CRITICAL SUCCESS FACTORS IN BUSINESS PROCESS MANAGEMENT – A literature review

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Abstract. Assessing the critical success factors (CSF) during a business process management (BPM) effort will help an organization to understand the reasons why a particular BPM effort may succeed or fail. The traditional BPM perspectives have a problem of focusing on internal actions in organizations that seem to contribute to delivering outcomes to customers. Organizations spend time focusing on those actions without realizing that they do not necessarily contribute to successful customer outcomes – emphasis is on fixing the causes of work rather than their effects. The tendency in the field seems to be putting more emphasis on customer-focused results that go beyond basic customer satisfaction measurements, as customer relationships and engagement are better indicators and measures of future success of the organization. This paper goes through the business process management literature from the previous decades and synthesizes the change of focus and the critical success factors in the literature. We find that there has been a watershed period in the 21st century when the focus shifted from Inside-out perspective of organizations to Outside-In. BPM has several challenges over many categories like organizational, managerial, information systems and social problems. This has lead into difficulties of clearly categorizing and making critical BPM factors general. The contribution of this paper is to provide perspective on the business process management capabilities (BPMC) that affect successful BPM endeavors.

Keywords: success factors of BPM, business process innovation, business process management, success factors, process development, business process management capabilities.

1 Introduction

(Business) Process management is almost a hundred years old concept (Shewhart, 1931). The basic idea of business processes and their management has been to create value for the customer through activities in an organization (Hammer & Stanton, 1999) and to fulfill other strategies like generating returns to stakeholders (Guha & Kettinger, 1993; Strnadl, 2006). The development of process methodologies started in the 1970s. Business Process Reengineering/Management (BPR/BPM) and other methods were introduced from the 1990s onwards. Business process management has stayed on the surface of business management concepts throughout the years. According to the latest research, business process management is going to be the top development priority in organizations at least until 2013, and after that change management will take the lead, but BPM will still stay second (Oracle, 2008). Change management and BPM can be seen interrelated since BPM is designed to change the functionalities of the organization with the support of change management.

Palmberg (2009) finds that even the practitioners have different perspectives on what business process management really is. 'Business' refers to the nature of an action, which is to accumulate wealth through one's work. 'Process' is described in different ways depending on the author. At least these components can be identified in different definitions of 'process': input and output, interrelated activities, horizontal: intra-functional or cross-functional; purpose or value for customer, the use of resources, and repeatability (Palmberg, 2009). An important point in process thinking is not to make people to do more, but to do things differently, so that an increased value comes through the process (Laamanen & Tinnilä, 2009).

The focus in BPM is mostly into 'management' of the processes and ensuring that processes are able to provide the benefits that are important to the customers. Organizations recognize the value of BPM as a way of attaining strategic alignment and as a means of creating and implementing business strategy (Ariyachandra & Frolick, 2008). Even though process improvement may cause revolutionary changes in an organization, it should never be uncontrolled. From the BPM capabilities perspective, categorization of success factors is more important than actual categorization of processes. However, categorization of processes is also an important matter in organizations, which have several core or strategic processes.

In this paper we are assessing the success factors of BPM through a literature review. From the literature review arises a question regarding the factors that contribute to the success of BPM. Next we will look into the theories behind BPM and then describe the Outside-In perspective on process improvement. Finally, we draw together the capabilities for successful BPM based on these success factors.

2 The History and Future of BPM

Towers (2010) suggests that there has been several waves in process management development, starting with Total Quality Management, and continuing with Business Process Improvement, Business Process Reengineering, Six Sigma, Lean, BPM itself and Outside-In approaches. Each of these waves has brought something new into the landscape of process management. Importantly, the tendency has been a development from task centricity towards customer centricity. This development which started in the 1970s is still continuing. This paper focuses mainly into BPM and Outside-In approaches.

The discussion around BPM necessarily also touches the concept of business process reengineering (BPR). BPR has existed as a term since the 1990s (Hammer M., 1990;

Davenport & Short, 1990), but there have been several definitions of it over time and therefore its meaning is still somewhat vague (Zairi & Sinclair, 1995). BPM is seen more as a holistic approach to processes (processes themselves, resources, roles, people, infrastructure and other aspects of overall process management), whereas BPR is more focused on optimizing processes (Hammer & Stanton, 1999). Choi & Chan (1997) conclude that there is consensus that, in performing reengineering work, BPR should aim at achieving a dramatic improvement – proactive and radical redesigning of the business actions. Business process reengineering is seen more as a rapid and dramatic performance improvement effort than as an incremental improvement (Ardhaldjian & Fahner, 1994). It is intended for improving product and service quality, reduce costs and increase speed. Davenport & Stoddard (1994) have concluded that successful business process reengineering is not an IT initiative, but it is business initiative with purpose of improving business practices to satisfy the needs of customers.

There are several approaches to business process management. This research does not look into differences between them, but tries to extract the capabilities that are common to those all. Also tools for process management vary and there are several methods for the actual implementation of business process management. Nowadays most of the business done in organizations is either directly or indirectly related to information technology (IT) and its usage. Therefore, the strategic alignment of BPM and IT means that the goals and activities of the business are in harmony with the information systems that support them (Woolfe, 1993). Information technology is one important tool behind the curtains, bringing possibilities to business process management. As Woolfe (1993) states, information technology's impact on business performance of an organization depends on the extent to which it enables business processes to be changed.

The continuous improvement of business processes must also consider the "Outside-In" perspective of customer needs and market requirements as a crucial part (Towers, 2010; Laamanen & Tinnilä, 2009; Zinser, Baumgartner & Walliser, 1998). Organization's business processes have to be able to respond to the changes in the external environment (Siha & Saad, 2008). The basic idea of the business processes and their management has been to create value for the customer through activities in an organization (Hammer & Stanton, 1999) and to fulfil other strategies like producing returns to stakeholders (Guha & Kettinger, 1993; Strnadl, 2006). Business value is not created anymore in traditional, hierarchical organizations with a separation between the organization and its clients. Networking has become a necessity and since it is not possible to gain benefits only from optimizing internally, both external and internal resources are compulsory assets for today's organizations (Palmberg, 2009; Zinser, Baumgartner & Walliser, 1998). Organizations need their customers to participate in their processes and to help them to improve their business, so that they grow to be strategic partners for their customers (Laamanen & Tinnilä, 2009). The internationalization of businesses has put more emphasis on co-operation and customer centricity (Zinser, Baumgartner & Walliser, 1998). As Zinser, Baumgartner & Walliser (1998) state, there is a need for organizational structures that bring together market and technology with the aim of assuring a long-range survival and competitiveness of the company.

There has been a clear evolution from process-centric business process improvement methods through 6sigma, TQM and others to business process management with a more holistic perspective. Still these methods have lacked the customer-centric focus on process development.

The next generation of BPM, also called as Customer Expectation Management (CEM), is based on Outside-In philosophy (Towers, 2010). The problem with the traditional BPM perspectives is their focus on internal actions that seemingly contribute to delivering outcomes to customers. We spend our time focusing on those actions without realizing that they do not necessarily contribute to Successful Customer Outcomes (SCO). That will lead to doing the wrong activities very efficiently; Towers emphasizes on fixing the causes of work rather than their effects. There should be more emphasis on customer-focused results that go beyond the basic customer satisfaction measurements, because customer relationships and engagement are better indicators and measures of future success of the organization (Baldrige National Quality Program, 2009, p. 53).

The Outside-In philosophy's central thesis is that all organizations ought to be build and designed with keen focus on achieving Successful Customer Outcomes (Towers, 2010). It is not a new idea to focus on customers, but still the BPM literature is neglecting the customer focus almost completely; why is that? Does it really help organizations to do the things more efficiently through task optimization like 6sigma, when there is no clear picture on what the organization should be doing? Successful Customer Outcomes help organizations to align their endeavors to the real needs of their customers (Towers, 2010). SCOs are the road towards satisfied customers and through that to thriving organizations. Towers mentions that the whole philosophy is very easy: It is about organizing ourselves around the person who pays our salary and keeps the shareholders happy – the customer.

This can be seen as the next generation of business process management taking the holistic perspective on all the tasks done in an organization with clear purpose. This also leads to some critical success factors which consider the customer centricity of an organization. The Outside-In philosophy may also be one of the domain theories behind contemporary business process management taking it to the next level from a mere task optimization perspective. Contingency theory, dynamic capabilities and task-technology fit are all important theories behind the execution part of the BPM (Trkman, 2010), but Outside-In is the more overall reason for BPM to exist; to satisfy the real needs of customers that pay for our business processes to exist (Towers, 2010).

3 Critical Success Factors in BPM

Business process management is a young field in the academic world and has been considered quite atheoretical (Karim, Somers & Bhattacherjee, 2007; Melão & Pidd, 2000). This conclusion may also be made from most of the critical success factor (CSF) literature. Most of the literature introduces case studies lacking a theoretical framework for the phenomenon of business process management. Trkman (2010) suggests that business process management is based on the theories of contingency, dynamic capabilities (DC) and task–technology fit (TTF), which may be used as a basis for evaluation of the critical success factors in BPM. Trkman sees that these three base theories can be used to categorize the critical success (and failure) factors. These three frameworks are related to business process management as follows: Firstly, the fit between the business environment and the business processes is needed. Secondly, proper organization and continuous improvement efforts are needed to assure sustained benefits from BPM. Thirdly, a proper fit between the tasks in the business processes and the information technology/systems must exist. We suggest adding Outside-In perspective as the fourth framework to business process management, giving it purpose to exist.

Business process management efforts need to be firmly linked to the organization's purpose and strategy so that they will support them. If BPM is not responding to those needs,

it may be slowing the organization down. That is why Trkman (2010) suggests looking into critical factors of BPM from a more interconnected perspective, than just taking separate variables independently under consideration. All this sets the base for our research - identifying the most common success factors and extrapolating business process management capabilities of them.

Our literature review is based on a vast search for articles, from the dawn of BPR/BPM. Many of the articles were case studies, often with limited organizational perspectives on BPM. From these we identified the most important success factors and gathered them into a table. Many studies prioritized certain aspects and these aspects were identified as critical success factors (CSFs) in our research. These CSFs were extrapolated into business process management capabilities that contribute into the success of an organization. See Appendices A and B for the list of critical success factors we found in our study.

4 Conclusions

Our synthesis on critical success factors in business process management is based on the literature review presented in Appendices A and B. It seems that improving business processes takes more than just adding more resources into action, even though resources are also important (Feltes & Karuppan, 1995). Business process management is a very complex field, since it involves challenges from several domains, like organizational, managerial, information systems and even social problems (Trkman, 2010). Our synthesis contains aspects related to current resources as well as changes that radical business process management efforts entail. Understanding this whole picture is the key to success in all BPM efforts.

The following categorization for success factors is based on the categories found in our literature review (see Appendices A and B). We find that the critical success factors can be categorized under these four categories:

- Management and leadership (ML)
- IT and architecture (ITA)
- Change management (CM)
- Collaboration and communication (CC)

The ML category focuses on the issues of management and leadership (containing organizational, managerial and social issues). The IT and architecture category focuses more on the technology perspective while the change management category focuses on achieving positive changes in organizations. The collaboration and communication category is related to social issues that arise when people do work together. The main purpose of the categorization is to help the discussion on critical success capabilities that organizations need to have to succeed in their business process management endeavours.

In the following we will further open the four categories into more detailed lists of factors that can be used to assess the capabilities organizations need to possess to become successful in improving their business process perspective.

Management and leadership (ML)

S1 Managers share the vision and information with their subordinates
S2 Managers place confidence between supervisors and their subordinates
S3 Managers constructively use their subordinates' ideas
S4 Top management generally has realistic expectation of the projects
S5 Top management usually has sufficient knowledge about the projects

S6 Top management frequently communicates with project team and users
S7 Top management generally supports changes in processes
S8 The organization has empowered process owners, who are responsible
S9 The performance measurements adequately correspond to the processes and changes into them
S10 The employees are empowered to make decisions

IT and architecture (ITA)
S11 Information technology is integrated in the business plan of the organization
S12 The organization extensively uses its information systems
S13 There are efficient communication channels in transferring information
S14 Legacy information systems are reengineered if necessary
S15 IT is aligned with the business process management strategy
S16 Does everyone know the cost of customer acquisition, the annual value of a customer and the cost of a customer complaint?

Change management (CM)
S17 The reward system is adjusted to serve the employees after the changes
S18 There is training and/or educational programs to update employees' skills
S19 BPM concepts and methodologies are known and understood
S20 The project plan for reengineering processes is adequate
S21 People are eager to improve the existing state of processes

Collaboration and communication (CC)
S22 There is open communication between supervisors and their subordinates
S23 Co-workers have confidence and trust in each others
S24 Teamwork between co-workers is a typical way of solving problems
S25 There is performance recognition among co-workers
S26 Customer expectations are considered in discussions on the organization's business

As the literature review suggests, there are several different aspects that need to be considered when thriving for success through business process management. In future this research will advance into analysis of critical failure factors related to BPM and making synthesis for total business process management capabilities (BPMC) based on both critical success and failure factors.

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APPENDIX A: Critical Success Factors Literature Prior Year 2000

Critical Success Factor	Research
Top and middle management commitment and support	Hall, Rosenthal & Wade (1993); Feltes & Karuppan (1995); Maul, Weaver, Childe, Smart & Bennett (1995); Holland & Kumar (1995); Kotter (1995); Grover, Jeong, Kettinger & Teng (1995); Alavi & Yoo (1995); Zinser, Baumgartner & Walliser (1998); Zairi & Sinclair (1995); Woolfe (1993); Hammer & Stanton (1999); Ives & Olson (1984); Savolainen (1999)
An effective, trained reengineering team	Leith (1994); Feltes & Karuppan (1995); Alavi & Yoo (1995); Grover, Jeong, Kettinger & Teng (1995); Zinser, Baumgartner & Walliser (1998); Zairi & Sinclair (1995)
Targeting of correct processes to be re- engineered, strategically significant processes	Leith (1994); Holland & Kumar (1995); Hyde (1995); Zairi & Sinclair (1995); Keen (1997)
Set specific outcomes and measurements in relation to performance, benchmarking, customer needs etc.	Johnson (1993); Hall, Rosenthal & Wade (1993); Leith (1994); Feltes & Karuppan (1995); Grover, Jeong, Kettinger & Teng (1995); Holland & Kumar (1995); Guimaraes & Bond (1996); Zairi & Sinclair (1995); Forsberg, Nilsson & Antoni (1999)
Synergistic use of IT and process redesign methods	Johnson (1993); Leith (1994); Smith (1994); Alavi & Yoo (1995); Maul, Weaver, Childe, Smart & Bennett (1995); Guimaraes & Bond (1996); Zinser, Baumgartner & Walliser (1998); Woolfe (1993)
Ensure project breadth and depth, goal for big enough improvements	Hall, Rosenthal, & Wade (1993); Maul, Weaver, Childe, Smart & Bennett (1995); Holland & Kumar (1995); Zinser, Baumgartner, & Walliser (1998)
Do not ignore the human factor - empowerment of 'process owners'	Goll & Cordovano (1993); Hall, Rosenthal & Wade (1993); Smith (1994); Willmott (1994); Maul, Weaver, Childe, Smart & Bennett (1995); Wellins & Murphy (1995); Kotter (1995); Rothwell (1995); Guimaraes & Bond (1996); Hammer & Stanton (1999)
The reengineering effort must be straightforward and practical	Johnson (1993); Leith (1994); McAdam (1996)
Organizations must possess the capacity and willingness to change	Johnson (1993); Grover, Jeong, Kettinger & Teng (1995); Halachmi (1996); Zairi & Sinclair (1995); Willmott (1994)
Existing organizational culture must be adaptable to change	Davidson (1993); Morris & Brandon (1993); Grover, Jeong, Kettinger & Teng (1995)
Setting team meetings up front	Feltes & Karuppan (1995)
Plan and implement the reengineering project concurrently	Woolfe (1993); Feltes & Karuppan (1995); Grover, Jeong, Kettinger & Teng (1995)
Use enablers	Johnson (1993); Feltes & Karuppan (1995); Grover, Jeong, Kettinger & Teng (1995)

Pilot new process designs	Hall, Rosenthal, & Wade (1993)
Assign the implementation team	Hall, Rosenthal, & Wade (1993)
Ensure implementation competency, in particular IS and IT proficiency	Grover, Jeong, Kettinger, & Teng (1995); Zinser, Baumgartner, & Walliser (1998); Zairi & Sinclair (1995); Woolfe (1993)
Enlist customers	McAdam & Donaghy (1999); Zairi & Sinclair (1995)
Empowered process owners	Hammer & Stanton (1999); Lee & Dale (1998); Pritchard & Armistead (1999)
Knowledge of process tools and methods	Elzinga, Horak, Lee & Bruner (1995); Forsberg, Nilsson & Antoni (1999)
Continuous improvement	Forsberg, Nilsson & Antoni (1999)
Sufficient resources, time and energy to the effort	Forsberg, Nilsson & Antoni (1999)
Reward the team	Goll & Cordovano (1993); Feltes & Karuppan (1995)

APPENDIX B: Critical Success Factors Literature in the 21st Century

Critical Success Factor	Research
Top and middle management commitment and support	Siha & Saad (2008); Paper, Rodger & Pendharkar (2001); Ahmad, Francis & Zairi (2007); Laamanen & Tinnilä (2009); Trkman (2010); Ranganathan & Dhaliwal (2001); Grant (2002); Ariyachandra & Frolick (2008); Hartlen (2004); Griffin (2004); Biehl (2007); Eckerson (2006); Fui-Hoon, Nah & Zuckweiler (2002); Havenstein (2006); Korogodsky (2004); Politano (2007); Nah, Lau & Kuang (2001); Ongaro (2004)
An effective, trained reengineering team	Paper, Rodger & Pendharkar (2001); Lu, Huang & Heng (2006); Ariyachandra & Frolick (2008); Wixom & Watson (2001); Fui-Hoon, Nah & Zuckweiler (2002)
Targeting of correct processes to be re- engineered, strategic alignment to organization's strategy	Siha & Saad (2008); Paper, Rodger & Pendharkar (2001); Palmberg (2009); Trkman (2010); Ariyachandra & Frolick (2008); Biehl (2007); Frolick & Ariyachandra (2006); Fui-Hoon, Nah, & Zuckweiler (2002); Poon & Wagner (2001); Stiffler (2006); Watson (2006); Zeid (2006); Maull, Tranfield & Maull (2003)
Set specific outcomes in relation to performance measurement, benchmarking and customer needs	Siha & Saad (2008); Palmberg (2009); Trkman (2010); Terziovski, Fitzpatrick & O'Neill (2003); Towers (2010); Maull, Tranfield & Maull (2003)
Synergistic use of IT and process redesign methods. IT to support BPM efforts.	Paper, Rodger & Pendharkar (2001); Ahmad, Francis & Zairi (2007); Trkman (2010); Grant (2002); Ariyachandra & Frolick (2008); Ongaro (2004)
All the needed resources (money, time, tools, etc.) and training of the people are available	Paper, Rodger & Pendharkar (2001); Mabin, Forgeson & Green (2001); Ahmad, Francis & Zairi (2007); Lu, Huang & Heng (2006); Ariyachandra & Frolick (2008); Biehl (2007); Eckerson (2006); Wixom & Watson (2001)
Do not ignore the human factor and empowerment of 'process owners' and teams	Siha & Saad (2008); Paper, Rodger & Pendharkar (2001); Ahmad, Francis & Zairi (2007); Mabin, Forgeson & Green (2001); Laamanen & Tinnilä (2009); Tonnessen (2000); Trkman (2010); Grant (2002); Maull, Tranfield & Maull (2003)
Organizations must possess the capacity and willingness to change (link to organizational culture)	Siha & Saad (2008); Paper, Rodger & Pendharkar (2001); Ahmad, Francis & Zairi (2007); DeToro & McCabe (1997)
Existing organizational culture must be adaptable to change	Siha & Saad (2008); Ahmad, Francis & Zairi (2007); Rentzhog (1996); Laamanen & Tinnilä (2009); Ongaro (2004)
Change is carefully planned, change management, managing uncertainty of people, management of resistance	Paper, Rodger & Pendharkar (2001); Ahmad, Francis & Zairi (2007); Laamanen & Tinnilä (2009); Herzig & Jimmieson (2006); Ariyachandra & Frolick (2008); Frolick & Ariyachandra (2006); Gruman (2004); Hartlen (2004); Poon & Wagner (2001)

Quality management system	Ahmad, Francis & Zairi (2007); Palmberg (2009)
Continuous and iterative improvement	Siha & Saad (2008); Paper, Rodger & Pendharkar (2001); Trkman (2010); Towers (2010); Ariyachandra & Frolick (2008); Poon & Wagner (2001); Vessel (2005)
Create team ownership and culture of dissatisfaction	Paper, Rodger & Pendharkar (2001)
Effective communication, at all levels	Smith M. (2003); Laamanen & Tinnilä (2009); Trkman (2010); Grant (2002); Lee & Pai (2003); Biehl (2007); Chan, Sabherwal & Thatcher (2006); Eckerson (2006); Fui-Hoon, Nah & Zuckweiler (2002); Hirschheim & Sabherwal (2001); Jensen & Sage (2000); Nah, Lau & Kuang (2001); Politano (2007)
Teamwork / working in teams	Ahmad, Francis & Zairi (2007); Ongaro (2004)
BPM project management	Ahmad, Francis & Zairi (2007); Burlton (2001); Laamanen & Tinnilä (2009); Trkman (2010); Grant (2002); Ongaro (2004)
Knowledge of BPM tools and approaches	Palmberg (2009); Laamanen & Tinnilä (2009); Grant (2002)
Process owners, who are empowered	Trkman (2010); Kuwaiti (2004); Ongaro (2004)
Both initial quick-wins and long-term solution should be sought	Trkman (2010)
Reward the team, use of appropriate incentive systems and training	Siha & Saad (2008); Ahmad, Francis & Zairi (2007); Mabin, Forgeson & Green (2001); Trkman (2010); Towers (2010)
Customer-centric focus on BPM	Towers (2010)
BPM champion who promotes it in an organization	Ariyachandra & Frolick (2008); Eckerson (2006); Fui-Hoon, Nah & Zuckweiler (2002); Jensen & Sage (2000); Nah, Lau & Kuang (2001); Reich & Benbasat (2000); Wixom & Watson (2001)
Users are involved in the development of a BPM solution and engage in specific responsibilities and tasks related to the BPM effort	Ariyachandra & Frolick (2008); Biehl (2007); Eckerson (2006); Shin B. (2003); Wixom & Watson (2001)
Support of data management structure	Ariyachandra & Frolick (2008); Biehl (2007); Eckerson (2006); Politano (2007); Poon & Wagner (2001); Reich & Benbasat (2000); Wixom & Watson (2001)
Prepare for potential emergencies and ensure continuity of operations	Baldrige National Quality Program (2009, p. 50)