

E-GOVERNMENT SUCCESS: SOME PRINCIPLES FROM A SPANISH CASE STUDY

AUTHORS' BIOGRAPHY

Reyes Gonzalez (mr.gonzalez@ua.es) is a Senior Lecturer in Business Management and Information Systems at the University of Alicante. Her current research interests are Information Systems Management, E-Business and Outsourcing Processes. She has published articles in several journals, e.g. Information & Management, Information Technology and People, Logistics Information Management, Total Quality Management, The International Journal of Educational Management, International Journal of Information Management, Information Management & Computer Security and Industrial Management & Data Systems.

Jose Gasco (jl.gasco@ua.es) is a Senior Lecturer in Business Management and Human Resources at the University of Alicante. His current research interests include Human Resources and Information Systems Outsourcing. He has published articles in several journals, namely, Revue Internationale P.M.E., Direction et Gestion des Entreprises, Corporate Communications: An International Journal, The International Journal of Public Sector Management, Business Process Management Journal, Total Quality Management, Information Technology and People, Logistics Information Management, International Journal of Information Management, Information Management & Computer Security and Industrial Management & Data Systems.

Juan Llopis (juan.llopis@ua.es) is Dean of the Faculty of Economics at the University of Alicante. His current research lines include Organisational Culture, Human Resources, Quality Management, and Information Systems Management. He has published articles in journals such as Information and Management, Total Quality Management, Journal of High Technology Management Research, Corporate Communications: An International Journal, Information Technology and People, Logistics Information Management Journal, International Journal of Value-Based Management, International Journal of Information Management, Information Management & Computer Security and Industrial Management & Data Systems.

CORRESPONDING AUTHOR

Reyes Gonzalez. Department of Business Organisation. University of Alicante. Carretera San Vicente-Alicante. Zip Code: 03080. Alicante. SPAIN. Telephone and Fax: 34 96 590 36 06. E-mail: mr.gonzalez@ua.es.

E-GOVERNMENT SUCCESS: SOME PRINCIPLES FROM A SPANISH CASE STUDY¹

ARTICLE TYPE: Case Study

ABSTRACT

Purpose This paper has as its aim to analyse the evolution and current status of e-government, trying to deduce a series of basic principles for its success.

Design/Methodology/Approach A case study has served to achieve that aim, but prior to its presentation, a short review of the e-government literature along with some facts and figures have made it possible to assess the situation of e-government in various countries around the world, and more precisely in Spain.

Findings E-government lays emphasis on technology; however, the internal processes through which Public Administrations offer their services to citizens need careful reengineering.

Originality/Value Since tax administration requires using a large amount of data, it is a key area in the application and study of e-government. That is why a Spanish public organisation in charge of tax administration has been examined in this paper.

Research Limitations Although a case study like this one, in which the analysis of e-government is restricted to the functioning of a tax administration body, may have limitations when it comes to generalising the conclusions drawn, the principles inferred from it can be easily extrapolated to the vast majority of Public Administrations.

Keywords E-government, Case Study, Tax Administration, Spain

INTRODUCTION

Finland has introduced a system to pay for parking through a mobile phone in several cities. The PARKIT² parking system allows users to start, finish or extend the parking time by just making a phone call, without even having to go to their

¹ The authors would like to thank the editor and two anonymous reviewers for their suggestions.

² <http://e.finland.fi/netcomm/news/showarticle.asp?intNWSAID=7240>

vehicle, thus saving time, nuisances and money, as the user only pays for the parking time consumed.

The city of Melbourne (Australia) wants both visitors and residents to feel at home there. For this purpose, it has installed iHubs³, i.e. computerised kiosks which provide information about events, restaurants, leisure, shopping and transport.

Norway.com, the Norwegian public sector information portal, has recently developed a service for those who wish to obtain information from the web portal but do not have an Internet connection. Calling a free phone number, users can have the information from the web site (news, contact information, etc.) read to them⁴.

The same as in these examples, there is a growing number of instances in which the public sector has committed itself to investments in Information and Communication Technologies (ICT) hoping to improve its internal management as well as the services it delivers to citizens through an innovative use of communication channels and facilities (Chen, 2003; Choudrie and Papazafeiropoulou, 2006; Mitra and Gupta, 2007). This recent trend has come to be known as 'e-government'.

The present paper has as its aim to discuss e-government with a focus on tax administration and providing an illustration with the case of a Spanish local public organisation. A short initial review of the literature on e-government is followed by some facts and figures about this trend both across the world and in Spain. After examining the environment, the case study is set out.

THE CONCEPT OF E-GOVERNMENT AND APPLICATIONS IN TAX ADMINISTRATION STUDIES

E-Government Definition

E-government means using ICT (Information and Communication Technologies) to provide citizens with an improved access to information related to Public Administrations (PPAA.). In addition to the traditional approach, which sought to

³ <http://www.melbourne.vic.gov.au/info.cfm?top=228&pg=715&st=584>

⁴ <http://www.norway.no/>

meet internal operational needs and solve problems associated with efficiency and costs, “e-government” focuses on the potential of external interactions and emphasises the importance that citizens assign to customer service, convenience and user-friendliness (Premkumar, Ho and Chakraborty, 2006).

A number of key action areas can be identified in relation to e-government. These areas, which are shown in Figure I, refer to the following relationships: Government to Clients or Customers (G2C); Government to Businesses (G2B); Government to Government (G2G); and Government to Employees (G2E) (Siau and Long, 2006).

It must be highlighted that while G2C and G2E imply an interaction between the government and individuals, G2B and G2G focus on the interaction and cooperation between the government and organisations. Likewise, G2C and G2B represent external interaction as well as collaboration between the government and the institutions around it, whereas G2E and G2G have to do with internal interaction both between the government and employees and between governments at various levels and in different places.

TAKE IN FIGURE I

Neither the application of e-government nor the definition of its study field is easy. E-government has proved difficult to define due to several reasons:

- o It is a developing area in practice and, therefore, has only very recently started to be researched on. In fact, the true boom of these services took place in 2000 (Telefónica, 2005).
- o Additionally, the roots of e-government are to be found in the literature on Public Administration as well as in that dealing with Business Administration and Information Systems (Holden and Fletcher, 2005). This location on the borderline between various disciplines contributes to the ambiguity of e-government.
- o On the other hand, although e-government means incorporating the e-business practices that are so common in the private sector into the public sector (Gulledge and Sommer, 2003), many differences exist between e-business and

e-government. One of them refers to the typical handicap for the public sector derived from the fact that it does not occupy a leadership position in the implementation of new technologies or in any other innovation area (Nikoloyuk, Marche and McNiven, 2005). Other problems specifically linked to e-government that bring it away from the concept of e-business are the following (Chen, 2003):

- Organisational and cultural inertia. Many public entities are not precisely known for their efficiency levels or for their wishes to introduce changes. Problems such as the bureaucratic organisational structures and the lack of clear communication channels or a collaboration culture need to be dealt with prior to the adoption of any successful e-government initiative.
 - Governmental and legal regulations. There are usually laws and regulations, the purpose of which is to specify rights or duties or to carry out a supervision or control function. Despite their good intentions, these regulations end up holding back innovation.
 - Security and privacy. E-government applications must safeguard citizens' privacy within an open, not completely safe environment (the Internet) (Chen and Barnes, 2007; Flavián and Guinalú, 2006). This applies to e-business too, but public services have an *extra* obligation to guarantee security and privacy.
 - Inconsistent, obsolete infrastructures and systems. Many public bodies experience budget restrictions which prevent them from modernising their systems and technologies.
 - Low staffing and ICT-use levels. Since expenses on these two areas are not considered a priority, the budget allocated to investment in ICT and staff training is small.
- o Finally, although the idea is to incorporate the Internet and other ICT in order to improve the performance of PPAA, there is much more to e-government than the use of technology. E-government can be seen as the evolution in the concern for the improvement of public services that has been developing in the

heart of PP. AA in many developed countries since the 1990s and is referred to as NPM (New Public Management). NPM implies the adoption of private-sector practices and principles by public services for the purpose of achieving a form of administration based on results (Teicher, Hughes and Dow, 2002). This is why e-government can be considered a second revolution in the way to run the public sector, after NPM. Nevertheless, e-government goes much further, its challenge being to transform the processes through which services are delivered to the public, both to citizens and to firms as well as to other PPAA. E-government thus cannot have a merely technical aspect; instead, it must concentrate on the socio-cultural transformations it can trigger. Consequently, the true concern of e-government is not technology but the government and the citizen (Saxena 2005).

E-Government Benefits

E-government makes it easier for citizens to become involved in and make their contribution to government-related issues (Barnes and Vidgen, 2003). It has promise to improve the delivery of many public services, including on-line transactions and the dissemination of information about the operations carried out by the Administration (Brunschwig, 2006). And it can additionally help to improve the communication between citizens and the Government, enabling the former to have a more direct involvement in the decisions that must be made by the latter (Tolbert and Mossberger, 2006).

The main aim of e-government is to use ICT to offer better services to the *customer* of PPAA, i.e. the citizen, because the latter is actually the recipient of a large part of the benefits provided by e-government. An investment in ICT that only achieves an improvement of PPAA internal efficiency through increased productivity and a reduction in production costs will be halfway through the achievement of its objective, as that internal efficiency does not help to increase the taxpayer's satisfaction with the public service received (Tan and Pan, 2003).

For that reason, it is necessary for e-government to contribute to the improvement of relationships between PPAA and their *customers*.

In short, e-government supplies clear benefits to citizens (Guilbert and Balestrini, 2004) and that helps to improve citizens' perception of the public sector (Tolbert and Mossberger, 2006). These are some of the most outstanding benefits:

- o Saving costs related to the provision of the service, which improves service efficiency and effectiveness and produces budget savings as well as an image improvement for the public body.
- o Avoiding the need for personal contact with the Administration, as public services can be delivered to citizens without them having to go to the PPAA in person - and that, 24 hours a day, 7 days a week, and receiving a personalised service (e.g. in different languages or with the availability of information to the disabled).
- o Achieving a more transparent relationship between the Administration and the citizen, since information items such as legislation, timetables, schedules or dates can be made public by means of web pages, for instance.
- o Conveying an image of responsibility, as shown by the privacy and security measures required when it comes to handling personal and/or confidential information on line.

E-Government Evolution

The Internet and the new ICT can offer public services with different interaction levels as the degree of maturity of e-government increases (Chen, 2003). At the lowest level, information about the public service is created that is later categorised, indexed and distributed to citizens, through the Internet, for instance. No two-way communication between the Administration and those administered by it exists at this first level. Communication in two directions starts to be implemented at the second level: web pages, e-mails or other means are available to the citizen not only to receive information but also to contact PPAA. The third level includes the possibility to carry out transactions, both between different

PPAA and between PPAA and citizens. An example of this third level would be the possibility to request local services, filling in forms, applying for licences, etc. The key aspect about the fourth level is the real chance of achieving a complete transformation in the way public services are delivered to citizens, not only at the *front-end* but also at the *back-end*, that is, a change starting from the procedures used both to produce and to deliver public services. Siau and Long (2005), apart from four similar phases, suggest a fifth phase, the so-called *e-democracy*, in which, using tools such as e-vote, governments try to increase citizen involvement in public life and political transparency. For the time being, this fifth stage is facing some real implementation problems due to the fact that the general public perceives lack of security in e-vote systems and therefore mistrusts them (Schaupp and Carter, 2005)

Accenture consultants have been preparing annual reports about the worldwide evolution of e-government since 1999-2000, as a result of which the classifications provided by this firm have become internationally acknowledged benchmarks. These analysts (Accenture, 2006) propose an evolution of e-government that can be examined in Table I, which starts from the creation of e-government, goes on to its use, to the search for leadership in the service delivered to the customer, and finally, as the ultimate evolution stage, to the creation of trust in PPAA on the part of the administered ones thanks to e-government. The first phase - e-government creation -, consists in translating PPAA conventional services directly into on-line services. In the next phase, corresponding to the use of e-government, the challenge lies in achieving a high level of use of on-line services by the administered ones (citizens and firms), which requires a dissemination and training effort by the Administration oriented toward them. The third phase has as its aim to reach customer service leadership based on four pillars, namely: an approach which concentrates on the administered one -"the customer is always right"- (which means that all the information is organised around the citizen and not around administration processes); a multi-channel service where the same services can be obtained using different means -ICT, telephone, a personal visit to

the administration, etc.; a fluent multi-department service in which the different PPAA bodies would collaborate in order to give the citizen an integral service; and finally, a proactive type of communication and education which provides a guarantee that citizens are well informed about the services delivered by PPAA.

TAKE IN TABLE I

The last phase in the evolution of e-government described in Table I focuses on achieving citizens' trust in PPAA. That trust allows citizens to have a better connection with PPAA so that the former can present their real needs before them, which in turn leads to policies better suited to citizens' needs that can help to increase public service excellence and reinforce trust, thus creating a *virtuous circle*.

E-Government Studies Focused on Tax Administration

Since tax administration requires using a large amount of data, it is a key area in the application of e-government, so a large number of studies on e-government are devoted to this topic. Fu, Fran and Chao (2006), for instance, analyse the conditions required for the acceptance of an electronic tax administration system by the taxpaying citizens. Tan and Pan (2003), who carry out a study about a tax administration agency in Singapore, highlight that a public service must see the taxpayer as a customer, not as *someone who owes money* to the Administration. In turn, Kana and Barraza (2001) conclude that the real challenge is the use of technology to continuously promote compliance with tax duties, ensuring at the same time that tax administration becomes more efficient and transparent. As for Brand and Roberts (2000), they underline the need to protect taxpayers' personal and financial data. In this respect, tax administration must tackle the problem known as the "*Big Brother syndrome*". As PPAA improve their ability to obtain, analyse and use the data drawn from their own records as well as those available in commercial databases, there is a growing fear of government omnipresence. This is a strategic problem and a political consideration which must be dealt with as tax agencies improve their ability to obtain, analyse and exchange data. Teo and

Wong (2005) point out that, because citizens can do nothing to avoid paying taxes, the objective of an electronic tax system should be to make this formality as easy and effortless as possible. For this reason, the critical success factors in an electronic tax administration system are - apart from top management support and internal staff training-, a taxpayer-oriented system, user education and user-friendliness (usability). This usability, the lower cost of communication channels (internet), the function of electronic tax processes and the increased participation of taxpayers will create a socio-economic environment, which is predicted to satisfy both the tax administration and the taxpayers (Tahinakis, Mylonakis and Protogeros, 2006).

E-GOVERNMENT: SOME FACTS AND FIGURES

Table II shows the 2005 ranking of various countries as far as e-government maturity level is concerned⁵. It can be seen that Canada and United States are the leading countries in the development of e-government. Accenture refers to these countries as *Trend creators*. They are followed by *Contenders* for e-government leadership, among which stand out Northern European countries such as Denmark, Norway and Finland, along with others such as France, Australia and Japan. Curiously enough, although the most developed and wealthiest countries are logically those that have made the most progress in e-government (Chen, Chen, Huang and Ching, 2006; Siau and Long, 2006), one must highlight the effort made by other countries which, despite having fewer resources at their disposal, have managed to achieve significant progress, e.g. Singapore (among *Contenders*) or Malaysia (among *Followers*) (Adham and Ahmad, 2005).

TAKE IN TABLE II

Legislative efforts have been made all over the world in recent years to drive government investments in ICT (Strejcek and Theil, 2003). In the European context, the *i2010 Action Plan* for e-government⁶ is a scheme adopted by the

⁵ There is no such classification for 2006 because the working methodology that Accenture employed that year consisted in carrying out in-depth interviews with the PPAA of countries ranked as leaders in e-government the previous year.

⁶ http://europa.eu.int/information_society/eeurope/i2010/index_en.htm

European Commission on April 25, 2005 which shows the path to be followed for the development of e-government within the European Union, providing guidelines for programmes, initiatives and decision-making mechanisms between 2006 and 2010, as well as a road map and strategic follow-up (Red.es, 2006).

The data offered by CapGemini, drawn from the report on the availability and sophistication of on-line public services presented to the European Union, show a considerable progress in many countries, like Austria, for instance, and in some of the new member states, especially Malta and Estonia. It can be checked in Table III that the European average both for the sophistication and for the availability of on-line public services has improved with respect to the preceding years, which shows that an effort to develop e-government is being made by the countries located in this part of the world.

TAKE IN TABLE III

Spain finds itself above the European average, both in availability and in sophistication of on-line public services. The situation, though not excellent, is not bad either if one considers the Spanish data with respect to the worldwide situation, as can be observed in Table II.

E-Government in Spain

The progress of e-government in Spain has undoubtedly been favoured not only by the greater predisposition shown by potential users but also by the planning and legislative efforts made by Spain's public sector. According to a note released by the Press Office of the Spanish Ministry for Public Administrations (*MAP* in Spanish, 2006b) in October 2006, 47.3% of Spanish Internet users (8.3 million) have contacted PPAA through the net at least once during the last three months. Among all Internet users above sixteen years of age, 49.4% have checked information, 28.4% have downloaded forms, and 14.6% have carried out formalities. The services within the State General Administration (*AGE* by the Spanish initials) about which information is most commonly requested are *Taxes* (47.1%), *Grants and Subsidies* (20.6%), *Social Security* (16.5%) and *Public*

Employment (15.5%). The most-often downloaded AGE forms are those related to *Taxes* (26.2%), Grants and subsidies (6.8%) and Public Employment (4.6%), the AGE services most frequently used through the Internet being Payment of *Taxes* (21.9%), Request of documents (19.2%) and Filing of applications (5.2%). It can thus be seen that tax-related on-line information and services stand among the most often demanded by Spanish citizens.

The efforts made by Spain's public sector have so far materialised in some plans and proposals of law. Examples are the *Avanza*⁷ and *Moderniza*⁸ Plans, set up by the Ministry of Industry, Commerce and Tourism (2005) at the end of 2005. The *Avanza* Plan (Gonzalez, Gasco and Llopis, 2006), the aim of which is "to achieve convergence with the European countries in our immediate environment that are the most advanced regarding the Information Society", has five broad action lines, one of them consisting in "Digital Public Services, with measures that make it possible to improve the services delivered by PPAA, improving citizens' quality of life and firms' efficiency".

The *Moderniza* Plan equally includes a set of measures for the improvement of the Administration to be implemented in the period comprised between 2006 and 2008 "for the purpose of giving a fresh impetus to public services, with a more flexible and effective organisation, making a strong bet on the introduction and consolidation of Electronic Administration". This Plan moves along three axes: (a) improving relationships with citizens (through transparency, procedure simplification and permanent access); (b) improving the organisation (by means of quality schemes and internal reforms); and (c) improving the level of government employees (through the modernisation of the recruitment procedure).

The Proposal of Law on Electronic Administration presented in October 2006⁹ additionally seeks to guarantee the citizens' right to be in touch with the Public Administrations by electronic means, which implies an 1.9-billion-euro worth

⁷ <http://www.planavanza.es>

⁸ http://www.map.es/iniciativas/mejora_de_la_administracion_general_del_estado/moderniza.html

⁹ http://www.map.es/prensa/notas_de_prensa/notas/2006/10/20061027.html

investment by the Spanish Government during the first year of application, but also means annual savings of 500 euros per citizen. Some of the main contents included in this draft bill of law are the following: (*Gabinete de Prensa del MAP - Press Office of the Ministry for Public Administration-, 2006a*): Citizens will be able to carry out all their administrative procedures using electronic means, to select the channel through which they access public services, and to do all these administrative tasks 24 hours a day/7 days a week/365 days a year. Electronic communications will have the same legal validity as the traditional ones in paper and citizens will not need to provide data or documents in the possession of PPAA, and will be able to carry out procedures corresponding to different administrations in a single place. All these rights entail a number of obligations for PPAA (*Gabinete de Prensa del MAP, 2006a*), for instance, that they must make it possible for citizens to obtain information and to carry out formalities through the Internet or using mobiles, television or any other means available in the future and guarantee access to people who cannot afford these technical devices or lack the knowledge required to use them.

Other e-government-related initiatives in Spain are the “SARA” system and the electronic national identity card. The SARA¹⁰ (*Sistema de Aplicaciones y Redes para las Administraciones Públicas* System of Applications and Networks for Public Administrations) system, launched in February 2006, has as its purpose to enable the computer applications of the different regional administrations and those of the central administration to exchange information with one another automatically.

Additionally, the introduction of the electronic national identity card, which was piloted in March 2006 and is due to be fully implemented in 2010, will make it possible to store a large amount of information about each citizen: in addition to the data currently displayed in the conventional document, others related to health, academic qualifications, driving license, etc. The electronic national identity card responds to the need to give citizens a personal identity that they can

¹⁰ <http://www.csi.map.es/csi/eModel/sara.htm>.

later use in the new Information Society and will also act as one of the driving forces behind the consolidation of that Information Society.

After this section dedicated to some facts and figures which provide a background to the situation of e-government in Spain and across the world, the paper now goes on to present the case of SUMA.

THE CASE OF SUMA¹¹

Suma is a public organisation which supplies services to town councils in the Alicante province (located in South-East Spain, with a population of more than 1,700,000 inhabitants) as a tax administration body. It operates independently from other national or local bodies and its foundation in 1990 came as a result of the evolution of other previously existing “tax administration services” in the province.

The revenues derived from taxes amount to ca. 50% of the total income obtained by town councils, which is why good administration is of paramount importance for the local finances. *Suma* has pioneered the establishment of an efficient, high-quality resource management style in Spain. It has created a model based on the pillars of *organisation, human resources and technology*, the coordination of which has made it possible to reach excellence levels at service results and quality.

During the last few years, *Suma* has developed and implemented a wide range of technological applications thanks to which tax administration procedures have been made easier both for employees and for taxpayers. Some of the most outstanding ones are described below.

Technological Applications

a) Integrated Tax Administration Software

Integration has been one of the main features followed by systems developers during many years (Gulledge, 2006). One of the mainstays in tax-related

¹¹ We would like to thank Mr. Ramón Andarias, Head of the Computer Area at SUMA (<http://www.suma.es>) for the information provided for the presentation of this case.

administrative activities is the availability of a single database which can contain all the procedures related to taxable properties or operations and to taxpayers. The Suma database has 800 million records, 4,000 programmes and 650 screen formats. The main advantage of the high integration level is that all those taxes which are interrelated (the Real Estate -or Property- Tax and the Refuse Collection Charges, for example) are managed using the same administrative procedure, and all the taxes levied on the same taxpayer are grouped together, which reduces administrative costs.

b) The Office Network

The network of Suma offices in the Alicante province includes 44 delegations which offer assistance to the taxpayer. Each one of these offices deals mainly with the issues linked to its own local area of influence, though the existence of a centralised database makes it possible to solve taxpayers' problems anywhere else in the province. The offices are permanently connected with the head office through lines contracted at a speed between 64 and 512 Kbps. The network has an automatic bandwidth system which becomes operative in case of breakdown at any access point.

In addition to the permanent network of 44 offices, Suma has 25 mobile units which continuously visit the most remote areas as well as those with access problems. These mobile offices are equipped with the same operational facilities as the ones available in the "fixed" office. In other words, each desk at a mobile office fulfils all the conditions required to perform the same tasks as any other permanent location within the network. They have a laptop computer, a printer and a wide band connection via modem which provides a safe link with the central database.

c) Integration of Digital Cartography into the Software

One of the most outstanding features of the software is the inclusion of integrated digital cartography visualisation options with alphanumerical information. The universal viewfinder software is able to show aerial photographs, pictures of the

façade of a building or plan, digital cartography, scanner maps and any other options linked to the geography of property.

Thanks to an innovative double viewfinder option, one can visually compare the visual cartography of registered properties and the information provided by aerial photographs, which is very useful in inspections against fraud. The technical innovation lies in the fact that the cartography is stored at the central database and later sent to each terminal in a contextualised format. This is important, because it means that the CAD system -normally associated with departments with a high level of technical training- can be used by non-specialists.

This software, called *Latino Server*, has been developed with Suma's own resources using .NET technology and integrated into the Suma software via ActiveX and Visual C++.

d) The Virtual Office

The Internet is a great tool that local authorities can use to give citizens and taxpayers information and added value (Fu, Farn and Chao, 2006). There are a number of services which need not be requested and delivered personally but can be offered via web services though. Some of them are open or available to the public and do not require any personal identification. Examples are tax payment periods, office locations and opening times, municipal regulations and downloadable formats. Other types of information are confidential and therefore can only be known by the taxpayers involved, e.g. visualisation of debts in historical payment records. Some options which prove useful to digitally identified users are: dispatch of applications, claims and written documents, personal data updates, review of pending or resolved procedures, as well as the creation of a "shopping basket" and on-line debit payment.

The technology supporting these services is very varied. It includes web servers, data management systems, J2EE, XML, JSPs, ASP for .NET, Host Integration Server, SSL3.

Suma, as a supramunicipal authority which delivers services to 140 municipalities in the Alicante province, also uses the Internet to provide local government

employees with management tools. The authorised staff at each municipality can obtain on-line information about their own customers, as the advanced search options become available. A large variety of reports can be downloaded, e.g. annual reports, reports on monthly progress, tax censuses, debtors' reports and exception reports among others. Suma has therefore completed all the phases proposed by Chen (2003); not only it is an informative web, it is a transactional and operational one too.

The key to have efficient services is usability, based on use simplicity, availability, security, adaptability to users' needs and, finally, on the information provided, which must be updated on a regular basis.

The Technological Principles and the SUMA Model

Technology is only efficient when it is used by well-trained staff and forms part of the organisation's workflow. According to Suma, technology should only be applied if it meets the following basic criteria or principles.

TIME. It must reduce the "tax lifecycle", i.e. the time gone by between the date when a property or a service becomes taxable and the actual payment of the tax. All technological advances in process automation, data mass processing and administrative bottleneck removal fall under this category.

EFFICIENCY. It must improve efficiency and error reduction levels at procedures, collect data automatically, prevent duplications, store document images, integrate aerial and digital photography of plans with property identification data, etc.

MULTITASK LEVEL. It must increase multitask levels among employees as the integration of all the procedures into a single information system and the design of a suitable software allows each employee to offer services to a "single window".

TAXPAYER COMFORT. It must make it easier for taxpayers to comply with their tax obligations by increasing the accessibility level and the amount of information available, widening the range of payment modalities, reducing the need for taxpayers to visit the office and shortening waiting times for those taxpayers who

need help. Advanced Internet options, payment via electronic banking services and virtual telephone have been developed to achieve these aims.

MODERNITY. Finally, it must convey an image of modernity. It has been demonstrated that such an image helps the taxpayer to trust the system and even to feel a certain pride for the image of efficiency at public service facilities.

Based on these principles, Suma has elaborated a functioning model¹² which revolves around three axes: *Technology*, *Organisation* and *Human Resources*. As said above, technology is no island; it must be closely related to or involved in a group of organisational procedures. The resources owned by an organisation must be properly managed so that the combination of them all can bear fruit.

TAKE IN FIGURE II

The concepts underlying the organisation axis in a tax administration service are specialisation; decision-making capacity; correct size; high standards both for internal services and for those delivered to customers; simplification; and orientation toward the achievement of satisfactory results. Regarding the Human Resources axis, it is of paramount importance for the staff to be motivated and well-trained. The provision of training must be based on a multidisciplinary approach that focuses on the theory as well as on the improvement of professional expertise and management technique levels.

Suma argues that effectiveness, cost-efficiency and quality are the key values when it comes to providing customers, municipalities and other organisations with high-level services through the efforts made in the field of e-government.

DISCUSSION

The progress toward maturity in e-government is being supported by various international and national institutions. In the case of Spain, the public sector is making continuous efforts to jump on the bandwagon of the Information Society, as a result of which it has come very close to the world's average in e-government

¹² In October 2005, this vision of technology applied to tax administration received the "Best Use of Technology" Award by the Institute of Revenues Rating and Valuation, London. <http://www.irrv.net/annualconference/awards.asp>

maturity and is actually above the European average. The number of Spanish users contacting PPAA through the net is arising and several plans and proposals of law (Avanza and Moderniza Plans, Proposal of law of Electronic Administration, the SARA systems, the electronic identity card) are contributing to the modernization of PPAA technologies and organisation in this country.

The case of SUMA offers some managerial implications for PPAA showing how a body in charge of tax administration can be successful at the implementation of e-government. This has come as a result not only of its determination to develop and apply different technologies, but also of its reflection on what citizens expect from a tax administration body and on how the latter can be best attended to. With these ideas in mind, Suma has elaborated a series of technological principles and a model which states that investment and technological improvement are useless if no attention is paid to the areas of human resources and organisation.

The principles presented (time, efficiency, multitask level, taxpayer comfort and modernity) have demonstrated to be the success factors in a tax administration service, unless this is the conclusion of the SUMA experience, as this organisation have applied them in all the technological projects undertaken the last 15 years. On the other hand, these success factors must be incorporated into a model, like the one presented by SUMA. Only through the combined action of the three forces of the model (technology, organisation and human resources) will it be possible to ensure the right functioning within the organisation. If one of the vectors is imbalanced and is, for instance, too strong or too weak, the resulting model will prove totally ineffective. To sum up, technology is only efficient when it is used by well- trained staff and forms part of the organisation's workflow.

CONCLUSION

The immersion into the Information Society by the public sector has uncovered the need to modernise both its service production processes (NPM) and the ICT by means of which these services are prepared and offered (e-government). E-government implies an effort to improve PPAA efficiency, but also their

effectiveness. In other words, this is not only about reducing costs but also about delivering the services desired by citizens and using the means or channels preferred by them.

Although the technological principles presented here are inferred from the success of e-government at tax administration, they seem to be easily generalisable to other public administration areas.

The case of Suma consequently illustrates the true challenge facing PPAA in relation to e-government, that is, to succeed in being seen not as something that holds back and hinders the activities undertaken by individuals and firms, but as proactive administrations with the ability to anticipate the needs of citizens and, therefore, to offer them assistance.

REFERENCES

Accenture (2006) "Liderazgo en el servicio al cliente. Creando confianza". Internet document downloaded 6 Nov 2006. <http://www.accenture.com>

Adham, K.A. and Ahmad, M. (2005). "Adoption of Web site technology among Malaysian public companies", *Industrial Management & Data Systems*, Vol. 105, No. 9, pp. 1172-1187.

Barnes, S.J. and Vidgen, R. (2003) "Measuring Web Site Quality Improvements: a case Study of the Forum on strategic management knowledge exchange" *Industrial Management & Data Systems*, Vol. 103, No 5, pp. 297-309.

Brand, P. and Roberts, L. (2000) "E-Commerce and Tax Administration", *The Tax Adviser*, Vol. 31, No. 5, pp. 336-339.

Brunschwig, C.R. (2006) "Visualising legal information: mind maps and e-government", *Electronic Government, an International Journal*, Vol. 3, No 4, pp. 386-403.

CapGemini (2006) "España mejora en seis puntos el desarrollo tecnológico de los servicios públicos on-line". Internet document downloaded 9 Nov 2006.

<http://www.es.capgemini.com/news/prensa/2006/prensa0629.htm>

Chen, H. (2003) "Digital Government: Technologies and practices", *Decision Support Systems*, Vol. 34, No. 3, pp. 223-227.

- Chen, Y-H. and Barnes, S. (2007) "Initial Trust and online Buyer Behavior", *Industrial Management & Data Systems*, Vol. 107, No. 1, pp. 21-36.
- Chen, Y.N.; Chen, H.M.; Huang, W. and Ching, R.K. (2006) "E-Government Strategies in Developed and Developing Countries: an implementation Framework and Case Study", *Journal of Global Information Management*, Vol. 14, No. 1, pp. 23-46.
- Choudrie, J. and Papazafeiropoulou, A. (2006) "Lessons Learnt from the broadband diffusion in South Korea and the UK: implications for future government intervenetion in technology diffusion", *Electronic Government, an International Journal*, Vol. 3, No 4, pp. 373-385.
- Flavián, C. and Guinalú, M. (2006) "Consumer trust, perceived security and privacy policy: Three basic elements of loyalty to a web site", *Industrial Management & Data Systems*, Vol. 106, No 5, pp. 601-620.
- Fu, J-R.; Farn, C-K and Chao, W-P. (2006) "Acceptance of electronic tax filing: A study of taxpayer intentions", *Information & Management*, Vol. 43, No. 1, pp. 109-126.
- Gabinete de prensa del MAP (2006a) "Diez puntos sobre la Ley para el Acceso Electrónico de los Ciudadanos a las Administraciones Públicas". Ministerio de Administraciones Públicas. Internet document. <http://www.MAP.es>
- Gabinete de Prensa del MAP (2006b). "Radiografía electrónica del España". Ministerio de Administraciones Públicas. Internet document. <http://www.MAP.es>
- Gilbert, D. and Balestrini, P. (2004) "Barriers and Benefits in the adoption of e-government", *The International Journal of Public Sector Management*, Vol. 17, No. 4, pp. 286-301.
- Gonzalez, R.; Gasco, J and Llopis, J. (2006) "Information systems offshore outsourcing: A descriptive analysis", *Industrial Management & Data Systems*, Vol. 106, No. 9, pp. 1233-1248.
- Gulledge, T. (2006) "What is Integration?", *Industrial Management & Data Systems*, Vol. 106, No 1, pp. 5-20.

Gulledge, T.R. and Sommer, R.A. (2003) "Public Sector Enterprise Resource Planning", *Industrial Management & Data Systems*, Vol 103, No 7, pp. 471-483.

Holden, S.H. and Fletcher, P.D. (2005) "The Virtual Value Chain and E-government Partnership: Non- Monetary Agreements in the IRS E-File Program", *International Journal of Public Administration*, Vol. 28, No. 1, pp. 643-664.

Kana, L. and Barraza, F. (2001) "Taxing time for e-government", *Organisation for Economic Cooperation and Development, The OECD Observer*, January, pp. 50-51.

Ministerio de Industria, Turismo y Comercio (2005) "Plan Avanza. Plan 2006-2010 para el desarrollo de la Sociedad de la Información y de convergencia con Europa y entre Comunidades Autónomas y Ciudades Autónomas". Internet document. <http://www.planavanza.es>

Nikoloyuk, G.M.; Marche, S. and McNiven, J. (2005) "E-commerce impact on Canadian Public Sector Audit Practice", *International Journal of Public Sector Management*, Vol. 18, No. 1, pp. 83-95.

Mitra, R.K. and Gupta, M.P. (2007) "Analysis of issues of e-government in Indian police", *Electronic Government, an International Journal*, Vol. 4, No 1, pp. 97-125.

Premkumar, G.; Ho, A.T. and Chakraborty, P. (2006) "E-government evolution: an evaluation of local online services", *International Journal of Electronic Business*, Vol. 4, No. 2, pp. 177-190.

RED.ES (2006) "Actualidad Europea sobre Sociedad de la Información. Plan de Acción i2010 de "e-Government": Acelerando la administración Electrónica en Europa para el beneficio de todos". Internet document. <http://observatorio.red.es/documentacion/actualidad/boletines/28abril2006b.pdf>

Saxena, K.B.C. (2005), "Towards excellence in e-governance", *International Journal of Public Sector Management*, Vol. 18, No. 6, pp. 498-513.

Schaupp, L.C. and Carter, L. (2005) "E-voting: from apathy to adoption", *The Journal of Enterprise Information Management*, Vol. 18, No. 5, pp. 586-601.

Siau, K. and Long, Y. (2005) "Synthesizing e-government stage models – a meta-synthesis based on the meta-ethnography approach", *Industrial Management & Data Systems*, Vol. 105, No. 4, pp. 443-458.

Siau, K. and Long, Y. (2006), "Using social Development Lenses to understand e-government development", *Journal of Global Information Management*, Vol. 4, No. 1, pp. 47-62.

Strejcek, G. and Theil, M. (2003). "Technology push, legislation pull? E-government in the European Union", *Decision Support Systems*, Vol. 34, No. 3, pp. 305-313.

Tahinakis, P., Mylonakis, J. and Protogeros, N. (2006) "The contribution of e-government to the modernisation of the Hellenic taxation system", *Electronic Government, an International Journal*, Vol. 3, No 2, pp. 139-157.

Tan, C, W. and Pan, S.L. (2003) "Managing e-transformation in the public sector: an e-government study of the Inland Revenue Authority of Singapore (IRAS)", *European Journal of Information Systems*, Vol. 12, No. 4, pp. 269-281.

Teicher, J.; Hughes, O. and Dow, N. (2002) "E-government: a new route to public sector quality", *Managing Service Quality*, Vol. 12, No. 6, pp. 384-393.

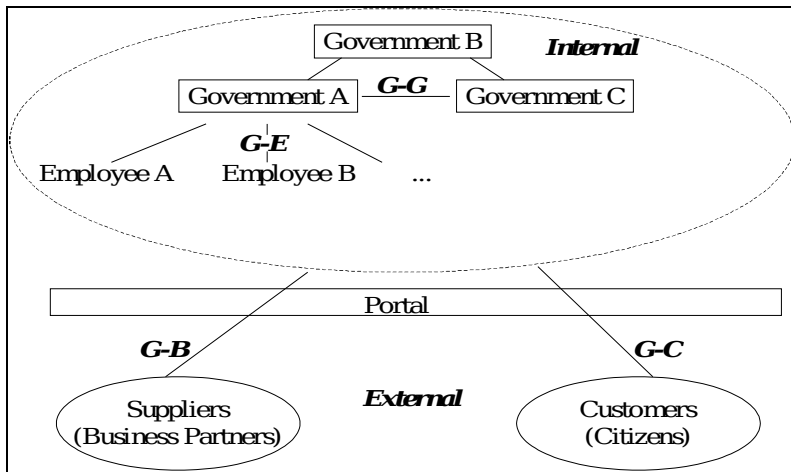
Telefónica (2005) "La Sociedad de la Información. España 2005". Fundación Telefónica. Internet document downloaded 13 Nov 2006.

http://www.telefonica.es/sociedaddelainformacion/html/informes_home.shtml.

Teo, T.S.H; and Wong, P.K. (2005) "Implementing Electronic Filing of Tax Returns: Insights form the Singapore Experience", *Journal of Information Technology Case and Application Research*, Vol. 7, No. 2, pp. 3-16.

Tolbert; C.J. and Mossberger, K. (2006) "The Effects of E-Government on Trust and Confidence in Government", *Public Administration Review*, Vol. 66, No. 3, pp. 354-369.

Figure I: The E-Government Framework.



Source: Siau and Long (2006).

Figure II: The SUMA Model.



Table I: The Progress of Public Administrations toward customer service leadership.

	E-government creation	E-government use	Adoption of the four main pillars of customer service leadership	Trust creation
Objective	Number of services available on-line	High percentage of acceptance by citizens and firms	PPAA services are delivered through various channels and different PPAA to offer a "single-window" service from beginning to end.	Citizens implicitly trust their PPAA
Period	Between 1999 and 2001	Between 2001 and 2005	Between 2005 and 2008	From 2007 on
Main challenges	Internet capacity	Dissemination to citizens, acceptance	Collaboration between different PPAA, service integration	Service content, not only service delivery
Implementation period	Two-to-three years	Two-to-five years	More than five years	More than seven years
Financial repercussions	Cost of technology	Investment in additional channels	Offering more with fewer costs	Citizens' contributions become an inspiration to allocate resources in an intelligent way from the beginning
Service repercussions	Service availability	Service delivery	Service value	Trust in the service
Advantage	PPAA. master technology	More convenience, Reduction of transaction costs	Approach focusing on the citizen, reduction or stabilisation of delivery costs	The country's effectiveness improves

Source: Accenture (2006).

Table II: E-Government Maturity in 2005.

Country	E-Government General Maturity Score (average=48)	Role
Canada	68	Trend creator
USA	62	
Denmark	56	Contender
Singapore	56	
Australia	55	
France	55	
Japan	55	
Norway	54	
Finland	54	
Netherlands	50	Follower
Sweden	49	
United Kingdom	48	
Germany	48	
Belgium	46	
Ireland	46	
Spain	45	
Italy	45	
Malaysia	44	
Portugal	34	Still developing
South Africa	22	
Brazil	17	

Source: Accenture (2006).

Table III: On-line Public Service Sophistication and Availability.

<i>Degree of Sophistication</i>			<i>Degree of Availability</i>		
	Apr 2006	Oct 2004		Apr 2006	Oct 2004
Austria	95	87	Austria	83	72
Malta	92	67	Estonia	79	63
Estonia	90	78	Malta	75	40
Sweden	90	89	Sweden	74	74
Norway	90	82	Norway	72	56
United Kingdom	89	84	United Kingdom	71	59
Kingdom	87	68	France	65	50
Slovenia	85	81	Slovenia	65	45
Denmark	85	83	Denmark	63	58
Finland	85	74	Finland	61	67
France	84	84	Portugal	60	40
Ireland	83	68	Italy	58	53
Portugal	81	50	Spain	55	55
Hungary	80	72	Netherlands	53	32
Italy	79	73	Hungary	50	15
Spain	79	70	Ireland	50	50
Netherlands	78	76	Belgium	47	35
Iceland	74	67	Germany	47	47
Belgium	74	66	Iceland	47	50
Germany	68	59	Lithuania	40	40
Lithuania	66	52	Cyprus	35	25
Cyprus	62	60	Czech Republic	30	30
Switzerland	62	61	Greece	30	32
Greece	61	57	Luxembourg	20	20
Czech Republic	57	53	Poland	20	10
Luxembourg	53	36	Slovakia	20	15
Poland	51	40	Switzerland	11	6
Slovakia	47	33	Latvia	10	5
Latvia					
Average	75.9	66.7	Average	49.6	40.8

Source: Adapted from CapGemini (2006).