious. Higher income is directly associated to the potential use of Internet. This asymmetric distribution of wealth also occurs spatial, if we considered the different regions of Brazil, as well as its cities. We can observe this more clearly in Map 1 and 2, where we used GIS software to study, from a spatial perspective, the spatial distribution of potential internet user in Brazil, and more explicitly, the same spatial distribution in one State of the Brazilian Federation, the State of Rio de Janeiro, and its capital, the City of Rio de Janeiro, taken here as a proxy as well. The map shows potential access to the Internet by residences, in clusters, in differentiated shades, representing percentages of potential access by state region and city neighborhood. Narrowing down to the local level – as in the detailed map of the city of Rio de Janeiro – we also have a clear divide within the capital. In both cases, the areas represented with darker tones are those with higher potential for access and, in general, associated with higher social status, confirming a spatial mismatch between potential internet users and low social-economic statuses, which confirms the data of graph 8 bellow.

Graph 8: Percentage of households with potential access to Internet (telephone and computer) by income (units of minimum wage) and region – Brazil 2000.



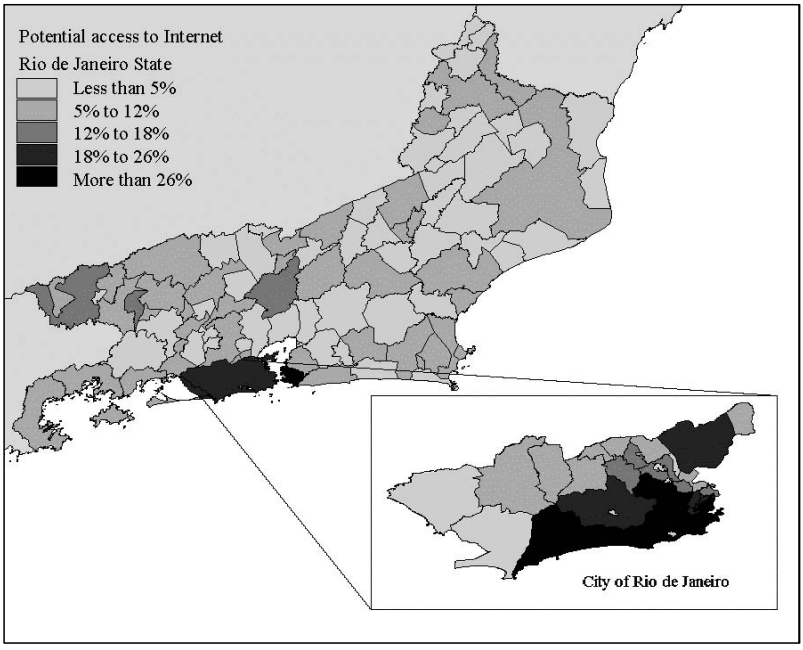
Source: Brazilian National Census 2000 – IBGE

Map 1: Brazil by Potential Users of Internet in Percentage of the Total Population



Source: Brazilian National Census 2000 – IBGE

Map 2: Rio de Janeiro State and City by Potential Access to Internet



Source: Brazilian National Census 2000 – IBGE

This points to the issue of governance mechanisms and transparency, which are fundamental to the reversal of the problematic scenario both in socio-economic and developmental terms, that could be greatly assisted by the digital revolution. However, obstacles arise due to the historic asymmetries in addition to a new technological asymmetry, which come up from the digital world itself in terms of a very intense digital divide. As stated in the report for the 2001 world meeting of the UN Habitat agency when defining local government as: "[...] the sum of the forms by which individuals and institutions (private and public) plan and manage their common interests. Local government is an ongoing process which can lead to conflict or mutually beneficial cooperative action" (Habitat, 2001). On these terms, based on the date shown above, one should ask how it could be possible with a presence of such digital gap? And complementing this question, how achieve a successful State Reform given this lack of possibilities for participation in the construction and feedback mechanisms of the reformist agenda?

Based on the above, one can say that developing public policy that takes advantage of the digital opportunity is a fundamental element for fair development, and it can also be a vector of efficiency. However, we should also argue about what kind of efficiency is possible if it is restricted to a certain population segment that, although significant in absolute terms, is still small from a relative perspective. Further, to what extent might this deprivation complicate the construction of social capital and stimulate the restructuring and the efficiency of the State? Taking both of these aspects into consideration, might State reform be considered a successful experience in terms of the interaction of academics, civil society and bureaucracy in Brazil? Does the academia when implementing conceptual frameworks has been successful in not only recognize, but also in change the conditionings of State inefficiency? In our conclusion below, we will discuss these final aspects.

4. Conclusion

Throughout along this article, we have attempted to examine key elements that we consider to be central to State restructuring and civic participation in terms of efficiency, with the backing of modern information technology, from a critical standpoint. These experiments were elaborated within a framework designed in academia and transposed to the heart of public administration. Therefore, E-government has been serving as a tool for promoting process integration and restructuring, as well as accountability, transparency and policy feedback mechanisms for checks and balances of administration performance, actively contributing to the implementation of key principles of State managerial reform. Using the *Benchmarking E-government* 2002 report of UN/ASPA as an analytical reference point, we have attempted to conduct an in-depth survey of the analytical parameters and the results derived therefrom. Despite the fact that our *proxy*, namely the e-procurement system, has many virtues, some of which are in the realm of initiatives for State restructuring, we realized that the basic principles it intrinsically contained, deeply rooted in managerial reform, has been presenting a lack of the potential to spread its critical standards throughout administration at national and regional levels.

This points to the failure of administrators in building a consensus that insulates critical changes from partisan disputes as well as establishing a sustainable cycle of governmental modernization, although the crescent use of e-government points to certain sustainability of it despite political changes with some differences regarding the agenda of priorities and the intensiveness of its implementation. By and large, the access currently provided is based, in the majority of successful cases, on the subsidiary nature and specialization of functions, consolidated and reflected in the supply of *ad hoc* services. These are restricted or unfettered by intense political concerns in terms of committed citizenship, or without civic interrelation for access to broad segments of society. Access is also biased, in the case we survey using census data, by an asymmetric distribution of the necessary equipment for accessing the Web. Thus, certain interest groups as opposed to others are potentially favored while especially reducing civic pressure for State restructuring and provision of information by the State. This points to an inevitable delay in achieving more widespread State reform, in which electronic government could act as a catalyst for a republican process for the reconstruction of administration. The obstacles are therefore both internal and external to the State apparatus.

Despite these problems, the very existence of this system and the results the system has achieved also point to the fact that State reform has indeed accomplished some significant results that, as shown in graphs 3 to 5 above, which demonstrates the vigor of e-govt in Brazil and its sustainability.

Our research, however, also mitigates this auspicious results by pointing serious difficulties in surpass the ceiling of users, given the limits of access in terms of potential users with low income statuses, not only limited by physical access to terminals and personal computers, but also, we should add, in terms of the complex comprehension of the use of hyperlinks, search mechanisms, and cognitive processes that reflects a lack on necessary years of study and, as primary cause, unbalanced policies for combating social inequalities, witch are locked in the well known perverse correlation of low income and lack of years of study. This means that the digital divide is associated directly to social divide. In this sense, the digital divide is a reflection of a deficit on the State provision of citizenship rights. Therefore, the State in its attempt to promote a development based on more governmental efficiency and on informational society is requested to develop a complex set of policies to fulfill this pretension. The lack of systemic action on this regard can jeopardize seriously the successful achievements of the e-government in Brazil in terms of spread the informational society.

Taking the above into consideration, we conclude by stressing that the problems marring the effectiveness of State reform have been twofold. On the one hand, there is a need for greater interaction between academia and government practitioners in recognize the necessity of implementing a more complex agenda for e-government, that goes from a greater provision of information for civil society and a broader possibility of access, both physical and educational, including specially low income citizens. On the other hand, consensus must be reached between bureaucracy and civil society in terms of the sustainable development of reforms and improved transparency not only for governmental services, but also for participation in the discussion of the reform agenda itself, which must be culturally disseminate before achieve

a successful implementation. These are the challenges facing our societies, and specially those in Latin America, in order to promote a more efficient managerial restructure of the State.

References

Report on the Impact of the Emerging Information Society on the Policy Development Process and Democratic Quality, OCDE, (1999).

Benchmarking E-Government: A Global Perspective. UN/ASPA, (2002).

The State of the World's Cities 2001. UN/Habitat, (2001).

Barzelay M. (2001), *The new Public Management: Improving Research and Policy Dialogue*, Berkeley and Los Angeles: University of California Press, pp. 219.

Cardoso, F.H. (1979), *Dependency and Development in Latin America*, Berkeley and Los Angeles: University of California Press, pp. 256.

Castells, M. (1997), *The Rise of the Network Society*, Vol. 1. Massachusetts: Blackwell, pp. 556.

DiMaggio, P. (2001), *The Twenty-First-Century Firm*, New Jersey: Princeton University Press, pp. 275.

Fernandes, C. (2003), Sistemas de Compras Eletrônicas e sua Aplicação à Administração Pública – O caso do SIASG/ComprasNet. Mimeo. FGV, Rio de Janeiro, pp. 173.

Fountain, J.E. (2001), *Building the Virtual State*, Washington: Brookings, pp. 251.

Kettel D.F. (2000), *The Global Public Management Revolution: A Report on the Transformation of Governance*, Maryland: Automated Graphics Systems White Plains.

Mechling, J. (2002), "Information Age Governance: Just the Start of Something Big?", in Governance.com – Democracy in the Information Age, E.C. Kamarck, J.S. Nye (Eds.), Washington, D.C.: Brookings Institution Press, pp. 141–160.

Norris, P. (2001), *Digital Divide? Civic Engagement, Information Poverty, and the Internet Worldwide,* Cambridge: Cambridge University Press, pp. 303.

Pereira, L.C.B. Spink P. (1998), *Reforma do Estado e Administração Pública Gerencial*, Fundação Getulio Vargas (Ed.), Rio de Janeiro, pp. 315.

Notes

[1] BRICS countries, as known in the literature, is the group of the five more advanced developing countries, comprising Brazil, Russia, India, China and South Africa.

[2] We use in this text "e-government" or "e-gov" for eletronic government as well.

[3] A more recent UN/ASPA report on e-government have been published in 2004. Although this last report is more detailed and mitigates the Brazilian position related to the same report published on 2002, it did not changes significantly the inferences we perform using the 2002 report. In contrary, Brazil is still considered in the mid range bracket of the e-government index and among the top 25 countries in the web measure assessment. Actually, the changes on this last report comes to confirm some of our observations in this article regarding the necessity of better understand the complexities of insertion of society in the informational era and a less naïve perception of the relative position of many of the countries, including Brazil, better ranked in the first report.

[4] Bresser Pereira is an academic that held different key positions in Brazilian Government, among them he was the ministry responsible for MARE and, consequently, the State Reform during part of the 90s.

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