Current State of e-Government in Slovenian Municipalities

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Abstract: The study presented in the paper is focused on empirical analysis of the present state of e-Government development in Slovenian municipalities, which derives from the survey conducted in the second part of 2003. It comprises a quantitative and qualitative analysis of websites, a public servants questionnaire and a real case test of municipalities e-mail responsiveness. Some results are also compared to the results of our past measurements and similar studies in other countries, although the latter is hardly to do, due to different organisation structures, duties and competences of local government bodies in different countries.

Keywords: e-Government, measuring e-Government, benchmarking, municipalities, Slovenia

1. Introduction

The development of e-Government as a modern state management also includes local government as a part of public administration. The advantages of using IT within business processes have long been recognised in the private and public sectors, in the latter of which they have become increasingly notable through the growing participation of the citizens in the information society and their awareness and competence to use IT.

Municipalities are, among parts of public administration, the closest link between people and public administration. Even more, they are specifically oriented to local affairs, which are those, that are the most interesting to the local population. But the territorial principle of government which was developed in the past and is linked with that idea is losing its meaning because IT and e-Government are clearing the borders in the global cyber space. Though the reality today shows that going to the local food store 500 meters away from home is a 'project' so, e-Government at the local level is an important matter and at its best, a good way of implementing democracy at local level, offering e-services and easy-to-access information. The important obstacle in this matter is the digital divide where rural local municipalities are not as well developed considering IT or knowledge matters as municipalities in city areas. Linked with rural development is rural economy, which is often poor as well and influences the municipalities, budged. Therefore the funds for e-Government at local level are often problematic.

The study presented in the paper is a part of a wider research concerning the development of integral measurement system for monitoring and evaluating the development of e-Government in Slovenia. The first model of indicators was developed in 1999 and the measurement was performed as well (see Vintar et al. 1999). The originally modest model of indicators was elaborated in the following years in terms of its comprehensiveness; quality and range (see Vintar et al. 2002b, Kunstelj and Vintar 2004a). In its final stage, the system should enable objective measuring and evaluation of e-Government development stage, ensuring continuity of measurements and comparability with similar studies worldwide. This is of vital importance for measurement of the current state of e-Government development in Slovenia, which has a huge amount of influence over the formation of new guidelines and policies. Monitoring and benchmarking of e-Government development anywhere in the world is also one of the main tasks for the governments and in European Union monitoring and benchmarking are important topics of the well known eEurope programme (see eEurope 2002 2000, eEurope 2002 2001a, eEurope 2002 2001b, eEurope2005 2002a, eEurope 2005 2002b).

The paper is focused on a critical analysis of the present state of e-Government development in Slovenian municipalities. With quantitative and qualitative analysis of municipalities' websites and real case test of municipalities' e-mail responsiveness the municipalities' front-office is evaluated. In addition, by means of the results of public servants questionnaire the analysis of some aspects of municipalities' back-office system was conducted. Some results are also compared to the results of our past measurements and similar studies in other countries. The results reflect the present situation and can serve as the basis for selecting adequate developmental steps in the future.

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2. Brief presentation of Slovenian municipalities

Slovenian government is organised in two-tiers: state and local (the third - regional - tier is in preparation at the moment). When Slovenia became independent in 1991, at the local level it was divided into 62 municipalities that inherited their size and characteristics from the so-called people's committees from the period during and after World War II. These committees represented decentralised power, which was nevertheless preoccupied mainly with the administrative matters of the state rather than the concerns of the local population. After Slovenia's independence the need for a reform in local self-government surfaced. The aim of the ensuing reform was to make Slovenian self-government comparable to the local self-governments of the European countries, thereby enabling a more balanced development of the whole community, a higher quality of life for the people, participation of the residents in the decision-making process and local democracy. Today, Slovenia with its population of 2 million and 20.000 km^2 of area is divided into 192 municipalities (Figure 1), established in accordance of the *Local self-government act* in 1994. The average municipality has 10.229 inhabitants and measures 105 km^2.

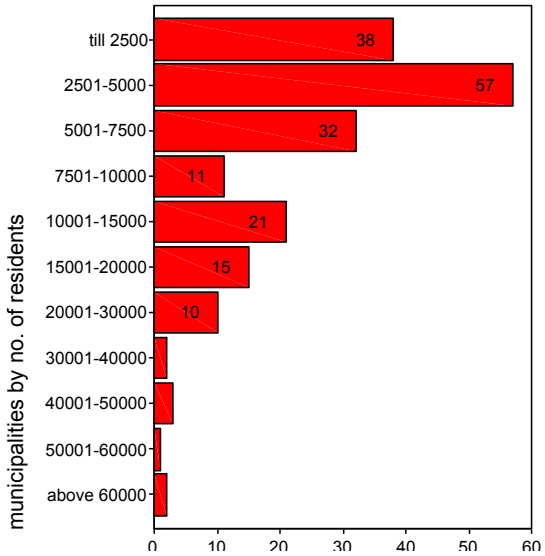

Figure 1: Distribution of municipalities by number of residents

3. Research methodology

In order to evaluate the present state of e-Government development in Slovenian municipalities, the study addressed the following two groups of questions, which refer to the back- and front-office respectively.

- How are Slovenian municipalities technologically prepared for e-Government? With which IT they are equipped? To what extent and to what purposes they use IT?
- To what extent Slovenian municipalities establish the web presence to communicate with the citizens, businesses and all other subjects anyhow involved in their activities? What are the extent, range and quality of information and services on the web? How and in what extent can citizens communicate with municipalities and participate in local democratic processes? What is the responsiveness of municipalities on citizen's questions?

To answer the above questions different methods were used. They are presented in Table 1.

4. Presentation of the results

Due to the limited space, the chapter presents the most relevant results, as well as the comparisons with the published analyses from previous years (see Vintar et al. 1999, 2001, 2002a, 2002b, Vintar et al. 2003, Kunstelj and Vintar 2004b, Leben et al. 2004).

4.1 Back-office perspective

The back-office perspective is often neglected since the front-office solutions are mostly only a façade that hides an 'ugly' interior. The back-office perspective of e-Government shows how IT is influencing the workspace of public servants. The important notice is that the real advantages that IT brings are the influence on efficiency and effectives of working processes and therefore also on administrative procedures. The range of indicators in our study touched this important aspect.

4.1.1 Technological equipment

Several technologies and the range of their application were tested within the indicator of the presence of ITs in business environment. All municipalities have great majority of their working posts equipped with personal computers. 88 % of municipalities already use a local computer network (LAN), while among small municipalities with 2500 residents or less, 21 % neither have LAN nor plan its set-up (Figure 2.). Intranet is a technology that is more used with bigger municipalities. All questioned municipalities without exception have access to the Internet and a running e-mail system. 58 % of municipalities provide an e-mail address to all their employees. The share of employees with their own e-mail address is smaller especially in smaller municipalities. Digital certificates are already used in 20 % of municipalities and planned in a further 30 %, as foreseen in the strategy (SEP-2004 2001).

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Table 1: Research methodology

method		sample	topic	time period
public servants questionnaire	paper	response rate of 45 % out of 192 municipalities	IT equipment, IT-related policies, impact of IT on employment	September 2003
	e-mail	response rate of 33 % out of 151 municipalities	IT usage, frequency and topics of electronic communication with the citizens, use quality management schemes	May 2003
websites survey		80 (42 %) out of 192 municipalities covering all size categories and regions ensuring the representative ness of the sample	indicators relating to the presence or absence particular information and services, technological development of services, communication possibilities, navigation possibilities, information up datedness, foreign languages, security mechanisms, links, e-democracy, mechanisms for the people with special needs	December 2003
e-mail responsiveness test		response rate of 52 % out of 87 municipalities	response rate and quality of the fictitious citizen	July 2003

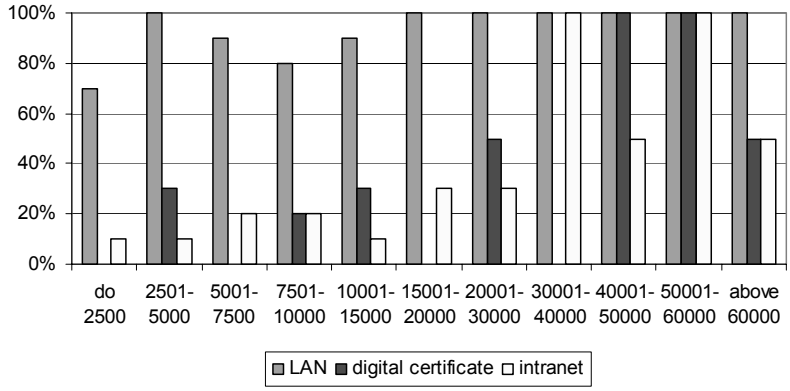

Figure 2: Appearance of specific technologies in municipalities

In comparison with other public administration bodies we can observe that municipalities, due to their smallness, are in advantage as regards workplace equipment with computers, but lag behind in terms of LAN implementation. In addition they are well furnished with Internet access, at the golden mean in the IT equipment and use of e-mail, but on the last place as regards the use of digital certificates and intranet (Vintar et al. 2003).

4.1.2 Electronic data exchange

While most of the questioned municipalities use different media (floppy discs, CD-s, etc.) and e-mail for data exchange within public administration, electronic data interchange (EDI) and shared software solutions with shared databases are less common since they are rather complex in terms of implementation (Figure 3). All these indicate poor connections of municipalities with other Slovenian public administration bodies. On the other hand, data exchange with users (mainly businesses) via different media as well as e-mail is even smaller in comparison to the exchange within the administration.

In comparison with other Slovenian public administration bodies, municipalities represent the golden mean as regards data exchange via electronic media and e-mail, and the worst position at the data exchange via EDI and shared databases, both internally within the administration and in communicating with the users.

4.1.3 IT-related policies

Here we analysed the rules or policies of IT use, supply and maintenance. The 'Acceptable Internet use policy' is already in use only in 14 % of municipalities, and planned in further 41 %. This step is currently in the planning phase mostly in large municipalities. Similarly, only 18 % of the questioned municipalities confirmed the implementation of 'Acceptable e-mail use policy' and 41 % are planning to prepare and implement it. The 'IT supply and maintenance policy' is in use in 17 % of municipalities and planned in 44 % of them. The indicator 'Website updating policy' shows that 29 % of municipalities have such a policy and a further 41 % plan to enforce it. It is interesting that the percentages of the different indicators in this cluster are more or less the same, which suggests that some municipalities implement all policies, whereas others are deficient in all.

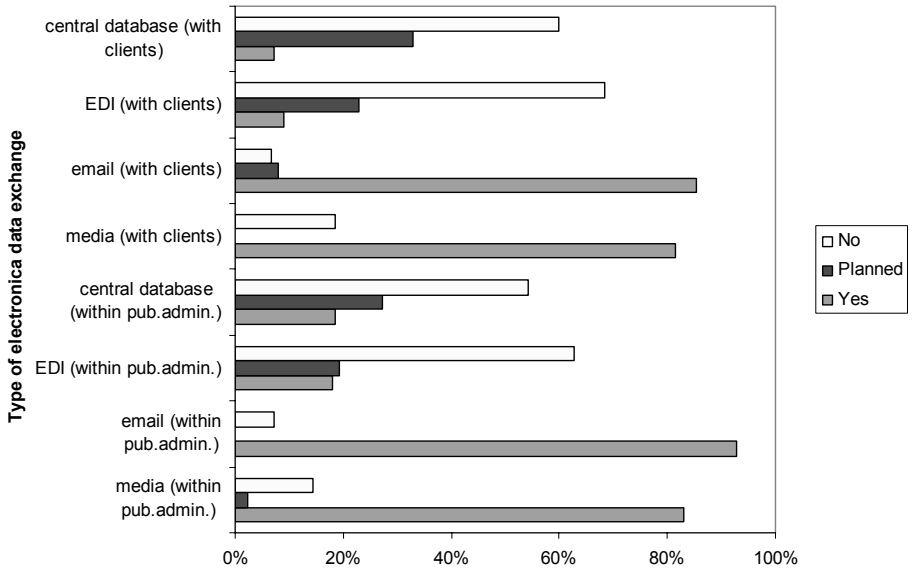

Figure 3: Existing and planned types of electronic data exchange of municipalities with public administration bodies and users

In terms of implementing policies, municipalities lag behind all other public administration bodies in Slovenia and have the lowest results for all indicators. Judging by the high per cent of the answers 'planned', however, the situation is bound to improve in the future.

4.2 Front-office perspective

4.2.1 Web presence

Compared to state administration bodies, municipalities in Slovenia have a weaker presence on the Internet (Figure 4). All state administration bodies and most of the other public administration institutions have their own websites. Nevertheless, an improvement of the situation can be observed. Web presence to a large extent depends on the size of a municipality (Figure 4). Questionnaire answers show that further 22 % of municipalities plan to create a website. But in two smallest categories we also came across the answer that they do not intend to set up a website, which is illogical in view of the low implementation costs. The cyberspace is rapidly becoming equivalent in significance to the real world and even the smallest organisations, especially public administration bodies, must exist and grow in it.

Municipality websites vary one from another considerably in terms of their technological design as well as their contents. Some have a modern design, which includes the application of different portal technologies (search engines, FAQ, discussion groups, dynamic web-pages, web forms, etc.); others are mere collections of a few static web pages. Some municipalities have set up their own web-servers to this end, others hosting elsewhere.

4.2.2 Websites contents

Although the contents found on the municipality websites are, in accordance with their activities, very diverse, they can be divided into the following four areas:

- basic information (address, telephone number, e-mail address, office hours),
- Tourist information and services (places, people, history, sights, culture, events, supply etc.),
- information and services about economy, sports, medical services, schools and other activities in the municipality (mostly addresses, telephone numbers and links to other websites),
- Information and services referring to the municipal council and administration.

Within this analysis, a total of 22 indicators concerning the basic information and the municipal council and administration were measured. Figure 5 shows the frequency of occurrence for each type of content on the municipality websites. Significant progress in contents scope and depth as well as in service sophistication can be realized from past measurements. But, considerable differences between the municipalities still may be observed in terms of quantity and variability of the published information. Larger municipalities (with 20.000 residents or more) clearly take precedence over smaller ones, the websites of certain smaller municipalities containing merely some basic information. In some cases, where local tourist

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organisations have the main responsibility for the websites, only certain tourist information are published, while municipal administration remains completely neglected.

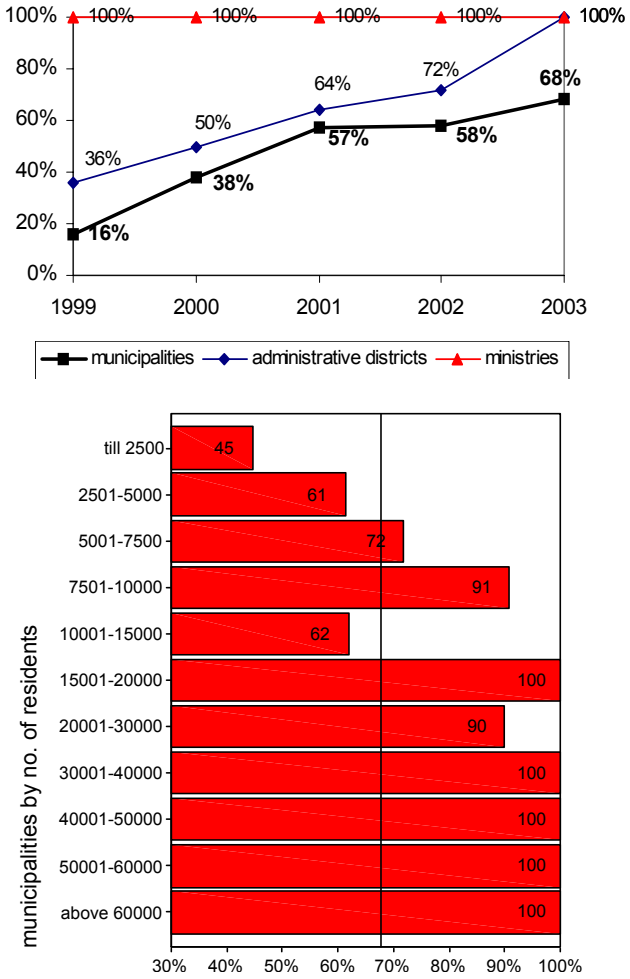
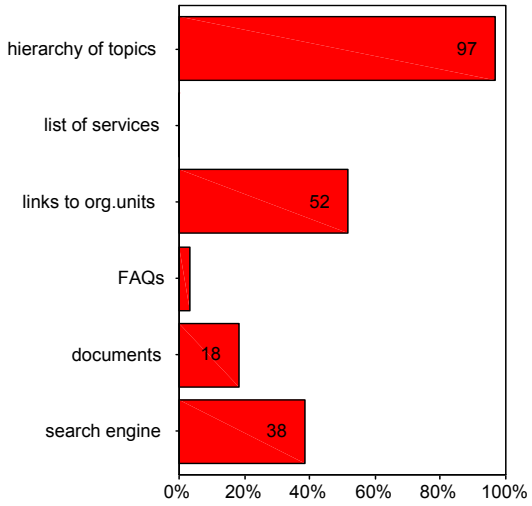


Figure 4: Web presence in years (top) and web presence in 2003 by municipalities' size (bottom)



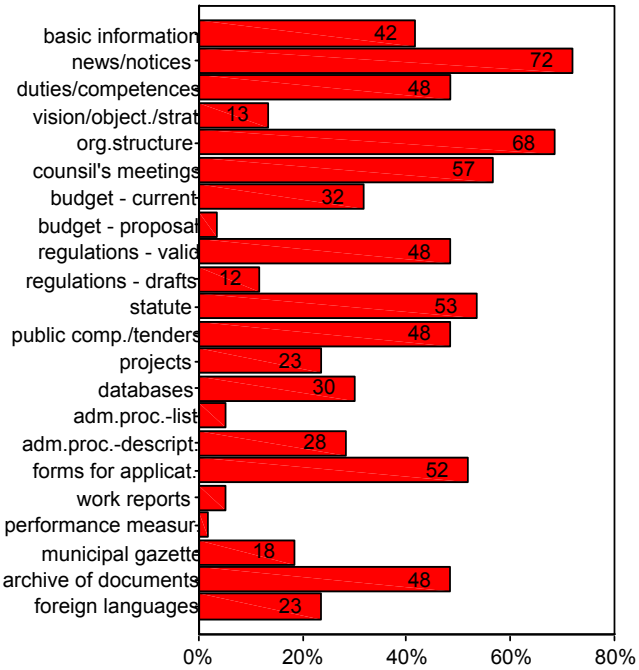
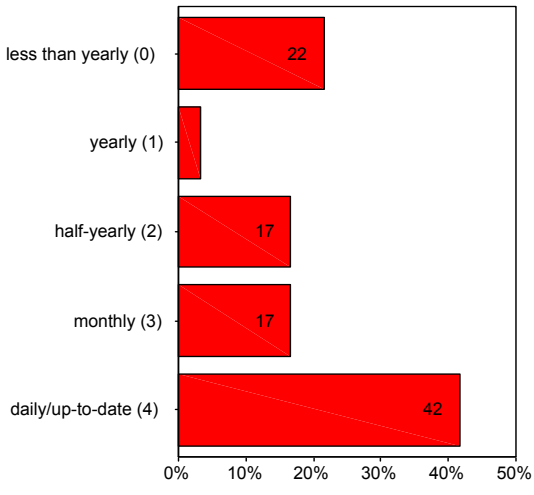


Figure 5: Frequency of information occurrence (above) and navigation possibilities (below)

Majority of municipalities publish news, notices or press releases including mainly invitations to different cultural and other events, as well as news and notices related to the work of the municipal administration. The option of subscribing to electronic news can also be found in 17 % of municipal websites. Based on the update ness of this information, also the update ness of the respective websites was assessed by means of a 5-grade scale. Although many websites are updated daily, the percentage of websites that are not updated at all is concerning (Figure 6-top). Among these, most are smaller municipalities (Figure 6-bottom).



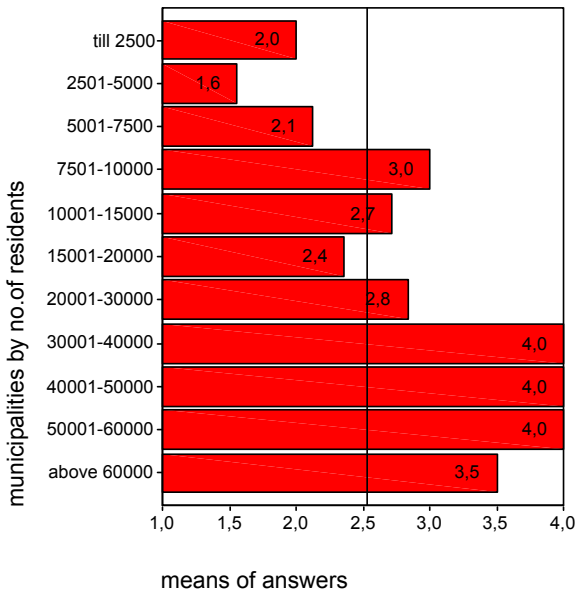


Figure 6: Assessment of information update ness in websites

4.2.3 Databases

Almost one third of municipalities offer access to at least one database either implemented within websites (for example calendars of events, municipal business and associations registers, registers of public competences, etc) or available via links on other websites (for example geographical information system – PISO, register of municipal rules and regulations). While most of them enable free and unrestricted use, the access to PISO database requires registration and also authentication in order to access the restricted data.

4.2.4 Municipal rules and regulations

More than half of the municipalities have put their municipal statutes on the website. Almost half of them also put other currently valid municipal regulations. It should be noted, however, that 10 % of the websites only provide lists of legal acts without their actual contents.

12% of the municipalities are aware of how important it is that their citizens are involved in the drawing up of new regulations. These municipalities publish drafts of the proposed regulations (all of which deal with spatial planning), although none enable the citizens to send their comments or proposals regarding the topic or participate in discussions. As municipalities being the closest e-democracy link to the government, for the citizen this is an important deficiency in this field.

Additionally, most municipal rules and regulations can be found on the website www.zakonodaja.gov.si, where all legal acts which entered into force after 1991, and some older ones, are available. Interestingly, only a handful of municipalities have active links to this website.

4.2.5 Public services

Services represent a connection between citizens, companies and other public administration bodies on the one hand and the municipality on the other. They denote an external or user view on the administrative procedures that are performed in the back-office. The analysis shows that no municipality provides a separate list of public services (Figure 5), the reason being that the descriptions of the corresponding administrative procedures are poorly catalogued and subsequently also inadequately presented on the web. Moreover, their informatisation is at a very low level. All these indicate that municipalities still function so as to serve their own needs rather that the needs of their users for whom they should primarily perform an effective service function.

According to the European Commission's four-stage model for assessing the sophistication of public e-services (eEurope 2002, 2001b), 28 % of municipalities (Figure 5) achieved the first level as they publish at least some information (i.e. short description, legal basis, instructions for filling in the application, list of required supporting documents, payment of fees, where to submit the application and other information relevant for the user) for at least one administrative procedure (Figure 7). However, the maximal number of described procedures in any of the municipal websites is 10, which is a very modest figure compared to the actual amount (several hundreds) of administrative procedures carried out at municipalities.

Since 52 % of municipalities provide at least one application form on their websites (Figure 7), they should attain the second (one-way interaction) stage of development. But only conditionally, as this is the higher percentage than the percentage of published procedural descriptions. The situation can be explained by the fact that a number of municipalities possess a quality catalogue of forms[1], but offer no information about corresponding procedures.

[1] Most forms are available in DOC format and much less in PDF or HTML format.

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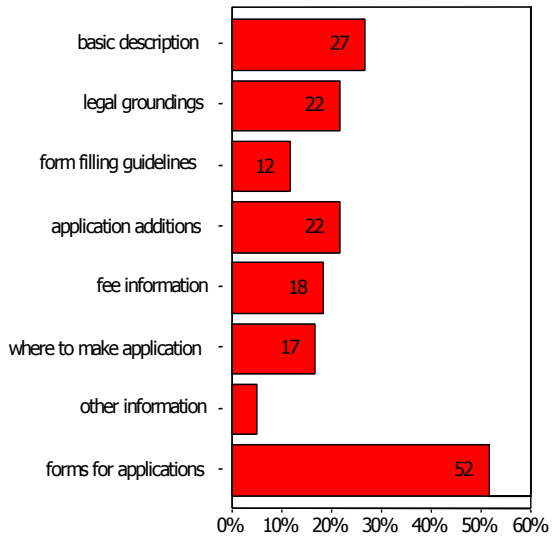

Figure 7: Frequency of individual elements of administrative procedures description

Services that enable online form filling including authentication and digital signature option attain the third developmental stage. The corresponding procedure should be initiated via the Internet with the completed form. This level was in some sense achieved in one municipality, where users can, on request, be informed (via e-mail and/or SMS) about the current state of the procedures processing their applications. Request can be initiated via web form including authentication. Informing users about the current state of the ongoing procedures is not an administrative procedure in itself, it is however one of the services that the municipality provides as part of all of its procedures.

The highest development level (transaction level), which according to the results of the analysis has not yet been achieved by any Slovenian municipality, refers to the full electronic case handling (i.e. completion of forms, authentication, digital signature, decision, delivery and payment, if necessary). One of the reasons is that at the municipal level, no adequate information infrastructure is as yet available, including public registers kept either in municipalities or other public administration bodies. Not only are these registers not yet entirely informatised, they are also inaccessible and unconnected. The state administration has taken on the obligation within the e-Government action plan (AN-2004 2002) to ensure electronic access to the key public registers (central register of population, tax register, land cadastre, land register, register of companies and others), which should accelerate the introduction of the transaction services.

4.2.6 Communicating with the municipality

Since citizens still have to use physical contact or at least regular post for the settlement of administrative matters with the municipality, it is important that the information needed to facilitate this kind of communication is available online. The presentation of a body's internal organisational structure, a list of employees and a list of municipal council's members may also be useful to the user trying to find the right person to contact. The share of municipalities that do not provide this sort of information therefore comes as a surprise, particularly in view of the minimal effort needed to provide it (Figure 8)

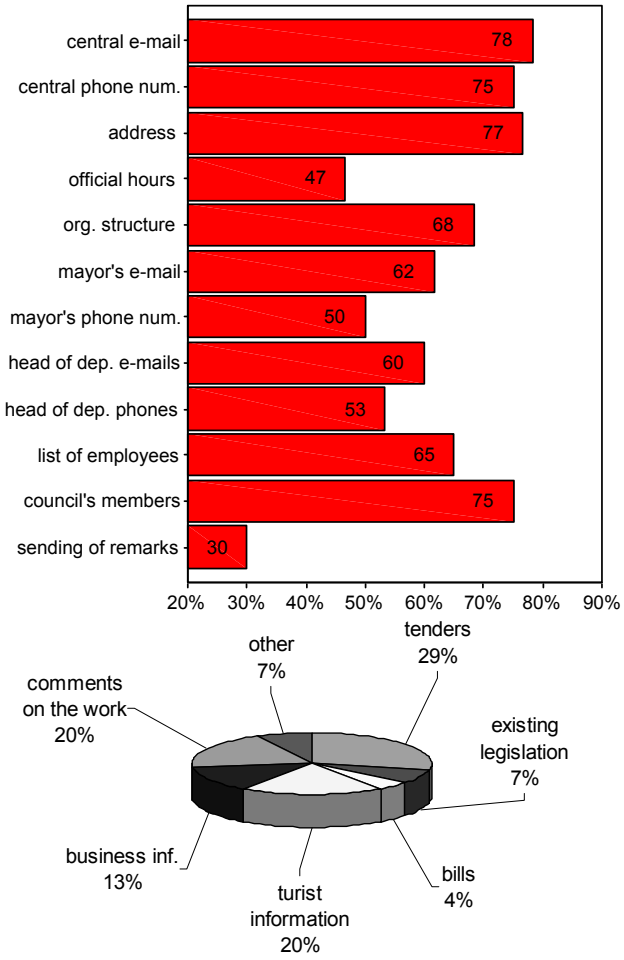

Figure 8: Possibilities of communicating with municipalities (above 1) and topics of e-mail communication between the municipality and its users (above 2)

If we now turn our focus to electronic communication, the analysis shows that 92% of municipalities have at least one e-mail address published on their websites. Among these, 15% publish the central e-mail address as well as the e-mails of the mayor, heads of departments and other staff including a specialised mechanism (e-mail, online form or forum) for sending comments and questions. According to Slovenian *Decree on the document management by the public administration bodies*, every administration body must publish a valid e-mail address and use it, so

a big percentage of municipalities are not acting according to the law.

Most municipal websites publish a central e-mail address (Figure 8, left). Messages sent to this address are checked by the responsible employee and referred to other public servants who actually reply to the message. This procedure on the one hand enables a simpler organisation of keeping a record of the received e-mails in an administrative body; on the other hand, however, it represents an unnecessary intermediate link. What is more, users often prefer to communicate with a specific public servant. For this reason, municipalities in most cases publish also the e-mail addresses of mayors, heads of departments, individual public servants, and municipal council's members. Some municipalities also provide a specialised mechanism (e-mail, web form, special categories in forums) by means of which users may contribute their remarks, comments and questions.

On the other side the results of e-mail questionnaire showed that that 75 % of the municipalities have already communicated with the citizens via e-mail, while 25 % have not yet registered this kind of activity. Most of these communications were about tenders and competitions, due to the fact that the users in this case are companies, where e-mail tends to be used instead of regular mail, fax or telephone (Figure 8, right). Messages about tourist information and comments on the work of the municipality were also common, whereas citizens were less interested in the existing municipal legislation or drafts of legal acts.

However, the question is, how serious is this way of communication taken by public servants? According to Denhardt and Denhardt (2002), public servants should concentrate on serving the citizens while managing public welfare and implementing the adopted policies and strategies. In other words, the main emphasis should be laid on the representation of public bodies focusing on comprehensiveness and good responsiveness, rather than on the steering and propelling of the public administration boat.

To test the current situation in Slovenian municipalities considering this statement we send a question of an imaginary citizen with a real problem (real case) using e-mail. Within 10 working days 81 % of municipalities read the message, while we cannot be sure that the others did not read it, since it is possible that their systems do not enable the read-message confirmation. However, Slovenian *Instructions on the implementation of the decree on the document management by public administration bodies* demands that the administration body sends a notice of reception if the sender requires so or sends an automatic reply by the email system if the sender demands an automatic reception reply. According to our estimates, however, the figure is nevertheless correct. We received the answers to the real case question from 52 % of municipalities (Figure 9). In view of the fact that contact e-mail addresses were published on the municipal websites, we had expected better results. We can thereby conclude that the municipalities have not yet adopted a mature attitude to electronic communication.

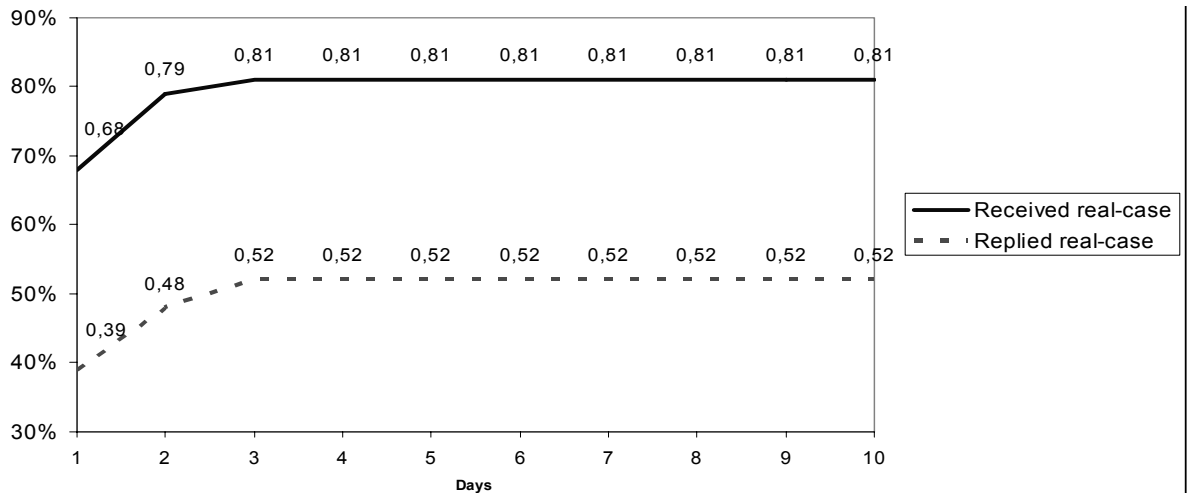

Figure 9: Temporal responsiveness of municipalities to citizen's e-mail question

The responsiveness of the municipalities can be compared to the results of similar tests, which focused on other public administration bodies in Slovenia (Vintar et al. 2002b). We can see that municipalities are more responsive than the ministries, whereas in comparison with administrative units, municipalities display higher temporal and lower numerical responsiveness. In

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comparison with similar measurements carried out in Slovenia in 2000, responsiveness at the municipal level has grown by 10 %. It should be noted, however, that recent surveys in the USA (West 2003) and Great Britain (Soctim 2003) also observed an improvement followed by a rapid drop due to a shocking increase in the amount of the received e-mails, when critical mass was reached and large numbers of users began to use this communication channel.

4.2.7 e-Democracy

Although generally speaking, most of the measured indicators increase the level of e-democracy, in this cluster we analysed those that have a direct impact on the level of e-democracy. Access to information is certainly a precondition for the participation of the public in democratic processes, yet these processes only become possible when the public has the option to ask questions and contribute their comments, remarks, initiatives, proposals and opinions. Citizens and legal entities can do that via e-mail, forums, chat-rooms and online opinion polls (Figure 10). Clearly, feedback is of equal importance here. Municipalities have to provide answers to all received questions, initiatives and other messages.

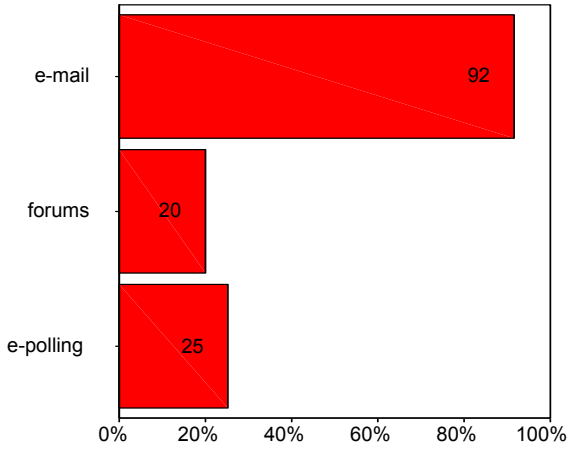

Figure 10: Possibilities of participation in e-democratic processes

5. Conclusions

Slovenian municipalities are currently at different stages of e-Government development. In general, however, they lag behind the state administration bodies (ministries, administrative units) considerably. They are one of the less informative segments of the Slovenian public administration. There are several reasons for that, which can certainly be deduced to the autonomy and smallness of the municipalities and their consequent lack of strategic guidelines, standards, human and financial resources, as well as to the inclination of local municipal authorities and historical reasons.

Nevertheless, the situation is improving gradually. Municipalities are more and more aware of the importance of e-Government development, but they cannot do much separately and independently of other segments of public administration. The top-down approach is of course, due to the nature of e-Government, indispensable solution. Current strategies and action plans on the Slovenian state level (see SEP-2004 2001, AN-2004 2002) involve municipalities only in certain segments, mainly connecting municipalities into the government computer intranet network, which allows them to use public registers and common applications and exchange or share data with state administration bodies.

However, this is a solution for only a small part of municipalities' activities and competences. This is why a uniform strategy for the transition of municipalities to e-Government was laid down in 2003 (see SEO 2003). Its main objectives are to increase the accessibility and quality of services, which also includes internal reorganisation with the aim of reengineering the now rigid and slow processes.

Municipalities are also late with the implementation of different IT-related policies. They tend to first introduce a new technology and then think about defining ways and conditions for using it.

Most municipalities have their own websites, yet these are in most cases of a mere informative nature, providing some basic information about the institution and the work of the municipal council and administration. Apart from that, several municipalities enable access to databases with information about events, enterprises, local transportation timetables and municipal legal acts. Finally, the websites of some municipalities also support more complex inquiries into spatial databases. Municipalities have yet to develop the proper attitude towards the e-world and learn the manners in electronic communication.

The situation is most unsatisfactory as regards public services. According to the European Commission's four-stage model for the evaluation of electronic services development, most Slovenian municipalities (72 %) attain the zero level of e-service development, supplying no information about theirs administrative services whatsoever on their websites. Other municipalities, particularly larger ones, have reached levels 1 to 2. Even here, however, we

should bear in mind that only a small share of all services supplied by municipalities are mentioned on the websites, and that descriptions of the relevant procedures are mostly incomplete.

Municipalities may be able to compensate in part for this delay shortly, since the set-up of a uniform municipality portal is planned for the end of 2004. In its initial stage, the portal will provide basic information about the municipalities and their services and will gradually be elaborated into its final design until 2007 when it should enable electronic execution of most services (SEO 2003). In addition, the integration of the municipality portal with the Slovenian e-Government portal 'eUprava' (http://www.gov.si) should enable the development of integrated public services based on the real life-events.

Compared to the other European countries, Slovenian municipalities showed a similar picture as the EU local authorities analysed by KEeLAN (KEeLAN 2002) and UK local authorities analysed by SOCITIM (Socitim 2003).

Ensuring security in e-business processes remains one of the weakest links in the informatisation of municipalities. An analysis (SEO 2003) showed that most municipalities have not yet adopted an IT-related security policy, with the exception of those connected to HKOM, the government communication network. But it should be stressed that such policies only regulate the communication between a municipality and the network. Most municipalities do, however, have rules regarding the definition and protection of confidential personal data (privacy statement) and documentary material protection.

Our analysis confirms the unsatisfactory situation in the area of ensuring security in Internet transactions. Namely, none of the analysed municipalities provide their security statement on their websites. Only three of them publish a privacy statement, which in all three cases refers to the procedure of user registration on the portal. We can logically infer that the reason for such poor results lies also in the fact that there are almost no online services available on the websites as yet.
The current stage of our measurement system for monitoring and evaluating the development of e-Government in Slovenia is focused only on supply side, but the more important (but harder to measure) demand side is a segment yet to be included in our system in the next year. The knowledge of wishes and demands of citizens and private sector could make the picture of e-Government complete and enable its development on all levels to the better future for everyone.

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