The Introduction of Compulsory Electronic Exchange of Documents in the Czech Republic: Comparing Expectation and Reality

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Abstract—This contribution aims to outline some topics around the process of introduction of compulsory electronic exchange of documents (so called e-Boxes) in public administration. The research was conducted in order to gauge the difference between the expectation of those using internal email and their experience in reality. Both qualitative and quantitative research is employed to lead also to an estimation of the willingness and readiness of government bodies, business units and citizens to adopt new technologies. At the same time the most potent barriers to successful e-communication through the e-Boxes are identified.

Keywords—e-Box, e-Government, electronic document exchange, digitalisation, public administration

I. INTRODUCTION

INVESTMENT in the public sector has been significant in the past few years. There are predictions that after e-Commerce and e-Business, the next Internet Revolution will be e-Government [1].

The use of advanced communication technologies has had a positive impact into the national economy and is proportional to the economic growth [2], [3], [4].

The Czech Republic has set itself high goals in the introduction and use of advanced technology for sharing information. In the international dimension the Czech government aspires to play an active role in the international initiative called the STORK project (Secure Identity Across Borders Linked), which aims to set up a compatible system for mutual identity verification among the EU Member States.

In domestic policy a very ambitious project called e-GON was initiated in 2006. This project involves a complex program of the digitalisation of information in the public administration of the Czech Republic. In the context of this program the first important project was the successful establishment of contact points for citizens – known as Czech POINTS.

The second important project in e-GON was the establishment of digitalized documents exchange. The main idea is replacing the physical mail boxes by electronic boxes. The mail to be replaced was the current mail requiring the advice of delivery. Although the terminology still has not been

fully settled, the most common expression is e-Box or data box, as it also serves as a electronic data storage box.

The e-Boxes project was originally scheduled to begin in the first half of 2009, and the author was therefore collecting the relevant information at that time just to keep herself up-to-date. Unfortunately the political situation (the dismissal of the existing government and setting-up of a provisional government) had an adverse effect on ongoing projects the introduction of data boxes. Doubts were also expressed about the readiness of the system. As it was impossible to distinguish between inherent factors and factors resulting from the political situation the author decided to carry out her own research. She views e-government as a communication mechanism appropriate to the twenty-first century, not as a toy to be exploited by politicians, and she was interested how these new technologies would be accepted both by both users forced by circumstances to become familiar with them and by those who had adopted them through their own choice.

II. RESEARCH OBJECTIVES

- To identify the expectation of both compulsory and optional users of data boxes
- To evaluate/compare the operation of data boxes in the first three months of operation adoption with the expectations
- To estimate the willingness and readiness of units to be open to programs of digitalisation.
- To outline the most important issues involved in the introduction of e-government into public life

III. METHODOLOGY

As already has been mentioned, in 2009 the project of e-Government (e-GON) was affected by the fraught political situation. The author wanted to undertake a clearly defined study on government units' and business units expectations of e-Boxes and their experience after two to three months. Government units had to set up the e-Box and send all documents (not regular mail) using them. The business units had to set up the e-Box compulsorily to receive e-documents but they can use it optionally for communication with their partners and government bodies.

The research was both qualitative and quantitative.

The qualitative research:

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This took the form of interviews conducted with as large scale of professions as was possible (clerks, IT experts, lawyers, managers, self-employed persons, etc.) from various units (local authority, post office, industrial businesses, law offices, small and medium sized enterprises, etc.) Forty-nine interviews were carried out by telephone. The interview was focused mostly on positive expectations and negative fears about the introduction of internal email.

The qualitative research was conducted between May 5 and June 3 2009.

This sample can not be regarded as a representative one and the main goal was to acquire a solid base for the construction of a quantitative questionnaire.

The quantitative research:

This research was conducted in two phases. The first was the investigation of expectations (16 June – 27 July) and the second dealt with the experience (15 January – 5 February). The trial period for the implementation of e-Boxes started on 1 July 2009 - none of my respondents was involved in this project after this date so their expectations could not have been influenced by any experience.

The questionnaire was distributed electronically. There was no requirement for a specific person to respond - simply a polite request for their agreement to take part in the research and to receive future questionnaires for the part of the research dealing with 'experience'. The data boxes project makes governmental bodies compulsory users, whereas individual businesses and citizens are optional users (but individual businesses have to activate its box to be able to receive e-documents from government bodies). Accordingly a balance of respondents was envisaged in the following proportion: 50% - government units, 25% business and 25% citizens.

In the first phase the 1,116 questionnaires were sent out - the return rate was nearly 50% (536). These questionnaires were of three types, according the type of respondent, and the proper balance was achieved by random selection. The final number of questionnaires used in this part of the research – phase one – was 462.

Based on the results of the qualitative research, the body of the quantitative questionnaire was in three parts: expectation of the procedure of physical implementation; overall opinion on the effectiveness of e-Boxes; and issues of particular fears of the respondent.

Respondents were asked to choose from one to five the most important expectations/fears from the list consisting on an average from eleven options in each part of the questionnaire (constructed in accordance with the interviews results) and to indicate an order of their choice. The evaluation of the date on the questionnaire was based on number of responses – only those exceeding 20% in the ranking of an item in the list were taken in account.

In the second phase only the 462 questionnaires were sent. In contrast to the first phase the previous respondents were asked specifically to complete the questionnaire. The rate of return was nearly 92%. For the final data analysis only 385 valid questionnaires were usable.

There is one important fact which distorts and limits this research – although a high demand for e-Boxes was expected, the active use of the system in practice was almost zero among the actual people involved in the research. This means that the questions asking experience of private persons were answered on the basis of general experience rather than personal experience.

This time the questionnaire construction was based only on the most frequent answers (above 20%) from phase one and the respondents were required to evaluate these expectations by Likert response categories ranking from 1 – 5 (strongly disagree - strongly agree).

To facilitate processing of the data the questions about fears were formulated in a negative way: "My fears of ... were not realized" - so that the highest ranking indicates an answer favorable to data boxes (comparable to 'fulfils the expectation').

To understand the issues concerning e-Boxes better the respondents were asked to include on their responses to the questionnaires any comments they might have. This opportunity was widely taken up and it is dealt with it later.

IV. THE MAIN IDEA OF INTERNAL EMAIL AS PRESENTED BY THE MINISTRY OF INTERIOR

Data boxes were intended to function as a new system of delivering documents by electronic means. It was launched by the Ministry of the Interior and the Czech Post.

Based on Act No. 300/2008 Coll., from November 1st, 2009 is obligatory for all public institutions (e.g. government offices, local governments, institutions established by local or state government etc.) to use internal email instead of traditional paper. The trial period began on 1 July 2009.

Document delivery - how does it work:

- delivery of documents via internal email boxes is guaranteed
- the owner of the internal email point will be notified when a new message arrives and can choose the preferred form of notification (text–message or email)
- the message is considered as received and read ten days after being sent

Use of data boxes:

- G2G – for authorities compulsory
- G2B – compulsory communication
- B2G – optional communication
- C2G, G2C – for citizens NOT compulsory, everyone can choose the method way of communication they prefer.

The goals for the introduction of electronic delivery via internal email are:

- reducing bureaucracy for citizens
- use of electronic delivery instead of traditional methods where possible
- One of the main reasons for setting up an information system using data boxes is to guarantee security for official announcements and applications. These documents are delivered in a special secure mode and even then access is only allowed under particular

conditions. For this reason, the use of e-Box is not the same as using ordinary email.

V. RESEARCH FINDINGS

The below stated tablets show the expectations of respondents who had to use (table I) and were chose to use (table II) the electronic communication through the data boxes and their evaluation - expectations are fully met and the fears are not realized (5 strongly agree, 1 – strongly disagree)

TABLE I
THE "COMPULSORY" UNITS EXPECTATION

Topic	Attribute	Expect.	Evaluat..
Physical implementation	Qualified "help desk" provided by government bodies	59%	2,1
	Reasonable investment into IT and staff training	23%	4,1
	Others	18%	-
Advisability	"Easy going" tool of official correspondence (saving time and money)	54%	1,1
	reliability on delivering (no doubts, no need of an extra evidence)	41%	3,6
	Others	5%	-
Fears	Indistinct legislations and rules	57%	1,4
	Insufficient security	22%	2,1
	Getting into troubles by using data boxes in improper way	21%	3,2
	Others	3%	-

VI. UNEXPECTED PROBLEMS

The main problems concerning the procedure of implementation were formulated by respondents as follows:
- The official help desk provided only basic information (mostly on PC settings);
- There was no precise answer about what kinds of document had to be obligatorily sent via e-Boxes;
- Double sending of documents (in electronic and paper form) due to problems in the introduction of the system;
- The system overloading, with the result of extended waits for documents to open;
- Technical problems with conversion of the message into paper (official) form

Some users of internal email were especially disillusioned due to:
  - The validity of the electronic signature certificate is only one year and after this time it must be officially re-validated;

TABLE II
THE "OPTIONAL" UNITS EXPECTATION

Topic	Attribute	Expect	Evaluat.
Physical implementation	User training provided by government	58%	1,7
	Extra funding provided by state budget	33%	2,3
	Others	9%	-
Advisability	Time saving	40%	1,2
	Elimination of "undeliverable" mails	36%	3,8
	Delivery validity (independent on the recipient)	21%	4,1
	Others	3%	-
Fears	Insufficient methodology	49%	1,1
	IT problems	45%	2,3
	Others	6%	-

- The archive service is available only for one year;
- Only one attachment can be made to each message, so each message required a separate message;
- In many cases the received document had to be printed and every page had to be authorized with special authority which had to be paid for so that the document after this act has the value of an original of an official document, and can not be considered just as one of printed copies;
- small villages invest not only money but also extra time taking the documents to the nearest official body to obtain official authorization;
- a search of sent/delivered messages is impossible – searches only cover one page at a time, unlike an email search;
- The data box system has no filter function;
- The system can malfunction without warning, and the maintenance time often exceeds twenty-four hours – no reliability, the risk of non-reading the message in the deadline of ten days;
- Very high vulnerability of data protection;
- It the message is unreadable or damaged, there is no way of refusing to acceptance it, or of registering where and how to claim it - any message is considered to be delivered properly;
- In some cases, a message addressed to one person is delivered to another;

VII. THE OFFICIAL DATA THE PERFORMANCE OF INTERNAL DATA TRANSFER

From July, 1 to October, 31, 2009 the activation (and using) of the electronic data transfer was recommended. Despite the strong encouragement of the bodies to use this period to try the data boxes and get ready for the "official" start date, in October 31, 2009 only 110 284 boxes were activated and ready to use. During the night to November, 1 the Ministry of Interior rather than the intended the owners of the boxes activated by itself the remaining 243 662 data boxes [5].

The volume of messages (actually it means number of connections) transferred using internal data transfer boxes was as follows:
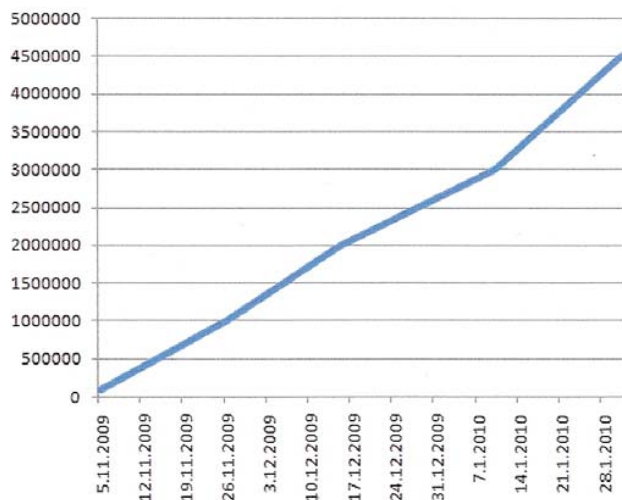

Fig. 1 The total number of transferred data messages (documents) in time

VIII. CONCLUSION

Generally it is possible to state that business units and physical persons understand e-Boxes as something similar to e-banking - something they have no problem in getting used to, and maybe less important than communication between banks.

There was a strong feeling in the subjects mentioned above that they would be able to use data boxes without any problems on their side. The only substantial fears come from the suspicion that the e-Boxes project has not been prepared well and that they will be victims of legal ambiguity and of confusing implementation of regulations.

The willingness of the entrepreneurs and citizens to become involved was fairly high but it was an absolute requirement that the new system should work smoothly without problems. This type of respondent was co-operative and willing to prepare on their own (including financially). However, after hearing daily news about the system failures and the elementary problems with the system, they had no reason to take part in this "high adrenalin game" (words derived from the notes in questionnaires). They felt busy enough with their daily routine work.

Inadequate consideration and implementation of regulations can be considered as the most important issue in the context of the respondents who were compulsorily required to use data boxes. The amount of training provided appeared high but in the research questionnaire there were complaints like "I was trained four times, - unfortunately four times I received different instructions". The regulatory statutes also changed several times.

The method of *Learning by doing* has proved its worth in managerial surroundings but in the terms of introducing compulsory electronic communication through e-Boxes in

Government services, it is strongly recommend that other methods are sought.

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