Responsiveness of E-Government and the Case of Slovenia

Mitja Dečman
University of Ljubljana, Faculty of Administration, Ljubljana, Slovenia
mitja.decman@fu.uni-lj.si

Abstract: The paper discusses the importance of e-mail responsiveness in the implementation of e-government services and introduction of new communication channels in public administration concerning government to citizen (G2C) and government to business area (G2B). Slovenia, as the country trying to be as developed as possible in this area, is shown in the results of empirical researches as a country that is basically at the beginning of e-government and e-democracy communication development and therefore ready to learn from experiences of others.

Keywords: measuring e-government, responsiveness, benchmarking, communication, e-mail

1. Introduction

In modern e-government a great deal of attention is dedicated to the customer. Especially when we talk about e-governance we are focused on the interaction between customers and public administration and the orientation towards the customers. In his book Kettl defines the term e-governance as “a way of describing the links between government and its broader environment[s] – political, social and administrative” [environments]. Governance is the outcome of the interaction of government, the public service, and citizens throughout the political process, policy development, program design, and service delivery” (Kettl 2002). This customer-oriented policy and the knowledge that organisations outside public administration (private sector, NGO) could offer customers more flexibility, lower prices and higher responsiveness are the reasons why outsourcing is used more often (Ott 2001). Customers want fast, transparent and quality government services. Therefore public administration should take care of all three criteria. Responsiveness, as an element of fast service, is an important starting element of the whole service process. The customer gets the impression that he is treated seriously, that the service is in progress and that he can trust that the service provider is doing what he is supposed to do.

New communication and interaction channels that emerged with the era of information society have enabled new ways of offering services including services of e-government. E-mail and World Wide Web (WWW) are the most common forms used today. These new channels mean new burdens for public employees, because beside paper, fax and phone they face new and even more interactive, transparent and demanding issues while doing their job. Beside that, new technology is an obstacle and a challenge to many employees due to their lack of knowledge. The benchmarking in the area of responsiveness using information technology can therefore be an indirect indicator showing the level of e-government and indicating how seriously the management is taking the informatization of public administration.

2. What could e-government responsiveness be and how can it be measured

According to the Cambridge dictionary ‘responsiveness’ is a noun, connected to the words ‘responsive’ and ‘respond’. ‘Responsive’ is an adjective meaning ‘making positive and quick reaction to something or someone’. ‘Respond' is explained as 'to say or do something as a reaction to something that has been said or done’ (Cambridge, 2003). As it can be seen responsiveness is a reaction to a certain impulse. It can be spontaneous, for example depending on a person's character, like crying while watching a sad movie, or it can be based on a certain rule, where response is expected, like stopping a car at a red traffic light. When focused on a business process the response
is usually well defined, probably in the way where a response would fulfil business objectives and goals of certain private or public organization. Responsiveness is a consequence of a certain event or act that triggers a business process. In the case of public administration this process or procedure is defined by legal means and the response is precisely described in advance. If a citizen puts an application to the public sector organization, the response depends on the form of application – process factor (if an application is incorrectly written, the response is rejection or a demand for completion), the current situation in the organization – business factor (if there are many applications the current application is queued) and the public employee – personal factor (the employee is at lunch or on vacation).

This paper filters the basic hypothesis about responsiveness to the time level and not to the contents level. Adjectives like fast, good, slow, bad responsiveness could be used although the word responsiveness itself often implies immediate reaction (see definition of 'responsive' above). Responsiveness has a great importance today because of the fast rhythm of life compared to the past that is demanded by the whole western civilization. In the private sector fast responsiveness means higher customer satisfaction, better competitive position and therefore higher earnings. These characteristics are different in public administration where faster responsiveness means citizens satisfaction and (optimistically said) many steps latter, re-election of leading governmental structure at the next elections. It is rarely the case that satisfaction of a public employee ('job well done') or their business culture is the reason for fast responsiveness. In most cases the legally based procedural rules are the common reason. At the same time it has to be said that fast responsiveness does not apply at the same time to the quality of service. Often it can be just the opposite. If fast responsiveness is the result of superficiality, mistakes and further burdening of the customer, then the speed is fruitless. When we measure responsiveness at a higher level as part of an aggregated index then the quality of service is often more important than speed.

In the modern electronic world one is often faced with automatic response that is enabled by information technology (IT) and enables the overall increase of quality of services. For example sending an e-mail and receiving an automatic response from organization's e-mail system and later on getting an automatic response that your application is now being handled by a public employee. Sometimes the response message can even be confirmation of nonrepudiation of digitally signed sent message (S/MIME receipt\(^2\)), which could be a valid proof that the original and unaltered message was read by the recipient.

Some information systems in different sectors of public administration enable tracking of procedure steps by customers. A customer can follow the procedure and in a way supervise the work of employees in the administration. In this case the responsiveness can be observed indirectly (compared to the automatic e-mail receipts) because responsiveness can be noted in the data that are available to the customer by the system. In Slovenia this is the case of information system of electronic services (over 30 services at the beginning of year 2005) where every user can see when an application has been accepted, processed and successfully or unsuccessfully concluded. Some of the Slovenian public administration bodies even implement their own solutions, for example one municipality that sends an SMS notice or e-mail to the customer about the processing of their application on their request.

Responsiveness is an important factor of modern e-government, which can be seen from the frequency of appearance of this word in different strategies and plans of many countries in the world. The Canadian Centre for Management Development Policy, Strategy and Communications (Bourgon 2000) considers responsiveness as an important element of guidelines for the future of e-government that needs inclusion of internal and external sources for the achievement of an adequate level. There is much knowledge found on the customers' side and a way should be found to enable the use of this knowledge in serving public interest. This could be done by accepting and responding to the citizens' suggestions, remarks and other activities that are included in the C2G relationship. The same goes for the C2B area. Specific public organizations must find the best solution and measure their own situation in this area. They should make comparison with other best organizations, perform analyses and improve their business processes. In the Europe's Readiness for E-government Report (Heath 2000) it is clearly stated that reliability and responsiveness are elements of trust in e-government services. Citizens that do not trust these services will not use them and huge funding in e-government implementation will be wasted. The report from Denhart and Denhart (Denhart 2000) states that public employees must focus on serving citizens while managing the public good and implementing

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1 Combination "fast responsiveness" is found on Google.com in 1700 hits, "good responsiveness" in 6200 hits.
2 S/MIME receipt: An e-mail security feature used to request confirmation that a message was received unaltered and information about who opened the message and when it was opened. This verification information is returned as a message to your Inbox (Source: Microsoft Office Online help).
accepted policies and strategies. The main emphasis is not on steering the public administration boat but on representing public administration bodies, emphasizing integrity and good responsiveness. Even in Slovenia one of the most important goals of e-government development is faster responsiveness of public administration to criticism, suggestions, comments of interested subjects considering successfullness, effectiveness, efficiency and responsiveness of e-government (Government of Republic of Slovenia 2003). Responsiveness is also mentioned in the framework of standardization that is often accepted by public administration bodies. CAF and ISO 9000 standards that include elements of responsiveness are most common. Especially CAF is relatively popular in Slovenian public administration and includes the measurement of responsiveness in different groups of indicators:

- democratic responsiveness with regard to successful activities of organization (area: leadership);
- complaint management and response to them (area: inclusion of citizens in development of services);
- responsiveness and proactive behaviour that increases customer satisfaction (area: measurement of customer/citizens satisfaction);
- proof of cooperation with customers and response to their needs and employees responsiveness to research/questionnaire results (area: indicators of results considering employees).

3. Measuring responsiveness of e-government

Measuring responsiveness can be focused on different phases of the working process. For the purpose of this paper, the research method focuses on measuring the responsiveness of a customer's demand towards public administration organization or a specific employee. Responsiveness is therefore actually response reaction. It can be measured as the initial response considering a certain procedure (answering a phone, reading e-mail) or as the final response at the end of procedure (finished administrative procedure with a provision, certain information offered to the customer by the public employee to the customer's request by the phone). Since the latter depends on the procedure itself and the current situation in the organization, we accepted the initial response as the point of measurement. Today's society is focused on implementation of information society and the development of e-government therefore we chose e-mail as a communication channel and measured the response to it. Beside e-mail, responsiveness of e-government can be measured in other ways:

- response of public administration organization on special e-forums on web pages of the organization,
- response to the comments and suggestions sent via special web forms, for example comments on new legislation that is prepared by ministries. It is difficult to compare measuring responsiveness to e-mail with classical measuring of responsiveness. In more common communication channels with customers we can find paper, phone and personal conversation. Each type is used for a specific case or situation. Paper is used for official business like applications or provisions. Phone is used for asking short questions or getting quick information. Personal conversation is used for solving bigger problems or complex situations. In each of the mentioned cases responsiveness is treated and measured in a different way. In case of paper we can measure the time between giving away the paper and receiving a response, answer or provision. Here the reaction or response time includes the time to solve the case (procedure time). The length of it depends on queues, employees' burden and the time (of the day, week or year). If we send a complaint on paper we usually do not expect an immediate response (like 'we will talk to the employee and then act immediately'). When we use the telephone, the measurement of initial response is almost useless, since we can only expect an answer or a message "all operators are busy at the moment - please hold". In personal conversation the initial response measurement is even harder since it quickly changes into time-to-solve-the-problem. The specificity and at the same time sensibility of initial response measurement to e-mail messages is in the relatively new technology itself and the use of this communication channel, which was considered as one of the objectives of the research. Today e-mail addresses are published at different places, most usually on web pages of public administration bodies. The question is whether the employees take them seriously enough. When we use a phone number published in the phone book we naturally expect someone to answer the call. When we send an e-mail this is not always the case. How often have you sent an e-mail and received messages such as 'this address does not exist', 'mailbox full', 'trying to deliver but failed', etc. Sooner or later, this situation, which cannot be

3 Responsiveness considering the amount of time for changing business processes or procedures according to customers' suggestions and complaints is not a context of this paper and is not analysed.
regarded as a matter of course, will have to change and these kinds of measurements will not be necessary. But in the present time and situation of developing information society and e-government, e-mail responsiveness index represents the level of development and adaptation to a new situation. Although many action plans and strategies of different governments include ‘better responsiveness’ and ‘putting e-government closer to the citizens’, ‘business culture’ in this field is still developing.

4. Methodologies of responsiveness measurement

Many authors see responsiveness as an element of interaction between e-government and citizens that influences on development of different policies and e-democracy. IT itself and related services enable better interaction and are an interesting potential in developing policies and increasing responsiveness of both public organizations and politicians (Sims 2001). Researches in this field that consider responsiveness measurement as described further here are rare and hard to find. Different sources and literature show us a tendency towards development and implementation of this and similar kinds of benchmarking that originate from different governmental strategies and plans of many countries in the world. While some state strategies only mention the need to improve responsiveness by using IT, others offer suggestions about measurement in this field. One such example is Canada and its document Defining and Measuring Success in Canadian Public Sector Electronic Service Delivery (Mechling, Vincent 2001). It defines the need to set up an evaluation framework for the Government online model and include a specific benchmarking system. In reporting these measures, a high-level scorecard will be used that focuses on whether outputs or outcomes are being achieved in the context of six client-oriented objectives: responsiveness, convenience, ease-of-use, interactivity, security, and privacy (Table 1). In case of responsiveness they intend to focus on outputs and outcomes on departmental level.

Table 1: Canadian Government online measurement framework

<table>
<thead>
<tr>
<th>Results category</th>
<th>Responsiveness</th>
<th>Convenience</th>
<th>Ease of Use</th>
<th>Interactivity</th>
<th>Security</th>
<th>Privacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Department level Outcomes</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Client-level Outcomes</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Some methodologies and researches can be found in different parts of the world that deal with responsiveness measurement. In USA at the University Brown Centre for Public Management this kind of measurement is included in their methodology (West 2003). Their target population is the Department of Health and Human Services in each state. The e-mail message includes a simple question of an imaginary citizen and the response itself, and response time is measured. Results from 2000 till 2003 show that the number of responses decreased in 2002 (55%) and increased in 2003 (68%). The response time compared to 2000 was 35% worse in 2002 and 62% better in 2003 compared to the year 2002. Although the number of emails is increasing every day, the organizations are rearranging their business processes according to the amount of emails received from customers, according to this report. The decrease of responsiveness in 2001 and 2002 is explained as a shock caused by the huge and sudden increase in the numbers of emails and unprepared environment in organizations for such a situation. The lack of a rapid or indeed any response is obvious. In our opinion the population in this research is too limited to show the public administration situation in general.

The recent research of an English project (SOCITM 2003) performing measurements on 476 municipalities in Great Britain showed significant improvement of response times in the 2003. In 2002, only 41% of municipalities replied on a real case test message (60% in 2001) and only 34% in less than 10 days (53% in 2001). Similar research considering responsiveness was conducted by the Kana company in the area of local authorities in USA and west Europe. The results showed that Dutch public organizations were among the fastest (average response time 22 hours) and English among the worst (average response time 58 hours, 33% did not respond). The company suggested that the solution should be the implementation of an e-mail system and defined spam and inappropriate web pages as a critical element that could already include elements which would decrease a number of emails sent by customers (FAQ, interactive portal help, etc.).
4.1 Measurements in Slovenia

In the research field in Slovenia there was no similar research going on (beside ours) that would consider responsiveness measurement in public administration. The research team at the University of Ljubljana, Faculty of Administration started developing the research methodology in 1999 and improved and supplemented it through the years. Especially in the past few years we have tried to link it with similar measurements of e-government development in Slovenia and Europe and, using results from analyses, tried to link it with other e-government indicators that affect the general situation.

The desired population were organizations of Slovenian public administration that were divided in following segments:
- parliament,
- ministries,
- administrative districts,
- municipalities.

Each of these groups included a certain number of organizations, shown in table 2.

<table>
<thead>
<tr>
<th>Type of organization</th>
<th>Number of emails sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parliament</td>
<td>90</td>
</tr>
<tr>
<td>Ministries</td>
<td>15</td>
</tr>
<tr>
<td>Administrative districts</td>
<td>58</td>
</tr>
<tr>
<td>Municipalities</td>
<td>192</td>
</tr>
<tr>
<td>SUM</td>
<td>355</td>
</tr>
</tbody>
</table>

Responsiveness measurements were divided in two segments for double testing and result comparison. The first segment included an e-mail with a short questionnaire, the second one an e-mail with a real case question from an imaginary citizen. The question asked for some kind of information and tried to exclude any procedure that would lengthen the initial response time. The questions were the following:
- municipalities: Where can I find the minutes of municipal council meetings on the web pages?
- administrative districts: What is the tax amount for officially changing a personal name?
- ministries: Where on the web can I find law proposals that your ministry is preparing at the moment?
- parliament: Can I join a parliament session in person as a visitor?

Since e-mail with real case question included and easy and quick to answer question we can equalize response reaction with responsiveness that is in man cases understood as a reaction to an event. The same presumption is not valid for the e-mail with a questionnaire since more time was needed to fill in all the answers (maybe even asking superior for approval). We waited for e-mail replies for a maximum of 14 days and then made an analysis. At the same time we made a comparison with the results of the previous years to see the changes that appeared through the years.

5. Research on the responsiveness of Slovenian e-government and the analysis of results

The results are divided according to the measurement groups.

5.1 Parliament

All the members of the parliament have their e-mail address published on the official parliamentary web site. Emails were sent to all 90 members. Their e-mail system enables automatic read receipt sending therefore we measured the time that passed between the time when the message was sent and the time when it was read by a member and in addition the time when we received a reply\(^4\). As for the questionnaire part, 43% of members read the mail and only 24% replied to the message (Figure 1). Compared to the results of the previous years, the situation was improving from 2000 to 2002, after which it worsened. We also concluded that many members do not have the time to answer questionnaire, hence in the second real-case test 63% of MPs read the e-mail message and 40% responded to the question.

\(^4\) The automatic read receipt could be disabled or blocked by the user hence results to this attribute could be higher.
The results show that the relation toward a citizen is of course different than toward a questionnaire. We are still disappointed that the 'read' level is this low since e-mail addresses are officially published on the parliament's web pages and that a reply could come from assistant staff, parliamentary group or any other employee working for the member. The meaning of publishing an e-mail address is still not well recognized and is, compared to the published phone number, treated at a different level. Comparing the results over the years nevertheless (Figure 2) gives us hope that the rightfully expected 'almost 100%' would be reached some day, especially since 'voters' are becoming increasingly aware of cyber space and e-democracy.

5.2 Administrative districts

Considering the communication between citizens and administrative districts we used a similar methodology as with members of parliament but focused on the organization instead of the person. First the questionnaire was sent and later on the e-mail with a real case question. The e-mail addresses were obtained at the portal of administrative districts of Slovenia. The e-mail with the questionnaire was read by 83% of 58 administrative districts according to the automatic read receipt. Most of them read the message on the day when it was sent. The situation with respect to replies was much worse since only 46% of them returned the filled questionnaire and in some case replies were not given to all the of the questions. Beside that, for most answers we had to wait longer than we expected considering the short time they had taken to read the message.
The real case test was set up as a real citizen's question sent to all 58 administrative districts. The read percentage was 94% which confirms the results of the previous test that most administrative districts regularly check their e-mail. We received answers to the question from 88% of districts, which is better than with the questionnaire and better than was expected (Figure 3). However, the percentage is still low considering the fact that, according to the Slovenian legislation, each electronic form of application or document received by an organization's registry has to be classified and processed. We recognize that for most of administrative districts electronic world is still less important and far from being equal to the paper world. Therefore in future awareness about the equality of electronic and paper form has to be stimulated, which is also defined in the Electronic Commerce and Electronic Signature Act. As can be seen here the law itself is not enough and the task of administrative districts and the competent ministries is to correct the situation. Beside that administrative districts can expect a huge increase in electronic messages since the information society in Slovenia is growing rapidly. Acting is therefore needed today and in the right direction.

5.3 Local government

The number of municipalities (192) and their diversity are special factors indicating that very diverse results can be expected in our research. As mentioned above the same steps were taken for municipalities. The questionnaire was sent to all 192 municipalities, i.e. their e-mail addresses were found on Slovenian local government portal and the alphabetical list of all public administration bodies in Slovenia was found at the governmental portal. Of these 192 messages, 38 were returned as undelivered. From the returned message we could find out that either their mailbox was full or the address did not exist. In fourteen days, 80 municipalities read the message. The actual number could of course have been higher since we do not know what kind of e-mail systems municipalities use or whether they enable automatic responses or not. According to our experiences from the past, we consider the number quite accurate therefore the response rate was 52%. We received the replies with filled questionnaires from 32% municipalities. The results of the real-case test are similar to the questionnaire test with 62% municipalities reading the mail and 40% of them responding to the citizen (Figure 4).
or the 'electronic world culture'. They should definitely model themselves on administrative districts. We hope that 80% of municipalities that are planning to prepare internal guidelines and standards for IT usage according to the recent research in Slovenia (Grad, 2002) also plan to lay down the obligation of responding to each and every citizens e-mail message received.

5.4 Ministries

In case of ministries and authorities under their responsibility we performed a similar test as with the other groups. We sent an e-mail questionnaire to 54 bodies and later on the real question from a citizen only to the ministries. For authorities under their responsibility we would have to select a different real-case question for each one of them and the influence of the type of question would decrease the comparison level since in some groups the number of bodies is very low. In fourteen days 55% of addressees read the questionnaire e-mail and 42% of them responded with answers. Of these there were 10 ministries, 5 tax offices, 3 departments of the Pension and Disability Insurance Institute and 5 from other bodies. The real case was then tested on all 15 ministries and we received 73% automatic read receipts. Later on we received 9 replies (60%) which is really low for the type of government bodies that are practically responsible for the development of e-government in specific areas (Figure 5).

![Time response - reply - real case](image)

**Figure 5:** Number of ministries reading e-mail with real-case question and replying to it.

6. Acknowledgements

If we gather the results over the years we see that the situation has improved since year 2000 till 2003 (Figure 6). The approximately 10% increase is seen in ministries and administrative districts, while results for municipalities vary. On the other hand, the speed of response is increased with municipalities, which can be seen from the steeper start of the curve. The same trend can be observed at administrative districts, while ministries have a much slower response rate.
Figure 6: Real case responsiveness by e-mail for different public administration bodies

It can be ascertained that the importance of responsiveness in public administration over new electronic channels based on IT is acknowledged by most of the countries and their governments. This conclusion can be made on the basis of reading their strategies and action plans. However, only some of them are also aware of the importance of measurement in this field and of reacting according to the measurement results while making decisions for the future.

The situation in Slovenia is similar to the rest of the world although the responsiveness has been measured at the Faculty of Administration for five years. The results show that over the years the situation has improved but still did not reach the desired level. If we consider the legally binding equality of paper and electronic form, the wide-spread presence of IT in public administration and good communication infrastructure, the situation should be better. The reason for the current state is not so much of technological nature but more of political nature.

Figure 7: Responsiveness of e-government considering the increase of e-mail messages from citizens and the current state of Slovenia and the developed world today

The comparison with results from abroad shows a small delay in Slovenia, especially because of the smaller intensity of electronic communication between citizens and public administration. Many public administrations in the developed world had already been faced with the explosion of messages they did not expect and needed some time to adapt to the new situation. In Slovenia the explosion will
probably occur in future (Figure 7). Therefore the Slovenian public administration should prepare according to the experiences from other countries and modernize and redesign its business processes, use web pages as information stations that with their rich contents divert citizens from sending emails and implement good information systems that would manage large amounts of emails and other forms of electronic data.

Wishful thinking of governments and management in public administration, legal acts, technology and published e-mail addresses are not enough to persuade citizens that paper and electronic form are equal. The task of the government is to make a step forward in the field of information culture, standards and policies and ensure successful development of e-government and use of e-services by citizens as faster, better and quality way in the future of the citizen to government (C2G) business.

References