

Key Differences of Private and Public Sector Business Process Change Author(s): Marlen C. Jurisch, Christian Ikas, Petra Wolf and Helmut Krcmar Source: *e-Service Journal*, Vol. 9, No. 1 (Fall 2013), pp. 3-27 Published by: Indiana University Press Stable URL: https://www.jstor.org/stable/10.2979/eservicej.9.1.3

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at https://about.jstor.org/terms



Indiana University Press is collaborating with JSTOR to digitize, preserve and extend access to *e*-Service Journal

Key Differences of Private and Public Sector Business Process Change

Marlen C. Jurisch

Technische Universität München

Christian Ikas

Technische Universität München

Petra Wolf

Technische Universität München

Helmut Krcmar

Technische Universität München

ABSTRACT

The public sector is subject to constant changes. In order to tackle the current financial, social, and political challenges, public sector organizations all over the world need to rethink, adapt, and change their underlying service processes. Prompted by these challenges public managers have turned to the private sector for solutions. By facilitating resource efficiency and allowing for a more straightforward way of service provision, business process change (BPC) assumes a leading role in the transformation of public administrations. Yet, in the past decades many BPC projects both in private and in public have failed to realize their objectives. However, the public sector Should not only learn from its own failures, but also from the mistakes made in private sector BPC implementations. A huge amount of case studies exist on the topic of BPC which provide comprehensive reviews of past failures and successes. So far, this rich pool of knowledge has remained unexploited. This paper identifies the main differences between private and public sector BPC implementations as reported in 128 case studies. Based on this meta-case analysis, we juxtapose current consensuses as well as contentious issues.

KEYWORDS: Business process change, meta-case analysis, sector comparison.

@ 2014 e-Service Journal. All rights reserved. No copies of this work may be distributed in print or electronically without express written permission from Indiana University Press.

INTRODUCTION

The public sector is subject to constant changes (Sims, 2010). One only needs to consider the recent changes and efforts introduced by European governments to modernize their bureaucratic structures in order to sustain the current financial crisis. An example of tremendous changes is the United States, where Obama's administration is working on reinventing public healthcare. Public administrations all over the world are forced to transform themselves into more efficient and effective, customer-oriented service providers (Fountain, 2001). In order to tackle the current financial, social, and political challenges, public sector organizations need to rethink, adapt, and thus reengineer their underlying service processes.

The resulting pressures to cut budgets and increase efficiency while maintaining performance prompted public managers to turn to the private sector for solutions (Parys & Thijs, 2003). Originating from a business environment (Otenyo & Lind, 2006), the idea of business process change¹ (BPC) found its way into the realm of public organizations (Parys & Thijs, 2003). As a means of rightsizing government, cutting red tape, and reducing bureaucracy (Otenyo & Lind, 2006), BPC promises to become a valuable and much-needed tool in public administrations. By facilitating resource efficiency and allowing for a more straightforward way of service provision, BPC assumes a leading role in the transformation of public administrations.

However, in the past decades many BPC projects have failed to realize their objectives. Past literature found that between 60 and 80 percent of all BPC efforts fail partially or even completely (Al-Mashari, Irani, & Zairi, 2001; Trkman, 2010). Thus, learning from past failures is central for future success. However, the public sector should not only learn from its own failures, but also from the mistakes made in private sector BPC implementations.

Various authors attempted to analyze and synthesize the unique characteristics of each sector and their impact on BPC implementations (Halachmi & Bovaird, 1997; Scholl, 2004; Sims, 2010). Many of these comparisons are based on the personal experiences of the authors. Other researchers summarized public and private sector BPC experiences in form of single and multiple case studies (i.e., Harrington et al. 1998; Hesson et al. 2007; Hughes et al. 2006; Thong et al. 2000). In fact, a huge amount of case studies exist on the topic of BPC implementations which provide comprehensive reviews of past failures and successes. So far, this rich pool of knowledge has remained unexploited. Yet, we posit that a structured analysis of these case studies will help in resolving, clarifying and stressing current challenges in public and private sector BPC implementations. We expect this meta-case comparison to be highly conducive to future research. Thus, the

^{1.} The term business process change comprises radical and continues changes (Grover, Kettinger, & Teng, 2000).

objective of this paper is to identify the main differences between private and public sector BPC implementations as reported in 128 case studies. This leads us to the formulation of the following research question:

What are the key differences between public and private sector BPC implementations and what can we learn from them?

The paper is organized as follows. In chapter 2, we summarize the related work on private and public sector BPC implementations. After illustrating our methodology in chapter 3, we present and analyze our results in chapter 4. In chapter 5 we highlight the key differences of public and private sector BPC practices as identified in the 128 case studies, and discuss how both sectors could learn from each other. We conclude our research in chapter 6 by summarizing the germane implications and limitations of our work.

RELATED WORK ON PRIVATE AND PUBLIC SECTOR BPC

Process scope definition. Identifying and delineating a proper scope for change projects is recognized as being of crucial importance in private sector BPC (Grover, Jeong, Kettinger, & Teng, 1995; Hall, Rosenthal, & Wade, 1993). The set of processes affected may vary according to the focus of the change and the nature of the organization. Processes may differ in several aspects, including the concerned entities, handled objects and involved activities (Davenport & Short, 1990). As many processes in the public sector involve various different functional departments and - in turn - the effects of a process are often multi-dimensional (Halachmi & Bovaird, 1997), most BPC efforts include interfunctional processes into their scope. Further, since processes in public administrations are primarily grounded in laws and legal guidelines, they tend to handle informational (rather than physical) objects. The delineation of the processes to be included into a public BPC effort may be significantly hindered as regulatory and legislative constraints and a multitude of stakeholders complicate matters. In general, public organizations wield far less control over their processes (Dennis, Carte, & Kelly, 2003) than private entities, rendering proper process scope delineation even more crucial in order to avoid project failure.

Intended vs. achieved improvements. Private BPC initiatives typically aim for improved productivity, cost reductions, customer service quality increases or decreases in cycle times (Grover et al., 1995). This is a direct result of private businesses' fate being coupled to their ability to fulfill customer needs and subsequently generate customer satisfaction. Concurrently, businesses strive to minimize the resources input required for achieving this goal. Public administrations are not primarily guided by their customers' (or citizens') wishes as they are bound to follow procedures stipulated by laws and guide-lines. Also, operating within preset budgets, public administrations do not feature the

same motivation for efficiency gains as do entities in the private sector, where every saved resource positively impacts the bottom line. Yet, productivity enhancement has been playing a role in public sector BPC (Halachmi & Bovaird, 1997). While Gulledge & Sommer (2002) even designate "increased efficiency and effectiveness" the "primary benefit" of business process management in the public sector, BPR may oftentimes be regarded rather as a means of rightsizing government, cutting red tape, and reducing bureaucracy (Otenyo & Lind, 2006).

Decision to change. In the private sector, both senior leadership support and employee involvement are accepted as essential prerequisites for the success of BPC projects (Grover et al., 1995; Zairi & Sinclair, 1995). Work by McAdam & Donaghy (1999) suggests top management support and understanding being of similar importance in the public sector. In spite of public managers usually being much more restricted in their initiation of BPC initiatives as laws and legal guidelines do not leave a lot of creative leeway, BPC projects in the public sector still depend on strong management support. Further, the multifaceted nature of public organizations may an indicator for employee and stakeholder influence in public BPC projects. Indeed, MacIntosh (2003) notes that "public sector BPR projects tend to be more participative in nature with greater emphasis on consultation and consensus."

Change management. Managing change is essential for any organization striving to significantly restructure or redesign its processes (Grover, 1999; Todnem By, 2005). Established as a success factor in private sector BPC (Grover, 1999; Zairi & Sinclair, 1995), adequate change management should pay equal benefits in the public sector. Due to the processes of public organizations being prescribed in detail by binding laws and regulations, the need for accountability, transparency and the strict adherence to any given provisions is much more pressing than in the private sector. Systematic Change Management offers the tools necessary for the documentation, tracking and auditing of any changes made to the organization's process landscape. Regarded as important in the private sector (Kennedy, 1994), management the human aspect of change is also a central element of public BPC projects, accounting for the aforementioned focus on stakeholders and employees.

Project management. For private organizations, systematic project management has been found to be crucial to BPC success (Grover et al., 1995). The narrow legal corridors in which public organizations operate when implementing change as well as the need for managing manifold stakeholder interests and subsequently achieving viable consensuses (MacIntosh, 2003) make an even stronger case for formal project management measures.

Management of resources. As difficulties in securing and forecasting required resources may hinder BPC efforts (Grover et al., 1995), resource management is a key success factor in private BPC (Al-Mashari & Zairi, 1999). With control over resources in public organizations often being distributed across various stakeholders (Scholl, 2004) and flexibility in resource allocation tending to be relatively low, long-sighted resource management is at least equally necessary in order to prevent bottlenecks that could endanger the whole change effort.

Interdepartmental integration. Private businesses have a long history of interfunctional integration fostered by increasing process orientation. As processes in private organizations oftentimes cross functional boundaries, BPC projects need to do the same (Grover et al., 1995). In the public sector, the distribution of responsibilities across different departments as well as complex links between organizations (Parys & Thijs, 2003) call for an equally cooperative approach.

Volatilities. Risk factors and the effects of volatility have been thoroughly analyzed in the private sector (Gemino, Reich, & Sauer, 2007). While comprehensive insights for the public sector are lacking, it has been found that policy changes may have incisive effects (Hutton, 1996) and elections and appointments may introduce a relatively high fluctuation into management (Halachmi & Bovaird, 1997).

Performance. Cao, Clarke, & Lehaney (2001) point out the the high failure rates of BPC projects in the private sector. In contrast, Scholl (2004) finds public BPC projects to be more successful than their private counterparts. However, while being more successful, public BPC projects often also take longer. Scholl (2004) attributes this to "elements of distributed control and accountability", rendering public sector change "intrinsically more complex than most private-sector BPC projects". Hutton (1996) points out the danger of unrealistic expectations in public change projects. As BPC may require the merging, automation and elimination of processes (Stemberger, Kovacic, & Jaklic, 2007), the nature of public administration requires the surrounding political conditions to be considered before applying any modifications (Halachmi, 1995). The myriad of stakeholders involved in many public projects and the scrutiny of public opinion render public projects more vulnerable to changes in their environment and expectations, potentially putting a further strain on success rates. When it comes to assessing success, Halachmi & Bovaird (1997) lament the merely "symbolic" setting of objectives in the public sector, which cloud the view on actual public BPC success rates.

In summary, findings relating to success factors, risks and best practices in BPC are much more numerous and well-supported for private sector applications. Yet, most concerns valid for BPC projects in the private sector seem to be of similar importance when dealing with their public counterparts. While there appear to be some differences in character (*process scope, intended improvements*), most aspects deserving attention in private sector projects also appear to play a major role when initiating change in public organizations, albeit sometimes for different reasons (*change management, resource management*). Certain influences, such as *volatilities*, still pose a relatively blank sheet to public sector BPC research.

RESEARCH DESIGN

We conduct a meta-case analysis (Larsson, 1993), in order to identify the key differences between public and private sector BPC implementations. This method turned out to be particularly useful for our research, because it represents a powerful technique for identifying patterns across case studies (Larsson, 1993; Lucas, 1974). Our meta-case analysis comprises the following three steps: (1) the selection of existing case studies relevant to our research question; (2) the conversion of qualitative case descriptions into quantified values; and (3) a descriptive analysis of data that emerge from the coding procedure.

Case selection

Since our research goal was the identification of the key differences between private and public BPC initiatives, we had to look closer at the empirical literature that provides details of such BPC initiatives. Thus, we applied a detailed screening of literature for case study descriptions of BPC projects. We used the key words "business process", "business process change", "business process reengineering" and "business process transformation" as the initial selection criteria. In addition, we combined each key word with the appendix "case study". After the initial literature screening, we identified more than 5000 references for each combination of key words and "case study". These were found through traditional channels (e.g., libraries), conference proceedings, online database services (e.g., Emerald, EBSCO, Science Direct and Google Scholar), consulting journals, and other web search tools. To determine the relevancy of these articles, we further explored titles, abstracts, and keywords. After this step, the sample originally aimed to include 217 articles describing BPC projects. However, making sure that apples are not compared with oranges, we excluded articles with the following attributes: (1) no or very little information about the case; (2) no or very little information about the impact factors for the success of the BPC initiative; and (3) focused on the technology, not on the BPC initiative. After eliminating these case studies, we derived at a final sample of 128 case studies comprising 86 journal articles, 22 book sections, 16 conference articles, 4 theses, 1 magazine article and 1 working paper (a full list of the 128 articles is available upon request from the authors). The final sample consists of a wide set of international BPC initiatives, 92 in private and 36 in public organizations. The articles span the years 1993 to 2012 and have an average length of 14 pages.

Case analysis

As a next step, we transferred the qualitative case descriptions into quantified values. Adapting the coding procedure used by Lacity et al. (2011), we examined the case study sample of BPC implementations in a way that was concise and meaningful. Two experienced raters conducted a frequency coding of the dimensions and related characteristics mentioned in section 2. Before they started coding the selected case studies, both raters coded several pilot cases to become familiar with the coding and compared their coding for calibration purposes. To ensure consistent coding at the outset, we established intercoder reliability. Considering the random error of measurement the observed Krippendorf's (1980) inter-coder reliability was acceptable (R=70.0). After finishing this step, we analyzed the articles by published year and the identified BPC related variables. The empirical insights and the analysis obtained from the meta-case analysis will be presented in the next section.

RESULTS

In the following, we present our findings, which we derived from the analysis of 128 case studies on the topic of BPC. First, we discuss some general findings and characteristics of the publicized cases over the examined period. Second, we present our findings on the differences of process scope and improvement goals. Third, we disclose some interesting results on the differences and similarities of private and public sector change and project management capabilities in BPC projects. Furthermore, we discuss additional variables that influence BPC projects in private and public organizations. Last, we illustrate how the success rates of BPC projects differ between the two sectors.

General findings

Our analysis encompassed literature from 1993 to the present. The term BPC was not defined properly until 1993 (Hammer & Champy, 1993), which might explain the lack of literature matching our search before this date. Considering this groundbreaking shift and the resulting time span comprising almost two decades, we deemed this to be an appropriate cut off for the focus of our literature search.

First, we analyzed the number of publicized cases over the examined period. Regarding the private sector, our results depict a striking spike with 16 articles in 1994, which marks the maximum in the regarded time span. From this year, the number of cases – while fluctuating – declines steadily. In contrast, the results for the public sector indicate three striking spikes. In 1995 five case studies and in 1996 six case studies have been published. Additional peaks exist for the 2001 and 2007 with 4 case studies per year. More so, while the number of articles in the private sector has exceeded the ones in the public sector over almost the entire period, the public sector has not experienced the



Figure 1. Number of relevant cases publicized over the examined period

sharp decline visible in the private sector. Our results reflect that BPC in the public sector has neither received equivalent attention in the past nor reached a state of theoretical saturation. Figure 1 summarizes this comparison.

Process scope definition

What differentiates BPC projects from each other is the degree of improvement sought (Kettinger & Grover, 1995). The degree of changes in BPC projects varies considerably (e.g., with respect to the number of business functions involved) (Ozcelik, 2010). However, it is important to define the change scope appropriately, because "different types of processes require different levels of management attention and ownership, need different forms of IT support, and have different business consequences when redesigned" (Davenport & Short, 1990). There are three major dimensions that can be used to define the scope of a process. These are the organizational entities or subunits involved in the process, the type of objects manipulated in the process, and the type of activities taking place in the process.

Our results show that the process scope differs considerably between the private and the public sector (see table 1). Private organizations are more likely (27%) to engage in an interorganizational BPC project than public organizations (19%). This is surprising, because government agencies are required by law and regulations to work across boundaries, which leads to extensive interorganizational information sharing (Fountain, 2001; Jurisch, 2011). But due to the numerous stakeholders involved in such interorganizational processes, it becomes more difficult to reach a consensus between all the levels of

Pr	ocess scope	Private	[% no.]	Public	[% no.]
Entities	Interorganizational	27%	(25)	19%	(7)
	Interfunctional	84%	(77)	92%	(33)
	Interpersonal	66%	(61)	50%	(18)
Object	Physical	27%	(25)	5%	(2)
	Informational	55%	(51)	72%	(26)
Activities	Operational	53%	(49)	64%	(23)
	Managerial	25%	(23)	28%	(10)

Table 1. Process scope

authority and various departments and thus commit to a common interorganizational BPC project (Thong et al., 2000). This may also explain why most public (92%) BPC projects focus on interfunctional processes. Interfunctional processes are within (internal to) the organization, but cross several different functional or divisional units (Davenport & Short, 1990). In addition to being interfunctional most processes also had an interpersonal dimension (i.e., Thong et al., 2000).

Furthermore, the processes selected for change can also be categorized by the types of objects they address (Davenport & Short, 1990). Due to the nature of business in the public and the private sector it is not surprising that most processes manipulate an informational (public 72%, private 55%) instead of a physical object (public 5%, private 27%). Most public processes create or manipulate information. Some processes also require the combination of both physical and informational objects (Davenport & Short, 1990).

The types of activities a process supports can be either operational or managerial. Our findings for the public and the private sector show that most activities which are in the focus of BPC projects are operational (e.g., private (53%), public (64%). An interesting discovery was that in the public sector the change of managerial activities was rarely the sole focus of a BPC project. Instead managerial activities were usually altered as a result of operational changes (i.e., Currie & Willcocks, 1996; MacIntosh, 2003)

Intended versus achieved improvements

In the private sector, most activities are ultimately aimed at satisfying the customers' needs and expectations (Goldkuhl & Lind, 2008). Lacking such a concise concept of "value" (Otenyo & Lind, 2006), public administrations are primarily guided by their mission to execute laws and legal ordinance (Grimmer, 2004). As a result, increasing customer satisfaction is not a primary concern of public agencies (Jurisch et al. 2012). It has also been argued that public organizations have less interest in reducing costs and

	Private [% no.]			Public [% no.]				
Improvement goals	Intended		Achieved		Intended		Achieved	
Productivity	32%	(29)	33%	(30)	39%	(14)	19%	(7)
Integration	35%	(32)	38%	(35)	28%	(10)	17%	(6)
Customer satisfaction	35%	(32)	34%	(31)	47%	(17)	28%	(10)
Delivery reliability	20%	(18)	11%	(10)	8%	(3)	3%	(1)
Complexity	20%	(18)	16%	(15)	31%	(11)	19%	(7)
Reduction of costs	51%	(47)	45%	(41)	56%	(20)	44%	(16)
Quality of products and services	53%	(49)	24%	(22)	64%	(23)	28%	(10)
Cycle time	42%	(39)	43%	(40)	50%	(18)	53%	(19)
Employee satisfaction and morale	26%	(24)	32%	(29)	22%	(8)	31%	(11)

Table 2. Intended vs. achieved improvements

improve operating efficiency, because they rely more on appropriations and less on market exposure (Thong et al., 2000).

However, our results indicate that private and public organizations are guided by surprisingly similar improvement goals (see table 2). The top three objectives of public and private organizations in BPC projects were the reduction of costs (56%), reduction of cycle times (50%) and the improvement of product and service quality (64%). In fact, the targets of public agencies were set even higher than those of private organizations.

Another unexpected and valuable discovery in our data was the increase of employee satisfaction and morale. Even though only 26% of private and 22% of public projects intended to improve employee satisfaction, more than 30% of these projects in both sectors actually achieved this goal. This is interesting, because particularly in the public sector resistance to change is allegedly very high (Thong et al., 2000). But in the end, employees appear to be rather satisfied with the results of the BPC. Thus, the satisfaction of employees with new tasks and changed routines can be a positive side product of a BPC project.

The major difference between private and public BPC projects lies in the ratio of intended and achieved improvement goals. For instance, 47% of public BPC initiatives aimed at increasing the satisfaction of their customers, but only 28% of the projects achieved this goal. On the contrary, only 35% of private BPC projects intended to improve customer satisfaction, whereas 34% achieved this goal. The same holds true for other intended improvements in public BPC projects (e.g., productivity and integration of information systems). One explanation for these results may be that performance measurement and management of BPC projects is not as strongly enforced in public as in private organizations. The following example illustrates this problem:

"Due to the complex multifunctional nature of the [public] organization's work, the reengineering team found difficulty selecting quantifiable performance measures/outcomes whereby improvements could be measured" (McAdam & Donaghy, 1999b).

However, defining and measuring the value public BPC projects is often harder than in the private sector. One reason for this is that public administrations produce their value for a more complex cast of actors (e.g., citizens, companies, other agencies, politicians, interest groups, etc.) and each of them has their unique interests. Public organizations have the unenviable task of having to meet a multitude of, often inconsistent, interests and aims with a very restricted budget (Llewellyn & Tappin, 2003). For instance, assuming a public agency aims to cut police-payroll days in order to reduce their costs. This agency has to keep in mind that the public is more likely to be concerned about the incidence of crime (Johnson & Scholes, 2001). Thus, measuring the performance of a public BPC project is not always a straightforward task.

DECISION TO CHANGE

The decision to embark on a BPC project should be strongly supported by the senior management and their employees (Grover, 1999; Jurisch et al. 2012). If senior management fails to provide the project with the necessary empowerment, the project will not produce the anticipated results (Schwarzer & Krcmar, 1995). This applies equally to private as well as public BPC projects. Senior management support is indispensable for overcoming resistance to change, maintaining stakeholder commitment and managing difficulties (Scholl, 2004). The analysis of our results disclosed that senior management support and commitment to BPC projects is higher in public (72%) than in private (58%) organizations (see table 3). In addition, in 56% of public and 47% of private projects senior management had a clear vision and an understanding of the change initiative. These results are rather surprising since achieving commitment to a public BPC project is considered more difficult because of the often larger number of 'process- specific' stakeholders (Halachmi & Bovaird, 1997). In the public sector, process ownership is not only internal to the agency but also external. Thus, senior public managers have to achieve commitment within the public agency, within government and outside government (e.g., among its customers). Getting consent and achieving commitment to a BPC project is a difficult task, which involves the building of a winning coalition (Halachmi & Bovaird, 1997; Thong et al., 2000).

However, the high senior management support in public organizations might explain the higher numbers of employees that committed to BPC projects (19%). Whenever employees see their senior managers on board, committing both time and effort to the change, their commitment to the change and morale support will be more likely Table 3. Decision to change.

Items	Private [% no.]	Public [% no.]
Senior management support	58%	(53)	72%	(26)
Senior management vision/understanding	47%	(43)	56%	(20)
Employee support	9%	(8)	19%	(7)

(McAdam & Donaghy, 1999; Thong et al., 2000). The following example illustrates this effect:

"They [the senior managers] were very keen on the process right from the start and very responsive when- ever information was requested from them. This extensive involvement contributed to the increased communication and understanding of staff at all levels" (Lai, Khoong, & Aw, 1999).

Additionally, Kelman (2005) asserts that resistance to change should not be overestimated in the public sector. A significant number of public service employees actually welcomed reforms, and their support for a BPC project only needs to be "unleashed" by their senior managers (Fernandez & Rainey, 2006).

Change management

Launching a BPC initiative is not likely to succeed if the people and the structure of the organization are unprepared for and incapable of change. Change management refers to the processes employed on a BPC project to ensure that changes are carried out in a visible, controlled and orderly way. In that sense, change management comprises communication and motivational activities, undertaken to govern the effects of BPC systematically (Kettinger & Grover, 1995). Interestingly, both public (36%) and private (31%) organizations rely on change management methods and tools to ensure the success of their BPC initiative (see table 4). Additionally, both sectors rely on intensive training of their employees to support the change. Training is often employed to minimize resistance to change, which is allegedly higher in public organizations, and to provide psychological support (Fernandez & Rainey, 2006). Next to training, effective communication is a necessary element in getting the members of the organization to embrace change. Our findings show that private organizations (55%) invest a little more effort in communicating the need for and desirability of change to convince their employees of the necessity for change. The following statement exemplifies the positive effects of communication:

"Interviewees described various aspects of stakeholder involvement, for example, via ongoing communication and participation. Demonstrating a

Items	Private [% no.]		Public [% no.	
CM methods and tools	36%	(33)	31%	(11)
Training to support change	57%	(52)	61%	(22)
Communication	55%	(51)	47%	(17)
Individual capacity for change	37%	(34)	19%	(7)
Organizational capacity for change	25%	(23)	11%	(4)

Table 4. Change management and learning capacity

project's potential benefits to stakeholders reportedly increases stakeholder support and mitigates change resistance" (Scholl, 2004).

A surprising result was that public organizations as well as their individuals have less faith in their capacity to change. Meyer and Stensaker (2006) state that organizations that have a capacity for change have the ability (resources and capabilities) to change, but also the capability to maintain daily operations and implement subsequent change processes. However, the capacity to change can be build up by an organization through experience with BPC (Meyer & Stensaker, 2006). One explanation for the lower capacity for change in public organizations could be that they have had less experience with BPC than private organizations (see figure 1).

Project management

The quality of the project management impacts the success of a BPC project, and thus the performance of the changed business processes, which then may lead to improved organizational performance (L Crawford, 2005). Our results illustrate that private organizations rely more heavily on project management methods and tools (54%) as well as a formalized project governance structure (59%) (see table 5). Crawford (2005) advocates that ideally the project governance and business-as-usual governance should not be identical. However, governance is a difficult issue in public administration. The numerous actors involved in public sector BPC projects often impede a clear and formal commitment to governance principles and rules (Fountain, 2007). As Gulledge & Sommer (2002) note, the presence of strict hierarchies in bureaucratic institutions presents a hindrance to project management in general. The following statement exemplifies this issue:

"While senior managers may agree in principle to collaborate, in practice middle managers from separate agencies carry out the work of integration and often have goals that are not aligned with those of the [...] project" (Fountain, 2007).

Project management	Private [% no.]		Public	[% no.]
Governance structure	59%	(54)	42%	(15)
PM methods & tools applied	54%	(50)	31%	(11)
Resource forecasting	9%	(8)	17%	(6)
Managing stakeholder interests	22%	(20)	25%	(9)
Managing project risks	17%	(16)	25%	(9)

Table 5. Project management

The analysis of the case studies revealed that public organizations invest more effort than private organizations in resource forecasting (17%), managing stakeholder interest (25%) and project risks (25%). Public sector BPC projects often face greater restrictions in acquiring resources and funding, particularly on a short-term notice (MacIntosh, 2003). Consequently, they have a greater need for forecasting and planning necessary resources for improvement. Often, the resources necessary for a BPC project have to be planned a year ahead of time – whenever the agency's annual budgets are defined. A lack of adequate resources can result in implementation errors, higher levels of stress, and neglect of core activities and functions (Fernandez & Rainey, 2006). Managing stakeholder interests and risks is even more important in the public than in the private sector due to frequent changes imposed by elections and political appointments (Thong et al., 2000).

Management of resources

The resources available to a project have a direct impact on the project's success. The kind of resources (e.g., technical, human, financial or others) available to an organization for completing specific tasks often directly impacts the success of BPC initiatives (Ray, Barney, & Muhanna, 2004). The term resource is not only tied to material goods but also includes immaterial goods such as the organizations' human resources and their knowledge, skills, know-how and talent (Barney, 1991) (Olalla, 1999). Our findings show that the employees' expertise available to the BPC project was considerably higher in the public (39%) than in the private sector (24%) (see table 6). Existing structures and hierarchies in public organizations may have been in place for decades and have not faced any pressure to change in the past (Jurisch et al., 2012). The more rigid organizational structures of public organizations often result in less employee turn-over than in private organizations. As a result, public service employees often possess a better understanding of government culture, structures and processes than external experts (Scholl, 2004). This might also explain why public agencies are less likely to rely on the support of external consultants (42%) than their private counterparts (58%). However, what public employees often lack is BPM specific expertise, which forces them to seek external know-how

Items	Private [% no.]		Public [% no.	
Employee expertise	24%	(22)	39%	(14)
Consulting support	58%	(53)	42%	(15)
Project manager expertise	17%	(16)	11%	(4)
IT hardware and software	34%	(31)	50%	(18)
Budget	8%	(7)	5%	(2)

Table 6. Human, IT and financial resources.

on this matter (Niehaves, 2010). Experiences from the private sector also show that the involvement of external consultants frequently results in knowledge transfer from external technical experts to internal experts (Markus, 2001).

Many researchers have highlighted the importance of the project manager's expertise to project success (Lynn Crawford, 2006). The lack of an experienced project manager presents a lack of knowledge resources, which poses considerable risks to a BPC project (Gemino, Reich, & Sauer, 2007). The analysis of the case studies discloses that the expertise of public project managers (11%) is marginally lower than those in private organizations (17%). One explanation for this difference may be that public BPC projects are often more complex and riskier in nature (Cats-Baril & Thompson, 1995). The project managers of such information-rich projects need special skills in order to be effective. However, effective project management training is rare in the public sector (J. Becker et al., 2012).

An interesting result of our analysis was that public organizations (50%) experienced fewer difficulties in acquiring IT hardware and software which were necessary for the implementations of the BPC project. On the contrary, both public (5%) and private (8%) project managers rarely ever had the required financial resources available. Instead compromises had to be made. In the public sector, money is not only an economic factor but also a public power factor. Public organizations are empowered by their citizens to invest that money through political processes (Johnson & Scholes, 2001). In order to avoid misuse and abuse of public power through unreasonable spending, budgets are often scarce for risky projects such as BPC.

Interdepartmental integration

By building on the experiences of past projects, subsequent BPC projects could achieve higher success rates and even reduce resource expenditures (Jurisch et al., 2012). Therefore, it is surprising that only 39% of public case studies reported that they cooperated with other departments throughout the change project (see table 7). In contrast to the private sector, knowledge accumulated among public managers is usually kept within the respective organization and not shared for the benefit of interested parties.

Interdepartmental integration	Private [% no.]		Public [% no.	
Cooperation	46%	(42)	39%	(14)
Formal integration	26%	(24)	17%	(6)

Table 7. Interdepartmental integration throughout BPC projects.

Interdepartmental rivalries (at both political and administrative levels) and unintegrated information systems often hinder the cooperation and collaboration of different public departments (Bannister, 2001). In addition, public departments are often reluctant to give out data on past projects, because they are "frequently tied to funding, political agendas, legal guidance, and public demand, and the resulting data are increasingly used to justify or advocate for certain stances on policy, law, programs, and so on" (Drake, Steckler, & Koch, 2004). Furthermore, in order for public organizations to collaborate with each other requires information systems which support this exchange of ideas. Our findings show that formal integration of the information systems of different departments throughout the BPC project was more frequent in private (26%) than in public (17%) organizations.

Volatilities

None of the public sector case studies reported a change of the executive sponsor throughout the BPC project (see table 8). This a surprising finding, since other researcher have proposed that more senior management turnover happens in the public sector due to elections and changing political appointments (Halachmi & Bovaird, 1997; Thong et al., 2000). Our findings disclose that in fact executive sponsor volatility is more frequent in the private sector (8%). This discovery is probably linked to the more volatile competitive environment which private organizations are exposed to. The results show that volatilities due to changes in the competitive environment were more frequent in the private (18%) than in the public sector (8%). On the contrary, public organizations (14%) were affected more frequently by changes in the strategy. It appears that 'no selfrespecting senior figure of a public sector organization would be without a strategy, vision or mission statement' (Newman & Clarke, 1994). Hence, frequent changes of government appointments may result in conflicting concerns and expectations and thus result in changes of a strategy.

One problem that every public BPC project is exposed to is the multitude of purposes that public organizations have to serve. As a consequence, political interests and visible outcomes are sometimes more important, depending on the political orientation of those involved, than measurable improvements (Kock & McQueen, 1996). Thus it is

Table	8. Vol	latilities.
-------	--------	-------------

Volatilities	Private [% no.]		Public [% no.	
Executive sponsor volatility	8%	(7)	0%	(0)
Competitive environment volatility	18%	(17)	8%	(3)
Strategy volatility	4%	(4)	14%	(5)
Political/ governmental volatility	8%	(7)	17%	(6)

not surprising that political/ governmental volatilities are more frequent in public (17%) than in private (8%) BPC projects.

Performance of BPC projects

Our analysis discloses that 60% of public and 70% of private BPC projects were identified as successful (see table 9). In contrast, 6% (9%) of BPC endeavours in the public (private) sector were deemed a failure. A higher percentage of public projects remained incomplete (23%) than of private projects (14%). No data on this criterion could be obtained of 11% (public) and 7% (private) of cases respectively.

A lower percentage of public projects (60%) was assessed as successful than in the private (70%) sector. This result conflicts previous statements that public BPC projects have higher success rates due a more inclusive approach (Scholl, 2004). But while fewer projects may succeed in the public sector, our results also show that fewer projects are declared as unsuccessful (6%). This seeming contradiction is resolved by the circumstance than in the public sector many projects remained incomplete, thus never reaching the actual stage of ex-post assessment. We attribute this finding to the projects being subject to the inherently more inert nature of the public sector, causing many projects to fizzle out as legislative periods end, decision-makers are replaced, political trends change or project objectives become obsolete due to changed legislature.

Assessment	Private [% no.]		Public [% no.]	
Successful	70%	(67)	60%	(21)
Unsuccessful	9%	(9)	6%	(2)
Incomplete	14%	(13)	23%	(8)
n.a.	7%	(7)	11%	(4)

Table 9. Success assessments of the examined cases.

DISCUSSION

Past research shows there are two more or less distinct approaches to public sector BPC research. One stream of research has been arguing that the public sector should learn from the experiences made in private BPC projects (Halachmi, 1995; Halachmi & Bovaird, 1997; Scholl, 2004). Another group of researchers has argued in favor of public-sector specific models and approaches (Becker, Algermissen, & Niehaves, 2004; Sharafi, Jurisch, Ikas, Wolf, & Krcmar, 2011; Stewart & Walsh, 1992). They argue that the often oversimplified private sector models disregard the distinctive purposes, conditions and tasks of the public sector. However, the situation is not that black and white. Both public and private organizations have accumulated considerable experiences with BPC in the last decades that the other sector could benefit from. Why should learning only work one-dimensional - from private to public? Our results show that there are certain factors that public administrations appear to have more experience in, while there are others that private organizations are more accomplished in. We propose that both public and private organizations may actually from one another's BPC implementations. This is particularly important when considering that public and private sectors are not two distinct and internally homogenous domains. In fact, few organizations are purely public or purely private. Most organizations sit somewhere on a continuum between these two extremes (Johnson & Scholes, 2001). For instance, numerous new mixed forms of collaboration have been created between public and private organizations (e.g., private-public partnerships). The increasing investment of the private organizations into the public sector is likely to even increase this spectrum of private-public forms of cooperation. Llewellyn and Tappin (2003) assert that "private sector sponsorship is, already, a significant phenomenon across the public sector". Thus, it is important that both public and private organizations understand why they might have been historically better in certain aspects of managing change and what they can learn from the other sector. Figure 2 summarizes the unique characteristics of BPC implementations for each sector, which identified throughout our analysis.

In the following sections we discuss the unique factors of each sector and how both sectors can learn from each other.

Unique public sector BPC characteristics

The public sector has collected experiences from BPC implementations for almost two decades. Public sector BPC projects are confronted with different organizational and environmental settings than in the private sector. As a result, certain aspects of managing change have received more attention. For instance, public organizations have the unenviable task of having to manage a multitude of, often inconsistent, interests and aims of internal and external stakeholders when embarking on a BPC initiative (Llewellyn & Tappin, 2003). As a result, public organizations often invest considerable efforts in



Figure 2. Unique characteristics of private and public sector BPC implementations.

managing stakeholder interests and building support for change, before the start of a change project. Getting consent and achieving commitment from internal and external stakeholders is a difficult task and requires strong leadership and employee support (Hal-achmi & Bovaird, 1997; Thong et al., 2000). This skill set of the public sector in managing a multitude if stakeholder interests could also be beneficial to private organizations, since more and more private companies embark on business network transformations (Word, 2009) requiring a large number of external stakeholders to collaborate (e.g., supplies, producers, etc.).

Another factor in which public organizations invest considerable effort is the resource forecasting and planning for BPC projects. Due to stringent annual budgets public agencies face extreme resource dependencies (Johnson & Scholes, 2001). Consequently, resource allocations have to be planned before BPC initiatives even commence. This includes clear budget estimates for IT hardware and software, since budget alterations throughout the project are rather difficult. This does not imply that the resources available are always sufficient (see table 6), but rather that resource planning is more essential than in private organizations.

Frequent changes of government appointments and changing political agendas result in higher strategy and political/ governmental volatility. Little is known what exactly the impact of these volatilities on the performance of BPC is. The results show that public agencies invest more efforts in managing project risks to face such volatilities (see table 5). Private organizations could benefit from these experiences. According to Baldry (1998) public projects rely on a wide range of techniques and methods for managing risks. However, risk management research for public sector projects is still rare. Further research is needed in order to clearly identify the risks imposed by strategy and political volatilities to BPC projects. Only then can the right risk management techniques and methods be adopted.

Unique private sector BPC characteristics

Within the public sector well and often standardized methods and techniques for managing change have emerged. These methods are used for the analysis of processes and workflows, for measuring the performance of projects but also for project management and change management (Kettinger, Teng, & Guha, 1997). Public BPC projects could also benefit from the use of such standardized methods and techniques. However, our results disclose that public agencies are less likely to rely on classic project and change management methods (see table 4 and 5). Instead public projects often create "completely new methods without expending any detailed analysis" (Scholl, 2004). The use of more standardized methods and tools might, however, have a positive effect on the performance of public BPC projects.

A key factor influencing the results of a BPC initiative is the capacity to change (Halachmi & Boyaird, 1997). The perceived capacity of private organizations and their employees appears to be much higher than in public institutions (see table). Change capacity refers to the ability of an organization to undertake and survive change (Meyer & Stensaker, 2006). Frequent change experiences can create an understanding for change and thus enhance the capability for change. Private organizations face change almost on a 'daily' basis as a result of constantly changing customer demands, new competitors, rapid developments of new technologies as well as shortened product lifecycles (Abdolvand, Albadvi, & Ferdowsi, 2008; O'Neill & Sohal, 1999; Terziovski, Fitzpatrick, & O'Neill, 2003). In contrast, the concept of change is still rather new to the public sector. Bevir, Rhodes and Weller (2003) stated that traditions and practices are rather fixed and static, because public agencies have not met nor faced many novel circumstances in the past. Specific methods and techniques exits in the private sector for building a capacity for change from which the public sector could benefit from. However, the development of capacity for change is closely related to the establishment of a learning organization. But this would require a cultural change, which might need a lot of time (Scholl, 2004).

The interdepartmental integration and cooperation of different departments in private BPC projects is very important since it facilitates the learning from past failures and successes (Jurisch et al., 2012). This includes the better anticipation of risks, lower costs due to reusable artifacts and more effective implementations based on documented best practices. In contrast to the private sector, the knowledge accumulated among public administrations is usually kept within the respective organization and not shared for the benefit of interested parties. Yet, the sheer number of merely horizontally separated – and thus similarly structured – public institutions demonstrates the potential of integrated knowledge management platforms documenting BPC experiences in the public sector. This platform could document common risks, outline best practices, share reusable documents and assist in the formation of realistic expectations regarding the benefits of BPC. By building on the fundamentals provided by past projects, subsequent BPC projects in the public sector may achieve higher success rates with similar or even reduced resource expenditures.

CONCLUSION

With this research paper we consolidated the experiences of 128 BPC related case studies from the private and public sector. We identified the relevant differences between the sectors in BPC implementations. For instance, private sector organizations are more likely to embark on interorganizational change projects. More so, the ratio between intended versus achieved improvements appears to be higher in the public sector. On the other hand, public organizations invest more efforts in establishing commitment to their BPC projects, which results in higher senior management and employee support. However, public BPC projects are more likely to be exposed to strategy or political/ regulatory volatilities due to a highly politicized environment. We also identified some interesting differences between the sectors. For instance, the improvement goals which guide BPC projects are rather similar between both sectors (e.g., cost cutting and quality of services/ products). We synthesized the identified differences into unique characteristics of public and private sector BPC implementations. Finally, we discussed how both sectors could learn from each other.

Implications

Our paper has the following research implications. It provides the first attempt to comprehensively analyze and exploit the rich knowledge discussed in BPC case studies. So far, most reports on BPC projects were primarily case study or literature based. The use of a meta-case analysis enabled us to analyze a pool of 128 BPC projects simultaneously. The results of this meta-case analysis will expand the current knowledge and literature on the differences and challenges in public and private sector BPC implementations.

The established knowledge on the differences in public and private sector BPC implementations can also provide guidance to practitioners. We summarized the unique characteristics of private and public sector BPC implementations. The results of our analysis regarding the specific characteristics of the public sector call attention to the need for an appropriate implementation strategy. Our findings may assist practitioners in the public sector to timely identify obstacles and impediments to their efforts and aid in the understanding of the underlying circumstances. Highlighting the need for top-down support of BPC initiatives, we encourage decision makers in the public sector to review the potentials of BPC for their organizations and initiate activities where appropriate.

Limitations

We identified the following limitations for our research. First, due to restricted institutional access to some journals, we were not able to investigate all articles that appeared to be relevant for our research. Second, even though the coding and interpretation of the articles was validated by inter-coder reliability, the process is still to some extent subjective and research bias may occur. Third, another limitation of our research is that our meta-analysis is solely based on the written and published evidence. Some authors may have actually discovered additional BPC factors throughout their case studies, but did not report them in their publications. Fourth, the case studies analyzed within this paper report primarily successful BPC implementations. Consequently, our results may paint an overly positive picture of BPC implementations. Last, this research only relied on simple descriptive statistics in form of frequency counts. This statistical analysis does not allow us to make statements on relations and dependencies of the factors analyzed.

REFERENCES

- Abdolvand, N., Albadvi, A., & Ferdowsi, Z. (2008). Assessing readiness for business process reengineering. *Business Process Management Journal*, 14(4), 497–511. doi:10.1108/14637150810888046
- Al-Mashari, M., Irani, Z., & Zairi, M. (2001). Business process reengineering: a survey of international experience. Business Process Management Journal, 7(5), 437–455.
- Al-Mashari, M., & Zairi, M. (1999). BPR implementation process: an analysis of key success and failure factors. *Business Process Management Journal*, 5(1), 87–112. doi:10.1108/14637159910249108
- Baldry, D. (1998). The evaluation of risk management in public sector capital projects. *International Journal of Project Management*, 16(1), 35–41. doi:10.1016/S0263–7863(97)00015–X
- Bannister, F. (2001). Dismantling the silos: extracting new value from IT investments in public administration. *Information Systems Journal*, 11(3), 65–84.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.
- Becker, J., Hofmann, S., Jurisch, M.C., Knackstedt, R., Krcmar, H., Räckers, M., Thome, I., et al. (2012). Prozessorientierte Verwaltung – Status quo und Forschungslücken. *Proceedings Fachtagung Verwal*tungsinformatik (FTVI). (pp. 61–72).
- Becker, Jörg, Algermissen, L., & Niehaves, B. (2004). Organizational engineering in public administrations. In H. M. Haddad (Ed.), *Proceedings of the 2004 ACM Symposium on Applied Computing* (pp. 1385–1389). New York, New York, USA: ACM Press.
- Bevir, M., Rhodes, R. A. W., & Weller, P. (2003). Traditions of Governance: Interpreting the Changing Role of the Public Sector in Comparative and Historical Perspective. *Public Administration*, 81, 1–17.
- Cao, G., Clarke, S., & Lehaney, B. (2001). A critique of BPR from a holistic perspective. Business Process Management Journal, 7(4), 332-339.
- Cats-Baril, W., & Thompson, R. (1995). Managing information technology projects in the public sector. *Public Administration Review*, *55*(6), 559–566.

- Crawford, L. (2005). Senior management perceptions of project management competence. *International Journal of Project Management*, 23(1), 7–16.
- Crawford, L. (2006). Developing organizational project management capability: Theory and practice. *Project Management Journal*, 37(3), 74–97.
- Currie, W. L., & Willcocks, L. (1996). The New Branch Columbus project at Royal Bank of Scotland: the implementation of large-scale business process re-engineering. *The Journal of Strategic Information Systems*, 5(3), 213–236.
- Davenport, T. H., & Short, J. E. (1990). The New Industrial Engineering: Information Technology and Business Process Redesign. Sloan Management Review, 31(4), 11–27.
- Dennis, A. R., Carte, T. A., & Kelly, G. G. (2003). Breaking the rules: success and failure in groupwaresupported business process reengineering. *Decision Support Systems*, 36(1), 31–47.
- Drake, D., Steckler, N., & Koch, M. (2004). Information sharing in and across government agencies. *Social Science Computer Review*, 22(2), 67-84.
- Fernandez, S., & Rainey, H. G. (2006). Managing Successful Organizational Change in the Public Sector. Public Administration Review, 66(2), 168–176.
- Fountain, J.E. (2007). Challenges to Organizational Change: Multi-Level Integrated Information Structures (MIIS). Governance and Information Technology: From Electronic Government to Information Government. Cambridge, MA.
- Fountain, J.E. (2001). *Building the Virtual State Information Technology and Institutional Change* (p. 251). Washington, D.C.: Brookings Institution Press.
- Gemino, A., Reich, B. H., & Sauer, C. (2007). A Temporal Model of Information Technology Project Performance. *Journal of Management Information Systems*, 24(3), 9–44.
- Goldkuhl, G., & Lind, M. (2008). Coordination and transformation in business processes: towards an integrated view. Business Process Management Journal, 14(6), 761–777.
- Grimmer, K. (2004). Öffentliche Verwaltung in Deutschland: Grundlagen, Funktionen, Reformen; eine problemorientierte Einführung. VS, Verlag für Sozialwissenschaften.
- Grover, V. (1999). From business reengineering to business process change management: a longitudinal study of trends and practices. *IEEE Transactions on Engineering Management*, 46(1), 36–46.
- Grover, V., Kettinger, W. J., & Teng, J. T. C. (2000). Business Process Change in the 21st Century. Business & Economic Review, Jan-Mar 20, 14–18.
- Grover, V., Jeong, S. R., Kettinger, W. J., & Teng, J. T. C. (1995). The Implementation of Business Process Reengineering. *Health care management review*, 12(1), 109–144.
- Gulledge, T. R., & Sommer, R. A. (2002). Business process management: public sector implications. *Business Process Management Journal*, 8(4), 364–376.
- Halachmi, A. (1995). Re-engineering and Public Management: Some Issues and Considerations. International Review of Administrative Sciences, 61(3), 329–341.
- Halachmi, A., & Bovaird, T. (1997). Process reengineering in the public sector: Learning some private sector lessons. *Technovation*, 17(5), 227–235.
- Hall, E. A., Rosenthal, J., & Wade, J. (1993). How to make reengineering. *Harvard Business Review*, (November-December), 119–131.
- Hammer, M., & Champy, J. (1993). *Reengineering the corporation A manifesto for business revolution*. New York: Harper Collins.
- Harrington, B., McLoughlin, K., & Riddell, D. (1998). Business Process Re-engineering in the Public Sector: a Case Study of the Contributions Agency. *New Technology, Work and Employment*, *13*(1), 43–50.
- Hesson, M., Al-Ameed, H., & Samaka, M. (2007). Business process reengineering in UAE public sector: a town planning case study. *Business Process Management Journal*, 13(3), 348–378.
- Hughes, M., Scott, M., & Golden, W. (2006). The role of business process redesign in creating e-government in Ireland. *Business Process Management Journal*, 12(1), 509–515.

- Hutton, G. (1996). "BPR-overcoming impediments to change in the public sector", *New Technology Work* and Employment, 10 (2), 147-51.
- Johnson, G., & Scholes, K. (2001). Exploring Public Sector Strategy (p. 331). Essex, England: Pearson Eductaion Ltd.
- Jurisch, M. C., Cuno, J., Palka, W., Wolf, P., & Krcmar, H. (2012). An Integrative Model of IT-Enabled Business Process Change: Causal Structures in Theory, Research and Practice. *Proceedings of Hawaii International Conference on System Sciences (HICSS - 45)* (pp. 4297–4306). Maui, Hawaii: IEEE Computer Society Press, Los Alamitos, CA.
- Jurisch, M.C., Ikas, C., & Palka, W. (2012). A Review of Success Factors and Challenges of Public Sector BPR Implementations. *Proceedings of Hawaii International Conference on System Sciences (HICSS - 45)* (pp. 2603–1612). IEEE Computer Society Press, Los Alamitos, CA.
- Jurisch, M.C. (2011). Transforming Interorganizational Processes in Public Service Networks. Doctoral Colloquium at the 12th Annual International Conference on Digital Government Research (pp. 1– 5). College Park, Maryland.
- Kelman, S. (2005). Unleashing Change: A Study of Organizational Renewal in Government (p. 308). Washington, D.C.: Brookings Institution Press.
- Kennedy, C. (1994). Re-engineering : The Human Costs and Benefits. Long Range Planning, 27(5), 64-72.
- Kettinger, W.J., & Grover, V. (1995). Special section: toward a theory of business process change management. *Journal of Management Information Systems*, 12(1), 9–30.
- Kettinger, W.J., Teng, J. T. C., & Guha, S. (1997). Business Process Change: A Study of Methodologies, Techniques, and Tools. *MIS Quarterly*, 21(1), 55–80.
- Kock, N. F., & McQueen, R. J. (1996). Is Re-engineering Possible in the Public Sector? A Brazilian Case Study. Business Change and Re-engineering, 3(3), 3–12.
- Krippendorf, K. (1980). Content Analysis. An Introduction to its Methodology. Beverly Hills: Sage Publications.
- Lacity, M. C., Solomon, S., Aihua, Y., & Willcocks, L. P. (2011). Business process outsourcing studies: a critical review and research directions. *Journal of Information Technology*, 26(4), 221–258.
- Lai, Y. F., Khoong, C. M., & Aw, T. C. (1999). Value Innovation Through Business Process Re-Engineering: A & E Services at a Public Hospital. *Knowledge and Process Management*, 6(3), 139–145.
- Larsson, R. (1993). Case Survey Methodology: Quantitative Analysis of Patterns across Case Studies. The Academy of Management Journal, 36(6), 1515–1546.
- Llewellyn, S., & Tappin, E. (2003). Strategy in the public sector: Management in the wilderness. *Journal of Management Studies*, 40(4), 955–981.

Lucas, W. A. (1974). The case survey method: Aggregating case experience. Santa Monica, CA: Rand Corporation.

- MacIntosh, R. (2003). BPR: alive and well in the public sector. International Journal of Operations and Production Management, 23(3), 327–345.
- Markus, M. L. (2001). Toward a theory of knowledge reuse: Types of knowledge reuse situations and factors in reuse success. *Journal of management information systems*, 18(1), 57–93.
- McAdam, R., & Donaghy, J. (1999). Business process re-engineering in the public sector A study of staff perceptions and critical success factors. *Business Process Management Journal*, 5(1), 33–49.
- Meyer, C. B., & Stensaker, I. G. (2006). Developing capacity for change. *Journal of Change Management*, 6(2), 217–231.
- Newman, J., & Clarke, J. (1994). Going about our business? The managerialization of public services. *Managing Social Policy*. (pp. 13–31). London: Sage.
- Niehaves, B. (2010). Open process innovation: The impact of personnel resource scarcity on the involvement of customers and consultants in public sector BPM. *Business Process Management Journal*, 16(3), 377–393.
- Olalla, M. F. (1999). The Resource-based Theory and Human Resources. *International Advances in Economic Research*, 5(1), 84–92.

- Otenyo, E. E., & Lind, N. S. (2006). Comparative public administration: the essential readings. Elsevier JAI.
- Ozcelik, Y. (2010). Do business process reengineering projects payoff? Evidence from the United States. International Journal of Project Management, 28(1), 7–13.
- O'Neill, P., & Sohal, A. S. (1999). Business Process Reengineering A review of recent literature. *Technova*tion, 19(9), 571–581.
- Parys, M., & Thijs, N. (2003). Business Process Reengineering ; or how to enable bottom-up participation in a top down reform programme. *Paper presented at the annual meeting of the European Group of Public Administration*, Lisbon, Portugal.
- Ray, G., Barney, J. B., & Muhanna, W. A. (2004). Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the resource-based view. *Strategic Management Journal*, 25(1), 23–37.
- Scholl, H. J. (2004). Current practices in e-government-induced business process change (BPC). Proceedings of the 2004 annual national conference on Digital government research (p. 10). Digital Government Society of North America.
- Schwarzer, B., & Krcmar, H. (1995). Zur Prozeßorientierung des Informationsmanagements. Wirtschaftsinformatik, 37(1), 33–39.
- Sharafi, A., Jurisch, M.C., Ikas, C., Wolf, P., & Krcmar, H. (2011). Bundling Processes Between Private and Public Organizations: A Qualitative Study. *Information Resources Management Journal (IRMJ)*, 24(2), 28–45.
- Sims, R. R. (2010). *Change (Transformation) in Government Organizations* (p. 328). Charlotte, North Carolina: IAP Information Age Publishing Inc.
- Stemberger, M. I., Kovacic, A., & Jaklic, J. (2007). A Methodology for Increasing Business Process Maturity in Public Sector. Interdisciplinary Journal of Information, Knowledge, and Management, 2, 119–133.
- Stewart, J., & Walsh, K. (1992). Change in the Management of Public Services. *Public Administration*, 70(4), 499–518.
- Terziovski, M., Fitzpatrick, P., & O'Neill, P. (2003). Successful predictors of business process reengineering (BPR) in financial services. *International Journal of Production Economics*, 84(1), 35–50.
- Thong, J. Y. L., Yap, C.-S., & Seah, K. L. (2000). Business process reengineering in the public sector: the case of the Housing Development Board in Singapore. *Journal of Management Information Systems*, 17(1), 245–270.
- Todnem By, R. (2005). Organisational change management: A critical review. Journal of Change Management, 5(4), 369–380.
- Trkman, P. (2010). The critical success factors of business process management. International Journal of Information Management, 30(2), 125–134.
- Word, J. (2009). Business Network Transformation (p. 279). San Francisco, CA: Jossey-Bass.
- Zairi, M., & Sinclair, D. (1995). Business process re-engineering and process management: A survey of current practice and future trends in integrated management. *Business Process Management Journal*, 1(1), 8–30.