Divergence Between Conceptual Business Process Management and its Practical Business Improvement Implementation: A Comparative Study

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Abstract—**Business improvement frameworks are of high importance in today's continuously changing market as organizations strive to stay competitive. There are many different frameworks, with this work focusing on Business Process Management (BPM). The implementations of BPM in Swedish industry will be analyzed in relation to its conceptualization to see how it differs and why.**

We took a look at implementation case studies and conducted a focus group interview with experts situated in Sweden. The results of this study show that there are some common factors regarding BPM applied for business improvement found in the industry cases that are also highlighted by the experts and conceptualization. For instance, importance of process ownership, visualization and flow, right behavior and culture, abstraction levels and domains.

Index Terms—**BPM, Comparing Conceptualization and Practice, Focus Group Interview, Sweden, Business Improvement**

I. INTRODUCTION

Many organizations struggle with the task of staying competitive in today's market, as success often is based on being able to adapt to a continuously changing world [1]. New products and services, change of customer needs, reduction of cost and increase of profit are examples of changing prerequisites [2]. Accordingly, Business Process Management (BPM) developed in the early 2000s focuses on improving business process [3].

BPM is a discipline that offers means to o discover, model, analyze, measure, improve, optimize, and automate business processes. It is a popular approach used in the field of business improvement with many organizations implementing it [4]. Further, it is utilized to check compliance [5]. Although there is a lot of theoretical descriptions and academic work of BPM, its actual implementation of BPM differ in industry. As every organization has different needs, the application of BPM needs to be tailored to these needs [6], [7]. This becomes a challenge for change management to improve the business [8]. Since we live in a continuously changing world with increasing demands on producing faster and achieving short

term results, there is always the risk of management not giving business improvement projects and initiatives enough time and resources. Implementing BPM is not a quick fix, it is a way of working. Many implementations fail, one example being that organizations implement BPM since it is trendy and see it as a method [9].

Looking at how and what is implemented in successful implementations of BPM is important, as it can act as evidence and inspiration for change management. What is being implemented and used in industry of all the conceptualization that describe different BPM approaches? Managers and management need knowledge and understanding, only reading theoretical descriptions of BPM is not enough.

Accordingly, we formulate our research question:

How is BPM implemented in Swedish industry for business improvement compared to its conceptualization?

Answering this question, we aim to provide information on experts' opinions on BPM implementations for business improvement in Sweden and to provide ground to academics and industry in the knowledge of implementing business improvement frameworks such as BPM.

The rest of this study is structured as follows. Next, we illustrate the related work, followed by the explanation of the applied research method. Afterwards, we give an outline of theoretical BPM definitions and present the results of the focus group interview. Then, results are discussed before we end with our conclusion.

II. RELATED WORK

Syed et al. [10] conducted a systematic literature review (SLR) on critical success factors of BPM project in the public sector. They discussed and compared private sector versus public sector as well as developing countries versus developed countries when it comes to critical success factors (CSF) in BPM projects. While their main results where the identified CSFs and the difference in different kinds of countries, our

study sheds light on BPMs implementation in one single country and the related CSFs.

Apart from SLR, there are further studies on BPM implementations that look at the comparison of theory and practice. Reijers et al. [11] investigate the use and deployment of BPM concepts in different organizations. Therefore, they analyze a set of 33 completed, industrial BPM projects. Additionally, they present a replication study based on six interview-based case studies and a survey among 77 BPM experts. They analyze various characteristics of BPM projects and discover e.g. that the conducted BPM phases correlate with the size of the company. Similarly, our study shows equal results for organizations in Sweden.

Smart et al. [12] present an empirically validated framework of business process management (BPM) to enable the pursuit of BPM theory. First, they focus on the development of an initial framework of BPM. To validate the framework, they conduct case-based research, utilizing semi-structured interviews. Their results show that developing a prerequisite 'process mindset' is a fundamental component of a BPM approach that is in line with our findings.

Vergidis et al. [13] contrast and summarize the main findings of literature research and conduct a survey to investigate the current state of research and practice. They show that the service industry is reluctant to adopt sophisticated approaches researched in science. Mainly, this is grounded in the fact that BPM research fails to convince service industry that a business process approach could bring significant benefits. Instead of concentrating on a specific domain, we elaborate in our study on Swedish industry and recognize that the term BPM is not very popular.

Other research covers the implementation of BPM in form of case studies. An extensive amount case studies has been gathered by Vom Brocke and Mendling [14]. The case studies cover a broad range of domains such as public organizations, insurance companies, or telecommunication companies. The described organizations suffered inter alia in the coherence and clearness of their procedures. Means of BPM are applied to overcome these shortcomings. A similar issue and solution is described by Harmon [15], but based on hypothetical cases inspired by characteristics of several organizations. Another reason to implement BPM is sketched by Jeston [16] where a financial institution decided to move to a process-centric view. In overall, our study replicates the insights from these studies for Sweden.

III. RESEARCH METHOD

To answer the research question, we opted for a focus group interview to gain a deeper understanding of BPM implementations in practice. A focus group interview is a qualitative data collection technique [13]. The main advantage of focus group interviews "is the opportunity to observe a large amount of interaction on a topic in a limited period of time based on the researcher's ability to assemble and direct the focus group sessions" [17]. Another advantage of a focus group interview compared to a semi structured interview is

the positively stimulation of discussions. Instead of getting a single answer to a question, the person giving an answer is forced to to describe the answer more explicit when faced with counter-answers. This suited our research question since we wanted to gain a deeper understanding.

The focus group interview implemented in this study was conducted in an hour with seven consultants from a consulting company. The consultants had a variation of work experience ranging between 10-30 years with most of them having expertise with BPM after multiple years of experience working with implementations of BPM in different organizations. They had the roles of enterprise designers and business developers. The consultants also had a variation of education. Most had master's degrees and a few bachelor's degrees. The field of study between the consultants included industrial management and engineering, business administration, computer ad systems science, mechanical engineering, applied physics and electrical engineering.

The questions asked were open-ended to promote the generation of qualitative data. The question of how it is implemented in organizations was asked as an initiator, and from there, the discussions excelled. The whole interview and its transcript were performed in Swedish, since it was the native language of all participants. Extracts from the interview were translated to English, as will be seen in the following sections. Not everything that was documented in the interview will be found in the results or the analysis of this work, since there were open discussions that did not follow a strict protocol. In order to extract relevant data from the transcript, important citations related to BPM was highlighted. These were then once again reviewed when comparing to the theory of BPM. Some of the discussions resulted in examples of cases which was used as data in the results (see section V) and other discussions resulted in data used as ground in the discussion (see section VI).

IV. CONCEPTUALIZATION OF BPM

Jeston [16] describes BPM as "the achievement of an organization's objectives through the improvement, management and control of essential business processes." BPM should not be misinterpreted as a product or technology. It is a collection of technologies, tools and methods used for the management of business processes.

In order to get a comprehensive view of what BPM is, vom Brocke and Rosemann [18] describe six core elements that collaborate in giving a good understanding. This view is structured and comprehensive. Also, many of the cases found aligned well with the core elements. These elements can be summarized as the following:

- **Strategic Alignment** The overall strategy of an organization is important, thus requiring BPM to be aligned with it. The link between organizational priorities and processes is crucial to business performance improvement. This requires processes to be properly designed, executed, and measured according to the given priorities and specific situations.

- **Governance** Roles and responsibilities for different levels of BPM must be transparent for the whole organization. The process of decision-making must also be clear as well as collecting metrics from processes and linking them to performance criteria.
- **Methods** Tools and techniques used for managing activities along the process life cycle. Process analysis and modelling techniques are common examples, e.g. the BPM approach Six Sigma that has a set of integrated BPM methods for process improvement.
- **IT** IT plays a significant role in the implementation of BPM as it relies on process modelling, mining, simulation, monitoring, etc.
- **People** People are the resources implementing the processes and IT systems and it is thus important for them to have the qualifications and expertise with relevant business processes. Business processes improve by continuous process management by people.
- **Culture** The organizational culture must be receptive to BPM initiatives. The collective values and beliefs must comply with BPM in the form of process-related attitudes and business performance.

The aspect of process improvement can be understand as life-cycle. A project or initiative can reach an improved process by following the steps in the life-cycle. There are different notations and layouts used to describe the life-cycle. Accordingly to Dumas et al. [19], we differentiate six phases:

1) **Identification** Relevant processes to an identified problem are identified. A new or updated process architecture is derived from the identification, showing the current state of the organization. This architecture assists in choosing, which processes to manage in the coming phases of the cycle.
2) **Discovery** The current state (as-is) of the relevant processes are modeled and documented.
3) **Analysis** Weaknesses related to the as-is processes are prioritized and their corresponding impacts are documented, using performance measures, also called Key Performance Indicators (KPIs).
4) **Redesign** An improved (to-be) model is developed based on the rework of improved processes. Performance measures from the previous phase support the analysis and comparison of changes.
5) **Implementation** Changes required to evolve from the as-is state to the to-be state are performed. This includes both organizational change management and IT-system development in the form of process automation.
6) **Monitoring and controlling** Relevant data of processes' performance is continuously collected and analyzed. Deviations, bottlenecks, or recurrent errors will trigger new issues and, thus, new iterations of the lifecycle.

Vom Brocke et al. [6] describe a framework for BPM initiatives, called The BPM Context Framework. There are different factors based on dimension. A BPM initiative can for example have the goal of either optimizing or innovating.

The process characteristics could differ in the form of being a core process, a management process or support process. There are many factors in a BPM initiative that can have different characteristics, showing that implementing BPM can differ a lot.

Röglinger et al. [20] shed light on a wide range of maturity models for BPM. They identify nine characteristics of maturity models and group them into the categories of basic design principles, design principles for a descriptive purpose of use, and design principles for a prescriptive purpose of use [21]. Along these categories, they classify the different maturity models for BPM and recognize that the basic principles usually are well covered, descriptive principles are sufficiently covered, and prescriptive principles are scarcely covered. They conclude that especially practitioners suffer of concrete guidance of applying the maturity models.

V. Focus Group Interviews

It was mentioned that many clients in the pharmaceutical and finance domain implement BPM, where it is required to have strict steps in processes and standards. Furthermore, a lot of global multinational corporates implement BPM in their way of thinking. There is control on processes going upwards when being approved and there should not be deviations in processes since you need to scale.

Additionally, the participants of the interviews mentioned a concrete case where they were involved in the implementation of BPM: A telemarketing company had a lot of orders but almost no deliveries. It figured out that a large amount of orders where created wrongly. Therefore, the sales department were forced to created new orders. Accordingly, the total amount of order was increased and the measured KPIs distorted. They solved the problem when they realized they measured the wrong thing. Visualizing the process using BPM helped to uncover this issue and measuring the right.

The gross of described research of successfully implementation of BPM in industry is related to large companies [10], [14]. This is in line with the experience of the participants: *"A lot of BPM is found in global multinational corporate thinking."* Further, our participants state that *"many clients are in the pharmaceutical and finance domain, where it is important to have strict steps in processes and standards."*. This is in accordance with our observations in scientific literature where the research is mainly situated in highly regulated domains like pharmaceutics, finance, or telecommunication [10], [14].

In the literature, the common goal of implementing BPM is improving customer and employee satisfaction, increasing efficiency of processes, and moving towards a more process-oriented view [10], [14]. Some cases [14], [15] viewed BPM from a technical perspective and used it as a business system to improve processes. All other cases viewed BPM as a governance system as well, understanding BPM as a means to achieve strategic goals. This is confirmed by our participants: *"There are different views on BPM. Some see it as a way to implement business systems and improve certain processes. This is the technical part of BPM. Others see BPM as a way*

TABLE I
BPM PHASES COVERED IN CONSIDERED CASES

Phase	Appearance
Identification	4
Discovery	7
Analysis	4
Redesign	3
Implementation	5
Monitoring	2

to look at their business. How you do (processes) to reach your goals." and *"BPM is a governance system. It is not only about optimizing processes."*

A noticeable observation is that in certain cases [14], [15] external consultants helping to implement BPM are mentioned. This is stressed by Jeston [16], who mentions that external BPM experts, who mostly have experience and knowledge, can help organization in their BPM maturity by educating and helping the internal staff. This is also supported by the experts from the focus group interview, as they all had the role of external consultants supporting clients in their implementations.

The existing literature shows that discovery and implementation are well represented while monitoring and controlling is not. For example, Vom Brocke and Mendling [14] analyzed 31 cases and concluded that most cases addressed process redesign (8 cases), process discovery (6 cases) and process implementation (5 cases). The phases which least cases addressed where process monitoring (2 cases) and process analysis (2 cases). Contrary, our participants mentioned that process discovery and implementation are well represented while process monitoring is not (cf. table I).

Vom Brocke et al. [22] describe a framework for BPM initiatives, called The BPM Context Framework. It is comprised of different factors based on dimensions. For example, a BPM initiative can have the goal of either optimizing or innovating. The process characteristics could differ in the form of being a core process, a management process, or support process. There are many factors in a BPM initiative that can have different characteristics, showing that implementing BPM can differ a lot. A lot of cases [14] mentioned working with process domains in the form of having core processes, management processes, and support processes. Our participants stress that processes have different characteristics and being able to categorize them helps understanding the process landscape.

One method that was mentioned in a few cases [14], [16] was the assignment of process ownership. Having a process owner that is responsible for planning and organizing a process is something that is crucial. Dumas et el. [19] describe that a process owner is responsible for initiating and leading process improvements as well as making sure that the process normally runs problem-free.

Another common method in most cases [14], [16] was workshops. Following Dumas [19], a workshop is one of the process discovery methods used in BPM. It is a visual and well-suited method when many different opinions are needed.

As many of the cases mentioned, workshops where used to gather information and model processes and this fits in well with the purpose.

VI. DISCUSSION

One interesting finding from our interviews is that the BPM phases "discovery" and "implementation" were well represented in organizations while there was, on the other hand, a lack of presence regarding "monitoring". This can be reasoned that the early phases of BPM are more frequent since they are early in the initiative of BPM. Completing the cycle of BPM initiatives with monitoring and controlling of processes requires more time, effort, and resources. One example of this are Business Process Management System (BPMS) vendors, who portion their BPM solutions into different parts, requiring different licenses for each part. Software AG and their BPMS, ARIS, have Process Mining as a separate solution that allows data collection of processes and their instances, comparing performance to KPIs, etc.[1]

It seems that many organizations struggle to fully pervade the capabilities that BPM offers and, therefore, settle with the ability to model their processes. This is stressed by the fact that in many cases the companies acquired additional support from external consultants to create a knowledge transfer. Usually, the external consultants were involved in the early stages of the BPM initiatives when the internal knowledge on BPM is the lowest.

Process ownership is also of interest in the discussion of BPM. Vergidis et al. [13] is one of many who highlight the importance of process ownership. They describe that having specific ownership and management of business processes prevent fragmentation between departments within an organization and clarifies the scope and outcome. Management of processes are important as it strengthens the knowledge and flow. This seems to be an important factor in the successful implementation of BPM. During our interviews, process ownership was also highlighted in most cases. Jeston [16] also mentions process ownership and its importance for a mature BPM organization. Jeston describes management along end-to-end processes as a way to minimize silo structures of organizations and is common in more process-centric and mature BPM organizations. This conforms with the experts from the focus group interview: *"BPM looks at customer value and flows. It looks at the bigger picture, one should not work in silos."*

Another interesting discussion regarding BPM is initiated by a citation from the focus group interview: *"A lot of BPM is found in global multinational corporate thinking."* This conforms with our observations made previously, showing that most organizations implementing BPM are large and often global. This is also discussed by Reijers et al. [11]. They found, from analyzing 33 BPM projects, that the adaptation of BPM concepts mainly depends on the size of the organization and their strategic orientation. They conclude that larger

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[1]https://www.softwareag.com/corporate/products/process/process_mining/default.html

organizations are more mature and systematic in their BPM adaptation.

However, it is questionable why smaller organizations are infrequent mentioned both in research but also our interviews. On the one hand, there are factors negatively affecting BPM implementation in smaller business-like cost and time pressure. On the other hand, there are positive factors are the fast decision making and relatively simple integration and more simple structure of the organization. We assume that BPM is adapted for medium size and large enterprises, as BPM implementations demand patience, long-term thinking, and investment. Additionally, there are studies on the obstacles of implementing BPM in small and medium-sized enterprises (SMEs) [23], [24].

Lastly, we recognized that none of cases we found was conducted in a Swedish organization. Our experts reason this as follows: *"You rarely hear customers talk about BPM, it is more established in academics. Not many in Scandinavia explicitly talk about BPM, there are more variants within BPM, but they go under other names."* Accordingly, we assume that BPM is still applied in Sweden, as it describes processes as company capabilities, which can be considered the intangible assets of an organization. Thus, having processes documented is an important step in knowledge management. BPM encourages organizations to document and identify their processes in portfolios. Modelling and documenting processes can be done with modelling notations such as BPMN which allows for visualization of processes in a standardized way [25]. Intangible assets, e.g. processes, knowledge management, information management, are becoming more and more important to organizations as they dominate the corporate market value compared to tangible assets [26]. The value of information is something to cherish and needs to be managed properly.

VII. LIMITATIONS

Looking at potential risks and weaknesses of the focus group interview, there is always an ethical aspect of recording an interview. The participants maybe held back certain sensitive information. For example, no specific company name was outed, they were instead anonymous. Another risk concerning the interview was that some participants talked more than others, maybe due to them having more to say in the issue, but it could have caused reserved individuals to hold back. One more risk that one could point out is the fact that all the consultants where from the same consulting company and might have caused them to have the same view on BPM. However, this was not an issue since they had different experiences and clients that they have worked with, together with the fact that the view on BPM differed in some ways between the consultants.

Another bias is introduced by the sample of participants as they were working all as consultants for the same company. Thus, our study solely reflects the perspective of externals. Further, organizations usually request support in certain topics when they already struggle on this topic and consultants leave when their project ends. Accordingly, positive reports might be underrepresented within our study and the development of BPM beyond the considered implementation projects is not considered. Finally, the size of participants was very small and, therefore, the insights generated by this study cannot be understand as generalizable.

VIII. CONCLUSION

This study set out to investigate industry implementation of BPM in relation to the theoretical descriptions of it, in order to provide ground and information for academia and other organizations interested in business improvement. Our results show that there are some common factors found in the industry cases that are also highlighted by the experts and theory:

- Importance of process ownership
- Assistance in knowledge and understanding of the framework
- Minimizing silo structures to increase the overview
- Not all phases in the life-cycle have equal focus
- Importance of knowledge and processes regarding intangible assets
- Size and span of organization matters
- Lacking use of the term BPM in Sweden

The analysis and discussion showed that there are many things in real life implementations of BPM related to its corresponding theoretical descriptions. This is limited by the fact that this study only showed a subset of how BPM is implemented in industry. However, our work covered a variety of organizations represented in the cases and in the focus group interview.

There are many possibilities of future work deriving from this study. One could use this study as a ground for going deeper into BPM. Instead of having a holistic view as this study, one could dive deeper into specific tools or methods within BPM, to better understand how implementations differ in greater detail, or look at the cultural aspect of implementing BPM, for example. Another possibility could be to conduct a multiple case study, which would allow for more qualitative and primary data. Up to date information on how a company implements BPM could be of good use in such a study. The multiple case study could be complemented with semi-structured interviews done with either proficient people in organizations or consultants working with multiple organizations.

Another possibility of future research would be to analyze companies that state that they implement BPM successfully to see how much of the success actually is based on the framework. An extension to this could be to define success and see how it corresponds to the factors of the framework.

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