



## Business process management capabilities in local governments: A multi-method study



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### ABSTRACT

Business Process Management (BPM) is a topic of greatest relevance to government innovation. While the concept originally stems from the private sector, public sector organizations have established BPM capabilities and are in the move of developing these further. Despite the importance of the phenomenon, literature does however not yet provide a comprehensive picture of BPM capabilities in governments. In this paper, we thus examine BPM capabilities on the local government level by means of an intertwined quantitative survey and (representative) qualitative in-depth case study. We identify a set of BPM challenges and reflect on the power of prevalent BPM capability assessment and development models, mostly maturity models, to provide good guidance. We suggest taking into account organizational positions in order to overcome the significant shortcoming of the 'maturity' concept, especially the focus on convergence towards an "ideal" state. Thus, we argue for developmental models following divergence theories. Implications for practice and potentially fruitful avenues for future research are discussed in the light of our findings.

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### 1. Introduction

Business Process Management (BPM) is an established approach to managing and improving organizational processes in both the private and public sectors. The improvement of business processes is currently the top priority for CIOs around the world (Gartner Inc., 2010). BPM is a means of improving business processes, thus improving efficiency and effectiveness, and ultimately gaining and sustaining competitive advantage (Broadbent, Weill, & St. Clair, 1999; McKinsey, 2008). The concept has its roots in Total Quality Management (TQM) and Business Process Reengineering (BPR). As such, it is a well established approach, combining both incremental and radical measures of process change. Notably, BPM is not only applied in the private sector: It is a key concept in e-government and public sector reform (Becker, Algermissen, & Niehaves, 2006; Kubicek, Millard, & Westholm, 2003; Niehaves, Plattfaut, & Becker, 2012; Scholl, 2004; Scholl, Fidel, Liua, Paulsmeyer, & Unsworth, 2007; Stemberger & Jaklic, 2007; Weerakkody, Janssen, & Dwivedi, 2011). It appears to have established as common sense that public sector organizations need to reevaluate their business processes: cost-cutting, especially in times of the financial crisis, citizen and service quality-orientation, electronic government (Becker et al., 2006), transformational government (Irani, Elliman, & Jackson, 2007), and other reform concepts

have called for a program of business process change in public organizations (Scholl, 2004). Most recently, for the case of European governments, the European Union (EU) Service Directive (the so-called Bolkestein Directive) requires the establishment of a single point of contact for all administrative services and provides yet another major impulse for BPM initiatives (Weber & Sure, 2009).

Developing BPM capabilities constitutes a key challenge for organizations. BPM being an established concept, contemporary research in the field revolves around the development of organizational BPM capabilities (Fisher, 2004; Rosemann & De Bruin, 2005; Rosemann, De Bruin, & Power, 2006; Zwicker, Fettke, & Loos, 2010). Several models exist for assessing and guiding the development of BPM capabilities, a comprehensive picture of BPM capabilities in the public sector is however still missing in the extant literature. We seek to address this research gap by means of a multi-method approach that involves an intertwined quantitative survey ( $n = 357$ ) and an in-depth qualitative case study (12 interviews). Our research objectives are a) to provide a comprehensive picture of public sector BPM capabilities as well as related problems and b) to discuss normative models, especially maturity models that claim to be of help when it comes to further BPM capability development.

The remainder of the paper is structured as follows. In the next section, we discuss the concept of BPM capabilities and review prevalent BPM capability assessment and development models. We then set out the methodology and the results of a quantitative survey on BPM capabilities in local governments. Based on our survey data, we identify a representative case organization that bears the potential to reveal typical BPM capability issues in local governments. The methodology and the findings of the in-depth case analysis are

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**Table 1**  
BPM capability assessment models.

References	Name (and type)	Concept	Sector	Theoretical foundation	Imperative for development
(De Bruin & Rosemann, 2007; Rosemann & De Bruin, 2005; Rosemann et al., 2006)	Business Process Management Maturity Model (BPMMM)	5 stages, referring to the CMM (Paulk et al., 1993); 6 capability areas	Private	Previous studies on BPM and/or maturity models	Develop until level 5 is achieved, following the prescribed path.
(Zwicker et al., 2010)	Public Administration BPM Maturity Model for the 48-h-service promise	Builds on Rosemann et al.'s BPMMM, 5 stages, 6 capability areas	Public	Previous studies, design science approach, but purely descriptive evaluation	Develop until level 5 is achieved, following the prescribed path.
(Fisher, 2004)	Business Process Maturity Model	5 stages; "5 levers of change"	Private	None	Develop until level 5 is achieved, following the prescribed path.
(Weber, Curtis, & Gardiner, 2008)	OMG Business Process Maturity Model	5 stages, referring to the CMM; a multitude of action fields	Private	None	Develop until level 5 is achieved, following the prescribed path.
(Hammer, 2007)	Process and Enterprise Maturity Model	4 stages; 4 capability areas	Private	None	Develop until level 4 is achieved, following the prescribed path.

presented in Section 4. The final sections are concerned with the theoretical and practical implications, limitations, and future research.

## 2. Business process management capabilities

BPM can be regarded as a management approach for achieving both revolutionary and evolutionary improvements in business processes. BPM has its seeds in TQM and BPR, and combines the merits of both traditions (Hung, 2006; Zairi & Sinclair, 1995). Hence, it is a holistic approach to managing organizations (Armistead & Machin, 1998). However, the term BPM is not used unambiguously. As the focus of BPM projects can range between purely organizational and purely technical (Rosemann et al., 2006), some authors understand BPM in a narrower sense as the tools needed to model and execute processes (Smart, Maddern, & Maull, 2009). In contrast, we understand BPM in a broader sense extending this narrow view: it covers other areas as culture, governance, or strategic alignment, too. From a theoretical perspective BPM can be understood as a collection of dynamic capabilities to adapt existing business processes and create new ones to achieve a fit with the organizational environment (Niehaves, Plattfaut, & Sarker, 2011; Niehaves & Plattfaut, 2010; Trkman, 2010; see also Klievink and Janssen (2009) for a discussion of dynamic capabilities in the public sector). Dynamic capabilities are the organization's ability to integrate, build, and reconfigure operational capabilities (here: processes) for the purpose achieving a fit with the market environment (Teece, Pisano, & Shuen, 1997).

The main focus of contemporary BPM research has shifted from BPM as a concept to that of developmental models for BPM in organizations. Today, BPM is no longer new, it rather builds upon more than 20 years of scientific research (e.g., Davenport & Short, 1990; Hammer, 1990). Thus, the academic community now has a fair understanding of the concept BPM. Hence, new streams of research have emerged. A major issue at present is how organizations can and should develop their BPM capabilities. Here, literature provides a prolific discussion of capability assessment and development models in the private (De Bruin & Rosemann, 2007; Rosemann et al., 2006) and in the public sector (Zwicker et al., 2010; see Table 1 for an overview).

As to our best knowledge, extant BPM capability models fall into the class of maturity models which represent a specific class of BPM development models and have been adopted widely. In BPM specifically, literature offers five distinct maturity models (see again Table 1). The basic concepts underlying all models are very similar and originate from the Capability Maturity Model (CMM; see Paulk, Curtis, Chrissis, & Weber, 1993). The common elements of extant BPM capability (maturity) models include:

- i. Building Blocks: All models have a number of stages (four or five), through which an organization proceeds to the most

beneficial BPM. These stages are intended to quantify and summarize the evaluation, so as to be consistent and comparable (Rosemann et al., 2006). In order to assess the status quo and give directions for future development, the models specify several capability areas, factors, action fields, or levers of change. These concepts represent "important components of BPM and allow a separate evaluation" (Rosemann et al., 2006, p. 5).

- ii. Theory Background: The theoretical foundation of existing BPM maturity models is arguably rather weak (see Klievink & Janssen, 2009). Most models are very practitioner-oriented and seldom refer to any body of theoretical knowledge. The BPM Maturity Model of Rosemann et al. (2006) refers to previous studies on BPM and the Public Administration BPM Maturity Model by Zwicker et al. (2010) builds upon Rosemann et al.'s work. However, neither model uses specific theories in terms of causal explanations or testable propositions. This perception is in line with such previous studies as Becker, Niehaves, Pöppelbuß, and Simons (2010, p. 6), who argue that maturity models in general "seldom refer to theories or theoretical statements of relationships".
- iii. Imperative for Development: All models propose developing BPM capabilities until the highest level is achieved, following a prescribed (sequential) developmental path. As such, maturity models are prescriptive in nature (Rosemann et al., 2006). This is a direct consequence of defining the last stage as the most beneficial one. Maturity models prescribe organizations to a) reach the highest level possible and b) achieve this by proceeding along a specific path. Any divergence from this prescribed path should be corrected first, before the journey to high maturity can be pursued further (Fisher, 2004). As a result, maturity models prescribe conceptual convergence towards an "ideal" state. This perception is closely related to convergence theory (Meyer, Boli-Bennett, & Chase-Dunn, 1975).
- iv. Sector Focus: The original area of application and focus of the majority of capability assessment models is the private sector. For instance, Rosemann et al. (2006, p. 7) explicitly claim validity of their model for the private sector only. Subsequent work of Zwicker et al. (2010) has adapted Rosemann et al.'s BPMMM and created a model for public sector BPM. The authors applied it to assess BPM capabilities relating to the specific issues of the 48-h-service-promise (Zwicker et al., 2010). Overall, the original application area of the models is the private sector or a very limited area of public sector BPM.

Against this background, we can identify several shortcomings in prevalent public sector BPM capability research. First, no holistic BPM capability assessment research has been undertaken in the public sector yet. Zwicker et al. (2010) focus on the specific aspect of

48 h-service-promise, but they do not answer the question of how well-established BPM capabilities are in the entire government organization. Second, current literature does not yet challenge the normative dimension of maturity models in this area. The imperative for development, habitually “develop until the highest capability maturity level is achieved and follow the prescribed path”, is not systematically tested in rigorous research.

In order to address these gaps, we seek to answer the following research questions:

- RQ1 *What is the status-quo of BPM capabilities in local governments?*
- RQ2 *Can BPM maturity models offer good guidance for capability development in local governments?*

Assessing BPM capabilities in local governments, we study six capability areas that stem from an empirically informed maturity model (Rosemann et al., 2006) and that have already been applied in the public sector context (Zwicker et al., 2010). Our public sector BPM capability assessment thus addresses the areas of strategic alignment, governance, methods, information technology, people, and culture (see Table 2 for a detailed description and references).

Methodologically, we apply a multi-method approach that builds on a quantitative survey to provide a sector overview and a subsequent qualitative case study which seeks to add rich data and in-depth insights into BPM capabilities in the local government.

**Table 2**  
BPM capability areas as in our assessment model.

Capability area	Description
Strategic alignment	Strategic alignment refers to the close linkage of both business processes and organizational priorities. This linkage is important for the translation of business process change action into business performance improvements. Unaligned changes in business processes could hamper the organizational development (Rosemann et al., 2006).
Governance	In BPM, governance addresses the establishment of accountability and decision-making capabilities. BPM governance is very closely connected to corporate or IT governance and focuses on roles and responsibilities for decision making processes (Rosemann et al., 2006).
Methods	BPM Methods are the techniques and approaches that support and enable process actions at each stage in the process lifecycle. Different authors suggest a plethora of lifecycles (Neumann, Probst, & Wernsmann, 2003; Van der Aalst, Netjes, & Reijers, 2007; Van der Aalst, Ter Hofstede, & Weske, 2003; Zur Muehlen, 2004). However, BPM methods are needed for each major stage, independent of the specific lifecycle chosen (Rosemann et al., 2006).
Information technology	The term IT covers not only software and hardware, but also the corresponding information management systems that enable or support process activities. In the context of BPM, different IT artifacts are needed for each lifecycle stage (Rosemann et al., 2006).
People	The capability area people covers all human-resource-related capabilities. The organization needs to develop these capabilities to develop their workforce so that it is BPM ready. Moreover, the ability of certain individuals and groups to improve business processes is covered as well (Rosemann et al., 2006).
Culture	Culture refers to the softer factors of attitudes and behaviors that are aimed at improving business processes. The culture of an organization needs to foster the development of both business processes and business process management (Rosemann et al., 2006).

### 3. Survey

#### 3.1. Methodology

The data for our survey study was collected in Germany with the help of an online questionnaire. The country was selected in order to connect to the only public sector BPM capability study identified (Zwicker et al., 2010). Furthermore, we expect the results to represent issues and challenges of BPM capability development for European and Western countries, especially those with a federal state system. We invited 8000 government officials, each responsible for BPM in a single local government, to participate in the study. Out of about 12,250 local governments in Germany, we were thus able to connect to about 65% of them. With a response rate of ~4.5% our sample represents 357 organizations located in 13 out of 13 German large-area federal states and, additionally, Berlin.

In order to understand BPM capabilities, we assess capabilities in six distinct areas: strategic alignment, governance, methods, IT, people, and culture. As for each of these areas, we developed survey questions (single item measurement) that our participants answered on a five point Likert scale [1 = strong disagree with the statement at hand to 5 = strongly agreement with the statement]. For example, as for the capability area of strategic alignment, we studied in how far the participants agreed with the statement “Business process management is a key component in our administrative reform efforts” (see Table 3 for an overview over the items and additional statistical information).

#### 3.2. Findings: BPM capabilities in local governments

Our quantitative study shows several interesting findings (Table 3). Firstly, in all six questions, the responding organizations answered on the full scale. This is an indicator that our questions are able to differentiate the organizations. Secondly, the data seems to be very centralized as indicated by the mean (around 3) and the standard deviation (around 1). However, both values are hard to grasp considering that Likert scales are ordinal in nature (Jamieson, 2004). Hence, we concentrate on the analysis of the median and the degree of agreement. The degree of agreement is defined as the share of all municipalities which agreed to the questions (i.e. answered 4 or 5 on the Likert scale).

The only capability area most organizations see themselves positioned well is IT. 56% of the organizations agree to the corresponding statement. Apparently investments in the past led to a good IT landscape that is able to support the BPM activities. However, only around one third of the municipalities see BPM as a key component for administrative improvements (strategic alignment). About the same amount has employed a good governance structure. With regards to people and culture, the results are even worse. Only about one in four municipalities trains the employees with regards to BPM (people) or has a good BPM culture in place. Especially the missing BPM culture might be corresponding to a general trend of aging workforces in German public administrations. Even more dramatically is the situation in the capability area methods. The results suggest that only a minority (9%) of the organizations rely on one single modeling notation while all other municipalities have a disperse landscape of methods (or ignored the field of process modeling at all).

### 4. Case study

#### 4.1. Methodology

In order to add richness to the quantitative BPM capability survey, we conduct an in-depth qualitative case study, taking advantage of

**Table 3**  
Survey results.

Capability area	Item	MIN	MAX	Mean	Median	Standard deviation	Degree of agreement <sup>a</sup>
Strategic alignment	“Business process management is a key component in our administrative reform efforts.” [Likert 5]	1	5	3.17	3	0.93	38%
Governance	“In our local administration, we have clearly defined roles and responsibilities for business process management.” [Likert 5]	1	5	3.12	3	0.96	39%
Methods	“In our local administration, we consistently use only one business process modeling notation.” [Likert 5]	1	5	2.59	3	0.88	9%
Information technology	“We use IT/software to support our business process management activities.” [Likert 5]	1	5	3.35	4	1.06	56%
People	“We train our employees in business process management.” [Likert 5]	1	5	2.85	3	1.04	28%
Culture	“Most of our employees see the necessity of business process management.” [Likert 5]	1	5	2.93	3	0.95	28%

<sup>a</sup> Degree of agreement = Cumulated answers ‘agree [4]’ and ‘strongly agree [5]’ in relation to all answers [1–5].

the rich tradition of qualitative IS research (for instance, Kern & Willcocks, 2002; Mingers, 2003; Remenyi & Williams, 1996).

#### 4.1.1. Case selection

Our rationale for selecting the particular case entity is to study a representative organization. In order to identify a suitable candidate, we conducted a step-wise approach taking into account our survey results (see again Section 3). First, we calculated the differences between the individual answers of the participating organizations and the median of our sample for all six BPM capabilities areas (see Table 3, column 6). Afterwards, we reckoned up the differences over all six capability dimensions leading to a single figure that is able to indicate to what degree an individual case organization is representative against the background of the survey sample. Out of the group of potential case organizations that feature the most marginal deviation (here: 2 points), we opted for studying large governments (that, in this study, we define as having more than 1000 employees and serving more than 100,000 citizens). The procedure led to seven equally suitable case organizations of which, for reasons of convenience (proximity), we selected  $\alpha$ -ville.

#### 4.1.2. Data collection

We employed multiple qualitative data collection methods in order to exploit the synergetic effects of combining them via triangulation (Capaldo, 2007; Yin, 2003): focused individual interviews (primary method), direct observations, and documentary information.

- i. Focused Individual Interviews. The primary sources of evidence are interviews with the key actors in  $\alpha$ -ville's BPM efforts. The ranks of interview partners included, for instance, head of BPM unit, head of IT, head of organization department, as well as members of quality management, accounting and other departments. When contacting our case study organization, we were directed to a contact person responsible for BPM. Being the first expert interviewed, he connected us with other significant actors in the organization (snowball sampling approach, see Salganik & Heckathorn, 2004). Each interview consisted of a confirmatory and an exploratory phase. In the confirmatory phase, we sought to evaluate against the background of our six BPM capability areas which were derived from the literature. In the exploratory phase, we sought to identify new/additional issues relevant to BPM in the organization.
- ii. Documentary Information. Several materials produced by or about the organization were incorporated as supplementary sources of evidence. For instance, business process documentations, organization charts, press articles, internet sources, research reports, project documentations, minutes of project meetings, or other reports helped us to reconstruct the case study setting in great detail.
- iii. Direct Observations. We were able to directly observe the settings and relevant events throughout a total of 16 site visits. This included, for instance, observing the working procedures and analysis of BPM

tools applied. These direct observations enhanced our understanding of the case study setting.

#### 4.1.3. Data analysis

A total of more than 20 h of interviews as well as other material were included in the analysis. As an initial step, all data was reviewed in the light of available documentary information and of direct case observations. Afterwards, two authors carefully coded the data with regard to the six BPM capability areas. In the event of unresolved differences, the third author was consulted. The interpretation of data and refinement of theory elements were highly recursive and formed a continuous interplay (Myers, 1997). This approach had the advantage that the authors' understanding of the case findings gradually improved.

#### 4.2. Case setting

The organization studied ( $\alpha$ -ville) is, in line with the overall study focus, a local government. It is situated in the western part of Germany. With more than 6000 employees in about 50 departments, the organization is one of the larger public bodies in the federal state of North Rhine-Westphalia. Also due to the shrinking number of inhabitants in the city the organization faces a huge a budget deficit of more than 100 million Euros. Media reports the financial situation of this local government as dramatic. On the one hand, the management expects BPM to contribute to consolidating this deficit, cutting costs and improving efficiency. On the other hand, the organization faces other challenges, such as e-government or the EU service directive, requiring BPM to contribute to major structural changes and to increased effectiveness.

#### 4.3. Findings: BPM capabilities at $\alpha$ -ville

Our in-depth analysis of BPM capabilities at  $\alpha$ -ville revealed the following insights with regard to the six BPM capability areas:

1. Strategic Alignment. In the case study organization, the strategic alignment is rather low. Firstly, there is no specific BPM strategy or process improvement plan. Several employees of  $\alpha$ -ville agree that a strategy is largely absent and only relating to the conformity with the EU Service Directive some processes could really be considered aligned to an external strategy. However, the development of a process improvement plan is a medium-term goal for at least some of the employees. An employee in the local IT unit stressed this point and stated: “We do not have a specific BPM strategy yet, so we can't even evaluate the alignment.” Secondly, the business processes of the organization should be linked with the BPM strategy. However, given that no specific BPM strategy exists, this linkage is also non-existent. Thirdly, a specific enterprise process architecture does not exist either. In the context of the Service directive, a product catalog was created, listing corresponding

processes, but other processes are lacking. Fourthly, there are no process outputs or key performance indicators defined at an organizational level. In some sub-units, there are performance indicators, but they seldom correspond to actual processes. Fifthly,  $\alpha$ -ville's BPM is not fully aligned with the priorities of stakeholders. Some aspects of customer-orientation are included as a result of the political pressures associated with the Service directive. However, the interviewees stated that there was no coordinated inclusion of stakeholders in BPM projects. In rare cases, employees of the organization department "cooperate with our subsidiaries, because we see opportunities to lower costs. However, we could do much more in this respect." In summary, the strategic alignment capabilities of  $\alpha$ -ville can be considered as low.

2. **Governance.** At  $\alpha$ -ville, BPM governance is problematic as well. The BPM-related decision-making processes are very fragmented. On the one hand, municipal decision-making generally has a political dimension. The mayor and the city council should be in charge of high-level decision making processes. On the other hand, the administrative staff is organized in hierarchies. Hence, coordinated decision making should be possible. However, at  $\alpha$ -ville, no specific responsibilities for BPM decision making are defined. "We try to take some responsibility here in the organization department," says a middle manager in the administration of  $\alpha$ -ville. Another middle manager pointed out that process owners are only defined once processes are implemented in the software – which is currently almost never the case. Moreover, BPM success is not measured systematically: "We do not have process metrics in place, we simply see if everything is running smoothly or not. Process metrics are not easy; our processes are much more complicated than those in the private sector." Additionally, we did not observe any process management standards. The few projects that took place all started from scratch without considering best practice. Hence, although all pre-requisites for BPM Governance were in place, at present our case organization did not build the necessary capabilities.
3. **Methods.**  $\alpha$ -ville does not use specified process design and modeling methods. Firstly, few of the processes are modeled and, secondly, this is done using a variety of relatively unsophisticated techniques, such as textual descriptions or simple flow charts. Only a very small number of processes (most of which are in one department) are supported by WfM systems and the corresponding methods are generally absent. As a result, there is no common method for process control and measurement. In  $\alpha$ -ville, some processes are monitored every now and then with regard to workforce planning. In this respect, employees from the organization department analyze processes in an ad-hoc manner and calculate workforce estimates. However, the results of this monitoring do not result in any process improvement. When it comes to process innovation and improvement, the organization does not employ any structured or systematic methods: "I know those methods from the private sector, however, we do not use them. Our efforts at improvement are spontaneous and arbitrary." However, there is a specific guideline for project management, which is employed in most of the projects at  $\alpha$ -ville. In short,  $\alpha$ -ville does not employ a specified set of process design and modeling methods.
4. **Information Technology.** At  $\alpha$ -ville, the IT capabilities are rather underdeveloped. As a direct result of the lack of coherent modeling methods, there is no single tool for supporting process modeling. Instead, different areas of the organization use different tools, such as Microsoft Word, Excel or Visio. However, even a lack of Visio licenses is evident. Moreover, we observed a lack of knowledge of the existing process modeling tools. Managers from the organization department, which should be responsible for process innovation and change, admitted that they recently stumbled upon an existing modeling tool in another department.  $\alpha$ -ville only supports one process with a workflow management tool. Citizens are now able to pay their fines electronically. "It is sad

that we only use workflows in an area which is very unpleasant for the citizens," said a line employee. When it comes to process control and measurement or process improvement and innovation, no special information technology is used. Here, the organization relies on Microsoft Office and similar solutions. However, the organization has an administration-wide project management tool in place. This tool is evidently heavily used, together with the corresponding project management guideline. In summary, the process-related IT capabilities can be categorized as underdeveloped.

5. **People.** The people capability area of  $\alpha$ -ville is also not highly developed. The organization lacks process skills and expertise. Firstly, this is reflected in the complete absence of BPM-specific roles or positions.  $\alpha$ -ville does not have process owners or analysts. Secondly, members of the organization department admit that they sometimes lack skills and experience needed to drive process innovation and change. This comes hand in hand with a lack of process management knowledge. Although certain employees are trained in this area, the methodologies are antiquated and not BPM-specific. As such, BPM knowledge is rare at  $\alpha$ -ville. The organization remains mired in old bureaucratic learning arrangements. BPM is not regarded as particularly important. "Of course, we are going to train our departments, but we first have to train the organization department", said a primary contact person at  $\alpha$ -ville. With regard to process collaboration and communication, we only observed one collaboration pattern. The organization department somehow tries to help other departments. However, process improvement is rare and appears to be sporadic. Finally, the organization department seems to be the process management leader. However, support from the top management of the administration is not only partial and, hence, the leadership cannot fully be played out. Thus, capabilities in the people area are underdeveloped.
6. **Culture.** The organizational culture of  $\alpha$ -ville is not very BPM-friendly. Firstly, the organization is not responsive to process change. It is often not even wanted by the employees, who appear to be very change-resistant. Thanks to the EU service directive, many employees are familiar with the term and understand the concept "process". However, this does not lead to actual process innovation and change, as existing practices are not questioned. A lack of leadership attention to process management appears to be the most important factor in this capability area. The head of the organization department pointed to a lack of top management support: "I would not say that we have the full support of our administrative top management. [...] There is more of a 'we say neither yes nor no' view on our activities." At  $\alpha$ -ville, we did not observe BPM-specific social networks. Although some employees talk to responsible individuals in other administrations, these efforts are neither institutionalized nor supported by  $\alpha$ -ville's organization.

The case study results suggest that BPM capabilities at  $\alpha$ -ville are underdeveloped and are thus in contrast to the results of the quantitative study. Here, we selected  $\alpha$ -ville as a typical organization which reported all capability areas on a medium level. We believe that these differences occurred due to two reasons. Firstly, and most important, in the quantitative survey the answers were self-reported. There might be a bias in comparison to a more objective point of view as taken in the qualitative study. Secondly, the questions for the capability area in the quantitative survey did not cover each capability area in full depths. Both reasons may be assumed to hold true for all other organizations in our sample as well. The identified discrepancy between the self assessment and the third party assessment results generally bears implications for survey approaches to capability assessment.

## 5. Discussion: BPM capability development

These results provide an answer to our first research question: What is the status-quo of BPM capabilities in local governments?

The quantitative study shows that BPM capabilities differ between specific municipalities. However, the survey suggests that an average local government organization has achieved a medium level of capability, with BPM methods being rather poorly developed. This second point is weakened by the quantitative study with the main argument of biases due to the survey being self-reported. Hence, we argue that the BPM capabilities of local governments are developed on a rather low level while outliers exist in both directions.

To answer the second research question (Can BPM maturity models offer good guidance for capability development in local governments?), it has to be broken down in two sub-questions. Firstly, what is the guidance given by BPM maturity models? Here, we build upon the work of Rosemann et al. (2006) and Zwicker et al. (2010). Secondly, with this understanding we can evaluate if the guidance given can be considered to be “good”. However, for this assessment additional variables have to be consulted and a second guidance based on them created. These variables result out of the conceptualization of BPM as a collection of dynamic capabilities (see again Section 2).

The guidance given by maturity models results out of their imperative for development: Every organization should follow a sequential path of stages towards higher maturity. For the case of public sector organizations this can directly be translated to the creation and/or further development of the specific dynamic capabilities for process management in the described capability areas. This view on capability development can be understood as a convergence theory. The academic debate on the relative merits of convergence and divergence theories has a long tradition (Meyer et al., 1975, an application to Human Resource Management can be found in Brewster, Wood, & Brookes, 2008). On the one hand, convergence theories argue that all systems of the same class (here: organizations that employ BPM) move towards a general “model” or “ideal” state. On the other hand, divergence theories argue that such an “ideal model” state does not exist and that the systems in question develop according to “choices” made during the developmental path. These “choices” can be made due to environmental pressure argued by evolutionary theories, through goals set by the organization as argued in teleology, or through discourse of parties in the organization as argued by dialectical theories (Van de Ven & Poole, 1995).

Whether this guidance of further capability development converging to an ultimate level can be called good guidance, especially considering the variance in BPM capabilities and backgrounds of municipal organizations, can only be assessed with the background of our understanding of BPM and the rich data of the case studied. We conceptualized BPM as a collection of dynamic capabilities to adapt existing business processes and create new ones to achieve a fit with the organizational environment. This understanding of the organizational position can be operationalized in form of an analysis of the asset classes as suggested by Teece et al. (1997). They differentiated between technological assets, complementary assets, financial assets, reputational assets, structural assets, institutional assets, market (structure) assets, and organizational boundaries (see Table 4). These assets influence the development of dynamic capabilities heavily. As such, the conceptualization of BPM as a collection of dynamic capabilities calls for a divergence theory perspective.

In terms of these seven asset classes the position of  $\alpha$ -ville is not very good. The case organization has no specific technological assets. The products and services offered by  $\alpha$ -ville differ not much from those of other municipalities. In rare cases, other public sector organizations offer more innovative e-government solutions. Exemplarily, the case organizations representatives mentioned new services that are possible with the new German identity card which are already offered by other municipalities. From a complementary asset perspective it is easily observable that especially organizational learning is insufficiently developed at  $\alpha$ -ville. The organizational culture is change-adverse, necessary training is avoided, and new developments are rejected. Most

importantly,  $\alpha$ -ville has very few financial assets. The organization suffers from an extreme budget deficit. Although BPM is seen as a cost-cutting measure, the necessary BPM investments are not undertaken, as they would require scarce resources that the organization is not willing to provide. Scarcity of financial assets has been identified as one of the main inhibitors of BPM projects (Moore & Vollmer, 2004). The reputation of  $\alpha$ -ville is comparably good. The inhabitants are, to a certain extent, proud of their city. However, our interview partners report that citizens regularly state that the service level could be improved. From a structural perspective  $\alpha$ -ville is still stuck in a very monolithic structure. There are few lateral relations between the departments. Moreover, the organization has an aging workforce. This is a direct result out of cost-cutting policies. As a public administration body, lay-offs are always hard to justify and defend. Hence, the organization pursued the easier route of hiring no more young employees. Consequently, the current workforce is not very IT-aware and could be described as rather change-resistant. The environment of  $\alpha$ -ville has changed over the last few years. In the past, public sector organizations operated in a very stable environment. This fostered an organization which is change reluctant and bureaucratic. However, due to high unemployment rates in the specific town and surrounding area, inhabitants began to move away. Today,  $\alpha$ -ville's net migration is negative as there are more people leaving than moving to the city.  $\alpha$ -ville has to adapt the processes to become more lean and, thus, cope with the lower service demand. Moreover, the EU Service Directive and the associated substantial effort towards the implementation of New Public Management, also raise the dynamics of the environment. Today, municipalities are in a market-like situation, a “quasi-market” (Dunleavy & Hood, 1994), e.g., for attracting business and citizens. A middle manager in our case organization stated: “We should not forget that other local administrations are competitors.” The organization tries to work over organizational boundaries, especially with neighboring cities. However, the interviewees agree that this could be improved.

All in all, especially the environmental and structural assets foster the need for business process innovation and change and, hence, the development of BPM capabilities. However, as another middle manager of  $\alpha$ -ville admitted, “We are still at the very beginning; so far, we have neither touched our processes nor changed our organizational structure.” This might be related to the other assets that are either missing or poorly developed and, thus, hamper the development of BPM capabilities. The guidance derived through divergence theory would be to further develop existing capabilities and create new ones as long as they fit to the organizational positions. However, the highest level of capabilities as suggested by BPM maturity models appears to be not a good goal as the organization and employees are not ready for this endeavor. A comparison of the guidance based on convergence and divergence theory is listed in the following Table 5.

Table 5 highlights that the guidance given by the two approaches differs to a great degree. Although both theoretical perspectives suggest a further development of the BPM capabilities, they set distinct target levels and argue for distinct paths. While maturity models suggest developing the capabilities to the highest level possible a divergence theory perspective suggests that the dynamic capabilities should fit to the organizational positions. Based on both our conceptualization of BPM and the rich case study data we argue that, for the case of  $\alpha$ -ville, the guidance given by divergence theory appears to be significantly more comprehensible and adequate.

## 6. Conclusion and outlook

In this article, we set out to provide a comprehensive picture of public sector BPM capabilities and to discuss normative models that claim to be of help in developing these capabilities. For this, we conceptualized BPM as a collection of dynamic capabilities to adapt existing business processes and create new ones to achieve a fit

**Table 4**  
Asset classes to understand the organizational position (adapted from Teece et al., 1997).

Asset class	Description	Examples
Technological asset	Technological assets are all assets of an organization that differentiate the organization from its competitors by providing advantages in the core processes of the organization. They constitute of specific product-related knowledge that has to be protected from other organizations.	<ul style="list-style-type: none"> <li>- Product and service specific knowledge</li> <li>- Patents</li> </ul>
Complementary assets	Technological innovations require the use of related assets to produce and deliver new products. These complementary assets include assets for management of processes in the organization as well as assets for the commercialization of the product.	<ul style="list-style-type: none"> <li>- Process knowledge</li> <li>- Product and service innovation</li> <li>- Commercialization resources</li> </ul>
Financial assets	Financial assets include the firm's cash position and degree of leverage. Especially in the short run projects can depend heavily on the cash position of the organization.	<ul style="list-style-type: none"> <li>- Budget</li> <li>- Employee utilization</li> </ul>
Reputational assets	Reputational assets represent the external view on the company by depicting the reputation of the organization seen by a customer, supplier or competitor and based on the subjective information and experiences the actor possesses about the organization. They are related to the other assets of the organization as they incorporate an external summary about the organization's current resources and expected future development.	<ul style="list-style-type: none"> <li>- Reputation</li> <li>- Customer satisfaction</li> </ul>
Structural assets	Structural assets describe the formal and informal structure of the organization, the employees, and their external linkages. They include the degree of internal hierarchy and vertical and lateral integration in place and influence the way of generating innovation.	<ul style="list-style-type: none"> <li>- Hierarchy</li> <li>- Lateral integration</li> <li>- Employee empowerment</li> </ul>
Environmental assets (market structure and institutional assets)	Environmental assets consist of all assets that are related to the business environment consisting of markets and institutions (separated by Teece et al. into market structure and institutional assets). These assets depend on the market position of the products or on policies of institutions as e.g. national regulatory systems.	<ul style="list-style-type: none"> <li>- Market dynamics</li> <li>- Dependencies between organizations</li> <li>- National laws</li> <li>- International policies</li> </ul>
Organizational boundaries	Organizational boundaries refer to the relation between boundary spanning partners and specify the degree of vertical, lateral, and horizontal integration in boundary spanning practices.	<ul style="list-style-type: none"> <li>- Decision power</li> <li>- Decision speed</li> <li>- Degree of integration</li> </ul>

with the organizational environment. These capabilities can be employed for achieving both revolutionary and evolutionary improvements in the corresponding business processes. Based on this understanding, we analyzed five different BPM maturity models that were created to describe and prescribe the development of BPM capabilities. Based on the capability areas used in two of these models (Strategic Alignment, Governance, Methods, Information Technology, People, and Culture), we conducted a quantitative survey of German local government administrations (n = 357). This survey suggested that the BPM capabilities are on an intermediary level. Moreover, we used the data to select one typical municipality and analyzed it in terms of a comprehensive case study. The results of the case study suggest some bias towards less developed BPM capabilities, which might be due to the quantitative results being self-reported. Hence, we argue that the BPM capabilities of local governments are developed to a low level while outliers exist in both directions (ad RQ1). Based on this information, maturity models would give the guidance to develop further until all BPM capabilities are developed to the maximum level. This is in line with convergence theory. Convergence theories argue for a movement towards an “ideal”

state. However, our case study data and the theoretical understanding of BPM suggest that other variables, especially organizational positions play an important role. This understanding leads to a divergence theory perspective which suggests that an “ideal” state does not exist and that organizations should develop only specific dynamic capabilities. Based on both our conceptualization of BPM and the rich case study data we argue that, for the case of  $\alpha$ -ville, the guidance given by divergence theory is more appropriate.

This study contributes several new insights to the body of e-government knowledge. First, to our knowledge it is the first broad assessments of BPM capabilities in the public sector. So far, public sector researchers often had a feeling that BPM capabilities are under-developed. This feeling can now be supported with solid arguments. Our empirical findings show that especially BPM capability area “methods” is yet under-developed in public sector practice. Second, our research could show that the concept of BPM capability development is applicable to the public sector, especially with regards to the six capability areas.

Moreover, our research makes important contributions to a more general literature on developmental models. We depicted maturity

**Table 5**  
Guidance given by convergence and divergence theory.

	Convergence theory	Divergence theory
Informed by Imperative for development	BPM maturity literature Conceptual convergence: Develop in a sequential irreversible process until the highest level is reached.	Dynamic Capability theory Develop depending on the organizational positions and the path taken in the past.
Guidance for $\alpha$ -ville	$\alpha$ -ville has not reached the highest level of BPM capabilities and should, hence, develop these capabilities.	$\alpha$ -ville lacks several BPM capabilities or employs them only on an intermediary level. Especially, the organizational position characterized by several assets suggests that a certain development towards better capabilities is needed. However, this development is constrained by the culture and the employees (esp. the aging workforce).
Guidance for local governments in general	Most local governments have not reached the highest level of BPM capabilities and should, hence, develop these capabilities.	Each local government should assess the organizational positions carefully. Based on this information, an individualized capability development strategy should be created.

models as following a convergence theory perspective. Our results suggest that this perspective is not suitable for the development of BPM and dynamic capabilities in general. These dynamic capabilities need to fit to the organizational position. Divergence theory appears to be better able to inform decision makers for building dynamic capabilities than maturity models. However, stage models might be suitable to describe the development of organizational capabilities (Andersen & Henriksen, 2006; Klievink & Janssen, 2009). Overall, we find that BPM maturity models show severe shortcomings of which their concept-inherent and context-invariant development recommendations can be regarded as the most crucial ones. However, there are other issues such as often overlapping and mutually dependent capability dimension (such as alignment and governance). Another challenge is the measurement of capabilities by specific measurement items. In our case, due to technical reasons, we opted for a single-items measurement approach which opens up for a discussion of other (eventually multi-item) approaches to quantitative capability measurement. Finally, with often lacking a sound theoretical foundation, cohesion is another issue in many BPM maturity models. It remains unclear to a large degree why certain BPM capabilities should be developed and what (positive) effects can be expected as a consequence. With our dynamic capability approach, we make a first step to address these shortcomings. Our suggest list of new variables (e.g., financial assets, reputational assets and technological assets; see Teece et al. (1997) and Table 4) may be used to create theories for BPM capability development that take into account the organizational position of the public administration.

Our study shows most public sector decision makers the clear need to build dynamic capabilities for BPM. However, this capability development should not only be guided by convergence theory based maturity models but also by the organizational positions as suggested in the dynamic capability literature (divergence theory).

With our study, we put primary focus on understanding BPM capabilities in the public sector. With dynamic capability theory and capability development in general being well applicable in the private sector as well, we would argue that the integration of the two in terms of our theoretical model should be applicable to studying private sector organizations too. We consider it a potentially fruitful avenue for future research to test this assumption and to empirically compare private and public sector findings.

As every research, our study is limited to a certain extent. Acknowledging that our case study observations might be subjective, we still believe that other researchers would make very similar ones. Together with the quantitative data we argue that the conclusions drawn are almost independent of the researcher. As we selected the case study based on the quantitative data the results should be replicable in any other municipal organization that falls in a certain range. Moreover, organizations on other administrative levels should deliver similar results. Last, the conclusions drawn with regards to developmental models are valid independent of the specific organization. We strongly believe that they are also valid independent of the sector (public or private) and hold true for the development of all dynamic capabilities. Nevertheless, this belief must be tested by future research in the private sector and on other dynamic capabilities. Moreover, future research could also work on incorporating the organizational position in a specific model. Last, other models describing change could be studied, too. For example, Van de Ven and Poole (1995) describe three other theories explaining organizational development apart of stage logic: evolutionary theory, teleology, and dialectic.

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