

Understanding Knowledge-intensive, Practice-oriented Business Processes

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Abstract

In order to create new opportunities for competitive differentiation, organisations are starting to shift their focus from transactional operational Business Processes (BPs) to other types of processes that cannot be easily replicated. Their key ingredients are human knowledge, experience and creativity that cannot be standardised, prescribed and easily acquired.

While Business Process Management (BPM) research and practice will remain focused on highly structured operational BPs for quite some time, there is a need to better understand other types of BPs, especially their knowledge aspect. This is expected to lead to new knowledge management strategies and processes designed to better leverage human capital to ensure continuous improvement of business processes.

This paper focuses on knowledge-intensive, practice-oriented BPs. It describes an exploratory case study of a complex practice-oriented BP in a large, multi-unit organization and illustrates how our research findings expand current BPM boundaries, especially in the area of BP improvement methodologies.

1. Introduction

In recent times, the field of Business Process Management (BPM) is becoming increasingly recognised as an established field of applied research and practice. While the term BPM is still most frequently used to describe technologies for business process (BP) automation, in recent times, business leaders are starting to adopt a more holistic view of BPM, best described by a recent report published by Gartner [1]. Thus, “the BPM discipline employs methods, policies, metrics, management practice and software tools to discover, model, simulate, execute, analyse, optimize and govern ongoing adjustments to

processes toward the goal of improving business agility and operational performance” (pg.2).

At the same time, while looking for new opportunities for competitive differentiation, organisations are starting to shift their focus from more-or-less standard, transactional BPs at the operational level, to other types of BPs that cannot be easily replicated by their competitors. Their key ingredients are human knowledge, experience and creativity that cannot be standardised, prescribed and easily acquired. This emerging focus is starting to stretch the existing boundaries of the BPM field to also include other, more knowledge-intensive BPs. Consequently, this creates a need to better understand the knowledge aspect of BPs, in order to support them in a way that would not restrict flexibility and stifle human creativity.

However, this need is yet to be met by the commercial BPM systems, as they are still best suited to support repetitive BPs at the operational level. In fact, the control-flow oriented coordination paradigm remains the most dominant in both research and commercial world of BPM. Even when more flexibility is provided by, for example, adaptive and dynamic workflow systems, majority of these systems still focus on operational, transactional business processes.

One of the main reasons for this trend lies in the process structure that, in the case of operational BPs, can be represented by a BP model. Process structure is, in fact, derived from various procedures and policies used to regulate and control business processes at the operational level, including the order and structure of individual tasks, roles performing these tasks and organisational resources used by these tasks.

This tendency to focus on process structure is so prevalent in the field of BPM that users of various BPM systems often start from the process structure in order to determine if a particular BP should be supported by BPM technology. Furthermore, the process structure is often used as the main focus of various emerging methodologies for BP improvement and redesign.

However, when we start to look beyond the operational level, processes become more knowledge intensive in terms of the experiential knowledge and creativity participants bring to these processes. This makes process structure less and less relevant and often not even possible to capture. Examples include various design processes in different organizational environments, such as design of new product, design of a new program or course curriculum etc.

Some of these processes may even appear to be highly structured at the coarse level of granularity, in terms of their individual tasks and the control-flows between them. Even more, in some cases, most (if not all) of their coarse-level tasks are also known in advance, including their inputs and outputs. For example, in the case of a highly creative BP “Marketing a new product”, the same set of coarse-grained tasks is followed each time a new product is launched (benchmarking competitors, deciding pricing strategy, planning promotions, etc.). However, their business value is not associated with their structure, but rather with the knowledge, skills and intuition of people involved in individual tasks. In essence, these are knowledge intensive, creative BPs. Therefore, a typical BPM approach to focus on process structure and try to capture it by a model, does not really help to determine how individual and collective process-related knowledge can be best leveraged to create business value.

This paper focuses on knowledge-intensive BPs and argues that, in the case of these processes it is important to focus on their knowledge perspective rather than their structure. Our research confirms that these processes should be seen as a set of coordinated knowledge-management processes. This is a very different viewpoint from the existing BPM research and practice, were BPs are still seen as a set of coordinated tasks.

After describing a basic classification of knowledge types, as defined in the knowledge management field, the paper introduces a theoretical framework used to analyse the knowledge dimension of a business process. Then, it describes an exploratory case study that uses the introduced framework to analyse an example of a complex knowledge-intensive, practice-oriented business process in a large multi-unit organisation. Finally, it illustrates how the main lessons learned from this research are, indeed, stretching the existing boundaries of the BPM field, especially in the area of BP improvement methodologies.

2. Understanding the knowledge dimension of business processes

The BPM field offers many classifications of BPs. The most popular ones still focus on process structure (see for example [2] and [3]). A recent classification, introduced by [4], for the first time takes into account the knowledge perspective of BPs. More precisely, it classifies BPs on the basis of their *knowledge intensity*, as depicted by Figure 1. Here, knowledge intensity relates to the level of knowledge sharing, collection and reuse that is required during processes execution.

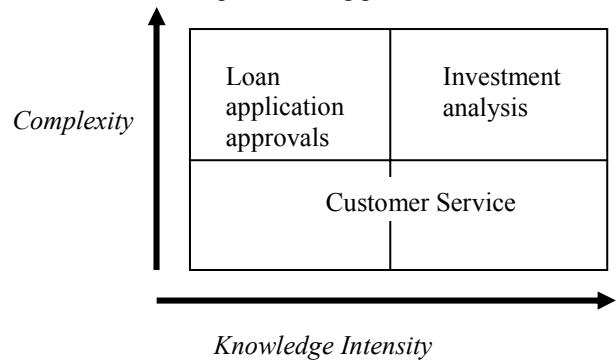


Figure 1. Knowledge intensity of BPs [4]

However, this particular classification does not take into account different types of knowledge. As illustrated later in the paper, this is a very important issue because it determines the types of knowledge processes that could be used to facilitate creation, sharing, transfer and application of knowledge as well as possibilities for business value creation.

This paper starts from the basic concepts of *explicit* and *tacit* knowledge. Explicit knowledge can be written down or drawn and described to other people. Consequently, it can be organised, distributed and managed by technology. Note that the explicit knowledge requires shared context. In other words, even though the explicit knowledge can be documented, only people sharing the same context will be able to understand and use it (e.g. operational manuals). Other examples of explicit knowledge include various organisational procedures and policies. Typically, they define roles and responsibilities for different tasks and are also used to define (prescribe) how things should be done.

On the other hand, *tacit knowledge* are things known by people but usually not documented anywhere such as the know-how, understanding mental models and insights of an individual or disciplines [5]. Very often, tacit knowledge is very difficult to communicate but could be externalised, to some degree, through problem solving and “working things

out”. Externalisation of tacit knowledge in an organization results in various organisational *practices*. These practices are developed over time by the empowered participants through their ability to make decisions and reflect upon their experience.

In reality, all business processes combine, to some degree, both procedures and practices (i.e. explicit and experiential knowledge). Figure 2 depicts the theoretical framework that can be used to describe the knowledge dimension of different types of business processes. This is an extension of the framework that was originally introduced by [6].

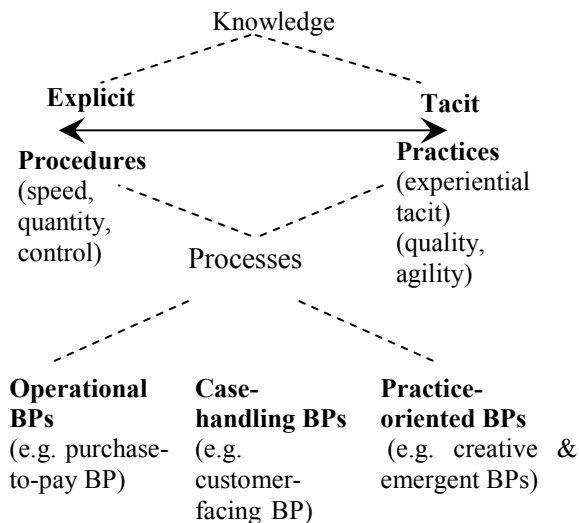


Figure 2. The knowledge dimension of BP

As illustrated by the above figure, highly repetitive, operational BPs have a much more prominent procedural component. Among other things, the procedural component defines the process structure i.e. individual tasks and their order in a particular process. Consequently, technology developers often rely on standardisation and predictability of organisational procedures to design BPM solutions. This is why the existing solutions remain the most suitable for the operational business processes where the main emphasis is placed on speed, quantity (no. of transactions) and control via standardised procedures.

On the other hand, in the *practice-oriented* BPs, their practice component is much more prominent. Here, people develop new experiential knowledge while participating in collaborative tasks and problem solving activities. The explicit knowledge comes in the form of policies that are used to help the participants stay within the normative boundaries of their organisation as well as the wider legislative environment. In the case of practice-oriented BP the main emphasis is placed on process effectiveness,

quality and finding creative solutions to meet customer needs.

The third category of BPs, called the *case-handling* BPs also combine procedures and practices. Here, the experiential knowledge comprises practices people develop while handling the non-standard cases of customer-facing BPs. While practice-oriented BPs tend to be more collaborative, case-handling BPs typically have one customer-facing officer (e.g. a case officer) in charge of each BP instance (e.g. case). This particular category is outside of the scope of this paper.

As already pointed out, this paper focuses on practice-oriented BPs. While some aspects of these processes have been researched in other fields such as knowledge management ([7], [8], [9]) collaboration engineering [10] and the emerging field of computer support for creative processes [11], there is a knowledge gap within the BPM field. This creates the need to better understand how these processes differ from operational BP that, so far, have been the main focus of BPM research and practice.

3. A motivating example of a knowledge intensive, practice-oriented BP

Typical examples of practice-oriented BPs include various design processes such as design of a new marketing campaign, a new product, a new course curriculum etc. This paper focuses on a process of BP improvement typically undertaken by organisations wishing to improve/redesign their existing or design new business processes. This example was chosen for several reasons.

First of all, this is a very complex example of practice oriented BP. Its procedural component involves the existing policies and procedures used to define roles and responsibilities of people involved in this process, as well as its normative boundaries. Its practice component is, to some extent, captured by a particular BP improvement methodology used by each organisation. In essence, a methodology is a generic description of a “how-to-do” process designed to provide guidance to practitioners to use in their specific BP improvement projects. Even though there are many models and techniques in this field, many prominent researchers, including Davenport, argue that BP improvement remains more “art than science” [9]. Therefore, any organizational implementation of BP improvement is, in fact, a knowledge-extensive, practice-oriented process.

Furthermore, the existing methodologies only specify coarse-level tasks such as analysis and modelling of the existing (As-Is) process, design of an improved (To-Be) process and organisational implementation of the new processes. However, this description is not precise enough for organisations to

provide helpful guidance, as to how to design new processes. Thus, fine-grained tasks emerge during the actual execution of this process as people “work things out” and generate new ideas.

Also, BPs improvement is at the very core of Business Process Management. Gartner predicts that, by 2008, most Global 2000 organizations will have more than one enterprise wide Business Process Management (BPM) initiative under way [1]. Therefore, any organisation involved in any type of BPM initiative will experience some version of this process, making this example one of the most frequent examples of practice-oriented BPs.

It is also important to observe that BP improvement is, in fact, a meta-process (i.e. a process about the process) that applies to any type of organisational processes. Even though it is a meta-process, it is still considered to be a business process because it contributes to business value creation and involves a set of coordinated business activities (tasks) performed by people, playing different organisational roles, and working towards the same goal or objective. However, its coordination pattern is not predefined as in the case of operational BPs.

While in many organizations, BP improvement processes start as a one-off project targeting specific organisational processes, the ultimate goal of BPM is to facilitate implementation of on-going, continuous BP improvement processes in an organisation. At the same time, continuous improvement is one of the pre-requisites for organisational agility, as more agile organisations are also more capable to continuously adjust their processes.

The above discussion illustrates that BP improvement is a collaborative, cross-functional process. This is a very important observation because as with any other collaborative processes, new knowledge is co-created through negotiation of meaning, collaborative analysis and problem solving. Furthermore, in order to facilitate shared understanding of different aspects of a process being designed, it is necessary to obtain, share and very often reconcile different points of view. This is why it is crucial to involve people who have the experiential knowledge of the given process. However, according to the existing methodologies, BP design processes are often conducted and led by process analysts who can only deal with the explicit knowledge expressed by process models. This practice is also encouraged by vendors of different modelling and analysis tools (e.g. for verification of consistency of process models).

Finally, it is important to point out that our current understanding of BP design processes has evolved from the approaches promoted by Business Process Reengineering (BPR) that was widely practiced during early to mid 90s. As Gartner pointed out, BPM, as

practiced or should be practiced today is not BPR [1]. More than ten years of the accumulated experience with various failed projects have confirmed that BPR focused too much on process automation, promoting the radical, “clean-slate” approach, thus neglecting the knowledge aspect deeply embedded in everything people do. Even though to this day, some practitioners continue to label their various improvement projects as BPR (for the lack of a better word), current practices have involved so much that BPR is now widely considered to be an out-of-date practice [1].

4. Case study Organization

This research focuses on a specific e-procurement process improvement initiative, currently undertaken by a BPM team in a large, multi-unit organization. The chosen case study organization is a large university that employs about 6000 staff. The e-procurement business process improvement project is currently being implemented in a large faculty that employs about 200 people. The faculty consists of a number of organisational units including academic departments, research centres and other commercial units. This particular study project was conducted during the 2006 to 2007 and is currently in the final stage. The case organization was selected because of the access given to the researchers, its potential as a rich organizational context in which to study the influence of process knowledge and the evolving nature of the process improvement methodology in a BPM implementation context.

While there are a number of different processes this organization is currently improving, this study focuses only on the e-procurement BP. This process, also known as “purchase-to-pay”, is one of the core operational processes in any organization. In essence, it is a very simple, repetitive, more-or-less standard BP designed to coordinate the main activities related to procurement of goods and services from suppliers, receipt and storage of goods and the subsequent payment. Thus, it typically includes the following high-level tasks: “Order goods and services”, “Receive goods and services” and “Make payment”.

An organization typically procures many different types of goods and services, however, some of them need to be registered and subsequently managed as company assets for insurance and depreciation purposes. In this particular organization, asset management has been a very complex problem, mainly due to very diverse asset types procured by different organizational units. Also, some units (e.g. research-based units) are constantly dealing with new types of assets, never procured before. For example, some

assets would require special storage and implementation of special safety procedures (e.g. radioactive substances). Some would even require highly specialised knowledge to check if they were received in a good working order (e.g. a very sophisticated piece of medical equipment such as DNA analyzer).

Even though the high-level e-procurement BP has remained the same across different units within the same faculty, over time, the underlying organisational practices and policies have evolved and changed. This was followed by development and acquisition of different applications used to manage different aspects of e-procurement process. In particular, very diverse asset types led to development and implementation of different asset management applications designed to meet the diverse needs of different units. The e-procurement BP improvement initiative started as a part of a much larger initiative to standardise operational processes that, in turn, will enable this large organization to implement a concept of shared business services. From the business value perspective, this will enable different units to share assets, improve bargaining power with suppliers, streamline the processes, and most importantly, better utilize knowledge, expertise and experience of people involved in this as well as other organizational BPs.

Over time, the BPM team aims to start similar initiatives in other faculties, again, first with the e-procurement process and then with the other core BPs. Consequently, the knowledge and experience acquired in this particular project and its transfer to the subsequent BPM projects become critical, in order to make the subsequent BP improvement initiatives even more effective. Obviously, this is a very challenging research and practical problem not only because of the underlying infrastructure, but also because of different organizational contexts. They involve different organizational culture, information management and change management practices as well as diverse organizational policies and practices developed and used by different units.

5. Research methodology

The main objective of our research has been to investigate the above described eProcurement improvement initiative as a complex example of practice-oriented BP. Our aims are to gain better understanding of these types of processes from the knowledge perspective and, subsequently, to identify new strategies that could be used to better leverage individual and collective knowledge and experience during BP improvement projects.

Our exploratory case study focused on the following research questions:

- What are the main aspects/components of the explicit and experiential knowledge in this particular example of practice-oriented BPs? How do they compare to operational BPs from the process perspective?
- What are the main knowledge management processes this organization used to create/transfer and apply individual and collective explicit and experiential knowledge?
- What knowledge-related strategies and techniques did this organization use in order to leverage individual and collective explicit and experiential knowledge during BP improvement process?

In line with the exploratory nature of this research, a case study method that involved an interpretive approach was adopted to capture its corresponding contextual richness and complexity [12]. Interpretive research offers an opportunity to understand the phenomena through the meanings that people assign to them [13].

In order to capture accurate reflection of the issues under investigation and the evolution of business improvement methodology in this context, semi-structured interviews with the stakeholders and facilitators of the project were conducted. The research team also participated in the process improvement workshop as a non-participant observing the evolving methodology and the interacting and facilitating factors in the final outcome. In addition, information that relates to the origin and history of this project, its plan of action, minutes of the previous meetings and workshops, and other policy related documents were collected and content analysed.

Like all interpretive studies, this study sought a subjective understanding of the conditions, practices and consequences of social action as expressed by the stakeholders and facilitators in their particular social context and are expected to reveal complexities and details that are commonly omitted in quantitative studies [14]. The data thus collected from different sources was compared and triangulated in order to identify the development and evolution of the business process improvement methodology in this context. Furthermore, to ensure validity of the results, all issues identified in this project, along with the research findings were discussed and confirmed with the key stakeholders from the case organization.

As is typical in any case study research, this study had limitations, including lack of generalizability and subjective bias ([12] and [14]). The findings of this study were specific to the situation observed and provide an anecdotal evidence. Since the business process improvement methodology and process

knowledge of individuals in the project is continuously evolving and changing, it was possible that the influence of process knowledge on certain aspects could not be seen immediately, and may become apparent only after a long period of time [15]. The limitations discussed above could thus have influenced the process as well as the outcomes of this study. However, these limitations are unlikely to have affected the validity and reliability of the outcomes significantly because the objective of the study was not to generalize, but to provide anecdotal evidence and to illustrate the role of process knowledge in this particular project.

6. Discussion and lessons learned

This section offers a summary of the key research findings related to the previously introduced research questions. It also illustrates how this research expands the boundaries of current BPM research and practice in the area of BP improvement practices and methodologies.

6.1. Knowledge dimension of practice – oriented BPs

The chosen example of BP design has enabled us to analyse, in parallel, the knowledge perspective of two different types processes: procedural (eProcurement process itself) and practice-oriented (the process of eProcurement improvement). It is very interesting to observe that these processes were performed in the same organization and some participants were involved in both processes at the same time.

In order to answer the first research question, we applied the previously introduced theoretical framework (as depicted by Figure 1) to both types of BPs. Table 1 summarises different components of experiential and explicit knowledge that could be observed in both types of processes.

Table 1. The knowledge dimension of procedure- and practice-oriented BPs.

Knowledge component BP type	Experiential (externalised tacit)	Explicit
Practice-oriented (the process of eProcurement improvement)	<ul style="list-style-type: none"> -Fine-grained tasks, emerging roles and resources -Coordination, communication and collaboration patterns -Knowledge management processes 	<ul style="list-style-type: none"> - Some coarse grained tasks as defined by the existing BP improvement methodologies -Existing organisational policies regulating the normative environment of the process - Some aspects of BP improvement methodology (over time, as organisation rolls out improvement of this and other processes in other faculties, some aspects of their “know-how” will become explicit knowledge)
Operational (eProcurement process itself)	<ul style="list-style-type: none"> -Exception handling and decision making related to asset management (e.g. dealing with new asset type) within different organisational units of the same faculty 	<ul style="list-style-type: none"> -eProcurement model (including description of all coarse-level tasks, roles and their responsibilities, resources) -Coordination patterns -Policies and procedures governing BP execution & some aspects of exception handling -Data on previously completed instances

The above table illustrates that in the case of an operational BP, almost all its aspects can be considered as explicit knowledge. They include a process model, its coordination aspect (including the order and expected duration of individual tasks), organisational policies and procedures governing the execution of individual tasks and data related to completed instances. While some BPM systems still require all possible exception handling procedures to be prescribed, in recent times organisations are starting to recognise the value of experiential knowledge developed through exception handling even in very routine, highly prescriptive BPs. For example, Stein and Zwas [16] argue that the core competencies of an organisation are derived from the episodic knowledge (contextually situated decisions and their outcomes) rather than the explicit knowledge, widely available in organisation.

On the other hand, as expected, the practice-oriented BP involves components that are predominantly experiential rather than explicit knowledge. For example, coordination among fine-grained tasks is completely human driven and cannot be predefined. Thus, participants decide when and how to proceed. Although this knowledge cannot be ever entirely captured, some aspects could be documented and preserved and reused to promote organisational learning. However, current research from the knowledge management field confirms that documented best practices, stored in organisational repositories (or memories) are rarely used and transfer of this knowledge from one context to another is destined to fail [17]. The main problem is that these practices are always deeply embedded in a particular organizational context.

6.2. Knowledge processes and knowledge-related strategies for BP improvement

During the course of this exploratory case study we have identified a number of issues that stretch the existing boundaries of “traditional” BPM, especially in relation to BP improvement processes and methodologies.

- First of all, BPM sees a business process as a set of coordinated tasks. Obviously this is still applicable to highly repetitive operational processes, where process models are known in advance. However, this research has confirmed that a practice-oriented process (in this case, a BP improvement process) should be viewed as a set of coordinated knowledge-management processes. These processes deal with acquisition (externalization), creation, co-creation, transfer and application of both explicit and, most importantly,

experiential knowledge (i.e. externalized tacit knowledge). These processes need to be carefully designed and coordinated in order to best leverage individual and collective knowledge, experience and creativity.

- Furthermore, a very comprehensive literature review confirms that the existing BP improvement methodologies focus on BP modelling and tend to follow a more-or-less similar approach (see for example: [18], [19], [20] and [21]). As already pointed out, typical coarse grained tasks include analysis and modeling of the existing BP (i.e. “As-Is” model), followed by design of a new process (i.e. “To-Be” model), followed by implementation of the new process. From the knowledge management perspective, this approach assumes transfer of knowledge from domain experts to process analysts and then representation of this explicit knowledge by a process model.

In the case organization, the high-level “As-Is” process was the same for all organizational units. However, over time each unit has developed its own version of this process, as individual practices have evolved. This was particularly evident in the case of asset management practices and policies that have evolved as units had to manage an increasingly diverse set of assets.

An application of any BP improvement methodology recommends modelling of all different versions of the “As-Is” process, in order to get a better understanding of existing practices. However, in this particular organization, rather than trying to identify and document all different versions of the existing process and the associated policies, the BPM team adopted a different approach. They decided to identify the key participants (also known as “touch points”) – people who have the explicit as well the experiential knowledge on the key aspects of each version of this BP. The BPM team also completed a number of interviews to gain better understanding of the possible sources of, and reasons for, different versions of the process.

Our project has confirmed that the key participants where people in charge of various semi-structured *decision making tasks* in each process and the main differences occurred because of the different policies and procedures that have evolved over time around these decision making tasks, especially when dealing with new types of assets they had never dealt with before. For example, the main differences could be attributed to an important decision: “Is the received good an asset?” and the associated rules different units developed and used to facilitate their decision making processes. This observation could be also linked back

to our finding related to different knowledge aspects of procedural processes, as depicted by Table 1. There, we have identified that decision making tasks involve experiential knowledge and consequently, it is expected that this knowledge will evolve over time through reflection-in-action.

- In the BPM field, analysis of an “As-Is process” is typically followed by design of a “To-Be” process. Looking from the knowledge management perspective, this means that knowledge acquisition and transfer processes are typically followed by knowledge creation, as new BPs are designed. However, this particular sequence works well if the main focus remains on the explicit knowledge (i.e. process model).

On the other hand, during the eProcurement improvement process, all knowledge processes were highly intertwined. This was particularly evident in the case of a (full-day) collaborative workshop that involved all “touch-points” from each organizational unit, senior management representatives and the members of BPM team. From the knowledge management perspective, the workshop included all key knowledge management processes: acquisition, creation, co-creation, transfer and application of both explicit and experiential knowledge. All these processes were highly intertwined and kept emerging as participants progressed with design. It is the experiential knowledge of the key people, rather than shared explicit knowledge, expressed by process model, that made this highly interactive process possible.

In essence, the workshop was designed to facilitate creation of shared understanding and co-creation of the new process. Again, rather than focusing on models, workshop participants focused on collaborative analysis of different existing scenarios of decision making related to asset management *within each* organisational unit as well as analysis of possible future scenarios *across* organizational units. The key questions used by the facilitator to guide this process were: “*How does this work in your world?*” and “*How would this work in your world?*” (where “this” referred to different scenarios of asset-related decision making). The observed practice of collaborative analysis of different scenarios has also its justification in the field of knowledge management. Here, the related research confirms that tacit knowledge (at least some aspects of it) can be only externalized through collaborative problem solving [7]. This was exactly the case with the observed practice. While some scenarios were prepared in advance by the workshop facilitator the rest of them kept emerging during discussion, as “touch points” kept sharing their complex examples or various exceptions.

Thus, the process of building of shared understanding of different “worlds” included both knowledge acquisition from the “touch points” as well as knowledge transfer between different organizational units. This was accomplished via different knowledge management techniques and strategies, including clarification of meaning and storytelling related to different exceptions and management of complex cases. The key role was played by the workshop facilitator who was also in charge of coordination of these knowledge processes. The facilitator was also one of the leaders of BPM team. This was very important as he was deeply involved in the BP improvement process and, most importantly, shared the same context with all other participants.

Furthermore, design of the new process was, in fact, a knowledge co-creation process via collaborative exploration of different scenarios. Compared with the typical BP improvement methodologies where the main emphasis is on design of a new process *model*, in this particular project, the group focused on the key *decision making tasks* with the view that the overall process model will emerge in the process of knowledge co-creation. Thus, the BP model was not the main driver, but rather one of the expected outcomes.

The collaborative workshop resulted in a preliminary design of new decision tasks and the associated policies that were also combined in a new version of an eProcurement process. It is interesting to point out that, the resulting high level model of the “To-Be” process remained the same. This is not surprising having in mind that this is the core business process that has to include a standard set of high-level tasks, because goods and services still need to be ordered and received and suppliers paid.

- After the “To-Be” processes are designed, typical BP improvement methodologies normally proceed with the implementation phase. In this particular project, the implementation phase again included a number of knowledge management processes. After the workshop was completed and the agreed outcomes documented, this, now explicit knowledge, was then communicated back to all organizational units for further analysis and discussion. This phase is still currently in progress. The BPM team has anticipated that after the reviews are completed by each unit and feedback collated, they will be ready to design an implementation plan for new process.

This project will continue with BP improvement of e-procurement processes in other faculties. From the KM perspective, this will include a two-way transfer of knowledge, from the recently completed to new projects in order to continue to improve the underlying methodology as well as back to the previous

participants to ensure sharing of new ideas and best practices.

7. Conclusion and future work

“It doesn’t make sense to hire smart people and tell them what to do; we hired smart people so they could tell us what to do.” (Steve Jacobs from Apple computer as cited by [8]). The same point can be easily applied to the field of BPM. To large extent, this field still focuses on well-structured, highly repetitive, operational business processes where systems are designed and used to “tell people what to do” via prescribed models and automated coordination mechanisms. In very recent times, the emerging holistic approach to BPM is starting to recognise the importance of human knowledge and expertise. In our research we follow the same approach. Thus, in order to allow smart, creative people to do “what they are hired to do”, it is necessary to stretch the boundaries of traditional BPM and start exploring more knowledge-intensive BPs along with the strategies how to best leverage human capital.

This paper uses an exploratory case study to investigate an example of a practice-oriented BP in a large, multi-unit organizational setting. The paper illustrates that in order to understand these BPs and how they differ from other types of BPs, it is necessary to analyse their knowledge dimension.

Finally, this paper argues that practice-oriented BPs should be seen as a set of coordinated, contextualized knowledge processes, rather than a set of tasks, as it is typically done with operational BPs. In this particular case, knowledge needs to be shared not only across different units within the same faculty, but also across different faculties and also from one BP improvement process to another. This creates a set of very interesting research and practical challenges as all knowledge management processes are contextually situated and therefore, different organizational factors (such as organizational culture, policies and even information management practice) will influence the way these processes are coordinated and implemented. Our ongoing research project aims to further explore these and other issues that are likely to emerge at the cross roads of BPM and KM fields. This includes further investigation of possible synergy between knowledge-intensive BPs and the “Strategy pull model of KM” [7], via more exploratory case studies in different domains and organisational settings. This research is expected to create new strategies, frameworks and tools to support organisations to better manage and support their practice-oriented BPs.

8. References

- [1] Gartner Research: Gartner position on Business Process Management. Gartner Research Note, ID: G00136533 (2006) <http://www.gartner.com> downloaded Jun 2007.
- [2] Pava, C. (1983): *Managing New Office Technology: An Organisational Strategy*, Free Press, New York.
- [3] Mohan, C. (1997): Tutorial: State of the Art in Workflow Management Systems Research and Products, Proc. of the 5th International Conference on Database Systems for Advanced Applications (DASFAA’97), Melbourne, Australia.
- [4] Moore, C (2000): *Process Knowledge, Workflow Management Coalition* (available from <http://www.wfmc.org>).
- [5] Alavi M. and Leinder D.E, “Review: Knowledge Management and Knowledge Management Systems: Conceptual foundations and research issues”, *MIS Quarterly*, Vol. 25, No.1, March 2001, pp.107-136.
- [6] Miers, D. “The Split Personality of BPM”, *BPTrends*, February 2004.
- [7] Malhotra Y. Integrating knowledge management technologies in organisational business processes: getting real time enterprises to deliver real business performance, *Journal of Knowledge Management*, Vol. 9, No. 1. pp.7-28.
- [8] Davenport T.H. and Prusak, L. (1998): “Working Knowledge: How Organisations Manage What They Know”, Harvard Business School Press, Boston, Massachusetts.
- [9] Davenport, T.H. and Short, J.E. (1990) “The New Industrial Engineering: Information Technology and Business Process Redesign,” *Sloan Management Review*, summer, p11-27.
- [10] Biggs, R.O., de Vreede, G=J., Kolfshoten, G. “Report on the HICSS-39 Workshop on Collaboration Engineering, January, Hawaii International Conference on Systems Sciences, HICSS’39, Hawaii, 2006.
- [11] Swatman, P. et al., (2005): *Supporting Creative Teams Through ICT*, Proc. of the Australian Workshop on Requirements Engineering, Melbourne, Australia.
- [12] Yin, R.: *Case Study Research: Design and Methods*. 3rd ed, CA: Sage Publications (2003).
- [13] Deetz, S.: Describing Differences in Approaches to Organization Science: Rethinking Burrell and Morgan and their Legacy. *Organization Science*, 7, 2 (1996) 191-207.
- [14] Mason, J.: *Qualitative Researching*. 2nd edition., Sage Publications, London (2002).

[15] Willcocks, L., Lester, S.: In Search of IT Productivity: Assessment Issues. in L. Willcocks, L. and S. Lester (Eds). *Beyond the IT Paradox*, John Wiley & Sons, (2002) 60-97.

[16] E. W. Stein and V. Zwass, "Actualising Organizational Memory with Information Systems," *Information Systems Research*, 6 (2), 1995, pp. 85-117.

[17] Malhotra Y. Why Knowledge Management Systems Fail? Enables and Constraints of Knowledge Management in Human Enterprises, in Koenig & Srikantiah (eds.), "Knowledge Management Lessons learned: What Works and What Doesn't", Information Today Inc. 2004 pp.87-112.

[18] Kettinger, W.J., Tenge, J.T.C., Guha, S.: Business process change: a study of methodologies, techniques and tools. *MIS Quarterly*, 21, 1 (1997) 55-80.

[19] Preece, I., Peppard, J.: A study of tools, methods and methodologies for business process redesign. Paper presented at the 3rd European Academic Conference in BPR, UK (1996).

[20] Harrington, H.J., Esseling, K.C. and Nimwegen, V. (1997), "Business Process Improvement Workbook: Documentation, Analysis, Design and Management of Business Process Improvements", McGill.

[21] Povey, B. The development of a best practice business process improvement methodology. *Benchmarking for Quality Management & Technology*, 5, 1 (1998) 27-44.