

Gauging E-Government Evolution in EU Municipalities.

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ABSTRACT

Since the late 1990s, governments at all levels have launched electronic government projects aimed at providing electronic information and services to citizens and businesses. Although websites are becoming essential elements of modern public administration, little is known about their effectiveness. The objective of this paper is to study the quality and usage of public e-services to citizens in Europe.

According to the results of this study, e-government seems to be following a more or less predictable development pattern ranging from a stage in which interaction is limited to what is shown on the screen to stages in which there is two-way communication and service and financial transactions can be completed with a satisfactory level of protection of personal privacy. At present, e-government in almost all the cities studied is merely an extension of the government, with potential benefits in speed and accessibility 24/7. Despite the limited degree of development observed, online access has advantages that are impossible to replicate offline. Even though few expect e-government to completely replace traditional methods of information, e-government is becoming a powerful tool of transformation, which has become embedded in the culture and in the agenda of the public sector.

Keywords: e-government, New Public Management, citizen trust.

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1. INTRODUCTION

Since the late 1990s, governments at all levels have launched electronic government projects, albeit at different speeds, aimed at providing electronic information and services to citizens and businesses.

The dramatic development of e-commerce in recent years and the evolution projected for the near future has encouraged consumers to demand more and more customized, rapid and at home services. In the private sector, research surveys suggest that customers achieve high levels of satisfaction from e-commerce vendors [1], so the consumers of public services are starting to demand the same level of responsiveness and service from their governments as they expect from the private sector [2] [3].

According to Relyea [4], the term 'e-government' was introduced by a joint report *-Access America: Reengineering Through Information Technology-* of the National Performance Review and the Government Information Technology Services Board in 1997, although initially e-government was little more than a general recognition of a confluence of information technology (IT) developments and the application and use of these technologies by government entities.

At present, there are various ways to understand what e-government means. An early definition is provided by Kaylor [5]: "E-government is taken to be the ability for citizens to communicate and/or interact with the city via the Internet in any way more sophisticated than a simple email letter to the generic city (or webmaster) or e-mail address provided at the site". In an empirical survey, the United Nations (UN) and the American Society for Public Administration (ASPA) defined e-government as "utilizing the Internet and the world-wide-web for delivering government information and services to citizens" [6]. Both indicate that e-government is an umbrella term covering many diverse applications. More useful was the subsequent US/ASPA division of e-government into five stages: emerging, enhanced, interactive, transactional, and seamless [6] [7]. More recently, e-government is defined by the OECD [8] as "the use of ICTs, and particularly the Internet, as a tool to achieve better government".

In the definitions mentioned above, the differences are not just semantic but reflect priorities in government strategies. The definitions fall into two groups: in one, e-government is defined as the Internet (online service delivery) and other Internet-based activity such as e-consultation and, in the other, e-government is defined as a capacity to transform public administration through the use of ICTs. Internet use by governments should not be isolated from the broader digitalisation of government activity as a whole.

The construction and management of websites is becoming an essential element of modern public administration, but little is known about the effectiveness of public websites. Given the substantial investment in time and other resources in governmental online initiatives, it is essential to begin undertaking the evaluation of governmental websites in terms of quality and effectiveness [9]. Yet, to date, there are no comprehensive benchmarks of the progress of cities in this regard. The objective of this paper is to study the quality and usage of public e-services to citizens in Europe. We study the degree of implementation of online services through the identification of which services are currently offered online by local governments in the countries studied. How websites allow interaction with citizens, to what extent they cover the 'circle of life', and the breath and depth with which citizens can receive

services through the Internet are important issues for simplifying relationships with public administrations.

Our study focuses on the websites of European Union (EU) local governments with more than 500,000 inhabitants. Local governments in the EU play a key role in the national pattern of government since they administer the welfare policies, together, in some countries, with regional governments and they are the public administration tier closest to citizens. According to Torres and Pina [10], there is a great degree of coincidence in the quantity and variety of services delivered by the biggest EU cities, except in services related to public health and education. This sample is only a small selection of cases given the large number of local government systems across the world and limits discussion to some economically developed nations. Notwithstanding, the advantage of this choice is that these countries form a unit for analysis. Now, the EU is in expansion and monetary union is strengthening it.

The next section discusses the context in which e-government initiatives have been growing, and in the background section some of the most outstanding contributions to the measurement of the development and classification of websites are analysed. The fourth section shows the methodology applied in this study and the fifth the analysis of results. Finally, the discussion and conclusions sections analyse the main findings of the survey.

2. THE CONTEXT

In Western-style democracies there are three broad styles of public management: Anglo-American, Nordic and European continental, the second considered by some authors such as Kickert [11] to be a mixed form of the Anglo-American and European continental types. Anglo-American countries emphasize efficiency, effectiveness, and value for money. They are more likely to introduce market mechanisms and notions of competitiveness and envisage the citizen primarily as a consumer of services, as a client. This group includes Ireland and the UK. The Nordic countries also belong to a public administration style concerned with meeting citizens' needs. Local governments have moved away from the Weberian form of bureaucracy and have a tradition of negotiation and consultation. The search for efficiency and effectiveness involves satisfying citizens' wishes. This group embraces Denmark, Norway, Sweden, Finland and the Netherlands. European continental public administration styles are built around administrative law [11] [12]. These countries are fitting public administration reforms into their bureaucratic models in order to increase the empowerment of citizens and employees and the quality of services, moving towards more citizen orientation, but overlapped with their traditional administrative systems. This group embraces Austria, Belgium¹, France, Germany Greece, Italy, Portugal, Spain and Switzerland.

According to John [13], at present, there is not such a great contrast between the Anglo-American, Nordic and European continental systems as there was in the 1990s. The European continental countries -especially the Southern EU countries- have modernized or created welfare states, created tiers of local government and given them new legal powers, whilst local governments in the Anglo-American and Nordic countries have been fragmented by new management reforms and the transfer of functions to special purpose bodies and the power of the central states has increased.

¹ Belgium is northern in geographical location but it is a southern state in some of its administrative structures [13].

Along with the public administration style of the different EU countries studied, another important factor to take into account when e-government developments are analysed and compared across EU countries is the reforms in public management that have taken place across Europe called New Public Management (NPM), which involve deliberate changes in the structures and processes of public sector organizations with the objective of getting them to run better [14] [15] [16] [17]. Essential for the implementation of NPM reforms is the decentralization of functions and administration to micro-agencies or decentralized units within public organizations whose objectives are clearly stated, measured and enforced by higher levels of government or regulators [13] [18] [19]. The consequence is the breakdown of older notions of hierarchy and the introduction of less visible lines of control. In this framework, e-government enhances the interoperability of agencies, tiers of public administration and public authorities in general, improving the responsiveness and the quality of services delivered through portals, one-stop shops and seamless initiatives.

3. BACKGROUND

Although e-government initiatives are recent, they have become a rapidly developing field of empirical study. Some research has already been carried out into the evaluation of e-government efforts at local, regional and central government levels. These efforts share a general concern with identifying objective measures by which we might assess the quality (defined in various ways) of e-government.

The Cyberspace Public Research Group 2001's, or CyPRG's, Web Attribute Evaluation System (WAES) [20] provides two broad dimensions (interactivity and transparency) for evaluating US federal websites that could quite easily be modified for evaluating websites of any level of government (or even the private sector).

Stower describes the percentage of public sector websites that provide information on a range of topics, such as economic development functions and contact information -phone and e-mail directories-, but he does not provide a measure for individual governments to assess their progress.

Norris, Fletcher & Holden [21] describe a survey on 2,899 municipalities which provides information about the percentage of municipalities that report having a website, the percentage that have dedicated staff to e-government, the percentage that outsource e-government functions to external vendors and a variety of other issues of concern to cities engaged in strategic planning.

The Australian National Audit Office -ANAO- [22] and the Office for Government Online (OGO) developed a four-stage model of government agencies' service delivery via the Internet in 378 initiatives about which they received information. The four stages were as follows. Stage 1, the agency has a Website that publishes information about itself and its services. Users have read-only access and can download documents. Stage 2, quite close to 1, an agency allows Internet users to access the agency database(s), and to browse, explore and interact with data. Users can access a database anonymously; for example, the Australian Bureau of Statistics provides census data online. Stage 3, a big jump from 2, at which an agency allows users access as in stages 1 and 2 and also permits them to enter secure information and engage in transactions with the agency. The agency has resolved the authentication issue, knows who the user is and can provide user-targeted information. Stage 4, close to 3,

at which, in addition to the level of access permitted in stage 3, the agency, with the user's prior approval, shares information provided by the user with other government agencies. Authentication has been resolved and the agency is sharing user information with other agencies, for example, change of address information.

The UK National Audit Office –NAO- [7] sees e-government as a process with five stages, which follow on from each other in increasing order of implementation difficulty, desirability for citizens, customers and society, and the levels of sophistication of the systems which are required:

1 A basic site holds electronic versions of the agency's Mayor print documents for public consumption. It gives basic information about the agency. Contact with the agency is by phone or mail, not e-mail. Site users cannot download forms or accomplish anything substantial online.

2 Electronic publishing occurs when the agency develops its external Website to be an important element of its overall communications strategy. The agency begins to put a substantial part of its information online. Citizens or firms can download forms to fill in and post back, but cannot do online submissions.

3 Interactive e-publishing is reached when users can personalise how the site works for them. For instance, users can specify their address or postcode and see only relevant local information. All the agency's forms are downloadable, and some can be submitted online also. Extensive e-mail contacting of officials is encouraged.

4. A Transactional Web-site exists when users can accomplish specific dealings with the agency online. Users can authenticate themselves to the agency and register their identities reliably. They can then undertake a complete transaction with the agency online, for instance, making secure payments for a service, fee, fine or tax using or not the agency's databases at various levels of security. At this stage, users can download and submit all forms online. The external Website links fully to most of the agency's back-office systems.

5 Joined-up e-governance is achieved when public sector Websites can facilitate 'one-stop shop' services online for citizens. Sites provide transparent access not just to the agency where people have logged on, but across central government agencies as a whole. Many agency processes use 'zero touch technologies', where transactions do not require any active intervention by a human employee to be accomplished. Agencies carefully research, analyse and anticipate the needs of their users, for instance by alerting them proactively to opportunities for them to improve their welfare or to meet given deadlines (so-called 'zero stop shops').

For Tat-Kei Ho [23], under the e-government paradigm -like the paradigm of information technology-based organizations in the business world [24] [25]- public managers shift from emphasizing producer concerns such as cost-efficiency, to focusing on user satisfaction and control, flexibility in service delivery, and network management with internal and external parties. The new paradigm stresses innovation, organizational learning and entrepreneurship so that government can continue to reinvent itself. For this author, the orientations of city Websites provide evidence that this paradigm shift is indeed taking place in city governments. 1) If a city maintains the traditional bureaucratic

paradigm, its Website organization tends to be administratively oriented. Information is organized primarily according to the administrative structure of the government and does not reflect substantial rethinking of the bureaucratic process. 2) Cities that have shifted from the bureaucratic paradigm to the e-government paradigm design their Websites differently. They tend to use two common approaches, commonly referred to as "portal designs." 2a) The first is the "information-oriented" approach which applies the concept of "one-stop shopping service" by offering a tremendous amount of content on the home page including the city budget, demographics, calendar of local activities, Mayor tourist attractions, official contacts, press releases, and employment opportunities. 2b) The second is the "user-oriented" whose design goes one step further by categorizing information and services on the Web according to the needs of different user groups. Both require a breakdown of departmental thinking and a reorganization of information according to the users' perspective and interest. Even though the information on the Website comes from different departments or external sources such as community organizations or business groups, users are unaware of the organizational boundaries of the providers in the cyber-world

For Moon [26] there are various stages of e-government, which reflect the degree of technical sophistication and interaction with users: (1) simple information dissemination (one-way communication); (2) two-way communication (request and response); (3) service and financial transactions; (4) integration (horizontal and vertical integration); and (5) political participation. Stage 1 is the most basic form of e-government and uses IT for disseminating information, simply by posting information or data on the Websites for constituents to view. Stage 2 is two-way communication, characterized as an interactive mode between government and constituents. In this stage, the government incorporates e-mail systems as well as information and data-transfer technologies into its Websites. In Stage 3, the government allows online service and financial transactions – to renew licenses, pay fines, and apply for financial aid- by completely replacing public servants [27] [28]. In Stage 4, the government attempts to integrate various government services vertically (inter-governmental integration) and horizontally (intra-governmental integration) to increase efficiency, user friendliness, and effectiveness -integrating seamless online and back-office systems- [27] [28]. Stage 5 involves the promotion of Web-based political participation, in which government Websites include e-governance tools such as e-voting and e-democracy.

It should be noted that the different stage definitions are only a conceptual tool to examine the evolution of e-government. The adoption of e-government practices may not follow a true linear progression. For example, a government may initiate stage 5 of e-government (political participation) without full practice of stage 4 (integration). It is also possible that government can pursue various components of e-government simultaneously. Like other stage models of growth [29] [30], the framework simply provides an exploratory conceptual tool that helps one understand the evolutionary nature of e-government

Wimmer [31] distinguishes a common typology of e-government services: information, communication and transaction services, as well as three generic application areas: administrative affairs (e-administration), political participation (e-democracy) and everyday needs (e-Assistance).

Sakovic identifies different approaches to measure the development of e-government and proposes some indicators appropriate for countries of Central and Eastern Europe. This author distinguishes four stages of e-government development:

information available online, one-way interaction, two-way interaction and full online transaction, including delivery and payment. A narrow view of the concept of e-government is associated with the implementation of administrative processes within the domain of e-administration. Broadly defined, electronic government can include all information and communication technology (ICT) to support government operations, engage citizens, and provide government services. Therefore, the broader approach embraces the whole range of governance and administrative projects including e-services, e-democracy, e-voting, e-justice, e-education and e-healthcare. For him, e-government is much more than gathering the information, downloading files or making online transactions.

UN/ASPA [6] distinguishes five stages of e-government: emerging -an official government online presence is established-, enhanced -government sites increase information and become more dynamic-, interactive -users can download forms, e-mail officials and interact through the web-, transactional -users can actually pay for services and other transactions online and seamless-, -full integration of e-services across administrative boundaries.

Many other studies have appeared, focused on e-citizenship [32] [33], e-democracy [34] [35], e-legislatures [34], cyberpolitics in international relations, and so on. Several studies of government presence on the Web have also been undertaken [6] [7] [36] [37] [38] [39], and municipal activity has been surveyed [26].

4. METHODOLOGY

In this section, we describe the method by which we gathered information about the cities studied and the depth and breadth of the services they currently offer online. Our empirical survey focuses on e-services. This term describes the use of electronic delivery of government information, programs, strategies and services available online "24/7".

The research has been carried out on the websites of thirty-three EU cities including some of the biggest cities, all the national capitals and other cities with high administrative relevance at country level, which belong to Austria, Belgium, France, Germany, Ireland, Italy, Luxembourg, Portugal, Spain and the UK. They were accessed during the second half of 2003. The findings of this paper could be of general interest to cities interested in determining how their online presence compares to other cities nationwide. For Kaylor [5], in order to make informed decisions, municipalities can and should use the experience of previous innovators as a guide. Although big cities are not always more innovative, their delivery of services is more complex and they have more staff and other management resources which enable the development of new tools and ways of providing services.

Full e-government includes the ability to submit transactions online and make payments electronically where they are required. Examples of this include filling in an electronic tax return form or selling goods and services to the municipality. In general, these are organised into the following categories: Government-to-Citizen (G2C), the "birth to death" range of citizen services including civil registration, health, education, and other municipal services; Government-to-Business (G2B), transactions and interactions including procurement, taxation, and licensing and Government-to-Government (G2G), a variety of intra-municipal transactions such as inter-agency payments, procurement, standardised forms, and permits. The methodology is based on

navigation throughout municipal websites with the aim of measuring two different variables: Service Maturity and Delivery Maturity [37].

Service Maturity (SM) is concerned with to what extent local governments have developed their presence online. The level of completeness with which local services are delivered through websites is gauged. SM measures the use of the Internet to extend, diversify and, where appropriate, improve the attention that councils give to citizens.

Sixty-seven services delivered through the Internet have been identified (see Table 1) in the websites of the thirty-three local governments studied, which are grouped according to the local public service classification carried out by Torres and Pina [10].

SM is obtained as the product of two dimensions:

- *Service Maturity Breadth (SMB)* shows the number of services offered through the Internet from the 67 services identified.
- *Service Maturity Depth (SMD)* classifies services according to the level of interactivity or the possibility of completing each of them through the Internet. Services are classified within SMD into three categories in accordance with G2C interactivity:
 - *Publish* – interaction is limited, users can only access what is shown on the screen, for example, regulations or requirements or forms to fill in at line desks, without the possibility of contacting the public administration electronically. In this category, the Internet is under-used and brings little advantage with respect to traditional proceedings such as a phone call to a help centre for citizens.
 - *Interact* – citizens can contact public departments, for example, to arrange a service, but there is no certainty of having any response from the department. This is the case of forms that are available on the Internet but cannot be filled in online or sent electronically. In this group, the potential of the Internet is not developed completely, but it represents an advance with respect to traditional approaches.
 - *Transact* – case handling; decision and delivery and payment. In services classified as transact there is interaction between administration and citizen, through the Internet and, as a result, services are performed.

Delivery Maturity (DM) embraces those website aspects that provide benefits for citizens and is an indicator of website sophistication²:

² Scoring of these factors has been made according to the following indications:

1-6, each factor has been given '0' if it exists and '1' if it does not exist. In the case of 'identification of errors during navigation' the scoring system is reversed. In some cases, we have given '0,5' to websites where the tool exists but is not fully working. 7-11, in each city these factors have been given scores from '0' when the website delivers the tool satisfactorily to '3' when it does not deliver the tool at all. An exception is online access to plenary sessions (number 11) that only reflects if it appears in the web or not.

Table 2 shows, for each website, DM percentages calculated as 1 minus the quotient between the aggregate punctuation of each

- 1) Identification of errors during navigation.
- 2) Inclusion of a site search engine and website map which permit more effective navigation.
- 3) Launching of initiatives to promote the use of the Internet and the use of municipal websites such as restricted access areas for registered users or the creation of a digital certificate.
- 4) e-mail address available for citizens so they can interact with the council or for their personal use.
- 5) Simplicity of filling in applications online: the more pages to be visited or 'clicks' needed to fill in an application, the lower the score given to the website.
- 6) Publication online of an agenda of public events in the city (culture, sports ...).
- 7) Access to the website in different languages. Different levels have been established: the website is only accessible in the official language of the country; other languages appear but only for tourist purposes; it is possible to navigate on the website in different languages and not only for tourist purposes; to fill in forms online in other languages is a possibility.
- 8) Existence and user-friendliness of a street map of the city.
- 9) Level of comprehensiveness of indications for reaching public departments from any locations, including public transport information, when formalities have to be carried out in person.
- 10) Identification of seamless aspects on the website, whether it is feasible to access other websites of other levels of government and services which are not the responsibility of the local government.
- 11) e-democracy aspects: contact the Mayor and other members of the council, online access to plenary sessions, participation of citizens through suggestion boxes and/or complaints about public services.

Adding SM and DM, with weights of 70% and 30% respectively, the Overall Maturity (OM) score is obtained. It measures e-government developments in the cities studied. The weights assigned to SM and DM seek to give more importance to the delivery of services online than to the level of sophistication of municipal websites.

According to OM results, the cities studied can be grouped in different categories [37], whose main characteristics are:

Innovative Leaders – the highest level of maturity in the use of the Internet as a tool for facilitating services to the public.

Visionary Followers – strong position in delivering formalities online and good situation with respect to DM.

Steady Achievers – great potential for the development of the Internet, although they have a limited range of formalities online.

city and the total punctuation (40) of a hypothetical website that does not deliver factors 1-6 and accomplishes factors 7-11 at their lowest level.

Platform Builders – official websites offer the lowest level of services online and benefits to citizens.

5. ANALYSIS OF RESULTS

As can be seen in Table 1, the average SMB score of the sample is 46.81%, and since 67 services are delivered through the Internet, this result shows a low degree of development of e-government among the biggest cities of the EU. The most common service offered is municipal tax payment, which has been implemented by 85% of cities. Other services such as library catalogues, booking of sports facilities, public employment, public procurement, permission for loading, unloading and driving in restricted areas, complaints about public nuisances, (noise, graffiti...) and public entertainment tickets are implemented in more than 70% of cities. Most of them are related to general, cultural, leisure and sports services.

The SMD score shows that 43.57% of services provided through the Internet in the cities studied are at stage of merely posting information online or the *publish* level, whereas 38.35% are included in the *Interact* category. This category embraces services in which an e-mail address or other kind of interaction between government and administration exists, such as downloading applications to be sent by post or presented at a line desk. Occasionally the forms can be sent by e-mail. In fact, this stage has a weak the degree of interactivity.

The lowest percentage is shown by the *transact* stage. This category embraces services such as payment of business rates, lost property, collection of bulky items, reporting a street fault and payment of taxes. The citizen can fill in the form with personal and other data related to the service required and send it electronically.

Some websites includes, under the label "Online services", services in which only limited interaction is allowed, such as the downloading of forms or instructions and guidelines for the filling in of applications. These "window dressing" practices mean e-government developments are becoming essential parts of local government governance approaches and a sign of modernity, quality, openness and responsiveness to citizens' needs.

Based on the product of *SMB* and *SMD*, the *SM* (Service Maturity) provides a measurement of developments in e-government. In Table 2 the following groups can be distinguished (Exhibit 1):

- *Moderate* – ($SM > 36\%$): Vienna, Birmingham, Stuttgart and Munich. In these cities most services are included in the *interact* and *transact* categories, with a low percentage of services included in the *publish* stage. This category also shows the highest number of services provided through the Internet.
- *Marginal* – ($36\% \geq SM > 30\%$): Saragossa, Essen, Barcelona, Sheffield, London, Cardiff, Dublin and Genoa. As in the *Moderate* category, these cities have a relevant number of services included in the *interact* and *transact* categories, although the number of services classified in the *publish* stage is clearly higher than in the *Moderate* group. The *SMB* score of this group is above the average.
- *Low* – ($30 \geq SM > 20\%$): Cologne, Valencia, Glasgow, Edinburgh, Berlin, Madrid, Luxembourg, Seville, Leeds, Hamburg, Brussels, Frankfurt, Rome. In this group

publish is the prevalent category, although many services are provided in *interact* and *transact* ways. The *SMB* score in this group is around the average.

- *Very low* – (20% > *SM*): Belfast, Lyon, Lisbon, Marseille, Naples, Milan, Paris, Palermo. These cities show low scores of *SMB* and the lowest levels of services labelled as *interact* or *transact*.

The *DM* index measures the degree of accessibility and website sophistication. From the figures shown in Table 2, the following website groups can be distinguished (Exhibit 2):

- *Moderate* ($DM \geq 62\%$): Barcelona, Frankfurt, Madrid, Saragossa, Cardiff, Berlin, Palermo, Vienna. These webs present a high and friendly degree of navigability. They have complaint boxes, an interactive map of the city which gives information about streets and general interest services and signs of e-democracy such as direct contact points with the Mayor or live council plenary sessions. These webs often have implemented facilities in order to make the use of the Internet more interesting, such as digital certificates in Barcelona and Madrid and facilities for drawing up individual profiles and for allowing case-handling (Berlin Online Club, Program Zaragoza@accessible, Connect to Cardiff).
- *Marginal* ($62\% > DM \geq 52\%$): Stuttgart, Edinburgh, Leeds, Birmingham, Valencia, Naples, Dublin, London, Marseille, Milan, Genoa, Hamburg, Munich. The webs in this group also allow a friendly navigation without shortages or mistakes, although sometimes there are no suitable interactive city maps, e-democracy signs such as contact points with the Mayor or other council members, suggestions about how to access administrative departments, or alternative languages to the official. Furthermore, the web flexibility to use online services is not as good as in the *Moderate* group. In this group there are digital initiatives such as DIBIS, Direkte Bürger Informations Service in Hamburg, digital certificate in Valencia and User's registration in London).
- *Low* ($52\% > DM \geq 40\%$): Cologne, Glasgow, Sheffield, Paris, Lyon, Luxembourg, Brussels, Essen, Lisbon, Seville. Although some of the webs of these cities offer suggestion boxes, city maps, e-democracy contact points or guidelines about how to access administrative departments, they do not obtain good scores.
- *Very low* ($40\% > DM$): Belfast, Rome. These two cities obtain the lowest scores in almost all website features considered.

Common features to almost all city websites studied are that they have been designed as one-stop shops with links to other administration webs, they show the agenda of city activities and they have search engines, except for Valencia, Glasgow, Luxembourg and Belfast.

On the other hand, only five cities, Barcelona, Berlin, Valencia, Naples and Hamburg offer facilities such as e-mail accounts for citizens maintained by the municipal portal or, in the case of Barcelona and Milan, e-democracy utilities such as council plenary sessions and other information related to the government cabinet.

The *OM* index synthesizes the previous information to carry out the analysis of the websites of the sample (see Table 2). *OM* is the combination of the *SM* and *DM* indexes in the proportion of 70% and 30% respectively. From the *OM* scores the following groups can be distinguished (Exhibit 3):

- *Innovative Leaders* ($OM > 50\%$): Vienna is the only city included in this category. This city is the first in the *SM* ranking, has a good balance between *DM* index components and is the city with the highest number of services offered online.
- *Visionary Followers* ($50\% > OM > 41\%$): This group embraces other cities with a high level of services online - *SM* score- (Stuttgart, Birmingham, Munich), together with cities with a good *DM* score (Barcelona, Saragossa, Cardiff)
- *Steady Achievers* ($41\% \geq OM > 30\%$): More than 50% of the cities of the sample are included in this group: Madrid, London, Sheffield, Dublin, Essen, Valencia, Genoa, Berlin, Edinburgh, Frankfurt, Cologne, Leeds, Glasgow, Hamburg, Luxembourg, Seville, Brussels. All of them show low scores in the *SM* index. Although cities such as Madrid, Berlin and Frankfurt present good *DM* scores, they are included in this group because of the weight of *SM* in the final score.
- *Platform Builders* [$30\% > OM$]: Marseille, Palermo, Naples, Lyon, Milan, Rome, Lisbon, Belfast, Paris. This final group is made up of cities with bad results in the *SM* and *DM* indexes.

6. DISCUSSION

The analysis of 33 websites of some of the most populous EU cities shows that almost all city governments are shifting from the traditional bureaucratic paradigm to the e-government paradigm albeit with different levels of development. Our survey shows that EU municipalities are already offering citizens up to 67 e-services. The biggest EU cities have embarked upon a wave of e-government initiatives that make use of information and communication technologies (ICTs). However, within such cities there are significant differences in the access to the Internet. As Table 2 summarizes, most municipal governments seem to be at the *publish* stage, a relatively small portion of the municipal governments has moved to a real *interact* (two-way communication) stage, and only a few are entering in the *transact* stage (service and financial transactions). Therefore, the transition to e-government is following a more-or-less predictable development process. The first step in the process tends to be 'publishing' and most local government websites today are at this stage. While local governments frequently use it to offer information to citizens, it is less common to use the Internet as a medium for two-way communication. Currently, information tends to be quite substantial, but the possibility of interacting with government online is much more limited.

Many websites allow the downloading of forms (pdf files). Most of the applications require manual completion of the form, but some cities offer the opportunity of completing the form by PC, printing the result and sending it by post later. Only a few cities provide more advanced applications with forms that can be transferred electronically to the administration and used as input to internal applications. Notwithstanding, simply moving a

service from offline to online –even at the *publish* stage- and making it available on the Internet is a significant service improvement for many users, since information and transactions are now available 24/7/365. The user benefits are more flexibility and time-saving.

To speed up the process of service delivery the European Commission has recently approved a list of 12 public services to citizens as a guideline for benchmarking [40]. Seven of them are already implemented by more than 50% of the cities studied (Income taxes, Public libraries, Job search, Personal documents, Application for building permission, Birth and marriage certificates and change of address notification). The others (Social security benefits, Car registration, Declaration to the police, Enrolment in higher education and Health-related services) are not always the competence of local governments in the countries studied.

For the moment, few websites show signs of e-democracy and customer case handling services. Both aim at enhancing citizens' trust in governments by increasingly engaging citizens in decision-making and can result in a more informed and better educated public opinion, sensitive to government proposals. The former seeks to involve citizens in the policy process through interactive initiatives such as contact points with the Mayor or council members or access to live council sessions online. The latter, to draw up open and transparent government websites whereby citizens enjoy a large degree of freedom of access to information, in particular, the possibility to trace their own files and dossiers within public databases. Only those cities with digital certificates and authentication services are able to offer a satisfactory level of protection of personal privacy.

Of course, the disparity across cities in the transition to e-government brings up the question, why? Why were some of these cities more progressive in adopting the paradigm shift? Theories of organizational change and innovativeness suggest several hypotheses. Several studies have found that larger cities tend to be more innovative, possibly because they face a more diverse environment that always demands innovative solutions, or because they have more organizational freedom to try new ideas [41] [42] [43]. West [38] performed a simple regression of his own US state e-government rankings on potential explanatory factors (population size, political complexion, overall state spending, and demographics) and found the only statistically relevant factors to be total population, which showed a positive correlation (see also Brudney and Selden [44] Norris and Demeter [45]). Because our study focuses on cities with more than 500,000 inhabitants, the population size factor is already included in the sample and, therefore, the sample can be considered comparable.

According to Dunleavy [46], potential forces for spreading e-government policies are: the transference of e-government experiences across countries which leads to a high probability of similar responses and the development of new public management (NPM) ideas in many democracies which stress the assimilation of public sector organizations into a desired general business management model.

Public administration styles and NPM initiatives contribute partially to explaining the changes observed in e-government among the local governments studied. Key components of NPM transformation have been territorial and managerial devolution, financial management reforms, personnel management and the relationship between governments and citizens [10]. Whereas differences in the implementation of the first three key components can be found between European continental countries

and the other EU countries (see Pollitt and Bouckaert [17], Torres and Pina [10]), in the relationship between governments and citizens, the developments show a high similarity throughout Europe.

The growth of citizens' expectations and needs in Western democracies led to a new approach to delivering services by the public administration, in order to respond to this new social demand. The quality of the services provided, results and customer satisfaction are now at the core of this new approach.

The demand by public service consumers for the same level of responsiveness and service from their governments as they expect from the private sector and the growth of citizens' expectations are leading to a new approach to service delivery by the public administration. In order to keep up with expectations, governments are taking a pro-active approach by anticipating the citizen's needs and making changes in how it works in order to meet those needs. To improve the 'relationship between governments and citizens', each country has undertaken a number of policies which include customer/citizen relationships, administrative innovation, improving citizen's quality life, adoption of modern techniques of administration, simplification of administrative procedures, the introduction of e-government and the delivery of high standards of services, with the goal of making the administration more efficient, results-oriented, customer-oriented, and of ensuring transparency and accessibility for the citizens [47]. E-government, service charters and one-stop shops are outstanding examples of 'relationship between governments and citizens' reforms which are being extensively implemented in European continental and other countries in which some NPM postulates, such as managerialism and marketization, have been difficult to fit into their public administration styles. For example, we can find cities included in the Innovative leaders and Visionary follower groups, which are European continental countries labelled by Hood [18] as non-leaders in the implementation of NPM reforms such as Austria, Germany and Spain. Since few governments disagree about crucial NPM postulates such as the need to increase efficiency and to reduce deficits and debt, to improve service delivery, to increase control over programmes, to enhance accountability and to focus core public servants on policy development and performance management, those countries with public administration styles reluctant to the introduction of some NPM reforms find in e-government initiatives a suitable tool to strengthen those policies addressed to achieve these goals which, furthermore, are compatible with the prevalent public administration styles of Western democracies mentioned in the context section.

7. CONCLUSIONS

This paper presents the results from a study of the quality and usage of public e-services in Europe. Its objectives were to identify which online public services are currently offered by local governments in the countries studied, to analyse the level of interactivity of online public services and to gather information about to what extent basic public services are being developed. A first finding shows that, at present, the issue is no longer whether government is online, but in what form and with what consequences. A second finding shows that the transition to e-government seems to be following a more or less predictable development process, albeit with different speeds between countries and within the cities of each country.

Although in the near future, few expect e-government to completely replace traditional methods of information and service provision, consultation and public participation, it is becoming a powerful tool of transformation, which has become embedded in the culture and in the agenda of the public sector. Online access has advantages that are impossible to replicate offline, such as the drawing together of information, 24/7 accessibility, independent search capacity and interactive policy consultation. E-government initiatives can refocus attention on a number of issues such as how to collaborate more effectively across agencies and tiers of public administration (seamless) and how to enhance customer focus. Its potential goes far beyond early achievements, enabling qualitative gains in work processes, results and efficiency. If implemented properly, it will help to develop and consolidate principles of good governance such as democratization, coherence, effectiveness, transparency and accountability.

However, if according to the definitions quoted in the introduction section, e-government should be more than Internet use or online service delivery, almost all the websites studied remain at the early stages, none of them making full use of the available technology. The e-government in almost all the cities studied is merely an extension of the government, with potential benefits in speed and accessibility 24/7. E-government is an enabler, not an end in itself, so it needs to be integrated into broader policy and service delivery goals, broader public management reform processes and broader information society activity. It should enable better outcomes, quality services and greater engagement with citizens, because governments and public administrations will continue to be judged by citizens against these established criteria for success.

Finally, one main challenge for governments is to identify user needs and to design e-government projects according to the identified target users. For every e-government project, coherence must be seen as the ultimate test: users will ignore governments' efforts in carrying out e-government strategies and visions if the service leads to more bureaucracy and/or less societal, economic and individual benefits. Therefore, an extension of this survey might be to analyse to what extent e-government initiatives meet citizens' demand and needs.

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TABLE 1. SERVICES INCLUDED IN THE RESEARCH. SMB & SMD

GENERAL SERVICES	SMB	SMD		
		<i>Publish</i>	<i>Interact</i>	<i>Transact</i>
1 Public employment	72,73%	25,00%	62,50%	12,50%
2 Public procurement	72,73%	41,67%	41,67%	16,67%
3 Change of personal data	33,33%	45,45%	54,55%	0,00%
4 Identity card /domicile register	42,42%	50,00%	14,29%	35,71%
5 Traffic fines' applying	21,21%	28,57%	57,14%	14,29%
6 Traffic fines payment	30,30%	30,00%	30,00%	40,00%
7 Lost objects	27,27%	11,11%	33,33%	55,56%
8 Register (birth, marriage, death)	60,61%	85,00%	10,00%	5,00%
9 Birth, Death and Marriage Certificates	60,61%	25,00%	40,00%	35,00%
10 Reporting a fault	69,70%	21,74%	26,09%	52,17%
11 Register of civil partnerships	24,24%	50,00%	50,00%	0,00%
12 Marriage in Town Halls	57,58%	68,42%	26,32%	5,26%
13 Changes in the census	54,55%	33,33%	50,00%	16,67%
14 Voter registration	57,58%	47,37%	42,11%	10,53%
15 Apply for meetings in public spaces	39,39%	15,38%	76,92%	7,69%
16 Permission for loading, unloading, driving in restricted areas	72,73%	16,67%	70,83%	12,50%
17 Funeral services and cemeteries	60,61%	70,00%	25,00%	5,00%
EDUCATION				
18 Municipal schools	42,42%	64,29%	35,71%	0,00%
19 Kindergardens	27,27%	55,56%	44,44%	0,00%
ENVIRONMENT-HEALTH				
20 Consumer's office	51,52%	70,59%	29,41%	0,00%
21 Food safety	45,45%	53,33%	40,00%	6,67%
22 Apply for garbage containers, litter	39,39%	30,77%	46,15%	23,08%
23 Collection of bulky items	57,58%	36,84%	10,53%	52,63%
24 Applications for recycling bins	51,52%	52,94%	35,29%	11,76%
25 Domestic collection of garbage	36,36%	66,67%	0,00%	33,33%
26 Pest control	42,42%	71,43%	28,57%	0,00%
27 Sanitary licence	39,39%	7,69%	84,62%	7,69%
28 Selective collection of garbage (trades/works)	45,45%	40,00%	33,33%	26,67%
29 Complaints about public nuisances (noise, graffiti...)	72,73%	58,33%	33,33%	8,33%
30 Abandoned vehicles	48,48%	43,75%	25,00%	31,25%
31 Dangerous, protection of trees	27,27%	33,33%	66,67%	0,00%
32 Waste water, discharge effluent to a sewer	30,30%	60,00%	20,00%	20,00%
33 Water supply	15,15%	0,00%	80,00%	20,00%
34 Licence/register of dogs and other animals	48,48%	37,50%	50,00%	12,50%
HOUSING				
35 No parking prohibitions	27,27%	55,56%	44,44%	0,00%
36 Building permission	57,58%	31,58%	57,89%	10,53%
37 Planning applications	51,52%	29,41%	58,82%	11,76%
38 Grants (to buy or rehabilitate housing...)	45,45%	26,67%	66,67%	6,67%
39 Council dwellings	48,48%	50,00%	37,50%	12,50%
40 Inspection/change of use of premises	30,30%	40,00%	50,00%	10,00%
41 Demolition	36,36%	25,00%	75,00%	0,00%
42 Buy a council property	36,36%	33,33%	41,67%	25,00%
43 Payment of rent, repairs of council properties	24,24%	25,00%	37,50%	37,50%
44 Private works affecting public roads	30,30%	0,00%	90,00%	10,00%
SOCIAL SERVICES				
45 Teleassistance	69,70%	86,96%	13,04%	0,00%
46 Adaptations for the disabled	27,27%	77,78%	22,22%	0,00%
47 Grants	36,36%	33,33%	66,67%	0,00%
48 Home care, meals on wheels, nursery homes	21,21%	71,43%	28,57%	0,00%
49 Social activities/youth	30,30%	70,00%	30,00%	0,00%
ECONOMIC ACTIVITIES				
50 Payment of business rates	36,36%	33,33%	8,33%	58,33%
51 Payment of taxes	84,85%	25,00%	25,00%	50,00%
52 Benefits	45,45%	33,33%	66,67%	0,00%
53 Communication change of fiscal data	24,24%	25,00%	37,50%	37,50%
54 Parking for residents	39,39%	30,77%	61,54%	7,69%
55 Parkings	63,64%	71,43%	23,81%	4,76%
56 Parking for the disabled	54,55%	66,67%	22,22%	11,11%
57 Public transport fares	60,61%	70,00%	5,00%	25,00%
58 Venues for meetings, congresses	54,55%	22,22%	44,44%	33,33%
59 Markets, trade in public ways	69,70%	47,83%	43,48%	8,70%
60 Use of streets and public sites for commercial activities.	48,48%	18,75%	81,25%	0,00%
61 Licence for taxi & private hire	33,33%	45,45%	54,55%	0,00%
62 Applications for licences to open or close establishments	60,61%	25,00%	65,00%	10,00%
CULTURE/LEISURE/SPORT				
63 Catalogue of libraries	75,76%	20,00%	0,00%	80,00%
64 Booking of books	54,55%	55,56%	11,11%	33,33%
65 Booking of sport facilities	75,76%	84,00%	12,00%	4,00%
66 Public entertainments tickets	72,73%	33,33%	20,83%	45,83%
67 Filming permit	30,30%	40,00%	50,00%	10,00%
MEANS	46,81%	43,57%	38,35%	18,06%

Table 2. FINAL RANKING & VALUE OF THE MAGNITUDES OF THE RESEARCH

RANKING	CITY	SMB	PUBLISH	INTERACT	TRANSACT	SMD	SM	DM	OM
1	VIENNA	61,19%	3	19	19	79,67%	48,76%	62,50%	52,88%
2	BARCELONA	62,69%	22	10	10	57,14%	35,82%	77,50%	48,32%
3	STUTTGART	62,69%	5	33	4	65,87%	41,29%	61,25%	47,28%
4	BIRMINGHAM	58,21%	8	20	11	69,23%	40,30%	61,25%	46,58%
5	SARAGOSSA	61,19%	17	15	9	60,16%	36,82%	67,50%	46,02%
6	CARDIFF	52,24%	14	12	9	61,90%	32,34%	66,25%	42,51%
7	MUNICH	53,73%	5	22	9	70,37%	37,81%	52,50%	42,22%
8	MADRID	43,28%	11	10	8	63,22%	27,36%	72,50%	40,90%
9	LONDON	47,76%	8	13	11	69,79%	33,33%	57,50%	40,58%
10	SHEFFIELD	59,70%	16	16	8	60,00%	35,82%	50,00%	40,07%
11	DUBLIN	49,25%	8	18	7	65,66%	32,34%	57,50%	39,89%
12	ESSEN	67,16%	20	22	3	54,07%	36,32%	46,25%	39,30%
13	VALENCIA	56,72%	20	13	5	53,51%	30,35%	60,00%	39,24%
14	GENOA	52,24%	15	11	9	60,95%	31,84%	55,00%	38,79%
15	BERLIN	49,25%	15	13	5	56,57%	27,86%	63,75%	38,63%
16	EDINBURGH	52,24%	19	10	6	54,29%	28,36%	61,25%	38,23%
17	FRANKFURT	31,34%	3	14	4	68,25%	21,39%	73,75%	37,10%
18	COLOGNE	61,19%	24	13	4	50,41%	30,85%	51,25%	36,97%
19	LEEDS	46,27%	15	11	5	55,91%	25,87%	61,25%	36,48%
20	GLASGOW	65,67%	34	4	6	45,45%	29,85%	51,25%	36,27%
21	HAMBURG	37,31%	3	18	4	68,00%	25,37%	55,00%	34,26%
22	LUXEMBOURG	55,22%	23	12	2	47,75%	26,37%	47,50%	32,71%
23	SEVILLE	41,79%	10	12	6	61,90%	25,87%	45,00%	31,61%
24	BRUSSELS	47,76%	20	10	2	47,92%	22,89%	47,50%	30,27%
25	MARSEILLE	29,85%	13	5	2	48,33%	14,43%	57,50%	27,35%
26	PALERMO	23,88%	8	8	0	50,00%	11,94%	62,50%	27,11%
27	NAPLES	34,33%	19	4	0	39,13%	13,43%	57,50%	26,65%
28	LYON	23,88%	8	0	8	66,67%	15,92%	50,00%	26,14%
29	MILAN	19,40%	5	4	4	64,10%	12,44%	56,25%	25,58%
30	ROME	44,78%	21	7	2	45,56%	20,40%	35,00%	24,78%
31	LISBON	29,85%	9	10	1	53,33%	15,92%	45,00%	24,64%
32	BELFAST	32,84%	13	6	3	51,52%	16,92%	38,75%	23,47%
33	PARIS	29,85%	17	2	1	40,00%	11,94%	50,00%	23,36%
	MEANS	46,81%	13,67	12,03	5,67	57,78%	27,23%	56,29%	35,95%

Exhibit 1:

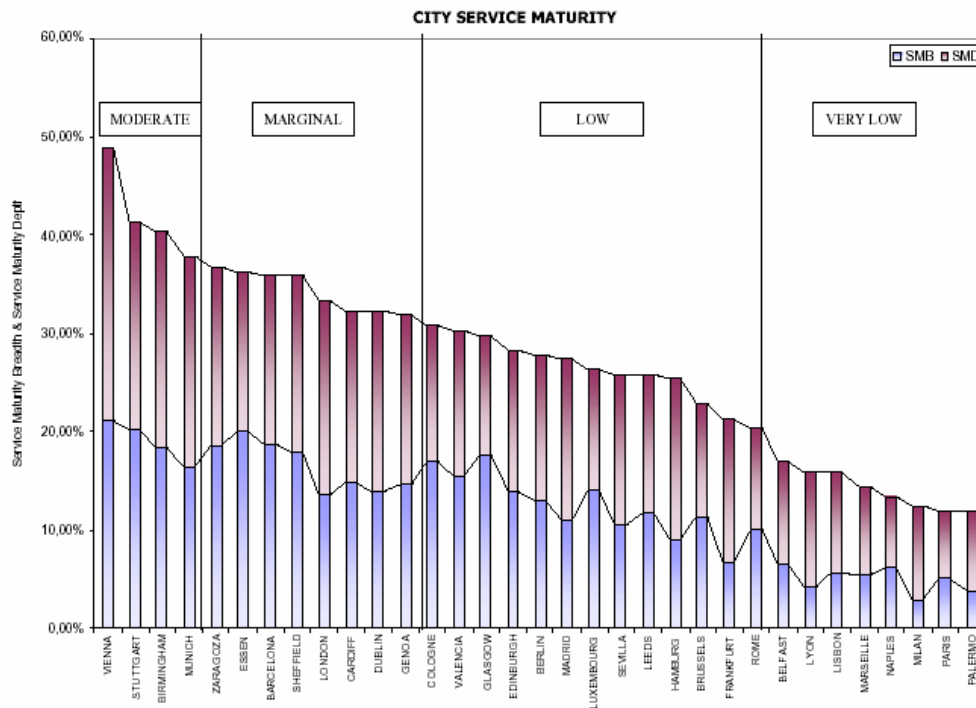


Exhibit 2:

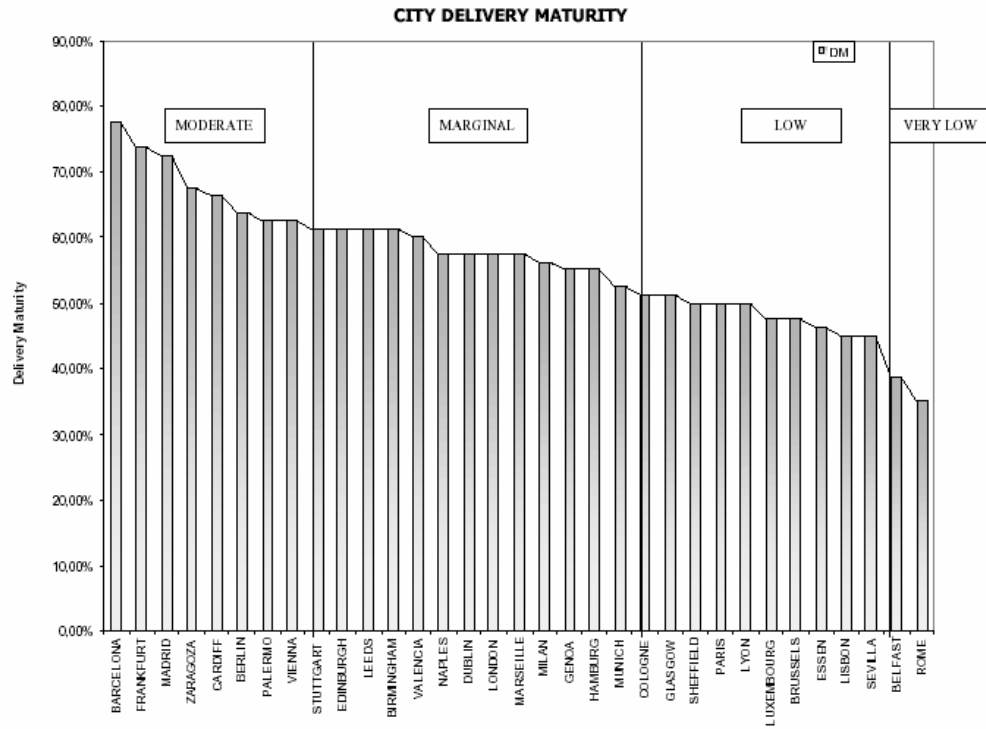


Exhibit 3

