



BUILDING E-MUNICIPALITY, PROBLEMS, APPROACHES AND SOLUTIONS

R. Kirilov*

University of National and World Economy, Sofia, Bulgaria

ABSTRACT

The main objective of this report is to present the state of information and communication technologies in municipalities. Legal, bureaucratic and technological issues in building e-municipality are addressed in the paper. On this basis, solutions are proposed for developing a unified information systems and portals for services. Particular attention is paid to the development of methodological issues in the construction of early warning systems. In conclusion recommendations are made.

Key words: e-municipality, information systems, e-government

INTRODUCTION

One of the main problems of business information, including small and medium-sized businesses, is the exchange of data with public institutions (ministries, agencies, municipalities, etc.). The increase of use of electronic signatures and the development of Internet technologies facilitate this process. According to a survey of National Statistical Institute (NSI) level of information and communication technologies (ICT) use in enterprises tend to expand the use of the Internet by businesses. For the period 2008 - 2012 there was a significant increase in the number of enterprises with Internet access (237%) and in 2012 it reached 87.4% of the enterprises. According to the same survey, broadband grows more rapidly in the past six years (41.2%) and 72.3% of the enterprises have broadband in 2010.

These rates correspond to the pace of technological modernization of Bulgarian companies in computer and communication technology. There is also growth in the number of businesses that exchanges data with external ICT systems in automatic way - from 41.5 percent in 2004 to 49.5% in 2012 (**Figure 1**).

*Correspondence to: *Rosen Kirilov, University of National and World Economy, Sofia 1700, tel. +359 2 8195 312, e-mail: rosenkirilov@mail.bg*

BACKGROUND AND PROBLEMS IN THE DEVELOPMENT OF E-MUNICIPALITY

In order to clarify assumptions and problems in the construction of e-municipality general interests are statistics on the distribution of the total number of enterprises which exchanges data with external ICT systems in automatic way by type of enterprise (**Figure 2**):

- From 10 to 49 employees;
- 50 - 249 employees;
- Over 250 employees.

The data in figure 2 shows that the number of small and medium-sized companies who are exchanging data with external ICT systems in automatic way is growing. This trend gives reason to believe that the business develops its attitude to work with institutions and external systems electronically. This is a prerequisite to consider setting up electronic services in the municipalities and the construction of e-municipality.

Another aspect of creating the conditions for the creation and development of electronic services in the municipalities is the interaction of business with public

institutions by type of use. NSI maintains data for the following purposes:

- To obtain information;
- To obtain tax forms;
- Providing statistical information;
- Performing an administrative procedure;
- E-procurement.

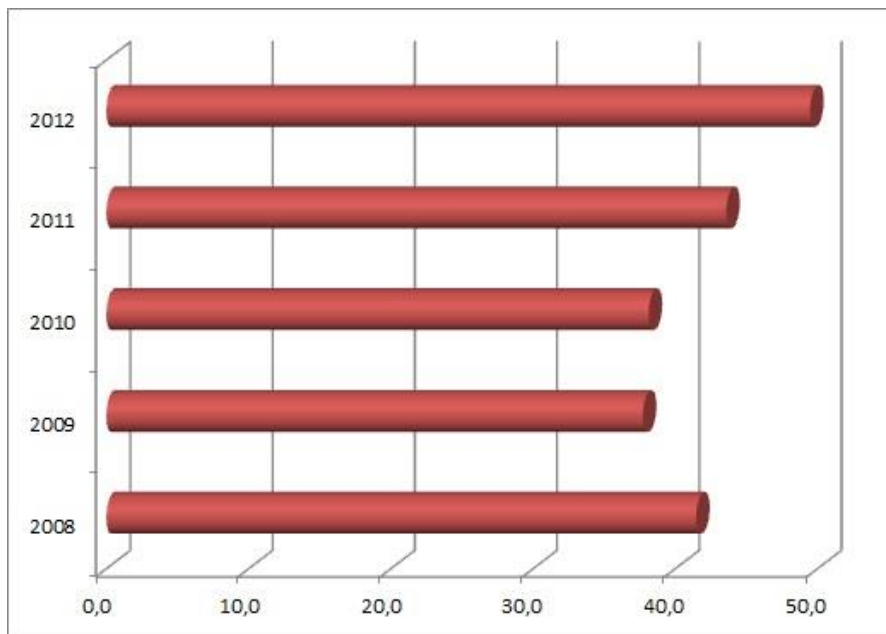


Figure 1. Enterprises exchanged data with external ICT systems in automatic way

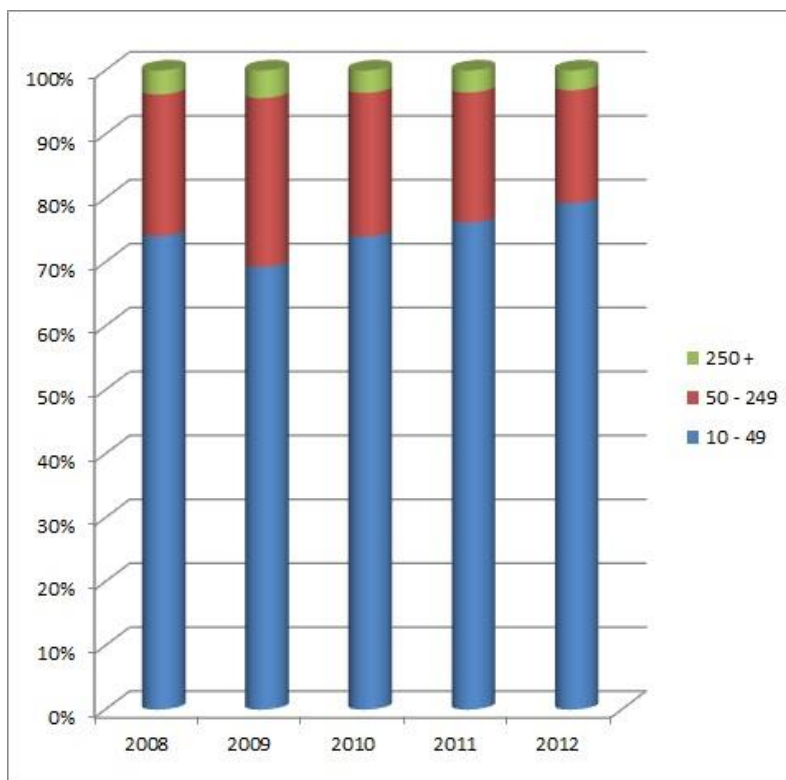


Figure 2. Distribution by number of employees

During the analyzed period 2004 - 2012 the share of companies that use the Internet for information has increased from 59.1% to 82.7%. There is an increase in obtaining forms (such as tax form) from 43.2% to 88.8%. In the analyzed period the website of NSI provided an opportunity for submission of annual accounts of companies on the Internet with receiving incoming number automatically when submitting

annual tax reports online. This possibility benefited a significant number of enterprises. The increase in the number of enterprises who submit completed forms has increased from 14% to 87.0%. Significant increase in the share is observed in the conduct of administrative procedures (reporting, registering, etc.) - from 3.3% to 73.0% (Figure 3).

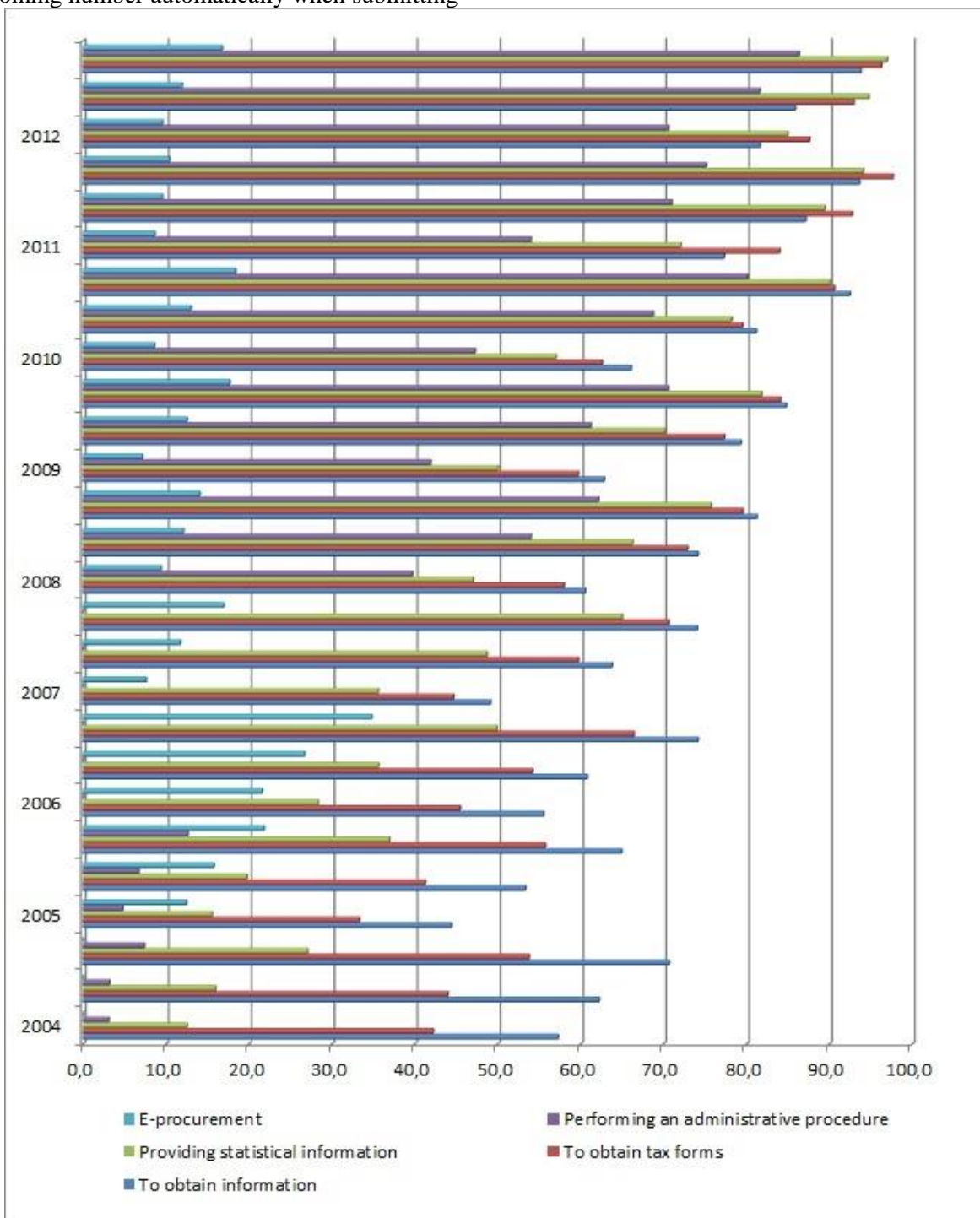


Figure 3. Business interactions with public institutions (by types of services)

As in recent years the use of electronic signatures when submitting reports and other documents to some of the public institutions has significantly increased, for the present research interest is the analysis of such data. According to

data from the National Statistics Institute, companies that have used electronic signature during the period 2004 - 2010, were increased from 903 to 14698 units (**Figure 4**).

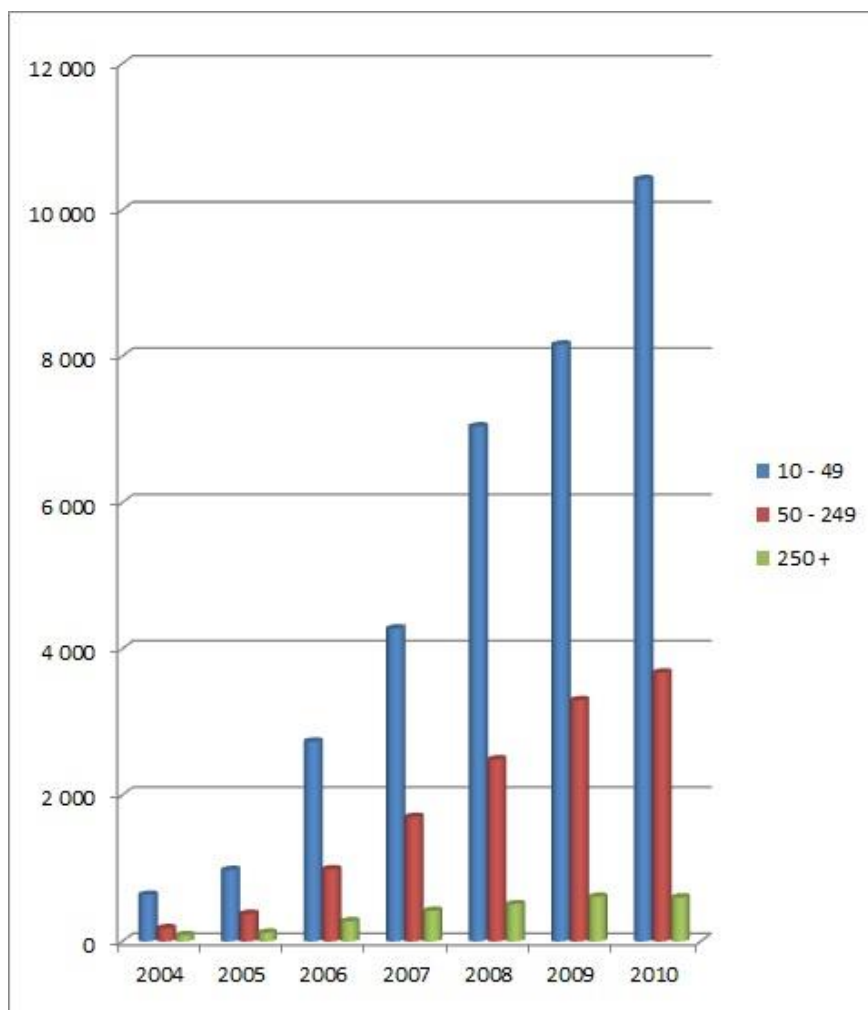


Figure 4. Distribution of total number of enterprises that have used electronic signature

Presented data and analyzes show that there are sufficient conditions for the development of electronic services by state and local government. Therefore, we will consider the design and implementation of electronic services in the local administration.

BUILDING E-MUNICIPALITY

Examinations made to propose the following sequence of stages in the development of the concept of e-municipality:

- Developing a concept of e-Municipality;
- Public discussion of the concept;

- Formal adoption of the concept;
- Design of basic and additional web services;
- Design the logical and physical architecture of the platform;
- Identification of key users;
- Realization of the database;
- Implementation of the web interface;
- Implementation level of security;
- Implementation of the e-municipality (**Figure 5**).

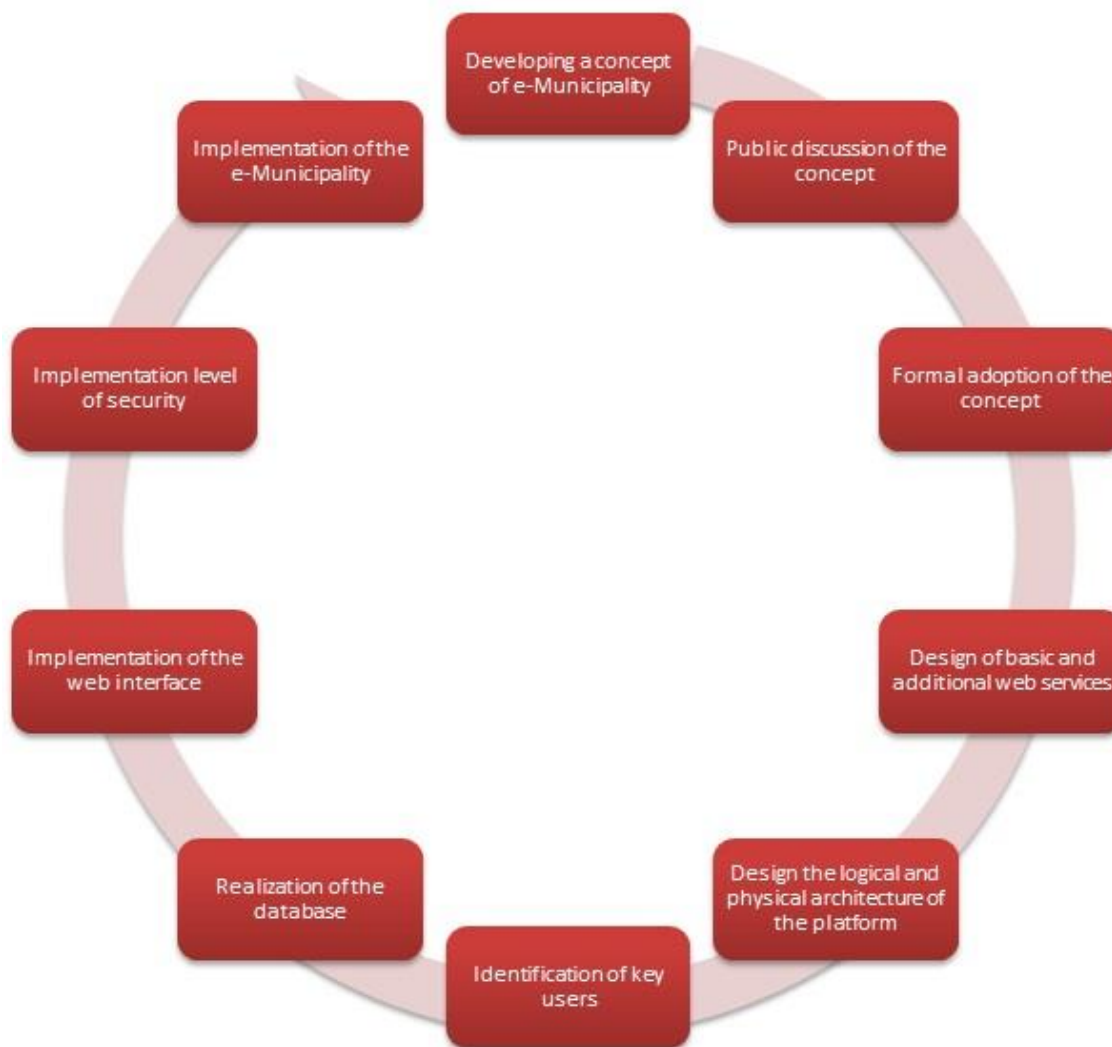


Figure 5. Building e-municipality

Construction of an e-Municipality is a difficult and complex task. Here are a few facts to support this statement:

- The first step in implementing a data project is realized need of automation in an activity. Discussed in terms of the design of information systems, we believe that this step (phase) is essential. In practice, in most cases, the awareness of the need for automation arises knee-jerk to the lower levels of management (operational and tactical) and subsequently is transmitted to higher levels (tactical and strategic). Reaching the desire for automation to

strategic management level is essential, because it commits the company's senior

management with the implementation of IT projects;

- Business processes across organizations and municipalities have a number of peculiarities. These features can be classified as specifics of interpretation of laws and regulations, refracted through the prism of applied best practices in local government. The high level of detail in the description and modeling of business processes can lead to the identification of municipality typical steps of these processes. All this, along with many attempts to describe the practice of all processes within an organization, confirm the assertion that specific business processes require the creation of specific software tools;

- The organizational structures of the different municipalities are different, which was confirmed by the study. Different organizational structures make use of the same 'type' software difficult. This means that the roles of individual users in the system are defined once and are never allowed to be parameterized;
- We can indicate a number of other examples to support our thesis that creating a unified software tool and its practical use in a wide range of municipalities would be very difficult (at times tending to be impossible) and will lead to low efficiency of the software project.

CONCLUSIONS

Finally, it should be noted that according to national statistics, in recent years there has been

a clear trend of increase in the total number of enterprises that interact with public authorities via Internet. As revealed by the data analyzed, relative shares of types of services and types of enterprises versus those who use Internet also increased. This creates sufficient conditions for the development of electronic services by municipalities.

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