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Toward a South-Eastern European Local E-government Identity: Analysis of the Greek Case

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Most attempts to provide a specific country image in e-government are using the central government as the unit of investigation. In this study, our unit of analysis is the local e-government. This paper calls for a local e-government investigation among countries in the South-eastern European region, where cultural and historical commonalities among these countries provide the context for shaping common local e-government patterns. The case of the analysis of Greek prefecture websites is presented. A four-stage evaluation scheme is used to investigate the quality and sophistication of prefecture websites. The quantitative analysis of websites reveals that most of the e-government efforts at the Greek prefecture level are limited to information provision, without exploring the functions related to interactivity, transactions and more citizen-oriented services.

Keywords: local e-government, e-government, website analysis, quantitative analysis, evaluation criteria

Local governments around the world may use the Internet both for delivering services to citizens efficiently (the e-government function) and/or for encouraging citizens to get involved in the affairs of the demos and participate actively in the policy-making process (the e-democracy function).

From an administrative point of view, e-government mainly aims at the administrative coordination of government units for more efficient and less costly provision of services to clients. According to the Danish Ministry of Finance, "e-government is the use of ICT to improve and make the handling of public management tasks more efficient for the benefit of citizens, companies and the public sector" (Torpe, 2003). The logic that e-government is value for money (Torpe, 2003) usually drives a one-way managerial discourse, placing the citizen on a backstage role.

From citizen's point of view, the interest in e-government is mainly driven from a willingness to perform jobs with the state in a fast and reliable way from easily accessed points (preferably from home), which may be accessible anytime during the day and the week avoiding bureaucratic processes.

Both views underestimate the e-democracy function, where citizens are taking a central stage role. E-democracy aims to broaden participation by facilitating citizen interest in politics, encouraging dialogue between elected officials and citizens and promoting active engagement of citizens in the decision-making process. E-democracy, with its emphasis on participation, empowerment and dialogue, is more attuned to

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discourses of participatory and deliberative democracy.

E-democracy depends on the degree of interaction that a local government engages with their citizens through the web. An OECD report (2001) identified three types of interaction that may characterized the government-citizen relation: one-way information provision, two-way consultation relationship where citizens provided feedback to issues raised by the government, and active participation where citizens engaged in policy-making in partnership with the government.

Compared to politics in a national or even a global scale, politics at the local level is much closer to the concerns and lives of citizens. Not only are the issues more linked to the everyday lives of citizens (i.e., environment, sanitation, traffic congestion, local development projects, etc.), but also in terms of scale, the average citizen can get involved and participate more easily and meaningfully in local politics than in national or global affairs. The use of information and communication technologies (ICTs) transforms the interface of local politicians and officials with citizens to a different level by rendering local administration more efficient and local politicians more accountable to citizens' concerns and demands.

The research interest in e-government is interdisciplinary. Scientists from computer science may provide architecture design, e-government platforms, applications of new web tools (web 2.0, web x.0), whereas scientists from communication studies may explore how the medium is used by several groups and many audits, in addition to exploring the applicability, the functionality, and the adoption of the medium for performing various communication and services tasks.

Current E-government Identity in the South-Eastern European Region

Penetration rates of electronic communication services rank very low for the south-eastern European countries of the EU countries compared to the rest of the EU (Special Eurobarometer, 2008, 2010). The south-eastern European countries of the EU are below the average of the EU in the percentage of households having a personal computer at home, in the percentage of households with internet access and in the percentage of broadband Internet access. Cyprus is the region's best representative, whereas the other three countries (Bulgaria, Greece and Romania) have either the worst rates (Bulgaria and Romania) among all 27 countries, lying at the end of the ranking table, or are very close to the worst rates (Greece). Table 1 summarizes the image of ICT at home for the Balkan countries.

Table 1

EU and ICT Rates Among the 27 Countries of the European Union

Households with a computer			Households with Internet access			Households with broadband Internet access		
Countries	2008	2010	Countries	2008	2010	Countries	2008	2010
1. The Netherlands	90%	92%	1. The Netherlands	86%	89%	1. The Netherlands	77%	79%
2. Denmark	85%	87%	2. Denmark	80%	85%	2. Denmark	69%	76%
3. Sweden	82%	87%	3. Sweden	78%	85%	3. Sweden	61%	76%
European Union-27	57%	64%	European Union-27	49%	57%	European Union-27	36%	48%
17. Cyprus	55%	58%	17. Cyprus	39%	49%	18. Cyprus	23%	39%
23. Greece	41%	50%	25. Greece	22%	39%	24. Greece	14%	31%
26. Romania	35%	42%	26. Bulgaria	22%	35%	26. Bulgaria	14%	27%
27. Bulgaria	27%	37%	27. Romania	24%	31%	27. Romania	15%	25%

Noteworthy it is that Internet penetration rate in the region has a sharp increase over the last years. Bulgaria and Romania gained at least 150% increase in Internet penetration rate from 2007 to 2010, as Bulgaria has seen the 14% of 2007 reaching at 35% in 2010 (150% increase), and Romania has seen the 12% of 2007 reaching at 31% in 2010 (158% increase). Cyprus and Greece gained also a significant increase as they have doubled the Internet penetration rate (Cyprus from 25% in 2007 to 49% in 2010; Greece from 19% in 2007 to 39% in 2010). Noteworthy it is also the sharp increase in households with broadband connections in the area from 2008 to 2010 (see Table 1), as Greece and Bulgaria gained around 100% increase from 2008 to 2010, Cyprus and Romania gained around 66% increase when the average increase in households with broadband connections in the EU from 2008 to 2010 was 33% (Special Eurobarometer, 2008, 2010).

United Nations report the rankings of e-government all around the world. According to the latest report (UNPAN, 2008), Slovenia was the best e-government representative in the south-eastern European region ranking at the 26th position. Cyprus, Bulgaria, Greece and Croatia ranking at places 35, 43, 44 and 47 respectively are among the first 50 countries in the world.

Table 2 shows e-government rankings of the south-eastern European countries for years of 2005 and 2008 (UNPAN, 2005, 2008). Noteworthy here is that Serbia, Montenegro and Albania made important steps forward gaining positions in the world ranking, whereas Turkey, Bosnia and Herzegovina and Greece were the countries that lagged behind between years of 2008 and 2005. These indexes may give an idea how the south-eastern European countries perform in e-government but the indices lack meaning and usefulness at the local e-government level.

Table 2

U.N. E-government Rankings for the South-Eastern European Countries

Country	2008 rank	2005 rank	Ranking difference
Slovenia	26	26	0
Cyprus	35	37	+2
Bulgaria	43	45	+2
Greece	44	35	-9
Croatia	47	47	0
Romania	51	44	-7
T.F.Y.R. Macedonia	69	73	+4
Turkey	76	60	-16
Serbia	77	156	+79
Albania	86	102	+16
Bosnia and Herzegovina	94	84	-10
Montenegro	100	156	+56

To our best of knowledge, there are no reports on local e-government rankings among countries. The above ranking methods have been applied to benchmark e-government using the central government as the focus of analysis. Local e-government had been studied in Norwegian municipalities (Flak et al., 2005) and in Greek prefectures (Yannas & Lappas, 2007).

Identifying a south-eastern European local e-government identity will be an interesting research effort as researchers around the Balkans can exchange experiences and best practices, identify cultural e-government identities and work together in exploring how the Balkan citizens can be better served from their local

administrators and how they can take part in transparent decision-making processes through the use of the web for improving democratic performance.

Exploring the Greek Case

Local government in Greece is comprised of two levels: the first level consists of municipalities (cities and smaller village communities), and the second deals with prefectures. Following the "Capodistrias Reform Program", there exist currently in Greece 54 prefectures, 900 municipalities and 133 village communities.

E-government has made very few inroads in Greek local government. There are at least three major reasons for the slow-pace embracement of the ICTs by local government in Greece. First, as we have presented in Table 1, Internet penetration in Greece is very low and lags considerably behind the average for European Union countries. This low level of Internet penetration maybe related to the expensive rates that Internet providers charge for connecting households to the World Wide Web. Second, Greek local governments are not autonomous from central government and they are financially dependent on transfers from the Greek state. It is estimated that local governments of the United Kingdom, the Netherlands and Greece are the most dependent and those of France, Denmark and Sweden are the least dependent on financial transfers from central governments (Lalenis, 2003). The economic dependence is coupled by the partisan dependence of local leaders on political parties for electoral nomination and continuous support. Third, people residing in local communities all over Greece, with the exception of the metropolitan cities in greater Athens and Thessaloniki areas, prefer to engage in face-to-face communication with their elected representatives rather than interact over the Internet. This last observation is corroborated by previous studies of Greek e-political campaigning at both the national and local levels, which demonstrates that: (1) According to Norris' (2000, pp. 137-179) classification of campaigns into pre-modern, modern and post-modern, campaign communication in the Greek periphery resembles characteristics of pre-modern campaigns with an emphasis on interpersonal communication whereas political campaigns in Athens and Thessaloniki exhibit definite modern traits (Doulkeri & Panagiotou, 2005); (2) interpersonal candidate-voters relationships figure prominently in local press coverage of electoral contests (Demertzis & Armenakis, 2002, p. 220); and (3) The web is more widespread, probably due to population size and time constraints, as a political marketing tool among politicians in metropolitan areas than those in the periphery of Greece (Yannas & Lappas, 2005, pp. 39-40).

In this paper, we focus on the 54 Greek prefectures. Government organizations go through stages in delivering services to citizens. The stages an organization goes through usually begins from a simple informational website and reaches the climax of using the web as an important medium to offer services to citizens and internal services to various levels of employees and departments and other groups related to the organization. The e-government dimension of an institution is usually implemented gradually. Public demand, cost reduction, familiarization with the medium or organizational strategic plans can be driving forces for going through the stages. A four-stage scheme for evaluating local government websites (Yannas & Lappas, 2007) is used. A number of e-government models, ranging from three to six stages, have been proposed in the literature (Irani et al., 2006). All models start with an informational stage and having a number of different intermediate stages end to a final stage. Most models seem to have in common the four stages of (Chandler & Emanuels, 2002) amounting to information provision, interaction, transaction and integration.

The evaluation of prefecture websites follows the four-stage model of Chandler and Emanuels (2002). Our study goes a step further by proposing an evaluation scheme to accompany the four-stage model. The

evaluation scheme is composed of 11 overall sub-stages and 154 overall indices. It uses a weighted ranking scheme totaling 1,000 points with each stage assigned 250 points as maximum score. Each sub-stage is evaluated according to criteria that best describe the stage category, with the accompanied scores being assigned in parenthesis (see Table 3).

In Stage I (information provision stage), the prefecture decides to go online and provides information to site visitors. The information is direct from the local government to citizens and similar to a brochure or a leaflet. The stage is subdivided into five sub-stages that follow a marketing plan procedure. Beginning with the query whether the site can be easily located, the evaluation scheme proceeds to examine users' perceptions regarding the attractiveness of the site, the ease of navigation, the richness of content, and the frequency of providing new information as an inducement for revisiting the site.

In Stage II (interaction stage), the prefecture incorporates various forms of interaction with citizens (i.e., email, newsletters, forums, etc.). The stage is subdivided into four sub-stages indicating the type of interaction: passive government to citizen (G2C) and citizen to government interaction (C2G), as well as real time G2C and C2G interactions.

In Stage III (transaction stage), the prefecture offers citizens the service to perform a number of transactions online, such as requesting documents, accessing payments, downloading official documents or programs etc.

In Stage IV (integration stage), the prefecture undergoes through a transformation at the organizational level to maximize citizen satisfaction. The transformation is reflected in the way, by which the web is used by officials and employees to carry out functional duties. A website will have attained the transformation stage if different levels of access are assigned to different groups of people, and if menu and content categories are suited to the interests of different groups of people (employees, citizens, tourists, members of the prefecture council, other governmental officials, authorities, etc.). Web site personalization to meet citizen preferences is also included at this stage. Therefore this stage is subdivided into two sub-stages: prefecture transformation and site personalization.

Table 3

The Evaluation Scheme

Stage	Sub-category	Evaluation indices
I-a Site locating		Prefecture's name figures in the top-10 listings of Google search engine (15); friendly, easy to figure out URL, like www.prefecture-name-or-abbreviation-name.country-initials (15).
I-b Attractiveness		Dynamic media are portrayed in introductory video before entering main page (2); video files (2); speech files (2); music in the site (2); animating text (2); animating graphics (2); photos (2); cliparts (2); banners (2); avoiding annoying pop-up advertisements (2); and 3d simulation (2) like a panoramic view of the area by using mouse clicks. The characteristics of design sophistication are portrayed in layout consistency (1), proper use of italics (1), proper use of bold (1), proper background (1), the use of no more than three main colors (1), proper editorial appearance (1) avoiding classes between colors, letters etc.
I-c Navigability		Site maps (3); return at home page option (3); no dead links or no "under construction pages" (3); tags and labeling hypertexts (3); labeling hypermedia and avoiding using hyperlinks in graphics that usually are missed by users (3); appropriate number of lines that allows minimum page scroll (3); search this site feature (3); fast download (3); recognizable new sections (3); proper names in the various menus (3).

(to be continued)

I-d Content	Services to prefecture citizens	Access to official documents (4); job announcements (4); staff members (4); contact information for staff members (4); organization departments (4); required application documents (4); information for citizen service centers (4).
	Transparency in decision making	Dates of the next council meeting (4); agenda of the next council meeting (4); invitation to the council meetings (4); council decisions (4); archives of previous council decisions (4).
	Services to tourists	Transportation to reach us (1); transportation schedules for reaching us (1); sightseeing's (1); museums (1); operating hours (1); how to reach various places (1); interactive map of interesting places (1); map of the area (1); accommodation (1); restaurants and food services(1); entertainment (1); local events (1); local products (1); local transportation (1); activities around the area (1).
	Prefecture achievements	Description of the action plan (projects) used in election campaign (2); completed projects so far (2); technical and financial details of projects (2); photos from completed projects action plan (2); multimedia usage for promoting projects (2); description of next projects (2); current state of projects (2); financial information of new projects (2); call for project participation (2); project reports (2).
	Leader information	Leader CV (1); details of studies (1); political achievements (1); professional achievements (1); achievements in prefecture (1); family details (1); personal photo (1); political photos (1); professional photos (1); family photos (1); photos of action plan (1); photos from local events (1); multimedia usage for promoting the leader (1).
	Members of the council	List of names (1); duties of members (1); photos of members (1); members CV's (1); multimedia usage for promoting members (1); contact details of members (1).
	Promotion of prefecture area	Sightseeing photos (1); museum photos(1); local events photos(1); local products photos (1); multimedia usage for sightseeing's (1); multimedia usage for museums (1); multimedia usage for local events (1); multimedia usage for local products (1); weather forecast (1).
	Local enterprises, NGO's, etc.	Prefecture and municipality organizations (1); local public agencies (1); local professional organizations and associations (1); local cultural organizations (1); local athletic organization and clubs (1); local business enterprises (1); local media (1).
	Links to local enterprises, NGO's, etc.	Link to prefecture and municipality organizations (1); link to local public agencies (1); link to local professional organizations and associations (1); link to local cultural organizations (1); link to local athletic organization and clubs (1); link to local business enterprises (1); link to local media (1).
	Other information, etc.	Calendar (1); anniversaries (1); change language (1); local elections (1); others (1).
I-e Update frequency		Date updated (4); press releases (4); archives of press releases (4); content update (daily 4, weekly 2, monthly 1); news (daily 4, weekly 2, monthly 1); newsletters (weekly 4, monthly 3, 3-months 2, semester 1); site statistics (4).
II-a Passive G2C		Contact address (4); telephones (4); fax number (4); contact emails (12); contact form (12); registration to newsletter (12); registration to newsgroup (12).
II-b Passive C2G		E-polls (10); online surveys (10); send your opinion (10); guestbook (10); send this site/file (10); e-cards (10); sign for e-petitions (10).
II-c Real time G2C		Video conferences (12); net meetings (12); online reviews and debates (12); online radio (12); online interactive games (12).
II-d Real time C2G		Discussion forums (20); chat rooms (20); bi-directional newsgroups (20).
III Transaction stage		Online official forms completion and submittal (50); online access to public databases (50); online payments (50); online certification requesting and issuing (50); download official documents and programs (50).
IV-a Prefecture integration		Different level of confidentiality access (40); inter-department functional operations or traditional administrative operations appearing on the web (40); group-oriented access menus (40).
IV-b Site personalization		Allow users to personalize the content of the site (40); subscription services for parts of the site (40); use of cookies/logs to segment users and expose them to site versions that suit their personal style (50).

Results

A quantitative content analysis of the 54 Greek prefectures was carried out spanning the period from

October to December 2008. Prefecture website addresses were drawn from the listings of the websites of the Greek Ministry of the Interior (www.ypes.gr) and the Association of the Greek Prefectures (www.enae.gr). A coding form was developed specifically suited to conform to the four-stage e-government scheme. Previous e-government studies (Stowers, 2002; UNPAN, 2005; Zhang, 2005) were used as a basis for developing the coding form of Table 3.

Pre-testing of the coding scheme was undertaken in a study conducted during the period of June to July 2005 (Yannas & Lappas, 2006). To assure validity of the coding scheme, three trained coders reached an agreement on the overall structure and content of the coding form.

From an e-government perspective, the average performance of Greek prefectures and the best scores are presented in Table 4. The data reveal that the average performance scores of Greek prefectures, as recorded in our evaluation scheme, are: 130.5 (52.2%) in information provision; 39.9 (15.9%) in interactivity; 28.7 (11.5%) in online transactions; 20.9 (8.4%) in integration stage; and finally 220 (22%) for overall.

Table 4

Evaluation of Greek Prefectures

Stages	Sub-stage	No. of variables	Max score	Best score	Average score	Best prefecture (N = 54)
Stage I	Site locating	2	30	30	26.6	31 Prefectures
Stage I	Attractiveness	17	28	22	13.9	Pellas, Fokida
Stage I	Navigability	10	30	30	20.7	Kefallinia
Stage I	Content	84	130	96	55.4	Western Attica
Stage I	Update frequency	8	32	24	13.9	Chania, Corfu
Stage I	Overall performance	120	250	172	130.5	Western Attica
Stage II	Passive G2C	7	60	60	27.9	Kastoria, Corfu
Stage II	Passive C2G	7	70	40	10	Kastoria, Chania
Stage II	Real time G2C	5	60	12	0.4	Evia, Heraklion
Stage II	Real time C2G	3	60	20	1.5	4 Prefectures
Stage II	Overall performance	12	250	100	39.9	Kastoria
Stage III	Online transactions	5	250	200	28.7	Kozani, Lasithi, Serres
Stage IV	Overall performance	7	250	90	20.9	Lasithi
Total	All stages	155	1,000	506	220	Serres

Clearly prefectures performed satisfactorily only in the first stage, using the Internet more as an information provision portal to citizens than a service facility. A closer look at the 84 indices that make up the content category indicates that prefecture websites adopt a promotional-commercial character of information. Prefectures seem not to differentiate between offering “services to citizen” and “tourist information provision”, as both indices are close to 50%. Citizen engagement seems to be a low priority category for prefectures, as the average performance scores regarding transparency in decision-making are considerably low 1.8 (9%). The picture that emerges out for interactivity and e-democracy features is more disappointing. The flow of information is one-directional, from the local government to the public. Citizens are not given the opportunity to engage electronically either in consultation with the local authorities or in actively participating in the decision-making processes. The information more pertinent to e-democracy concerned council meetings. Figure 1 presents a view of the average performance across the four stages of the Greek prefectures.

Our evaluation scheme allows us to identify the top prefectures across the various categories of stages and

sub-stages. The prefecture of Kastoria appears three times as one of the top prefectures, followed by the prefectures of Chania, Corfu, Lasithi, Serres and Western Attika, each appearing two times as top prefectures. Regarding all stages, the prefecture of Serres is the top prefecture. Our evaluation scheme allows us to also identify weaknesses of a prefecture in various sub-stages as well as large margins in performances of a prefecture across stages and sub-stages. Thus our evaluation scheme can also be used for identifying high and low performances of a local government organization across the various e-government categories of stages and sub-stages.

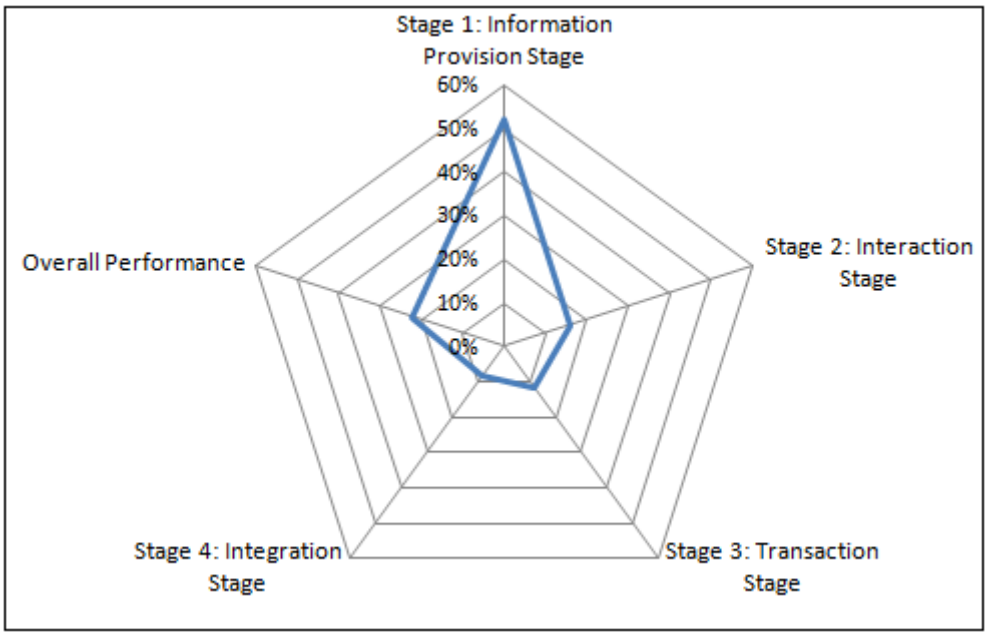

Figure 1. Evaluating e-government performance of Greek prefectures.

Conclusions

The findings of this work demonstrate that the Internet has not taken root among Greek local government authorities. A number of prefectures are engaged with e-government features with an attempt to supply basic information to residents and tourism-relevant information to visitors. However, some prefectures seem to be experimenting with more sophisticated e-government services. We only provided results related to which prefectures attained the highest score in each stage and sub-stage of the evaluation scheme. The evaluation scheme can also provide us with details about the type of content resided in the site, and may also provide results in the exploration of how exactly the web tools have been used from the Greek prefectures. It would be interesting to collect data from more south-eastern European countries related to local e-government and compare the use of the web in local governments. Such a comparison would not only provide a better understanding of the south-eastern local e-government identity, but would also provide us with best practices, examples and innovations taken from our region.

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