Reorganizing Public Administrations – How to Manage Process Oriented eGovernment Projects

Jörg Becker, Lars Algermissen, Patrick Delfmann, Thorsten Falk, Björn Niehaves
European Research Center for Information Systems
University of Münster
{becker|islaal|ispade|isthfa|isbjni}@wi.uni-muenster.de

Abstract

Common eGovernment initiatives in Germany focus on an enhanced offer and quality of information for citizens and do not take into account the reorganization potential of communicational and transactional citizen service processes. The results of an empirical study conducted in 70 local German governments underline this assumption, and show in addition the need for reorganization of citizen services. The application of procedure models in project planning has evolved into a well-established tool in the field of organizational design. Depending on the domain where such procedure models are applied they have to be specified in detail and adapted to the business context. An important task in eGovernment projects is the selection of processes for reorganization. A special characteristic in this domain is the existence of more than 1000 independent core processes. Hence it makes sense to use a structured phase model for the pre-selection of processes for reorganization. Therefore this article provides such a phase model and application experiences in a local government reorganization project located in the northern German region “Muensterland”.

Keywords: eGovernment, Process Management, Reengineering, Process Prioritization, Phase Model

1. The Potential for Reorganization through Electronic Government

Public administration has been confronted by a series of new demands on the one hand and has been forced to cost and staff cuttings on the other hand. There is a conspicuous trend towards growing individualization whereby there are increasing demands by individuals to provide solutions to a variety of problems. Simultaneously, in the context of national and international competition, efficient and effective government activity and support for entrepreneurial activities in a region or country are becoming an increasingly decisive factor in location decisions. For some years, the term ‘eGovernment’ has been universally proposed as a way of closing the public administrations’ modernization and performance gap (Budäus and Schwiering, 1999).

Hence many public administrations started with eGovernment initiatives. Most of them deal with an improvement of their websites to so-called “Virtual Town Halls”. However, we assume that most of the administrations just focus on an enhanced offer and quality of information and do not take into account the reorganization potential of communicational and transactional citizen service processes. Though, before classic public services can be offered as eServices it is advisable to reorganize the underlying processes and organizational structure in the back office, since an implementation of business processes without reorganization can lead to inefficiencies in the automated process as well (Davenport, 1993; Hammer, 1990).

In order to prove our theses we have conducted an empirical study, which is presented in chapter 2. The findings of the study and the demand for process oriented reorganization result
in the need of a pre-selection of processes that are suitable for reorganization. We face this problem with the development of an according selection and prioritization phase model presented in chapter 3. In chapter 4 we present experiences we have gained applying the model in practice. Finally, a conclusion and an outlook on further work are given in chapter 5.

2. The Need for Process Oriented Reorganization in Public Administrations

Our study takes into account two different perspectives to measure and benchmark the penetration degree of eGovernment activities. To ensure a representative sample in terms of demographic and sociological structure all investigated public administrations are settled in the same region – the “Muensterland”.1

On the one hand an external perspective was examined which deals with the citizen and industry perception of eGovernment activities. It was intended to find out on what kind of eGovernment activities administrations are focusing. With a catalogue of criteria the internet portals of all 66 municipality and four county administrations were analyzed. The focus of this evaluation was the “Virtual Town Hall” which is the area of the portal where the regarded public services are offered. Besides the scope of these offered services the amount and quality of offered information was evaluated (Becker et al., 2004). The results confirmed our first thesis and showed that the degree of interaction of most services does not reach the level of transaction. The majority of the municipalities only describes the services (information) and partially provides contact information (communication). However, significant benefits can only be realized when a public service offers the chance for transactions and hence becomes an eService.

On the other hand, the internal perspective deals with the self-assessment of the local public administrations and aims to reveal the general conditions under which eGovernment activities take place as well as what organizational and technological artifacts are affected by these activities. The data collection was made by the use of a questionnaire which was structured into five categories concerning the following thematic scopes:

- Status-quo of eGovernment activities
- Scope of the internet portal
- Used domain specific software applications
- Perspective of future eGovernment activities
- Organizational and technical environment concerning eGovernment activities

The questionnaire was sent to all municipality and county administrations and after two weeks of process time 56 of 70 questionnaires had been answered which results in a representative 80 % rate of return. The evaluation indicated that the questionnaires were answered by the eGovernment responsible organizational units that own the essential knowledge regarding the questionnaire. This concludes adequate data-quality of the self-assessment in this empirical study. The most important question we asked to underline our second thesis was: What impact had eGovernment initiatives on your organizational structure and your processes up to date? The results validated our second thesis as in 84 % of the public administrations eGovernment has lead to none or only marginal changes in the processes and the organizational structure (see figure 1).

---

1 The “Muensterland” is a region in the German federal state of North Rhine-Westphalia which comprises 1.5 million inhabitants spread out over 4 counties, one county-independent city, and 65 municipalities.
3. Phase Model for the Prioritization of Processes

The findings of the study as well as the demand to reorganize underlying processes and organizational structure in the back office before offering communication and transaction services via internet result in the following implicit problem: Common product catalogues of municipal administrations prove that the range of services offered by public administrations presently comprises more than 1000 individual services, which are all represented by unique business processes. The number of processes implies that their reorganization will not bring about a significant rationalization for every single one of them. Therefore, it is advisable to pass through a stage of selection before beginning with the detailed cost and time extensive modeling of the present situation in order to select only those processes where the expected results of streamlining measures will exceed the modeling costs by far (Schwegmann and Laske, 2003; Meffert and Bruhn, 2000). For this purpose we suggest a procedure model for the selection and prioritization of processes with reorganization potential that is embedded in an overall framework for the process oriented reorganization of businesses (Becker, Berning and Kahn 2003), which is presented in figure 2.
An efficient way to select the processes with the highest potential for reorganization is by dividing the process of prioritization into different steps, which reduce the number of candidates for reorganization gradually (Schwegmann and Laske, 2003). This method allows for the usage of straightforward assessment criteria to accelerate the selection in the early steps, whereas a more detailed analysis of the processes will further diminish the number of processes in the later steps. Only after applying this method the necessary modeling activities for the purpose of reorganization should be started.

The phase of selecting high-potential processes for rationalization is integrated in the as-is modeling phase of the already mentioned procedure model for process-oriented reorganization (Becker, Berning and Kahn 2003) as shown in figure 2. The phase of as-is modeling can be divided into three steps; the first and second being responsible for the selection of the processes that ought to be modeled in the third step.

**Step A: Portfolio Method.** In the first step, there is an obvious need for a tool that can provide a basic overview of the most important qualitative features of a service at minimal cost whilst conveying its potential for a modeling project. We have chosen a portfolio method, based on two pairs of criteria (see figure 3; Gisler, 2001; Isselhorst, 2001; Boller and Beuchat, 2001).

The pair of criteria *technical development* determines the processes’ penetration by information technology. It is specified by the technically feasible degree of interaction with the customer/citizen, and by the integration of information technology. The criterion *interaction degree* can have the values:

- **Information:** The value Information describes the mere unilateral technical provision of information like opening hours of the city hall on a website.
- **Communication:** The exchange of information between citizen and administration can be performed in a bidirectional manner. Besides, there is a possibility of interactive information retrieval (e. g. communication via email)
- **Transaction:** The citizen is given the possibility to handle entire administrative transactions, e. g. tax declaration, vehicle registration etc. via the internet.

![](image)

*Fig. 3: Portfolio method for prioritization of processes with a potential for reorganization*

The criterion *integration degree* can adopt the following values:

- **Media break:** The execution of a service can be supported by means of modern information technology but its fulfillment includes at least one discontinuity in the use of media (e. g. the manual submission of an order form).
• Without media breaks: The performance of the service is almost entirely supported by information technology. I. e., the fulfillment is realized without media discontinuities. Still, individual decisions which impede the automated workflows mark the action of the institution.
• Automated: Services are entirely supplied by an application system without any need for further human action. This automation is particularly suitable for procedures which do not require any scope of discretion or individual consideration.

After having clustered the processes by the pair of criteria technical development, a first impression of the processes’ need for reorganization can be obtained and a first prioritization can be established. Additionally, services that do not require reorganization can be identified and implemented immediately. This applies especially in those cases, where services are comprehensively supported by information technology, but the online access for the citizen is still missing.

The second pair of criteria (intensity of execution) sheds light on the cost intensity of the inspected processes (Hagen, 2000). As a result, the potential for rationalization measures becomes obvious. This portfolio focuses on the following two criteria:
• Number of cases: The number of cases of a process indicates the number of instances of one process within a certain period of time; i. e.: how many times is a process executed in that period?
• Share of power users: Customers who trigger the instances of service processes with an above-average frequency are called power users. For example car dealers usually register a certain number of vehicles on behalf of their customers.

Having clustered the processes by the criteria number of cases and share of power users, further decisions on the prioritization can be made. A process with just a small number of executions for instance does not cause an immense effort and should therefore be put on hold.

**Step B: Profile Method.** The portfolio of the processes has been reduced by the preceding analysis. In a second step it is now possible to assess the remaining processes on a more detailed level. To enable the evaluation of the processes’ potential for reorganization, we propose to determine their organizational as well as technical complexity. Additionally, the degree of citizen integration into the provision of a service, and the existence of formalities have to be taken into consideration (Eifert, 2000).

**Table 1: Criteria and values of the profile**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of involved employees</td>
<td>One. Two, More than two: (Number)</td>
</tr>
<tr>
<td>Persons in charge to approve the results of a service</td>
<td>None. Officials. Head of department. Mayor / District chief executive</td>
</tr>
<tr>
<td>Number of involved entities</td>
<td>One. Two, More than two: (Number)</td>
</tr>
<tr>
<td>Cooperation with other institutions of public administration</td>
<td>None. One. Several: (Number)</td>
</tr>
<tr>
<td>Number of changes of responsibility</td>
<td>None. One. Several: (Number)</td>
</tr>
<tr>
<td>Average processing time</td>
<td>Hours. Days. Weeks. Months</td>
</tr>
<tr>
<td>Degree of complexity</td>
<td>Mainly routine. Mixed. Mainly discretionary</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical complexity</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number and type of used applications</td>
<td>One. (Producer). Several: (Number, producer)</td>
</tr>
<tr>
<td>Number of proprietary developments involved</td>
<td>None. One. More than one</td>
</tr>
<tr>
<td>Further usage of service data</td>
<td>Data is treated confidentially. Data is used internally. Data is forwarded to external institutions</td>
</tr>
<tr>
<td>Hosting of procedures</td>
<td>Desktop PC. Internal server. External server. Internal and external servers</td>
</tr>
<tr>
<td>Existence of rules for the execution of processes</td>
<td>No. Instruction. Law</td>
</tr>
<tr>
<td>Form of usage</td>
<td>Written form is required. Physical presence of applicant is required</td>
</tr>
<tr>
<td>Scope of discretion in the supply of a service</td>
<td>Scope of discretion. Scope of discretion. Scope of discretion</td>
</tr>
</tbody>
</table>
Organizational and technical complexity, degree of citizen integration and formalities add up to a profile which further allows reducing the amount of candidates for reorganization. The processes have to be analyzed according to the defined criteria and their possible values. Those values should be defined explicitly in advance to permit the comparison of the results. Table 1 shows some of the criteria and their possible values. Based on the obtained results, the final choice of processes, which will be modeled in the next stage, can be achieved by using selection methods such as the Value Benefit Analysis (Zangemeister, 1970). At the end of this phase the number of candidates should be reduced to a level where a detailed modeling of the current situation seems economical.

**Step C: Modeling of current situation and analysis of weaknesses.** The identified processes with the highest potential for reorganization will be modeled in detail in this step in order to discover weak spots, which in turn will form the basis for the creation of to-be process models. By means of interviews not only with officials, but also with managerial staff members, the “state of play” can be captured and transferred into process models.

The presented prioritization procedure does not only select processes with high reorganization potential but does also rank all other processes with respect to their potential. The results can be used for future projects in order to select the next processes to be reorganized and offered as transactional eServices within the “Virtual Town Hall”. Further the fine granular separation of selection phases will result in a well and easy to understand documentation of the selection process to justify the selections made with respect to the project goals set by the project management.

**4. Application of the Phase Model**

The presented phase model has been applied in a real world project which was conducted as well within the ‘Muensterland’ area. Steps A and B of the phase model were completely performed decentralized by the administrations themselves. During the project, the following experiences could be gained:

- Because of its simplicity, the phase model was highly accepted by all involved project participants.
- A consensus between administration staff and researchers concerning the processes which should be excluded could be achieved very easily because of the high transparency of the phase model. Hence a decentralized, cost-optimized collection of data was possible.
- The method was regarded as simple and pragmatic by all involved participants. A reason for this is also the fact that administration staff was included early and continuously into the project work. On the one hand this was made possible by constant communication of project contents, on the other hand by active participation of administration staff in workshops, e.g. for the formulation of questionnaires.
- Because of the practicability of the phase model, its application led to the exclusion of a majority of regarded processes, as was intended.

However, the following problems of the phase model application were noticed:

- The gathering of values of the criterion ‘power users’ was very difficult due to missing data or those that were difficult to collect.
- Due to the decentralized and autonomous gathering of data, extra communication efforts had to be accepted. Furthermore, misinterpretations of query items had to be resolved in additional workshops, where the consolidation of results took place.
• The scales and values to measure the complexity degrees had to be discussed and determined by consensus, because an objective assessment was not possible.

5. Conclusions and Future Work
The phase model has proven its usability in practice. However, due to the encountered problems and further application areas, a set of necessary activities can be identified:
• Further simplification and clarification of the questionnaires in order to overcome misinterpretations is necessary.
• The phase model for selecting business processes with a potential for reorganization has to be enhanced: e.g., the selection criteria could be adopted with regards to the national specifics of the context of application.
• Other administrations and further domains should become application subject of the phase model: Initially, it was developed for the domain of public administration. Thus, it should be evaluated, for example, in other service oriented domains, e.g. insurance.
• The gained knowledge from modeled classic public service processes and reorganized processes should be used for formulation of reference models for administrative processes. These reference process models should be usable by a broad range of other administrations to fasten and enhance their reorganization projects within eGovernment activities.

References