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Major Issues in Business Process Management: An Expert Perspective

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Abstract

Process is perennial. Within any business activity or enterprise it is crucial that the variable of "operational efficiency" is maintained at sufficiently high levels, such that the return on investment is sustainable enough to justify its continued existence. Business Process Management (BPM) is the term used to encapsulate a process-driven approach to attaining enterprise operational efficiency. Despite BPM being ranked as top priority by organizations, current status of BPM research suggests a gap of addressing present industry demands. In this paper, we aim to identify the issues that organizations face in their efforts to manage business processes, as identified by BPM experts across the globe. The findings point to, among others, lack of top management support, lack of tool support for process visualization, and lack of connection between process design and process execution.

Keywords: Business Process Management, BPM, Major Issues, Expert Interviews

1 INTRODUCTION

It is widely acknowledged that process enforcement technologies hold the potential to provide the so-called "missing-middle" that can assist in overcoming the notorious business-IT divide (Davenport, 1993). Indeed, BPM is widely seen as the top priority in organizations wanting to survive the current competitive markets (Gartner Group, 2005). However, BPM is viewed from highly diverse angles ranging from a management strategy to a software system, so much so, that there is still not a common consensus even about the definition of 'Business Process Management' itself (van der Aalst *et al.*, 2003). In spite of many success stories, the diverse points of view on BPM cause major roadblocks for organizations moving towards BPM solutions.

There are three primary stakeholders in the BPM space, namely the users (organizations), the vendors, and the experts who champion the BPM approach and to a large extent possess the knowledge that can align user and vendor agendas. Organizations find that they face a wide range of often unexpected challenges when embarking on BPM projects. The identification of such challenges will be of critical importance to organizations in terms of developing a realistic understanding of what problems they might face. It will also serve to inform academia and industry on what potential new research directions are needed in the area of BPM and related topics. Accordingly, we have embarked upon a large study that attempts to bring together the views and experiences of the three groups to extract an overarching understanding of major issues and challenges in BPM.

We have already reported on the findings of the study involving user organizations (anonymous, 2006). In this paper, we target specifically the findings from the expert community. We have approached the world's leading experts in BPM in this regard, and through extensive dialog, extracted and summarized their perspectives. The basic premise of our research is that the experts provide a unique perspective that encompasses organizational, technological as well as conceptual challenges. However, the expert community itself is diverse, often focussing on either the business aspect, or the technical aspect, and sometimes both. Currently, there is a scarcity of studies that attempt to bring together expert views and experiences into a consolidated report. We have attempted to address this question through a comprehensive qualitative study involving in-depth interviews with renowned BPM experts (business and technical) across the globe.

In order to introduce the outcomes of the study, the paper is structured as follows. The following section provides a brief overview of the BPM field and the current research areas being actively worked on by academia. The third section introduces and justifies the research methodology chosen for this study. Section four reports the main issues identified and categorised through this study. The paper concludes with a summary of findings, a discussion of the limitations, as well as a preview of future research.

2 BACKGROUND

Business Process Management (BPM) includes methods, techniques, and tools to support the design, enactment, management and analysis of business processes (van der Aalst et al., 2003). BPM approaches prescribe that the entire management of an organization - strategy, goal setting, controlling and planning - be based on its core processes. In definitional terms, a process is simply a structured, measured set of activities designed to produce a specific output for a particular customer or market (Green and Rosemann, 2000). 'Process management' in this relatively new light has revolutionized the way organizations conducted business. Just after the industrial revolution, with the influence of existing theories such as those of Henry Ford and Fredrick Taylor (i.e. Fordism and Taylorism), a 'function oriented' approach, where individuals concentrated only on one specific task, was used in the day-to-day activities of the organization (Hammer and Champy, 1993). However, as the business arena started to evolve dynamically, weaknesses of this perspective began to hinder the organization

from acting competitively. In response to the pitfalls of functional over-specialization and lack of overall process control, Hammer and Champy (1993) proposed the 'Business Process Re-Engineering' (BPR) concept, which was further re-enforced by other contemporary practices such as Davenport's 'Process Innovation' (1993), Total Quality Management (TQM), Six Sigma, Lean Management, Time-based Management, and value-based performance measurements. The basis of these practices is having a 'process-oriented' vision, rather than a function oriented one.

This business demand was met with a suite of technologies, ranging from groupware and office automation, to workflow systems, and, more currently, BPM technologies. Although, workflow technology has delivered a great deal of productivity improvements, it has been used mainly for pre-defined static and repetitive business processes that required a basic level of coordination between human performers and some application components. Recently, BPM has been used as a broader term to reflect the fact that a business process may or may not involve human participants and may also cross organizational boundaries.

While there have been significant advances in various BPM research areas, in particular on technological features that support process control and monitoring, and application integration (i.e. van der Aalst, 2003), the foremost factor in BPM success is achieving improvements in the business outcomes. Indeed, unless the efforts towards BPM can clearly produce business outcomes, advanced technology deployments will only generate disappointments (Davenport, 1993; Kettinger et al., 1997; Grover et al., 1998). For organizations to succeed in reaping the benefits of BPM, it is essential that they first outline the business drivers for BPM, articulate the targeted processes, and have a clear agenda on deployment strategies. For many organizations this initial requirement is a very significant challenge. Raduescu, et al., (2006) reports on the issues identified within such large process modeling projects.

This study, however, has a more general focus that targets overall BPM efforts encompassing both definitional as well as deployment phases in organizations. It is in part motivated by the lack of empirical research in the field of BPM. Although there is a plethora of reports that outline particular experiences and case studies, there is little evidence of studies that have attempted to consolidate the various experiences into a comprehensive collection of issues and challenges.

3 RESEARCH METHOD

The research question and results presented in this paper form a part of a larger global study on the main issues in BPM. Only one part of the larger study is reported here, *viz.* detailed interviews with BPM experts. Interviews of BPM tool vendors together with focus groups with user organizations will constitute the next phase that sets the groundwork for the identification of BPM issues on a global scale via a survey (including a Delphi study). Through this multi-method approach, we will be able to identify four distinct sets of outcomes. First, as is the focus of this paper, we will be able to identify the BPM issues as perceived by BPM experts. Second, the research design will also allow us to gain insight into the opinions of organisations deploying BPM solutions. Third, an understanding of organizations' misconceptions of BPM technologies, as confronted by BPM tool vendors will be obtained as well. Last, we will gain an understanding of BPM issues on a global scale, together with the apparent criticality of those matters of concern. This final outcome is aimed to inform practitioners and the research community world-wide on problems that are yet to be addressed in the related areas.

3.1 Expert interview conduct

Interviews are the most common source of information in qualitative IS research, and they can be open ended, semi-structured, structured or survey type. This study used a semi-structured interview approach, with the anticipation that the interviews would help gain insights into the "issues" of BPM. The semi structured nature of the interviews enabled the opportunity for the interviewees to think about topics, themes and core content in a new way and to reflect upon and link their experiences and

perceptions (Kramp, 2004), as well as to talk about new ideas and perspectives. The interviewers' expertise and preparedness in terms of probing and moderating is an essential element for success in these semi-structured interviews.

Fourteen global BPM experts[1] were interviewed throughout a six-month period (March 2006 to September 2006). Table 1 describes this sample in brief detail. Each interview lasted approximately 45 minutes to 1 hour.

Expert ID	Interview Conduct	Expert's primary BPM Background
Expert 1	Telephone	Technical
Expert 2	Face-to-face	Technical
Expert 3	Face-to-face	Technical
Expert 4	Telephone	Technical
Expert 5	Telephone	Technical
Expert 6	Telephone	Technical
Expert 7	Face-to-face	Technical
Expert 8	Face-to-face	Technical
Expert 9	Telephone	Technical
Expert 10	Face-to-face	Technical
Expert 11	Face-to-face	Business
Expert 12	Face-to-face	Business
Expert 13	Face-to-face	Business
Expert 14	Face-to-face	Business

Table 1. Summary details of the sample interviewed

The participating experts were identified through a judgmental procedure, based on factors such as years of experience in BPM and proven expertise (based on evidence such as best selling BPM book publications, research publications[2], invited key note speeches at leading BPM events, special designations[3] held in relation to BPM related institutions, and recognitions through major BPM bodies such as Bpmg.org[4]).

A list of target BPM experts was developed (with a conscious effort to include those from both a strong technical and business background in relation to BPM) and the experts were individually contacted. A face-to-face interview or a telephone interview was then set up to suit the feasibility of the project. Due to the global dispersion of the experts, only 8 out of the 14 interviews were conducted face-to-face. However, long established evidence (e.g. Rogers, 1976) denotes that telephone interviews are just as effective as face-to-face interviews and we have observed no limitations in the data collected in this manner in this particular project.

The semi-structured interviews were designed and pilot tested to elicit free flowing information from the target experts. All four researchers took part in the data collection process where a protocol on the overall interview conduct was followed. Each interview was led by one researcher (at a time) with a second researcher taking part in the interview as a supporting facilitator when possible. The

[1] The details of experts are not revealed in this paper due to confidentiality and ethical reasons.
[2] Identified through best paper awards, nominations for fellowships, and successful large scale research grants.
[3] Roles such as presidents and directors in major BPM consultancies and research centres.
[4] The Business Process Management Group (BPMG.org) is a global business club exchanging ideas and best practice in process and change management. They have over 16,000 global members in 155 countries across all business sectors and support their members through case studies, seminars, education and research (see http://www.bpmg.org/ for further details, last accessed November 22nd, 2006)

interviewers were equipped with a 'field kit' (following Miles and Huberman, 1984), which consisted of a standard introduction to the project, the core interview questions (see Exhibit 1) and a response summary template to take down effective notes to support the probing process throughout the interviews conducted.

Q 1: Please describe your role in relation to your BPM experience
Q 2: How would you define the term 'BPM' and, in your own opinion what role(s) do BPM currently play in businesses?
Q 3: What do you perceive as the major issues in Business Process Management?
- What recommendations can you give in addressing some of these issues that you identified …

Q 4: What do you perceive as the major issues in *Business Process Management supporting Technologies?*
- What recommendations can you give in addressing some of these issues that you

Exhibit 1: Expert interview protocol

The first two questions were designed to 'set the scene'. Question 1 was intended to anchor the expert into his/her area of expertise, and Question 2 was posed to clarify the expert's perspective on what BPM is and to further identify his/her view on what BPM can do within organizational contexts. Questions 3 and 4 were the main parts of the interview, where major issues and potential recommendations in terms of the generic BPM methodology and specific BPM technology were elicited.

3.2 Data analysis

As each interview was completed, the main findings were summarized. All interviews were transcribed and analyzed in detail using the qualitative data analysis tool NVivo 2.0.

"*Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study*" (Miles & Huberman, 1984). The interviews were coded using a bottom up approach; where all inferences were derived purely from the data (no a priori notions or constructs were considered in the coding process), where, a node[5] within the NVivo tool was created to capture details of each emerging issue and any related recommendation(s).

- When a new issue was identified, a new set of nodes (folders) was opened to capture this.
- Statements that generally discussed a certain issue were grouped together.
- Statements that specifically mentioned the potential resolution for a certain issue were grouped under a 'recommendation' node for each identified issue.

The detailed coding was conducted by two of the researchers. One first coded each of the interviews and created an initial node structure. The other re-coded the interviews against this created node structure. The created node structure from the first coder was used by the second coder, in order to manage the difficulties with the terminology used in this type of context (BPM being a rather vaguely defined area) and bottom-up coding. The second round coding was conducted merely to further validate categorization of the first coder. Only a few, very minor discrepancies existed and these were discussed and resolved by recoding as agreed to a common consensus. This resulted in a set of major BPM issues as defined by BPM experts; these main issues are being reported in detail, in the next section of this paper.

[5] "Nodes" are 'folders', within NVivo where one can store ideas and categories, they are organised in a tree-like structure.

4 RESEARCH FINDINGS

We present the main BPM issues perceived by selected renowned BPM experts, against the typical organizational levels. The findings are thus grouped into three categories namely strategic level issues, tactical level issues, and operational/technical level issues (as shown in Table 2). We use this approach here, in order to specify the context of the identified issues, as well as to better structure the discussion. From the BPM perspective, the strategic level, which is at the top level of categorisation, relates to top management support, business and IT alignment, process organisation and governance issues. The tactical level encompasses challenges in efforts such as process modeling, process performance measurement and BPM methodologies. The operational level relates to technological issues in BPM adoption such as technology capability, SOA (Service Oriented Architectures) maturity in the technology landscape, use of XML standards and so on.

Strategic	Tactical	Operational
• Lack of governance • Lack of employee buy-in • Lack of common mind share of BPM • Broken link between BPM efforts and organisational strategy	• Lack of standards • Weaknesses in process specification • Lack of BPM education • Lack of methodology	• Lack of tool support for process visualisation • Perceived gaps between process design and process execution • Miscommunication of tool capabilities

Table 2Major issues in BPM at different organizational levels, as noted by BPM experts

Whenever applicable, direct quotes from the experts are depicted as is (‘*see quotes in the text’*), and when required minor editions are made to these quotes, which are denoted within the quotes (<indicated thus>). While the data analysis technique using the NVivo tool has enabled the researchers to keep track of the data, analysis and the original source; the original source is not denoted here due to confidentiality agreements with the experts who were interviewed.

4.1 Issues at the strategic level

4.1.1 Lack of governance

Lack of governance is a frequently quoted issue by the experts. “*Corporate governance is the system by which companies are directed and managed. It influences how the objectives of the company are set and achieved, how risk is monitored and assessed, and how performance is optimized*” (ASX Corporate Governance Council, 2003). Experts stated that; “*Governance is the real issue*” (Expert 4), “*… the biggest challenge for the next step forward in BPM is proper representation of organisation and assignment of responsibility and allowing organisations to be extremely flexible while at the same time not losing track of any piece of work*” (Expert 6).

From the perspective of BPM, another frequent issue is the ownership and control of processes across organizational units. Questions such as “*who is the owner of the business process?... Who is allowed to change it, who is allowed to alter it?* (Expert 10). *“ Do I want you to share my process or my bits of the process with my competitors*” (Expert 5), are essential to be addressed for the effective deployment of BPM, but there was no recommended procedure on *how to* address them has been discussed. Solving this issue is stated to be “*absolutely difficult*” (Expert 4). Some recommendations towards a solution include the documentation of “*organisational directories”* (Expert 6) that show the “fluidity of organizational structures” (Expert 6), and a clear documentation of “*BPM authentication standards*” (Expert 6), (consistent standards for access to BPM-related systems). “*Good sponsorship from high*

level management" (Expert 5), is one of the factors that will support this, which is also related to the issue of employee buy-in discussed below.

4.1.2 Lack of employee buy-in

Employee buy-in across an organization is negatively impacted by the lack of a common understanding of BPM. One reason for this is lack of awareness of what BPM is. Another reason is the wide range of views that exist of BPM - *"there is too many meanings with the acronym BPM„… So you if you talk to a manager versus a technical person or a process owner, their perspective of BPM would be different"*. (Expert 5). This multiple perspective and lack of common consensus often creates confusion and disagreement on the benefits, expectations and deliverables of BPM.

Middle management has been particularly criticized as being non-supportive for BPM initiatives; "*middle management feels threatened by the introduction of business processes because they are losing control*" (Expert 4). Experts believe that the way to remove this barrier is to obtain top management support, which in itself is also a challenging task. Indeed, quite often the "*bottleneck is at the top of the bottle*" (Expert 12), and careful measures need to be take to obtain the buy-in from these top level managers. *"One issue is getting the leadership buy-in and getting their engagement and accountability to implementing BPM and in order to get that, I think you need to be able to clearly articulate the business case and the business need and how that fits into the overall strategic goals and objectives*". "*You can use different techniques to sell business process management top down and you need to do things like benchmarking and story telling"* (Expert 14).

Organizational culture also plays a role in levels of employee buy-in. BPM is generally "*a very hard concept to sell in organizations. Business process management typically involves the graphical mapping and modeling of processes and in particular in the US, many organizations don't see a value in just understanding how the business works. Americans just want to do stuff. Germany* <on the other hand> *want to understand stuff, there is a big difference"* (Expert 7). When asked what one can do to change a culture to make BPM more acceptable, experts' responses were; (a) "*First of all talk about and educate students - that's sort of a grass roots thing"* (Expert 7); (b) *"Stress the organizational side more than the technical side. Make sure that BPM is not just the type of software that one uses and speaks the language of the business"* (Expert 7); and (c) *"Give the people involved the impression they are still under control and that BPM is just a system that helps them to forget and make it easier to access applications*" (Expert 8).

Another identified hurdle to employee buy-in is the common perception that BPM is about minimizing the employee-base - "*people are* <also> *very reluctant to talk about processes because they think that they are going to be rationalized in a way*" (Expert 7). This is a difficult hurdle to overcome as, invariably; process automation and improvements do, in cases, result in minimization of the workforce. However, the employees' perception that this is commonly the case is due to lack of understanding of BPM benefits overall.

4.1.3 Lack of common mind share of BPM

There is a lack of awareness that BPM technologies can help, as well as a lack of consensus that a holistic BPM approach is applicable. One of the major inhibitors for this is the lack of consensus on what BPM is and what it can provide. "*The first thing is the term itself because it's such a broad term, business process management, if you talk to different people they will give you totally different definitions of business process management*" …"*The main thing first is getting an agreement from all the different stakeholders that when they talk about business process management, what does it actually mean?*" (Expert 10).

4.1.4 Broken link between BPM efforts and organisational strategy

BPM management should be a holistic approach *"…I particularly emphasise that when one looks at the way that an organisation gets its work done that you see that part of this is an important strategic level and part of this is an important operational level*" (Expert 3). There should be no gap between the bridge between organisational strategy and BPM efforts; *"a total alignment from strategic intent, strategic objectives to stakeholders and the relationships and the measures of value for them, and the processes which contribute towards those* <should exist>"(Expert 12). Then, "*when one looks at the way that an organisation gets its work done, you see that part of this is an important strategic level and part of this is an important operational level*" (Expert 3). Often *"4,5,6, different places in the organisation* <run BPM projects> *and then you have the problem how to bring these local projects together, in an overall process architecture. I see a lot of bottom up projects but no way to tie that all into an overall business strategy or process strategy of the organisation. That in my view is one of the biggest problems that the BPM, both the technical industry as far as the consultancy has to overcome*" (Expert 7).

BPM experts have also expressed a major concern with the problem of policy management, policy match making and service agreement. "*BPM has to fit into an overall IT infrastructure*" (Expert 4), and this can only be done with the proper documentation of procedures and policies that clearly show how organisational strategy, corporate mission and supporting technologies fit together.

One can use portfolios and strategy maps to look at what are the processes within an organisation and how they relate to an overall strategy. Such approaches will also assist organisations to align the different BPM projects together and assist in communicating the business value of BPM efforts to the relevant stakeholders.

4.2 Issues at the tactical level

4.2.1 Lack of Standards

Standards are specifications that are sanctioned by standard governing bodies or specifications that are widely accepted and used (*de facto* standards). In general, they provide an agreed-upon basis with which software, hardware and communication can be specified. They hence play an important role in maintaining consistency within and across organisations and domains. In the space of BPM, standards support consistency and completeness of BPM solutions, and allow various departments within an organization to better communicate their processes. For example, the recently proposed candidate standard BPMN (Business Process Modeling Notation) denotes an effort at standardising process modeling in organisations and putting an end to having to translate models from different notations within an organisation. Standards can also assist organisations to align their BPM initiatives with essential compliance requirements. Experts state that *"there is some evidence that these open standards will allow for better interaction, easier interaction between enterprise applications and that will be conclusive to process management"* (Expert 8)**.**

However, standards themselves can be problematic. With regards to the content of standards, their development is often domain specific, so experts in the field come together to derive these and "*that is more a political issue*" (Expert 8). *"As mentioned earlier, BPM means so many different things to so many different people and standards bodies and standards groups have their own vested interest in what they do and what they are trying to push*" (Expert 5). The *application* (as apposed to the creation) of standards is another related issue; when to use what standard and when to deviate from these is not an easy decision to make. Experts state *"Use them where they exist and they're good and then depart from them if you have a good reason to but don't propagate a non-standard simply because it's more convenient for you"* (Expert 6).

4.2.2 *Weaknesses in process specification*

Process specification is important as it allows to "*break up information islands within the organisations to allow people to get a broader look at the problem*" (Expert 8). Organisations often use process modeling to achieve this. However, there is the "*classic trade off between richness in expression and the stability of the business of a language*" (Expert 8). There is a difference between what could and should be usefully modeled and what modeling languages can actually support - this is a yet to be addressed issue. In light of using process modeling for process specification, organisations also often fall into the pitfall of over specifying their process, losing track of the bigger picture of the intended purpose of modeling; "*Coming up with 400 different models is not important. Trying to analyze all the specifications is not important*" (Expert 9). Experts also suggest to model (document your processes) in different levels of abstractions; "<sometimes> *business people want to see their processes in a much more simple way so when we transform those processes to the technical view we still should be able to have that abstract view"* (Expert 10).

4.2.3 *Lack of BPM education*

Past BPM success studies have directly stated the importance of appropriately skilled personnel and BPM education for successful proliferation (Grover et al., 1998; Larsen and Myers, 1998; Murphy and Staples, 1998; Ketinger and Teng, 1997). However, many years after identifying this need, lack of appropriate BPM education is still a topic that is raised as a perennial issue by the experts. "*If you take an MBA in a school in the US, you don't hear 'process'. I mean it's not being taught at Harvard, it's not being taught at Stanford. They have marketing and they have finance etc. If they hear about process at all, it's operations under manufacturing somewhere*". "*There is a brand new area that I believe that the university ought to jump into this area, teach it and research it*" (Expert 11).

4.2.4 *Lack of methodology*

As experts stated; "*there is a strong need for methodology for BPM and* <none> *exists at this point*". *"From a methodology perspective, … really the biggest issue is that there are none. There are no methodologies, there are no set ways of doing <BPM>. There is no standardised approach"* (Expert 6). There is general agreement amongst all the experts interviewed that there is no reliable *holistic* methodology that guides the BPM projects end-to-end. Experts also commented that "*a lot of companies get hung up*" (Expert 13) on ad hoc specific methodologies, that come up time to time, and they recommend that the better approach is to borrow from these different approaches and adapt one's own. "*Companies get hung up on whether it's Lean or Six-sigma or what is the right methodology and they argue how many black belts you should have, and how many classes you should attend. We took parts out of Lean, we took parts out of Six-sigma. Neither one of them, frankly, we felt applied very well to business process improvement"* (Expert 13). In the end the expert recommendation is to *"look at what the continuing improvement opportunities are and try and focus on what we need to focus on*", (Expert 13) since there is no common model that solves all purposes. *The "biggest change for moving forward in all this is to get away from the one size fits all mentality*" (Expert 6).

Experts also argue that there is a need for an overall encompassing methodology that addresses issues such as BPM project scope management, appropriate tool and technique selection in BPM projects, a way to maintain performance measures and overall project flexibility.

4.3 Issues at the operational level

Limitations of the technical support made available for BPM efforts was a recurring theme that was discussed by the interviewed BPM experts. Many user organisations *do* have various BPM technologies deployed but *"that doesn't mean that they are BPM compliant just by buying those technologies"* (Expert 10), merely having the technology does not address any issue, rather it is how

the technology is used. While this is a fairly broad topic, a range of weaknesses from the tool vendors side were identified by the BPM experts. These were; the lack of tool support for process visualisation, perceived gaps between process level and runtime, lack of flexibility in BPM tools, and mis-communication of tool capabilities.

4.3.1 Lack of tool support for process visualisation

Process visualisation is a core element within BPM projects, and this is often achieved with a series of as-is and to-be process modeling tasks. Process modeling is an approach for visually depicting how businesses conduct their operations by defining the entities, activities, enablers and further relationships along control flows (Curtis et al. 1992; Gill 1999). It is widely used to increase awareness and knowledge of business processes, and to deconstruct organizational complexity (Davenport, 1993; Hammer and Champy 1993; Smith and Fingar 2003). The visualization of business processes in the form of process models has increased in popularity and importance, and appropriate tool support is a critical success factor for successful process modeling (Bandara et al, 2005). This is a gap that experts identify needs to be addressed; "*Some companies, they print out 'wall-papers'..they are sitting in the middle of the room with glasses and take a look at the comprehension of business processes*" (Expert 4). In particular, this quote leads to a discussion of the lack of tool support for visualising processes at different levels of abstraction and being able to view/navigate them.

Experts also commented on the issues of visualising large scale process models. "*The problem is how to design huge business processes, If you take a look at the tools, you simply cannot view a process model"* (Expert 4). There are *"monster diagrams"* (Expert 3 and 4) created through BPM process modeling initiatives, and this added visual complexity (when process modeling is meant to *reduce* the complexity of the business processes) is not helpful. Some tools attempt to reduce that complexity by breaking down the process; *"So if you have a big process and you know that this part of the process - this technology is going to support and this part - this technology, you would totally break up that process into different pieces and give it into different parts, and hope they will work together somehow, and that will introduce those complexities"* (Expert 10), but this can introduce new complexities, specifically in relation to technology and process integration.

Other identified needs are those of finding the right modeling language for all required purposes - "*we are trying at the moment …to force feed us one type of representation which is BPMN or Petri nets or flowcharts or EPC's; they are supposed to work at all levels and it simply doesn't. It's good for the technicians and it's good up to the process analyst but when you go into the business world then people don't think in boxes and arrows*" (Expert 7).

4.3.2 Perceived gaps between process design and process execution

In the current market, the tools for BPM are relatively fragmented. Different vendors specialise in different aspects of the BPM lifecycle, and often, due to a lack of standards, activities completed in one phase with one type of tool do not translate to the next steps of the lifecycle (which may use another type of tool). This is in particular visible between the process design (process specification/ requirements engineering phase) and the process execution phase. "*From <the process> abstract level there is no connection to the implementation*" (Expert 1). "*They provide the tools for designing the process and simulating it and then provide you with <another> tool to execute the process but they don't have <any> kind of <tool to> design process <directly> into run time*" "(Expert 1). This creates a large amount of rework and sometime loss of information in the process of translation. "*If you go from design to implementation then we've got the problem where we represent processes in the design phase with one medium and then, in the implementation phase, when we put them into systems we have to convert them to various amounts of dialects that are out there at the moment. So it's another exercise*" (Expert 7).

One expert's vision is to come up with a technology solution that "*(a) allows to quickly or partly construct process or information systems. And (b) allows the execution of these systems to be flexible"* (Expert 8). If these requirements are not met then it is the view of the expert that "*the whole technology will <eventually> fail*" (Expert 8).

4.3.3 Miscommunication of tool capabilities

It is a common problem that many users are not aware of the full functionality of the tool(s) that they have purchased. Tool vendors and consultants have been scrutinised for providing incomplete details of the software and/or misleading information. "*There's a lot of hype in the market*" (Expert 6), there is "*a lot of disinformation out there that large corporations are spreading in order to sell their product*" (Expert 6).

5 CONTRIBUTIONS, LIMITATIONS AND FUTURE WORK

This paper provides a targeted discussion of the frequently mentioned issues and challenges related to Business Process Management adoption in present organizations, as perceived by BPM experts. In order to identify the main issues, a rigorous research approach was used, employing in-depth interviews with 14 expert participants world-wide, identified through a meticulous selection process.

In particular, the study has found a number of more frequently noted issues, such as: lack of top management support, lack of tools for visualization for large processes, lack of tools that link process design to process execution, etc.

The study's findings are expected to be of benefit to both the BPM research and practicing communities, in terms of guidance for positioning their current research and targeting future research on BPM topics identified by industry as areas that need attention. The study is not without its limitations. The data collected at this stage of the study was limited to a selected group of BPM experts- identified through a judgmental, sampling method. While inherent weaknesses of interviews (which were used as the data collection approach) were mitigated as much as possible with a coherent interview protocol, the process is relatively subjective in nature and research bias may have occurred during data collection, in particular when identifying target interviewees and during the facilitation and probing of the actual interviews.

This study is the first step towards deriving a global industry based research agenda for the BPM context. Extensions of the presented work are planned, and have commenced, in order to generalise these findings across different perspectives (as discussed in the research design section). While this paper reported on issues pertaining to BPM experts, the identification of issues as observed by BPM-related technology and consulting vendors are underway, while the extraction of issues from BPM users has been already completed (Anonymous, 2006). This method of triangulation will enable a rich cross-perspective analysis of BPM issues across different crucial stakeholders of BPM, leading to a better understanding of overall issues in BPM and, accordingly, related critical research directions.

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