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Avoiding management of resistances during IT pre-implementation phase: A longitudinal research in a high tech corporation

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BARRIERS FOR TRANSFORMATION: IMPEDIMENTS FOR TRANSFORMING THE PUBLIC SECTOR THROUGH E-GOVERNMENT

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Abstract

In the past decades many e-government initiatives have been introduced. Currently, attention is shifting towards enhancing the effectiveness of these initiatives by improving service delivery through organizational transformation. This is called Transformational Government and is often regarded as the next step in the development of electronic government, in which unique cross-organizational processes for customer service request are created. However, the creation of such service processes is cumbersome and even those organizations that have realized successful online service delivery are often hindered in their efforts to achieve transformational aspects such as service orientation and a networked organizational structure. As there is little insight in the barriers that organizations encounter on their path to Transformational Government, this research investigates those barriers by looking at two case studies that have made efforts to transform. The barriers we found include a lack of knowledge about necessary changes, a lack of change in the organization structure and the absence of a transformational mindset.

Keywords: Transformational Government, e-government, barriers, transformation, service delivery.

1 INTRODUCTION

Over the last decade, a first generation of e-government initiatives has been implemented. Many of these projects focused on realizing electronic service delivery to citizens and businesses. Recently, more sophisticated e-government initiatives have been set up that are expected to create results of a more invasive nature: "E-government is being increasingly seen as an enabler for a longer-term transformation of government that goes far beyond online service delivery," the OECD (2005, p 164) notes. ICT has the potential to improve the performance of government organizations as they become part of networks, but organizations need to understand this potential (OECD e-Government Studies 2005, p 164). In order to achieve these objectives of transformation, a new effectiveness enhancing mindset is deemed necessary: Transformational Government (Irani & Elliman & Jackson 2007).

Governments acknowledge that major changes are needed to achieve the impact on organizations and service delivery that Information and Communication Technology (ICT) within government promised to deliver. Considering the complex, evasive and long-term nature of transformation, much research focuses on stages of growth models that both describe and provide guidance for the development of e-government initiatives (e.g. Andersen & Henriksen 2006; Layne & Lee 2001; Chen 2003; Gupta & Jana 2003; West 2004; U.N. 2002). The idea behind these maturity models is that transformation is expected to happen stage-wise, starting off from developing an information system and, eventually leading to transformed government. However, although a lot of e-government systems have been set-up in a relatively short time-scale (Irani et al. 2007), the "e-government revolution" (West 2004, p 15) is – in reality – falling short of its potential to transform government service delivery (West 2004).

Research in the field of e-government has identified challenges and barriers to its implementation at government organizations (Liu & Hwang 2003; Gil-Garcia & Pardo 2005; Janssen & Cresswell 2005; Coursey & Norris 2008). We argue that literature on Transformational Government can also benefit from identifying barriers impeding the development of e-government towards transformation. Barriers are those factors that can be identified as blocking the adoption of a transformational mindset and, consequently, the goal of achieving a transformed public administration. This paper aims to contribute to research carried out on Transformational Government by investigating why government organizations fail to achieve transformation. This is done by identifying and classifying the major barriers that occur when organizations aim for transformation. The main research question of this paper is, therefore: *What are the barriers impeding transformation of government organizations?*

This paper is based on two case studies on organizations in the Dutch public sector that have made initial efforts to transform through the adoption of e-government, but encounter barriers to progressing further. This paper is structured as follows. First, a background of Transformational Government is presented in order to provide insight in steps undertaken by organizations aiming for transformation. Second, a framework for barrier classification is derived from literature. Then, the case studies are investigated and the barriers we identify are categorized. After this analysis, the research findings are presented, followed by conclusions.

2 TRANSFORMATIONAL GOVERNMENT

In recent decades, government organizations on all levels have implemented e-government initiatives, such as realizing electronic front offices, creating authentication concepts, and setting up digital vital registries. As a result of legal obligations and widely available information technology, many government organizations have increased their online service delivery to citizens and decreased administrative costs for businesses. Both enhanced efficiency and effectiveness of government services are key objectives in these developments (Irani et al. 2007). Furthermore, some organizations have strived for organizational change to support these initiatives better. However, large-scale effects have not been achieved yet and little transformation of the public sector can be observed. In order for society as a whole to benefit from e-government initiatives, government organizations need to make

sure that they transform in order to realize demand-driven service delivery that truly meets citizens' and business' needs.

2.1 Characteristics of transformed government organizations

Transformation can be defined as a "complete change in character, condition" (West 2004, p 15), which refers to the invasiveness of the process. Transformational Government is the mindset that aims for political and organizational transformation of the entire public sector (West 2004; OECD e-Government Studies 2005). This transformation is spurred by the implementation of a large number of e-government initiatives that promise to change the way the public sector functions (Kim & Pan & Pan 2007), for example by encouraging cooperation between public officials and government organizations and the development of cross-agency 'portals' (West 2004, p 16). Irani & Elliman & Jackson (2007) extend this idea and define the rationale for Transformational Government as "the exploitation of e-government such that benefits can be realized" (Irani et al. 2007, p 327). From a business perspective, Transformational Government can thus be seen as the *value added* of e-government initiatives for citizens and businesses.

The realization of such value added requires transformation in multiple directions. Public administration is foremost expected to become more customer-oriented and act more pro-actively towards citizens and businesses in order to deliver these benefits (Peristeras & Tarabanis 2000). Government will then enable "fully integrated and fully executable online services", as well as "options for website personalization […] and push technology" (West 2004, p 17). Examples include citizens and businesses only providing their information once to any government agency involved in a service, and single contact points in the form of designated websites that function as the unique information- and service access points for all government agencies. Realizing these initiatives requires change to occur not only in the service delivering front office, but also in the back office of organizations (Beynon-Davies 2007). This could lead to cooperation between multiple autonomous organizations and the transformation from a siloed structure to performing tasks as part of chains or networks (Castells 2000). This, in turn, requires that tasks should be assigned to the organization that is best-equipped to carry it out in order to achieve optimization of these processes. Shared service centers can then be formed, in which services from multiple organizations are concentrated in one joint centre (Janssen & Joha 2006). Following these elements, the transformation of public agencies includes some or all of the following dimensions: adoption of service orientation, formation of service chains, business process re-engineering of the back office, integration with other government agencies, formation of shared services, networked or modular organizational structure, and organizational and governance support for transformation.

A major challenge to achieve any of these dimensions of transformational is the structure of the public sector. The landscape of public administration is largely fragmented, as many different agencies exist that are responsible for their own specific tasks and that have a relatively large degree of autonomy. Therefore, transforming the processes of these organizations to form a service delivering chain is a difficult process. Although the introduction of e-government holds great promises for changing the public sector, many authors, therefore, claim that in reality very little of this transformation can be observed (Fountain 2001; West 2004; Coursey & Norris 2008). Furthermore, the practice of transformation is not considered to be one of radical re-design, but rather a process of 'muddling through' (Lindblom 1959), in which small, incremental steps are being made that might, in time, lead to change (Wildavsky 1984). These notions run squarely into the ideas promoted by Transformational Government as they claim that there are severe limitations to the capacity of the public sector to transform.

2.2 Classification of barriers to transformation

Research on the implementation of information systems in (government) organizations more often focuses on success factors (e.g. Akkermans & van Helden 2002; Somers & Nelson 2001; Poon &

Wagner 2001; Rosacker & Olson 2008) than on impeding factors or barriers (Liu & Hwang 2003; Gil-Garcia & Pardo 2005; Janssen & Cresswell 2005; Coursey & Norris 2008). Gil-Garcia & Pardo (2005) propose a comprehensive framework for identifying success strategies and challenges for e-government, comprising five categories: (1) *Information and data,* comprising success strategies such as having an overall plan, continual feedback, and training, (2) *Information technology*: ease of use, usefulness, and demonstrations and prototypes, (3) *Organizational and managerial*: project team skills and expertise, leadership, clear and realistic goals, identification of relevant stakeholders, planning, and communication, (4) *Legal and regulatory*: information technology policies and standards, and (5) *Institutional and environmental*: leadership, legislative support, and outsourcing and public-private partnerships.

In the field of business process re-engineering (BPR), Al-Mashari & Zairi (1999) identify barriers instead of success factors. Their approach enables us to identify barriers in the field of e-government as well. This fits the field of Transformational Government as there are little cases available in which transformation is an outright success. In the field of public sector change, Janssen & Cresswell (2005) identify barriers to re-engineer the public sector. In order to identify the barriers that government organizations encounter on their path to transformation, this research uses four of the abovementioned categories by Gil-Garcia & Pardo (2005), namely: *information technology*, *organizational and managerial*, *legal and regulatory*, and *institutional and environmental*. Following Liu & Hwang (2003), however, the two latter categories are grouped under the label of *governance*. Furthermore, following Hammer & Champy (1993), Al-Mashari & Zairi (1999) and Kim & Ramkaran (2004) we add the category of *business processes* to our framework. Accordingly, in the case studies that are analyzed in this paper, the factors are found in the following areas: *technical*, representing (partial) failure at the level of information systems; *business process*, which includes failure in re-engineering processes or the formation of service delivery chains; *organizational and managerial*, representing factors at the organizational level, and including cultural failure factors; and the *governance* category representing institutional factors impeding transformation of public administration.

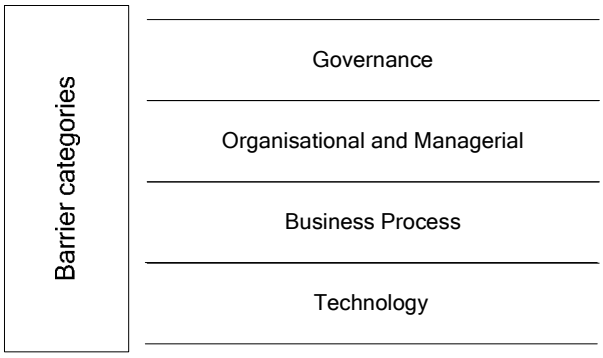

Figure 1: framework of categories of barriers impeding the transformation in public administration

3 CASE STUDIES

3.1 Research problem, methodology and case selection

The focus on barriers impeding the transformation in public administration, instead of the more common success factors, is deliberate. A focus on success factors neglects factors blocking progress. Since there is a lack of cases that portray full transformation, it is not only necessary to know what factors contributed to the success of their partial transformation, but also the barriers that organizations encounter when trying to achieve a stage of transformed government.

Since the field of Transformational Government is still underdeveloped, there is a general lack of theory and research approaches. To research the main question of this paper, we use an interpretivist methodology for in-depth research of organizational case studies since this best fits the complexity of the matter (e.g. Klein & Myers, 1999). In the previous section, the concept of Transformational Government was defined and a number of efforts necessary for transformation are identified. Implementation of some or all of these efforts represents the theoretical ideal of a transformed government in which the effectiveness of electronic service delivery increases. The mismatch between this theoretical ideal and the current empirical state of transformation is used to identify barriers.

For analyzing the cases, we use a triangulation of methods (Mingers, 2001). We base our case study research on a combination of research methods, including document analysis and interviews. Insight is needed in the complex organizational context in order to identify the relevant barriers. Single case studies are often seen as inferior to multiple case studies with respect to generalizability (Yin, 1989). Therefore we opted for two cases that are distinct in their size and transformation approach, but share that they are both seen as successful in improving service delivery. A limited number of case studies can be very successful in terms of theory formulation and theory testing (Yin, 1989). Both case studies provide complementary insights in the barriers that impede further improvement in providing the value added that goes with Transformational Government. This case selection method illustrates the goal of this paper, which is not to provide a full growth path to transformation, but to identify the barriers that organizations encounter on their path to transformation.

The cases were analyzed by comparing the vision to the accomplished transformation and determining the factors impeding the development towards the desired situation. The first case study was investigated using seven interviews with management, administrative staff, IT staff and IT architects. The interview results were compared with documentation including press releases and internal documents such as memos, reports, and presentations. This resulted in a list of factors distributed over the four categories described in figure 1. The second case study was investigated in a similar manner, with multiple (semi structured) interviews with people from various disciplines and document analysis being the second method of research.

3.2 Case studies

In order to support government organizations in their efforts to transform, several support programs have been set up in the Netherlands. Benchmarking studies are carried out and best practices are disseminated. Furthermore, local government agencies can receive support from a professional funded by the central government who gives advice tailored to the specific needs of the organization and culture.

During the last decade, the Dutch government actively stimulated the adoption of e-government initiatives, for example by setting a target that 65% of all government service delivery should be available to citizens and businesses online. In 2007, it was concluded that this goal was achieved by all agencies and the directive was changed into the aim that all government websites be awarded a grade seven out of ten. In order to define how this aim should be achieved, a national action program for better service delivery was set up. The main goals of this government-wide action plan are to identify generic e-government components with a focus on architecture and to increase the visibility of the effects on public administration functioning.

The program aims for a comprehensive outlook on electronic government as it not only defines what public electronic service delivery should look like, through defining service delivery criteria and vital infrastructure components, but it also identifies how public administration could enhance its effectiveness. Examples are given of networks of organizations performing services. Although transformation is, thus, an issue of concern for the public sector as a whole, in this study we look primarily at individual government agencies and at transformation on the organizational level.

Within this context, two Dutch cases are investigated. The first case represents a case of a transformed organization, while the other represents transformed service delivery. First, we will discuss a local

government that transformed into a service-oriented organization. This is a front-runner municipality that deployed service architecture. Second, we look at a semi-autonomous public agency that can be considered a good practice of multichannel service delivery because of their radical approach to both organizational structure and electronic service delivery.

3.2.1 Case study 1: organizational transformation in a front-runner municipality

The municipality under study is often viewed as a good practice in the Netherlands for its effort to transform into a demand-driven organization. Early 2000, this municipality's city council decided that it wanted to become a front-runner in the field of e-government A four-year action plan was developed which resulted in a high ranking on a government website comparison list. This municipality only succeeded in partial transformation as it transformed its organization, put in place the right technology, but failed to align it with its business processes. The main drivers of the transformation are a focus on service orientation which was implemented by introducing an integration broker, intra-organizational transformation and an ICT-driven organizational re-engineering.

During the implementation of this (first) action plan, the municipality experienced problems in connecting their applications and more and more money was spent on the control and maintenance activities. In addition, they found that the organization was not suitable for demand-driven service provisioning yet. In this project, the organizational structures were not altered and technology actually reinforced the existing structure. To tackle these problems, a new action plan was developed which primarily focused on shaping the organizational conditions and the technology needed for demand-driven service delivery.

The second action plan started with transforming the organization from a siloed structure to a service oriented organization. Banking and insurance companies were used to serve as an example for this transformation. This was an invasive process which was managed separately from the implementation of ICT and resulted in separate departments for interaction with citizens and businesses. Furthermore, a number of legacy systems was opened up by adding web services. Thereafter, these systems were connected to the website to enable real-time service delivery. After almost two years, it was found that the idea of levering legacy systems by opening them up using web services was fruitful, even though it requires standardization and a sound architecture for integrating the various parts. The municipality bought an integration broker architecture that should contain the logic of connecting the website to the applications in the back office.

Later on, the municipality became aware that just having a broker was not enough. It was unclear which process steps should be performed in the front office or back office and what the broker should do. This requires extensive analysis of business processes, a comparison of similarities between these processes and the allocation of processes to the front and back office. In addition, this helped to map process steps to the new organizational structure, clarifying responsibilities and improving processes.

The municipality in this case study transformed its organization, acquired the right technology, but failed to align these systems with its business processes, which proved to be the bottleneck for transformation. The lack of knowledge on how these changes impacted the organization, its processes and the technology, can thus be seen as the main the barrier for transformation. Currently, a number of business processes is analyzed and mapped to the broker architecture and web site. This has resulted in the creation of several services that can be requested in an integral way and reuse of information stored in the back office. The automation of all business processes is a long lasting process, as it requires extensive analysis of current processes, its corresponding structures and future possibilities. Furthermore, connections with other organizations are limited; only connections based on well-standardized formats are realized.

3.2.2 Case study 2: front office transformation in an executive agency

The second case studied was a large semi-autonomous executive agency, which is seen as a good practice of multiple-channel service delivery in the Netherlands. The organization is responsible for

millions of interactions with citizens each year. The agency addressed its fragmentation problem by concentrating the coordination of its multiple service channels (and the corresponding departments), into a single department. Although this structure proved very successful for managing the various streams of customer contacts, it did not succeed to transform the organization as a whole. Creating a department specialized in multi-channel management ensured that a state-of-the-art front end was set up, but at the back end, processes and information systems could not keep up with the service provisioning. In other words, service delivery chains were not formed.

The service strategy deployed by the multi-channel department focuses on a number of drivers: efficiency, image, customer satisfaction, and effectiveness. The strategy differs per channel and per customer segment, and for this purpose different service concepts were implemented. For example, customers with complex problems or language difficulties are served at the counter whereas the young and educated are stimulated to use a web-based self-service channel. The organization transformed to a multi-channel service organization with successes both on efficiency and effectiveness. Higher customer satisfaction and lower costs mark the success of this transformation of the front office, but the formation of service chains or networks with other organizations remains a challenge.

The formation of chains was hindered by the legacy in the back office. A main barrier to transformation is, thus, that the back office lags behind the front end redesign. Furthermore, in some service delivery chains, improved cooperation with other organizations would have been desirable, including more interoperability of information systems and a clearer allocation of responsibilities. Moreover, most developments in this case were introduced on an ad-hoc basis, with trial-and-error as the main strategy. The result is an uneven development of a single coordinating department, with back office departments lagging behind.

A second barrier impeding transformation is the absence of a vision on how this agency could enhance its service delivery by becoming part of a network of organizations. Following the trial-and-error approach, its transformation efforts were based on current structures and the desire to improve efficiency and customer satisfaction. Therefore, the transformation efforts reinforced the existing role of the organization. Alternative strategies, for example one that would redefine the organization's function from a service providing agency to a broker in a service network, were not considered since there was no vision on what a transformed organization should look like or what's its role in the network could be.

3.3 Findings: barriers identified

The two case studies in this paper represent organizations that have transformed partially. Therefore, the transformational efforts observed in the cases are summarized in table 1 in order to demonstrate the barriers that can be encountered when transformational efforts are undertaken. The barriers derived from the two cases are categorized, reflecting the factors that impede the studied organizations' efforts to transform.

Categories	**Transformational efforts**	**Barriers**
Governance	National action plan for enhanced service delivery (cases 1 and 2)	Misunderstanding the impact on long term control and maintenance efforts (case 1) Absence of implementation guidance and best practices (case 1) Insufficient understanding of clients (case 2) Lack of transformational readiness (case 2)
Organizational and managerial	Demand-driven customer orientation (cases 1 and 2) Change from a siloed structure to a process-oriented organization (case 1)	Lack of an organization-wide overview (cases 1 and 2) Detached front and back office (cases 1 and 2) Gap between IT and administrative departments (cases 1 and 2) Unclear responsibilities for process ownership (cases 1

		and 2) Limited availability of resources (case 1) Ad-hoc integration based on demand (case 1) Lack of cooperation with other organizations to enhance service delivery (case 2)
Business Process	Limited business process re-engineering observed; only front office creation (case 2)	Lack of knowledge of implications of e-government for the alignment of ICT to the organization by process redesign (case 1) Limited knowledge of business process reengineering (case 1) Unavailability of detailed process descriptions (case 1) Focus only on front office; back office lagging behind (case 2)
Technology	Installing technology supporting transformation, such as brokers (case 1) and multi-channel services (case 2)	Lack of data standards for interoperability (cases 1 and 2) Legacy systems hindering integration (case 1) Dependency on software vendors for system innovation (case 1)

Table 1: barriers identified in the case studies

Table 1 shows that barriers were observed at all levels. Furthermore, the common characteristic of the barriers observed seem to be (1) a lack of knowledge of – or mindset for – transformation, despite the presence of a national action plan for improving (online) service delivery, (2) lack of knowledge of the changes necessary for transformation and its implications, and (3) a lack of organizational change that needs to accompany transformational efforts. Possibly, if additional efforts of transformation are attempted, other barriers might be observed.

4 DISCUSSION: BARRIERS IMPEDING TRANSFORMATION

Since we have looked at only two cases studies, the barriers we identified are not generalizable to all government organizations in the process of transformation. However, by selecting two good practices with a different approach to transformation, the barriers found here are expected to apply to most (Dutch) government organizations. If the elements of Transformational Government found in literature are not even realized in these cases, other organizations are expected to have trouble realizing them as well. Therefore, the theoretical underpinnings and the main barriers identified in the cases by use of the framework can help organizations anticipate on these barriers early on in their transformation process. Although not generalizable, this research on barriers for Transformational Government provides valuable insights for both the theoretical advance of the research field and for the challenges faced by practitioners.

The greatest transformational effort undertaken by the organizations under study is the adoption of service orientation, which was identified as one of the dimensions of Transformational Government. In both cases, this was partly realized. However, service orientation was introduced mainly by technical means (such as broker technology) and front end innovations (such as a multi-channel strategy), instead of undertaking a thorough redesign of the organization and its business processes. Re-engineering the processes in the back office could have led to the formation of service provisioning chains throughout the organization. Therefore, while these organizations acknowledge that their service levels could be improved, they fail to implement all organizational changes necessary, such as assigning responsibilities, aligning processes and bridging gaps between front and back office, IT- and administrative departments. Hence, they appear to lack the understanding of how organizational transformation impacts the re-design of their business processes.

Accordingly, not any effort was observed to reposition the organization within the wider context of the public sector by enhancing service delivery through the formation of chains with other organizations.

Often, processes run through multiple departments or organizations. To accommodate this, service chains must be formed, business processes must be re-engineered where necessary, and systems must be able to interact with those at other government agencies. For the municipality under study, this is further complicated by their dependency on third party software vendors. Despite the presence of a national action plan, the organizations under study seem to lack an overarching transformational mindset to connect all those dimensions. Therefore, they have taken small steps on various paths without a clear vision on where they are heading.

In accordance with the theories that look at transformation as being not just a technical issue, we found barriers also at the governance, organizational and process levels. This leads us to believe that Transformational Government is not just about adopting the right technologies, acknowledging client's wishes or agreeing on standards, but that it is about the fundamental re-orientation of the role and function of an organization as part of a network that offers services to citizens and businesses. Furthermore, it requires suitable governance mechanisms supporting transformed organizations and business processes need to be installed. Focusing on one part only – whether improving systems or setting up a service oriented front office – inhibits the comprehensive organizational and process reform that is needed for transformation. Often, like in the case studies, organizations take too narrow a focus on transformation and neglect the invasive nature of the process on all of the categories we identified.

For government organizations to advance on their path to transformation, we found barriers that need to be overcome, most notably a lack of mindset, lack of process alignment, and a lack of knowledge on implications of the introduction of e-government facilities. Taking these into account requires the public sector as a whole to determine and define where it is heading and how it will attempt to get there; an integral vision on Transformational Government is necessary. As long as this transformational mindset is lacking and knowledge on these changes is still limited, Transformational Government, as foreseen by scholars in many stages-of-growth models, is not likely to be within reach.

5 CONCLUSIONS

This research aimed to contribute to the research field of Transformational Government. This research field studies the transformation effects of e-government supporting enhanced use of ICT for more effective service delivery. In this paper barriers impeding transformation in the Netherlands were identified and categorized. We believe that identifying these barriers complements the present focus on success factors. Using literature review, a classification of barriers was developed consisting of governance, organization, business process and technology. This classification was used to analyze two cases in-depth. Barriers observed in both cases are related to a lack of knowledge on transformation leading to very limited process re-engineering with a front office focus and a failure of using ICT to enhance the effectiveness of e-government initiatives. Furthermore, an urgent lack of a transformational mindset was observed. The core of transformation is in developing a transformational mindset and a vision to guide organizational and service process development, as well as a collaborative culture. Further research should, thus, focus on improving theoretical and practical support for Transformational Government, such as refining current stages-of-growth models to reflect the complex nature of transformation and the difficulties in achieving a stage of transformed government.

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