

# Towards an Integrated E-Government

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## E-GOVERNMENT – THE NEW PARADIGM FOR PUBLIC ADMINISTRATIONS

Public administrations (PAs) tend to be permanently under an increased pressure to make their services and business processes more efficient, cost-effective and transparent. From the management's point of view, the main problems are deemed to be drawn-out and intransparent procedures, lacking basic data, unclear responsibilities, inefficient communication, interoperability between systems from different PAs as well as continuously increasing personnel costs [25, p. 13].

First reform attempts addressing the challenges mentioned above have been already initiated at the end of the 60's, but they could not obtain the comprehensive effect [2, pp. 14-20]. In the 80's the New Public Management (NPM) initiated a reform process, that even today continues and that is introduced in world-wide PAs. It comprises administrative reform strategies, which are led by an economical interpretation of the administrative processes [26, p. 59]. The core elements comprise the setup of a decentralized management and organizational structure, the control of the outputs as well as competition and customer orientation [12, pp. 70-74].

Over decades, the usage of the information and communication technology (ICT) and its potentials was hardly recognized even within the area of the NPM. In this context, the ICT has been seen as an auxiliary tool used only for the support of the financial management and to provide statistical information. In the meantime, the delivery of services via the internet has attracted a huge attention and the realization of the "virtual administration" is one of the top topics at the political agendas [16, pp. 1-3]. More specifically, the need to take into account the support and optimization potentials of modern ICT within the fields of the modernization of public administrations is widely accepted. The still young discipline of "Electronic-" or "E-Government" deals with the "[...] execution of business processes that are related to the governance and the administration (Government) by usage of the information and communication technologies via electronic media." [17, p. 1] Since its emergence in the end of the 90s E-Government was interpreted in many cases as a new part of an e-business aspect or as an electronic option of NPM as mentioned above. In fact it is an independent concept that actually is seen as the "[...] most important instrument for modernization of the state, politics and public administration [...]" [14, p. 2], that opens new potentials for the optimization of decision making, service distribution and execution as well as output delivery to external demand groups of public administrations.

A successful implementation of E-Government requires the simultaneous consideration of the relevant administrative processes. The presented paper motivates the topic of "business process management at the administrative area" and outlines a potential approach. Thereby, the basis is build by an empiric survey that was performed with administrations from the German federal and federal state government levels.

## ADMINISTRATION PROCESSES AND E-GOVERNMENT

In order to better serve the demands of citizens and enterprises, the public administration has to evolve from a vertical and highly fragmented organization to an effective and open network of interoperating public entities. Empirical research on the level of the federal state governments in Germany has shown that the hopes and expectances tied to the realization of E-Government are focused on the optimization of the administrative processes as well as the improvement of the customer orientation.

As a result of the high developed status of modern ICT, E-Government is barely limited by technical restrictions [23, pp. 49-50]. Indeed, the primary euphoria and high expectations have recently changed to a realistic pragmatism. E-Government is no longer considered as a general "silver bullet" but rather as an alternative solution for current challenges [3, pp. 5-8].

To realize the aimed potentials, the highest objective consists in achieving a transaction-oriented and seamless integration of all parties involved. The realization of this integration level is necessary because on the one hand, citizens and enterprises demand increasingly the supply of online services from the different public agencies. On the other, the public organizations are forced to improve the efficiency and effectiveness of their procedures. In order to achieve this, a well-structured and successive procedure is necessary, that integrates the strategic perspective, the processes for achieving the strategic goals and the supporting technology. Experiences have shown that only a technology-driven approach doesn't lead necessarily to the aimed improvements of the work procedures. Especially within the sphere of PAs and service offering organizations a positive correlation between ICT-investments and productivity couldn't be verified for a long time. Paradoxically, it even was proved that an increase of the ICT usage could affect negatively the execution of the processes [4, pp. 70-71; 19, pp. 48-49].

Fig. 1: Goals of the E-Government implementation [9, p. 104]

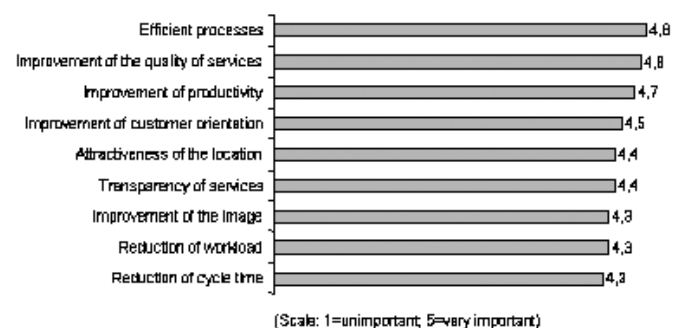
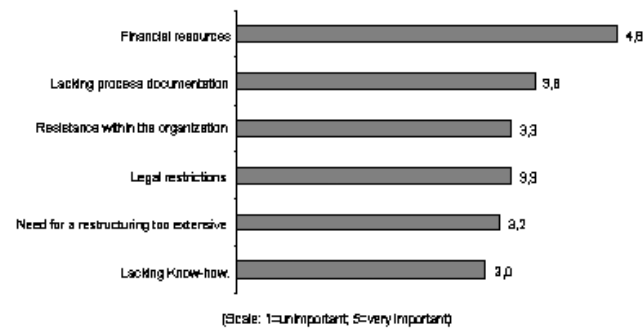


Fig. 2: Barriers for the realization of process re-engineering within PAs [9, p. 109]



According to this perception, the adaptation of the various administrative procedures to integrated processes is crucial for a successful implementation of a “true” E-Government and for the realization of its potentials. In practice, the relevance of an all-embracing process management is broadly accepted. As an example, within the German federal state governments 75% of the decision-makers involved in E-Government related activities estimated the importance of process optimization and -management as “extremely important” or at least as “very important” [9, p. 106]. At the same time, barriers that hinder the process-driven realization and that have to be taken into account are specified as shown in Fig. 2.

Various administrations – especially on the higher state levels – actually try to eliminate this barriers and deal actively with the challenge of creating efficient and effective process structures that enable an integrated E-Government and take into consideration the goals of the NPM. The area of process reorganization can be found as an explicit field of action within the actual initiatives and programs aiming at the modernization of the PAs as well as on the usage of the corresponding ICT. So, for example, various German federal state governments have set up competence centers for process innovation that are responsible for the creation of specific know how, the realization of process improvement projects and the implementation of the new procedures within the organization [22, pp. 37-40; 27; 28].

In this context, the existing long-term experiences from the business sector in setting up and realize activities for the implementation of a process oriented organization can be seen as an advantage. Additionally, from the scientific domains of business administration and business informatics origins a high level of knowledge and theoretical backgrounds e. g. in process modeling, workflow management or process cost analysis. Indeed, the transfer of this know-how to the domain of the PAs have been realized only punctually and concentrates particularly on the higher state levels, as for example in Germany at the level of the federal government or the federal state governments. At the level of the municipalities, a lack of activities – caused especially by the barrier of the insufficient financial funds – can be recognized. In addition to this insufficient transfer of scientific results to the administrative practice, challenges of the process management as e. g. the creation of domain-specific proceeding models are actually missing at the relevant scientific disciplines [1, pp. 860-861].

Basically, the definition and usage of a proceeding model that aims at the conception of integrated E-Government processes and the implementation of the relevant technologies requires a detailed knowledge of the process goals and the specific process characteristics at the as-is state. In general, the spectrum of administrative processes ranges from simple and well-structured activity sequences to complex procedures distinguished by difficult legal questions. These extremes can be characterized on the one hand as *well-defined production processes* and on the other as *unstructured decision-making processes* [14, p. 17].

## ADMINISTRATIVE PROCESS MANAGEMENT – THE BASIS FOR AN INTEGRATED E-GOVERNMENT

In general, the reorganization of processes isn’t something new within the sphere of the PA, but in the past, the focus was set especially

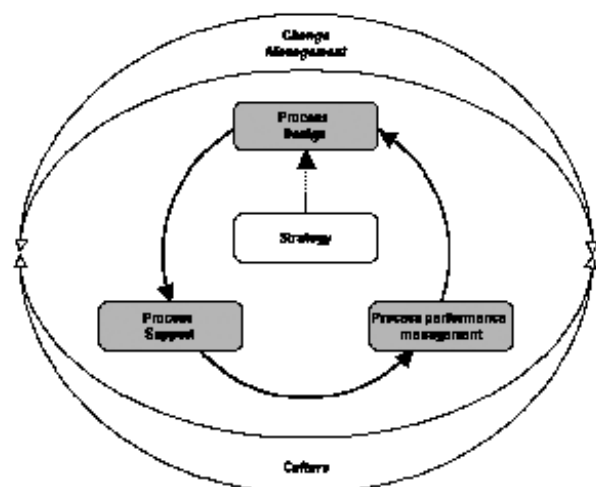
on the well-defined production processes and, additionally, on reference models that were not able to deal with the wide variety of the work processes [15]. Of highest importance for the realization of an all-embracing administrative process management as a basis for the implementation of an integrated E-Government are the definition of an *unified set of modeling requirements* considering the *specific process characteristics* as well as *proceeding instructions*. Requirements for a common framework of the process modeling are e. g. the integrated definition of process components for the front- as well as the back-office in order to adapt the activities to the customer needs as well as to the corresponding internal conditions, or the separation of individual and repetitive patterns within the administrative processes. In addition to the process characteristics as already outlined above, further aspects such as intensity and need of communication or changing responsibilities could be taken into consideration. [29, pp. 25-26]

On their way to an integrated E-Government the PAs have to manage systematically the transformation of their traditional processes to innovative work procedures. An *framework* for an all-embracing process management that quasi defines the borders of a proceeding “roadmap” is shown in Fig. 3.

As a basic principle, the *Process Design* should be determined by the PA’s strategic goals such as increase of effectivity, improvement of customer orientation or cost reduction. The strategy and the processes have to be conjointly observed because they’re connected in an inter-dependent relation. According to the principle “Process follows strategy” the realizability of the strategy depends on the actual processes [6, pp. 34-35]. Vice versa, the process design should make sure that an adaptation to the strategic orientation is performed. On the long run a harmonization has to emerge among the administrative strategy, the processes and the structure in terms of a “fit” situation to reach the defined goals [24, pp. 36-37]. In this context should be noticed – and also anchored at the strategy – that for the design of E-Government processes the addressed parties such as citizens or businesses have to be integrated. The hitherto dominating concentration on the internal structures has to be eliminated [18, p. 12].

Modeling and analysis of the existing work procedures are crucial activities of the process design phase. The process models help to understand the focused scenario and enable the evaluation of the actual process performance and optimization potentials. In the very beginning of the restructuring activities, *the modeling aim*, *the modeling object* and *the modeling approach* have to be defined [1, pp. 861-864]. Subsequently, the concrete processes that will be focused at the various optimization projects have to be defined and prioritized according to well defined criteria, that generally can be deduced from the strategic goals. Considering the fact that “typical” administrative procedures – except the routine processes – are dealing with individual cases and

Fig. 3: Administrative process management



therefore are highly determined by explicit and implicit knowledge of the employees it can be stated that the models should foresee a *certain degree of flexibility*. In contrast to models of full standardized procedures, the details of how the involved actors collaborate, bring in their knowledge and participate in the decision making are of highest importance [13, pp. 130-131]. Furthermore, within the PA's knowledge intensive process environment the observance of the *underlying knowledge* is of a high interest. An overview about an approach that combines process and knowledge management is given in [20].

The subsequent definition of a *should-be model* based on the as-is modeling and analysis can be supported by the usage of reference models that provide basic patterns for the process design. A problem that emerges from the definition of organization specific should-be models and that has an impact especially on weak structured and complex procedures as found within the PA is the lack in considering framework conditions for specific cases. To overcome this and to provide a better basis for the process execution, customizable process models can be used that allow an adaptation to an particular context. To insure an efficient creation of application-specific process models in the meaning of a "mass customization" the following aspects should be addressed [21, pp. 226-227]:

- The application specific process *context* is described by framework conditions out of a set of determining factors that have an impact on the design of the process model.
- To support the reusability, generic *process components*, generic *reference process models* and *process cases* have to be differentiated.
- The coherences between context and process design have to be saved as *interdependencies* between process components and framework conditions on a generic level.
- A *proceeding model* describes how to get from the context over the interdependencies to the process model.

The reorganization of the as-is processes allows the realization of various optimization potentials within the PA such as increases of transparency, reduction of cycle times, saving of time, reduction of redundant data or optimization of interfaces. Scenarios that estimate the optimization potentials from different angles should be developed at an early stage to ensure e. g. the staff's commitment to the new procedures as defined at the should-be models [7, pp. 5; 9].

Based on the process design, the implementation of the new structures that define the framework for the selection and integration of the adequate E-Government-Technologies is realized. Consequently, the *process support* delivered by the ICT is aligned according to the strategic goals determining the process structures that represent the link between strategy and technology [11, p. 123-124].

To insure the further development of the E-Government scenarios after the implementation, a comprehensive *process performance management* has to be initiated. Based on well-defined target figures that should represent the strategic goals and that could be connected to products as output of administrative processes, a continuous comparison of the actual process performance has to be performed. As an example, concrete measure values for a PA from the judiciary sector are the number of apprenticeship and re-education places, the number of intermediations to institutions for debt regulation or the number of releases [5, p. 76-77]. Thus, possible weaknesses of the procedures are displayed contemporary and possible corrective actions can be realized. Thereby a difficulty for the data collection emerges from the fact that various administrative departments could be involved which have to be monitored. One approach to deal with this challenge and to realize a continuous observation, analysis and improvement is the appointment of a so called *process owner (PO)* [8, p. 141]. Regardless the involved departments, the PO is responsible for the whole process and consequently for its monitoring and performance.

The *culture* as well as the *change management* are taking an heavy impact on the successful realization of the process re-design, the technical implementation and the process performance. Both are influencing one another, so has the existing culture – innovation

friendly or adverse – an impact on the choice of change management tools. Vice versa, an adequate change management strategy can cause sustainable modifications of the culture. For the implementation of effective E-Government processes and technologies an appropriate communication strategy has appeared as the element the most essential. To ensure an open-minded information policy a wide range of tools such as kick-of meetings, e-mail-newsletters, road-shows or public workshops can be used to involve the staff in the ongoing activities at an early stage and treat them as customers. [10].

## CONCLUSION

Efforts to reach a "real", transaction-orientated E-Government that integrates all relevant internal and external parties can be assessed within PAs all over the world featuring various intensities and development states. The presented paper showed that the potentials of the ICT usage can only be achieved by an combined approach that focuses not only the technology but also and especially the underlying processes as well as the strategy. An all-embracing approach has been outlined that integrates the mentioned aspects and allows a systematic administrative process management. Nevertheless, it is obvious that the shown characteristics of the administrative procedures demand a modification of the process management concepts known from the business sector, even if the adoption of this well-tried approaches – at least partially – is possible for the area of the PA. According to this, further research has to be done to realize adequate concepts that can be transferred to the administrative practice in order to support the metamorphosis of the public institutions to customer oriented, effective and efficient acting service organizations, working on the basis of innovative processes and ICT concepts – towards an integrated E-Government.

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