TOWARDS E-GOVERNMENT: BUSINESS RENOVATION OF PUBLIC SECTOR IN SLOVENIA

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ABSTRACT

E-government, as a segment of e-economy, has attained much interest in order to improve communications and level of services between governments and citizens. It is clear that successful e-government implementation requires not only introduction of modern information technology, but also business renovation, business process reengineering and e-business strategy. The main goal of the paper is to present the characteristics of business renovation efforts and readiness for e-government in Slovenia. The case of business renovation project in one of the Slovene Ministries, where the process modelling, analysis and simulation were extensively used is shown. The simulation modelling proved useful since it shows the process as a whole, drawbacks of the existing process, bottlenecks in the process execution, provides critical insight into process execution etc. The results of the business renovation show in reduced execution times, organizational changes, simplified business processes which represent a good foundation for informatization as a next step towards e-government.

INTRODUCTION

E-government is the execution by electronic means of interactive, inter-organizational processes and represents a shift in business doctrine that is changing traditional organizational models, business processes, relationships and operational models that have been dominant in the public sector in the past decades. The new doctrine of e-government requires organizations to integrate and synchronize the strategic vision and tactical delivery of services to its clients with the information technology and service infrastructure needed to meet that vision and process execution. In the next few years, successful countries will restructure their public sector, process and technology infrastructure for successful e-government execution.

Past experience in introducing e-government in the most developed countries (Singapore, Canada, Australia, New Zealand…) in this field has shown us that the root of the problems, which have to be solved in introducing e-services, has moved from the technological into the organizational and process domain. The essence of e-government is to radically change the ways and mechanisms of operating administration and, as a result, also basic principles, on which these mechanisms have been developing in the last decades or even centuries. Therefore, the business renovation (BR) or business process renovation methods should be used in the framework of e-services introduction. BR integrates radical strategic method of Business Process Reengineering (BPR) and more progressive methods of Continuous Process Improvement (CPI) with adequate Information Technology (IT) and e-business infrastructure strategies. Process renovation is a re-engineering strategy that critically examines current business policies, practices and procedures, rethinks them through and then redesigns the mission-critical products, processes, and services (Prasad 1999). Beside business processes reengineering business renovation also includes changes in human resources, culture, technology and organizational structure.

BPR as a segment of BR is a fundamental redesign of a companies business processes and organisational structures in order to achive dramatic improvements in its critical success factors – quality, productivity, customer satisfaction and time to market etc. (Tapscott and Caston 1993). Because of its great intervention in the organization, BPR demands full co-operation of management team and workers. BPR is based on critical evaluation of existing processes in the organization (AS-IS business models), from which alternative (TO-BE business models) are made. Unerstanding of the existing processes is the key to successful modeling of renovated processes.

After the processes are optimized and renovated, the suggestions for their informatization need to be prepared. Informatization presents general and holistic implementation process and use of informatization technology which can be compared by analogy to industrialization process of industrial society. One of the main purpose of informatization is economic competitivnes achivement or automatisation and optimization of their business processes.

In the article is presented business renovation process at the Ministry of education, science and sport. In Section 2 the e-government strategy in Slovenia is explained, which is recently actual topic in Slovenian political place. Then, in the Section 3, the theoretical starting-point of business renovation is described and it includes section about Business Process Reengineering and Informatization. Section 4 is the main part of the paper

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and includes practical example of business renovation project at the Ministry of education, science and sport. It describes the main phases of the project and the key processes, which were identifyed. Then the modeling, business renovation and guideliness for informatization are discussed of the process Promotion of the employees in education to a higher professional title are presented.

THE E-GOVERNMENT STRATEGY IN SLOVENIA

By adopting the "Strategy of E-commerce in Public Administration for the Period 2001-2004, SEP-2004" (Government Centre for Informatics, 2001), in February 2001, the Government of Slovenia has defined the primary strategic orientations for the next essential phase of informatization of public administration, which is the development of e-government. As a result, Slovenia is following a number of most developed European countries, which are approaching the accelerated development of e-government in a similar way.

Although Slovenia has started a new developmental cycle of technological modernization of administration and has launched a number of new projects, the conclusion was that development is not progressing as planned and expected. This is not only a problem in Slovenia, but based on analyses carried out in EU, also a problem in mostly all other countries. Due to the lack of experience in most cases, plans and deadlines for introducing e-government were in all places too optimistic. After a year or two, it can be seen that in most countries it was relatively easy to achieve the first (information) stage, which refers to the introduction of information services, as this step does not require specific changes in internal operations of administration and in business processes and procedures (Government Centre for Informatics 2001). Much more complex is the introduction of more demanding, so-called transaction services, which enable all phases of a selected administrative procedure or process to be executed electronically. As a rule, this requires a complete renovation of administrative operations, internal business processes and procedures, the integration of registers and public databases, the alteration and completion of material legislation and the development of new organizational regulations, classifications, and standards. At this point, the development of e-government in most developed countries has come to a standstill, which is evident from viewing web portals of these countries where it can be found very little transaction services. The same has also occurred in Slovenian public administration.

Problems, which need to be solved as soon as possible, are, in a minor sense, of technological nature (Government Centre for Informatics 2001). They predominantly extend to the internal renovation of administration operations, its reorganization, greater process orientation and close coordination and cooperation among various departments, and even branches of power (executive, legislative, and also judicial). It has to do with deep structural changes in the operation of administration, which will be successfully and quickly implemented only with a total and well-considered approach, as used in the modernization and reformation of administration up to the present. BR projects should be focused on all related key business elements: business processes, people and finally the technology. E-government is not only enabling the redesign of internal organizational processes, but is extended into inter-organizational processes.

Within the framework of development of a new "organizational paradigm", which will be based on the operation of e-government, all State Bodies and other institutions from the public sector will have to analyze in detail all (action and other) administrative procedures and processes and renovate them in accordance with defined starting points and principles of development of e-government, and the possibilities that information technology can offer as soon as possible (Government Centre for Informatics 2002).

BUSINESS RENOVATION

Reengineering a company means tossing aside all sistems and starting over. It involves going back to the beginning and inventing a better way of doing work (Hammer and Champy 1993). Towards Leavitt's diamant (Burke and Peppard 1995) BR includes changes in technology, human resources, structure, culture and processes.

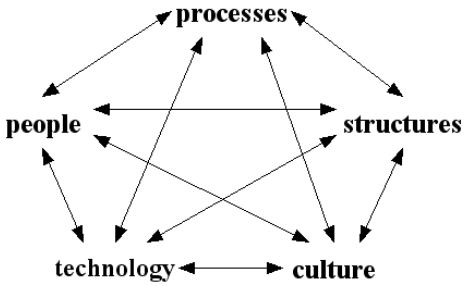

Figure 1: Amended version of Leavitt's 'diamond'

In the paper the orientation is on optimization of business processes and their informatization.

Business Process Reengineering

BPR is an organizational method demanding radical redesign of business processes in order to achieve better efficiency, quality and more competitive production (Hammer and Champy 1993). It is also a method of improving the operation and therefore the outputs of organization (Kettinger and Grover 1995). It means analyzing and altering the business processes of the organization as a whole. BPR was first introduced in a research program at MIT (Massachusetts Institute of Technology) in the early nineties. BPR was the buzzword of the mid-1990s, and although there were plenty of successes, there were many more failures

(Hammer and Champy 1993). To many, BPR remains a dirty word, bringing back memories of head count reductions, budget cuts, facility closures, expensive consulting engagements and endless reorganizations that destroyed morale and confused employees, partners and customers. By the time it was recognized that successful BPR required careful change management, the damage was done. The BPR craze encouraged organizations to focus on internal process and internal (mostly transactional) ERP applications. Today, the e-business craze has reinvigorated interest in process, this time on a grander scale that spans organizations. The difficulties of formulating and adopting new process, a lack of cooperation between vendors, and the sheer difficulty of interorganizational coordination will likely lead to yet another era: the era of e-business.

Many leading organizations have conducted BPR in order to improve productivity and gain competitive advantage. A study by Dhaliwal (1999) showed that about 50% of firms surveyed in Singapore (in some cases comparable to Slovenia) were engaged in BPR projects, with 37% of the firms indicated their intention to take up BPR projects in next few years. However, regardless of the number of companies involved in re-engineering, the rate of failure in re-engineering projects is over 50% (Hammer and Champy 1993). Some of the frequently mentioned problems related to BPR include the inability to accurately predict the outcome of a radical change, difficulty in capturing existing processes in a structured way, shortage of creativity in process redesign, the level of costs incurred by implementing the new process, or inability to recognize the dynamic nature of the processes.

Informatization

The goal of information engineering is to describe an already-conceptualized process in informational (or, more accurately, data-oriented) terms so that a system can be rapidly and riguosly constructed to support the new process design (Davenport 1993).

Information technology refers to the technological side of an information system. It includes the hardware databases, softweare network and other devices. It can be viewed as as subsystem of an information system (Turban et al. 2002).

Informatization and information technology are powerful tools for enabling and implementing process innovation. Although it is teoretically possible to bring abaut widespread process innovation without the use of IT, we know of no such examples (Davenport 1993).

Davenport (1993), in arguing for radical change rather than incremental change of business renovation, suggests that this is the only means of obtaining the order-of magnitude improvements necessary in today's global marketplace. He is also saying that information technology is both an enabler and an implementer of process change.

The term of electronic business (e-business) presents from the business renovation view for organization new challange, full of radical changes. E-business presents radical move and consideration about business doctrine. From organization a new doctrine of e-business demands accommodation and sinhronization of its strategic vision and its practical execution with opportunities of contemporary information technology (Groznik and Kovačič 2002).

BUSINESS RENOVATION PROJECT AT THE MINISTRY OF EDUCATION, SCIENCE AND SPORT

The Business renovation project at the Ministry of Education, Science and Sport (Ministry) started due to internal and external factors. Internal factors that caused business renovation were the integration of two ministries, Ministry of Education and Sport and Ministry of Science and Technology into the Ministry of Education, Science and Sport, versified business processes that were not well defined and duplication of activities. Externally, the project has been stimulated by the Slovenian government that started the anti-bureaucratic program on the governmental level. The goal of the program is, according to Action Plan E-government Up to 2004 (Government Centre for Informatics 2001), to remove inefficiencies in business processes, to change organizational structure and to introduce suitable information technology that will support renewed business processes.

The Business renovation project project has three main phases:

- identification of key business processes and their modelling;
- analysis of key business processes on the basis of their models;
- modelling renewed processes and proposing organizational changes.

The project started with formation of project group consisted by members from the Ministry and consultants from Business Informatics Institute (BII), Faculty of Economics, Ljubljana. Then a workshop for Ministry project group was prepared in which they were acquainted with project goals and the methodology. After the workshop, five key business process groups were identified by discussion and brainstorming:

- strategic planning;
- working program preparation;
- laws and provisions preparation;
- financial processes;
- administrative processes.

The processes were modelled by interviewing people from the Ministry who perform the activities. This phase of the project was very difficult and lasted for almost six months and models had to be changed several times. Then, the members of Business informatics institute made analysis of key business processes on the basis of their models. The results of the analisys were the starting-point to renovated business processes, which were made in two months.

Since the scope of the project is too big for the presentation in the paper, only a fragment, subprocess Promotion of the employees in education to a higher

professional title of Administrative processes at General Affairs and Human Resource Service, will be shown in the next section.

Modeling and analysing the existing processes

The Administrative processes group includes some of the most frequently executed processes and are therefore very interesting for a detailed examination and analysis in the BPR and informatization project as significant improvements in efficiency can be expected.
This group consists of more than 30 processes, however some of them are of the same type, but for different areas (e.g. elementary schools, high schools, universities) and therefore their substantial activities are executed in different departments.
In the first phase of the analysis some processes with the highest application frequency were examined in more details. One of them is "Promotion of the employees in education to a higher professional title" (Figure 2) which has about 2500 applications per year. The rate of complete application is 60%, after the completion of incomplete application this rate is 80%. The owner of this process is the General Affairs and Human Resource Service (GAHRS), where the application is professionally executed by four officers. The applications are always accepted only in dispatch centre. The application state is recorded four times, always twice: manually and using a computer program. The Minister signs the decision statement.
The simulation of the process that was carried out showed that the mean execution time for one application is 49 days. The effective work time is less than one day. The rest of the time is the delay in the process (signing, transfers of documentation, waiting for the completion of the application etc.).
However, the quantitative results of the simulation experiment as presented in the simulation report, regardless of how precise and detailed the simulation may be, are only one aspect of the business process analysis. Business process maps themselves can frequently show many problems that have not previously been observed. In the modelling phase, several problems were observed. Beside the problems with data collection presented in the previous section there are also some difficulties related to the tool as not all the situations from the real world can be directly modeled. Some examples are (Tarumi et al. 2000):

- Process flow can be interrupted by other predominant processes.
- Multiple processes compete for a common resource.
- Many other kinds of exceptions can occur, such as the absence of personnel.
- Human behavior cannot be predicted (e.g. some persons start tasks as late as possible to meet the deadline).

Due to stated problems, the results obtained when using simulation modeling of business processes should be used cautiously, as the figures cannot be considered exact values. As such, its primary use is in analysis and in understanding the process itself, in observing the problems in process operation (e.g. bottlenecks), in evaluating and comparing alternative scenarios, in supporting decisions on process informatization, renovation, and in the introduction of organizational changes, etc. According to (Bellinger 2002) modeling and simulation is a discipline used to promote a deeper and more complete understanding of how things work; it does not provide answers.

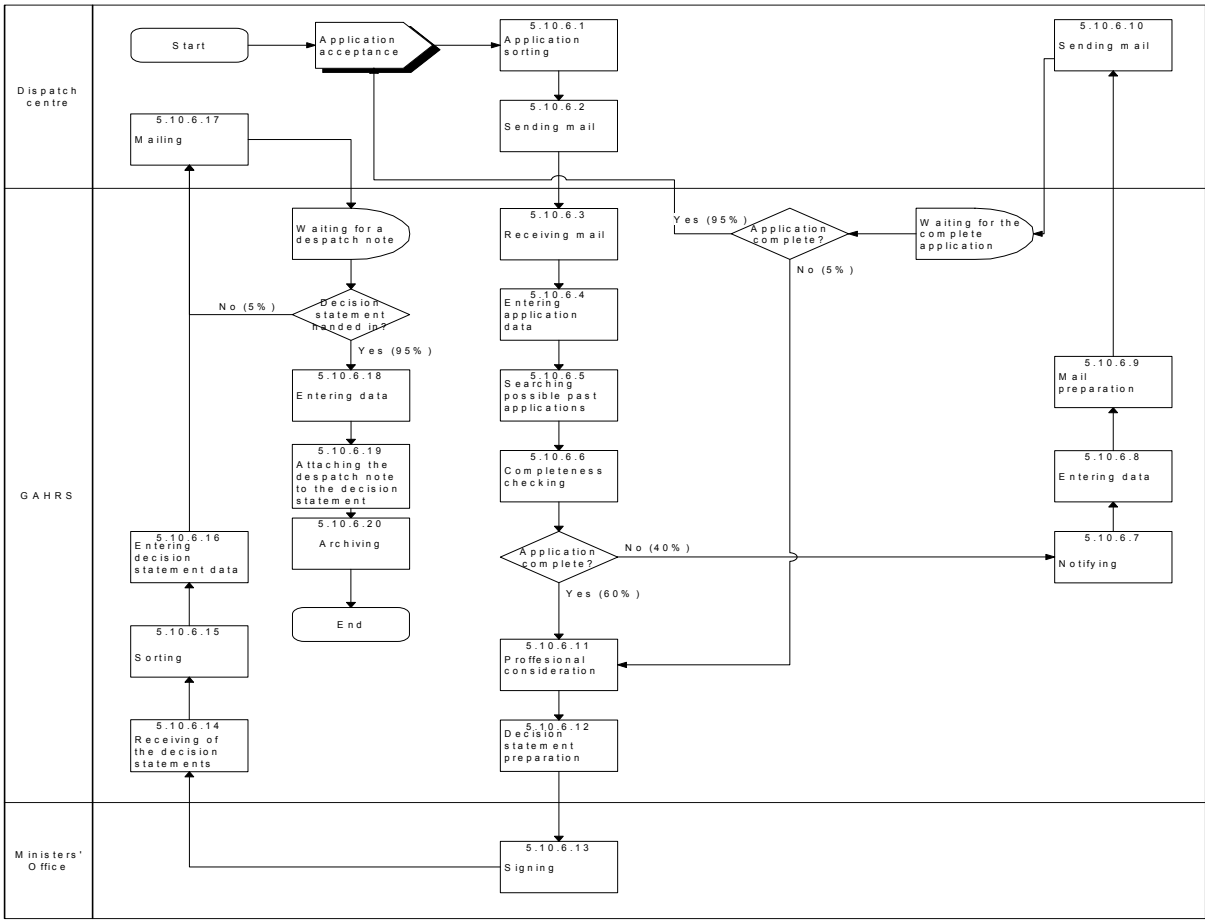

Figure 2: Promotion of the employees in education to a higher professional title

Business Process Renovation and Informatization

To uniform the administrative processes current similar processes had to be grouped:

- statusses of associations, private workers, proffessional workers, proffessional and top sportsmen, organisations, Interscription in evident of sports objects, Fulfilment conditions for financing private kindergartens,
- agreement to the act of establishment of organization from the area of upbringing and education, science, sport,
- nostrification of the certificates acquired abroad,
- doing technical exams of proffesional workers, which are working on the area of upbringing and education in sport,
- second stage processes.

For each group, TO-BE models have been modelled. As the number of the processes is extensive, the focus will be on Promotion of the employees to a higher professional title (Figure 3).

The main goals of the renovation of the process Promotion of the employees to a higher professional title were:

- the procentage rate of the incomplete applications should be reduced,
- the execution time of the process should be decreased,
- information level of the customers should be improved,
- the applications tracking should be organized more efficient,
- the officers in GAHRS need to be discharged of administrative work,
- improvement of the applications recording.

During the analysis a high rate of incomplete applications was detected. The reason for that were mostly uninformed customers which did not know what should the application contain. The answer to that problem is in initiation of the Acceptance office, where custumers could get all the information, needed to correctly fulfil the application (Figure 3 - Application preparation advising). The main tasks of the Acceptance office are formal completeness checking, giving informations about specific Administrative process and advising.

In the case of incomplete application the Officer from GHARS sends a request to complete the application. That would not be always necessary if they had an official database where they could find the missing information. That kind of database would increase customer satisfaction and decrease the execution times. In cases where sending request to complete application is necessary the Officer should use the fastest way. For that reason renovated process includes proposal of electronic mail and electronic signature.

The simulation results of the existing process showed that a lot of time is used for signing prepared decision statement in Ministers` Office. To decrease the execution times of the process and to discharge Minister, the activity signing decision statement should be executed by the Head of the General Affairs and Human Resource Service (GAHRS).

Business renovation is successful only in connection with informatization of business processes. The information support needs to be uniformed and connected for entire Ministry. The most important information solutions on the process Promotion of the employees to a higher professional title are:

- the accompaniments of the procedure which works as a Workflow management System and enables uniform launching of activity and process execution,
- Document Management System which allows scanning of documents and electronic approach to archives and is connected to Workflow Mamagement System,
- uniformed management of evidents,
- delivering applications through internet which must use digital confirmation and electronic signatures.

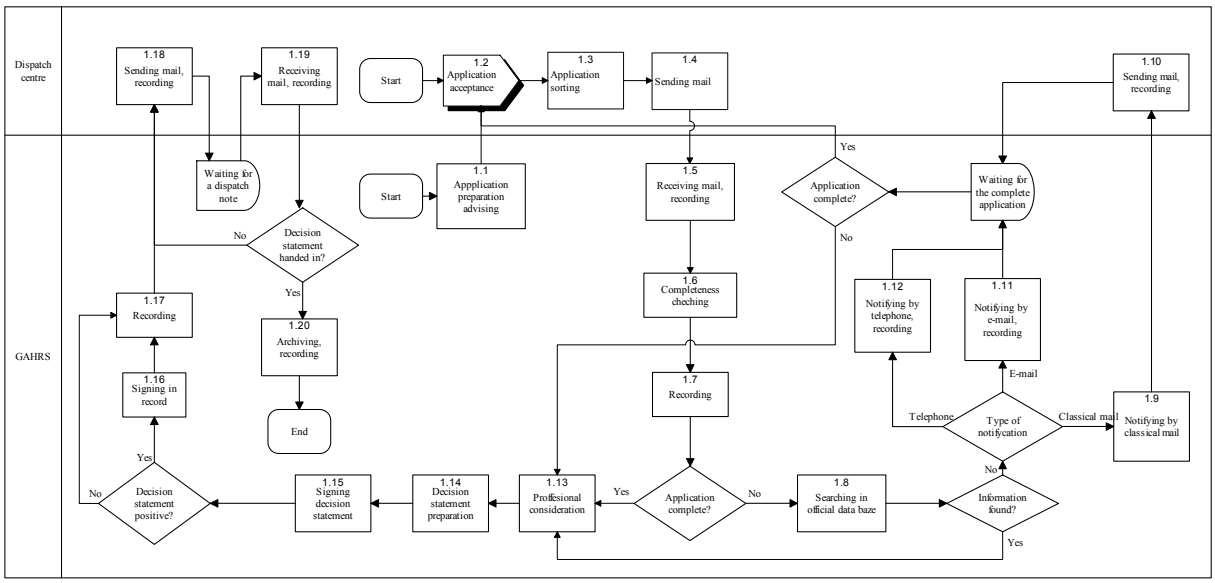

Figure 3: Renovated process Promotion of the employees in education to a higher professional title

RESULTS

TO-BE model of the process Promotion of the employees in education to a higher professional title includes changes based on the main goals of the renovation.

The first difference is seen in implementation of the new activity Application preparation advising. On the base of appreciation 80% of all incoming applications go through this activity and this is why there are only 10% of incomplete applications instead of previous 40%.

Activity Searching in official database is also new in the process. Its existence affects on the number of demands about missing data, which becomes with renovation reduced. In renovated process, there are three ways of notifying customers about incomplete application. Officers can notify customers by phone, by mail and e-mail. According to implementation of informatization in the renovated process, notifying by e-mail must be used as often as possible and only exceptional cases are executed by the two other ways.

In the AS-IS model the decision statements are signed in Ministers' office which increases time of process execution. With renovation this activity is placed in GAHRS and the decision statements are signed by state undersecretary.

The main result of the renovation is seen in simulation of the renovated process were the average execution time is 22 days shorter.

CONCLUSION

In the paper are presented the main characteristics of business renovation efforts in the Ministry of education, science and sport. The results of the business renovation show in uniformed and simplified process, reduced execution times, organizational changes. The project Business renovation plan of the Ministry of education, science and sport is succesfuly concluded, but it is only a part of whole business renovation project. The Business informatics institute has in this stage made suggestions of new business processes, their informatization and prepared the suggestions for organizational changes. In the next phase, the Ministry of education, science and sport has to implement suggestions in praxis which will, according to experiences, take a great deal of work, time and funds to do it.

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