

## Chapter 2

# Knowledge Base

**Abstract** This chapter presents the knowledge base to the research. First, the relevant and contemporary Business Process Management theories (both exploitative and explorative BPM) and methods for process improvement and innovation are presented and discussed. Second, the theoretical understanding of systems thinking and decision-making that influences the design choice of the Prioritisation and Categorisation Method (PCM) is discussed. It gives a general systemic view and a more specific focus on organisations as social systems supported by the systems thinking. Two other approaches that influence the design of the PCM are also discussed, i.e. organisations as networks of commitments and the theory of bounded rationality in decision-making. The chapter finishes with concluding remarks and reflections by summarising the theoretical background that the PCM is built upon.

**Keywords** BPM • Exploitation • Exploration • Systems thinking  
Social systems • Network of commitment • Bounded rationality

### 2.1 Business Process Management: Exploitative and Explorative Approaches

Managing business processes is a necessity for all organisations (Becker et al. 2013). In order to keep the pace with fast changing business environments, organisations must continuously regenerate strategies, goals and objectives (Saint-Onge 1996), and thus there is a continuous demand for changing and improving their business processes. The improvement of business processes involves a series of actions that are taken, to identify, analyse and improve business processes within an organisation with the purpose of meeting new goals and objectives (Harrington 1991).

Business Process Management (BPM) has rapidly evolved as a management philosophy and discipline with a specific focus on business processes (Kokkonen and Bandara 2010). BPM “combines knowledge from information technology and

knowledge from management sciences and applies this to operational business processes” (Van der Aalst 2013, p. 1). BPM is also understood as a managerial philosophy for creating a process view of management in order to maintain a corporate competitive advantage (Hammer 2010). BPM considers the continuous improvement and the fundamental innovation of business processes to ensure that the strategic goals and objectives of an organisation can be achieved (Burlton 2010). Hammer defines BPM as a comprehensive system for managing and transforming organisational operations. However, Hammer also criticises BPM by saying that it has become a topic with too much focus on software (Hammer 2010).

Harmon (2010) positions BPM as a combination of three traditions, the quality control tradition, the management tradition and the IT tradition. He also stresses that the main challenge of BPM is its position as a holistic approach that embraces all three traditions, and that there is an alignment problem between the traditions. Individuals who come from one tradition do not appreciate the other approaches, feeling that their approach is sufficient or superior (Harmon 2010). However, BPM researchers have recognised the problem and set up a research direction from exploitation to exploration (e.g. Rosemann 2014; vom Brocke et al. 2016).

### ***2.1.1 Exploitative BPM: The Methods for Process Improvement and Prioritisation***

In a literature review on the business process, Solaimani and Bouwman (2012) provide an overview of the research areas that are, generally speaking, related to Business Process Modelling (e.g. Giaglis 2001; Yu and Wright 1997; Lin et al. 2002; Recker and Rosemann 2009), Business Process Re-engineering (e.g., O’Neill and Sohal 1999; Yu and Wright 1997; Lin et al. 2002), Business Process Management (e.g. Lee and Dale 1998; Van der Aalst et al. 2003; Duffy 1994) or Business Process Automation (Kirchmer and Pantaleo 2005; Watson and Holmes 2009). Some other, less extensive, BP areas are discussed by O’Neill and Sohal (1999), including Business Process Improvement, Core Process redesign, Process Innovation, Business Process Transformation, Breakpoint Business Process Design and Business Scope Redefinition. In this thesis, we focus on Business Process Management. In the last two decades, Business Process Management (BPM) research has advanced knowledge on process innovations and process improvements (Van der Aalst 2013).

The BPM community has produced mature knowledge regarding process modelling and information technologies that support process efficiency and performance. Methods for continuous process improvements and prioritisation have traditionally been designed based on exploitative BPM (Rosemann 2014; Kohlborn et al. 2014). Porter (1980) defines an organisation as a combination of primary and supporting processes. The primary processes consist of the processes of inbound logistics, operations, outbound logistics, marketing and sales, and services; and the

supporting processes include firm infrastructure, human resource management, technology development, and procurement. Hammer and Champy (1993), and Davenport (1993), argue the important role that information technology plays in re-engineering work and processes in order to increase value creation and achieve a competitive advantage. These classical research studies claim that organisations need to make consistent efforts for process improvement in order to maintain the alignment of the processes with the business strategy, goal and value, which ultimately generate competitive advantages (e.g. Harrington 1991; Davenport 1993; Trkman 2010; Dumas et al. 2013). The fundamental activity of process improvement is prioritisation (which process to be improved first) (Burlton 2010). The maturity level of the processes and BPM is often considered as an indicator for improvement. However, the models lack applicability and configurability to practitioners (Röglinger et al. 2012), and most of the maturity models lack the validation of empirical evidence (Tarhan et al. 2016). Previous research has introduced a few methods specifically for the purpose of prioritising process improvement initiatives, for example, the business value scoring method (Bandara et al. 2010), the process performance scoring method (Huxley 2003) and the value matrix of process and strategy alignment (Burlton 2010). Although there is no standardised methodology regarding process prioritisation yet, the literature shows that the prioritisation criteria focus on: (i) the strategic importance of the process; (ii) the performance of the process; and (iii) organisational readiness for process improvement, i.e. culture, people, and governance for the implementation of a new redesigned or improved process. Previous research shares certain agreements with regards to how a process can be analysed and understood (e.g. Harrington 1991; Davenport 1993; Dumas et al. 2013). Quantitative and formal methods are recommended. So the measurements for assessing the process performance in terms of time, quality, flexibility and cost, are mostly adopted in the research (e.g. Dijkman et al. 2016). However, these methods only describe the process performance and indicate what to prioritise; the information on how to improve is mostly lacking. Bandara et al. (2010) conclude that the prioritisation “remains as a ‘mystery phase’ in most available guidelines” (ibid, p. 178).

### ***2.1.2 Explorative BPM: A New Direction for Research***

Exploitative BPM tools, methods and IT-related software have become a commodity, which means that companies cannot depend on them to create competitive advantages. Rosemann (2011, 2014) further points out that the weaknesses of exploitative BPM have negative impact on industries exposed to disruptive technologies and an emerging new class of competitors. As a result, *explorative* BPM has been put on the research agenda as a new direction for BPM development and application in organisations (Rosemann 2011, 2014; Kohlborn et al. 2014). Explorative BPM research goes back to the core of the BPM concept that is proposed by the classical strategic management approaches to promote the uptake of

BPM within business (not only in IT), for example Hammer (1990) and Davenport (1993). Explorative BPM research and practice should facilitate process innovation and design new processes “*capitalizing on emerging technical solutions and satisfying a consumer base with increased digital literacy*” (Rosemann 2014, p. 7). Rosemann (2014) defines the two key capabilities of explorative BPM. The first is to craft process visions “*that are compelling and transformational that they motivate staff, and customers, involved to explore how to make a desired future state...*” (ibid, p. 7). And the second is to identify the opportunity points in processes that can create new business and revenue opportunities. Organisations need new explorative BPM capabilities for value creation to better meet the demands of their customers in new business environments (e.g. Lindman et al. 2016). Lehnert et al. (2016) has argued the importance of integrating organisation’s BPM capability and process improvements projects. vom Brocke et al. (2016) challenge the one-size-fits-all methods used in BPM, and instead propose a framework for a context-sensitive BPM. The BPM body of knowledge is enriched by examining and assessing a broader variety of business contexts that helps practitioners to better understand the specific business context in which the BPM initiatives are applied (Niehaves et al. 2014). Niehaves and his co-authors explicitly comment further on the negative effects of the BPM maturity models on business practice, and they argue that dynamic capabilities related to embedding contingencies in a developing BPM are needed. Obviously, this new explorative approach and thinking has profound impact on how prioritisation as a mystery phase can be tackled in BPM research.

### 2.1.3 Six Core Elements of Strategic BPM

To ensure the correct scope of BPM and to foster a common understanding of the research area, Rosemann and vom Brocke (2010) have defined the six core elements of strategic BPM: strategic alignment, governance, method, information technology, people and culture. They claim that these six elements, and the corresponding capabilities, increase our understanding of BPM as a holistic management discipline. The six elements “make the holistic view on BPM more tangible” (ibid, p.120). This framework “has the potential to become an essential tool for such strategy and road-mapping exercises as it facilitates the task of *allocating priorities and timeframes* to the progression of the various BPM elements” (ibid, p. 119). The elements are further defined as the following:

**Strategic Alignment:** Strategic alignment is defined “*as the tight linkage of organisational priorities and enterprise processes enabling continual and effective action to improve business performance*” (Rosemann and vom Brocke 2010, p. 112).

**Governance:** BPM governance is described “*as appropriate and transparent accountability in terms of roles and responsibilities for different levels of BPM*

(portfolio, programme, project, and operations). Governance also focuses on the design of decision-making and reward processes to guide process-related actions” (Rosemann and vom Brocke 2010, p. 113).

**Methods:** Methods are defined as “the set of tools and techniques that support and enable activities along the process lifecycle and within enterprise-wide BPM initiatives” (Rosemann and vom Brocke 2010, p. 113).

**Information Technology:** Rosemann and vom Brocke (2010) have mentioned that IT-based solutions are very important for BPM initiatives.

**People:** People are defined as “individuals and groups who continually enhance and apply their process and process management skills and knowledge in order to improve business performance” (Rosemann and vom Brocke 2010, p. 113).

**Culture:** BPM culture is described as “the collective values and beliefs with regard to a process-centred organisation” (Rosemann and vom Brocke 2010, p. 113).

In an interview regarding business transformation through processes, vom Brocke (in Van den Bergh et al. 2013, p. 17) further emphasises that “these six factors are not a cookbook-they’re a stimulant for embracing an all-inclusive approach towards BPM. Context sensitivity with regard to the company’s current state of affairs is crucial. Each company should adjust its approach and balance the various factors in order to optimise value creation from BPM efforts.”

### 2.1.4 Ten Principles of Good BPM Practice

vom Brocke et al. (2014) propose the ten principles of good BPM and further articulate the importance of BPM for an organisation to become more explorative and holistic in nature. The ten principles (vom Brocke et al. 2014) are principles of organisational context-awareness; of continuity: BPM should be a continuous and permanent practice; of enablement: BPM should build new capabilities; of holism: BPM should be inclusive in scope; of institutionalisation: BPM should be embedded in the organisational structure; of involvement of all stakeholder groups; of joint understanding; of purpose, i.e. contributing to strategic value creation; of simplicity: BPM should be economical; and of technology appropriation: BPM should make opportune use of technology.

In conclusion, BPM research has developed mature knowledge regarding how to model, analyse, automate and streamline processes, which is labelled as exploitative BPM. This approach has supported companies to overcome identified problems within a process. However, the capabilities related to the exploitation have become a commodity. Therefore, more and more BPM researchers and practitioners promote an explorative approach in conducting BPM research, which is coined as “explorative BPM”. Rosemann has argued the importance of this explorative approach for BPM research (e.g. Rosemann 2011, 2014; Kohlborn et al. 2014; Van de Bergh et al. 2013). Rosemann (2014) asserts that “Explorative BPM is a significant future opportunity, and challenge, for the BPM community” (p. 7). The

**Table 2.1** Exploitative BPM versus explorative BPM (Rosemann 2011)

Exploitative BPM	Explorative BPM
Reactive	Proactive
Today's efficiency (Process model)	Tomorrow's revenue (process vision)
Problem-focused	Opportunity-focused
Exclusive (only processes)	Inclusive (business models, products, services, etc.)
Transactional innovation	Transformational innovation

explorative approach is still in its infancy. But it will generate more ambidextrous capabilities to companies (see Kohlborn et al. 2014; O'Reilly and Tushman 2013). The following table (Table 2.1) contrasts the differences between exploitative BPM and explorative BPM.

In addition to the knowledge base from the BPM research, systems thinking has influenced the design choice of the PCM, which are, organisations as social systems (Ackoff 1994), organisations as networks of commitments (Winograd and Flores 1986), and bounded rationality in decision-making (Simon 1957, 1997).

## 2.2 Systems Thinking

System and management sciences have been heavily influenced by the goal-seeking paradigm, so called "hard system thinking". However, most of the criticism to this paradigm has been put forward regarding its limitations for management use. The reality facing today's managers is complex and dynamic and subject to change, reducing problem situations to a form that would make them amenable to a hard system modelling that was already considered to be a difficult and unfeasible task in the early 1980s (Checkland 1981). Checkland argues that a "hard" paradigm is unable to handle complexity and to cope with a plurality of different beliefs and values, and is not of much help when it comes to politics and power games in an organisation. He has pointed out that intervening in ill-structured problem situations requires relationship maintenance that is at least as important as goal-seeking, and answering questions about what we should do is as significant as determining how to do it.

Another limitation is that hard systems thinking is unable to deal satisfactory with multiple perceptions of reality (Jackson 2003). Stakeholders normally have diverse opinions about the nature of the system that they are involved with and about its proper purpose, or as Beer puts it *system is a very subjective thing* (Beer 1979). Therefore, in the 1970s a general understanding was established that hard system thinking was not useful for more complex situations and in problem contexts that were deemed to be more pluralist and coercive in character (Jackson 2003). Soft systems methodologies related to problem contexts were created to focus on system models expressing different viewpoints so that alternative

perspectives could be systematically explored, compared and contrasted. Soft system thinkers abandoned the notion that it was possible to assume easily identifiable, agreed-on goals that could be used to provide an objective account of the system and its purpose.

The “soft systems” approach suggests that complex real world problems should be discussed and analysed within the context of the problem. The participants and the complexity of the system in focus are the two primary sources in analysing the situated problem.

### ***2.2.1 Organisations as Social Systems***

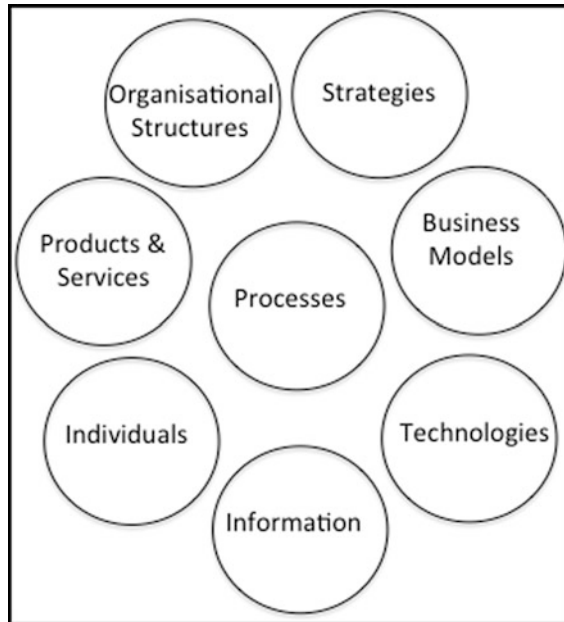
Ackoff (1981) discusses the changing concept of the corporation as an organisation and how it has evolved since the industrial revolution. He defines an organisation as (1) a purposeful system that is (2) part of one or more purposeful systems, and (3) parts of which, people, have purposes of their own. The social systems view of an organisation has evolved from a mechanistic view to an organismic view and now to a social systems model.

Mechanistic models of reality conceptualise it as a machine that works with regularity directed by its internal structure and processes together with the causal laws of nature. A mechanical view is inflexible. Therefore, it can only operate effectively if its environment is static or has little effect on it. That is where it can operate as a closed system. A rapidly changing environment requires continuous adaptation and learning by organisations if they are to stay effective. Adaptation and learning require a readiness, willingness and ability to change. Mechanistically managed and structured organisations lack such abilities (Ackoff 1994).

A social system conceived as an organism has a purpose of its own. The environment for many organisations are characterised by accelerating change, increasing uncertainty and growing complexity that diminish the possibility of accurate and reliable forecasts at an increasing rate. In such an environment, the best hope for a social system lies in its ability to bring more and more of its future under its own control. Such an approach requires a model of a social system different from the mechanistic and organismic models. The social model conceptualises a social system as a part of a larger purposeful system as well as a system with purposeful parts. It focuses on both the functions of the parts in the whole, and of the whole in the larger containing system of which it is a part. Therefore, it can yield an understanding of both the behaviour of the parts and the whole.

The social system model can help to get a better understanding of an organisation. The social system model points out that the system should be viewed as a whole and cannot be divided into independent parts because the behaviour of each part and its effect on the whole depend on the behaviour of other parts. This model can reveal why it is what it is, and why it behaves the way it does.

From a systemic point of view, an organisation consists of several components inherent with certain capabilities. In the business context of today the evolution of



**Fig. 2.1** Organisation as a social system

some of these components is so fast that there is a challenge for other systems to keep up with the pace, e.g. the technological capabilities are evolving at such a pace that the organisations and individual capabilities cannot change accordingly. These components can also be defined as sub-systems. In Fig. 2.1, the sub-systems are described as Individuals, Technologies, Information, Processes, Products and Services, Organisational structures, Strategies and Business Models. These sub-systems need to be coordinated and integrated to achieve business value (Ackoff 1981, 1989). Since companies today act in an age of accelerating change, increasing uncertainty and growing complexity, the demand for coordinating and integrating the sub-systems is higher than ever, and the task of coordinating and integrating the sub-systems is also more difficult than ever.

Viewing the organisation as a holistic system can also be found when Keen (1991) argues that competitive, technical, organisational, economic, and management choices and their consequences are so interdependent that they cannot be handled in isolation from one another. To be effective, business design through IT must balance the interplay among these capabilities. If you want to lead the business initiative that depends on IT, you must manage the decision process for IT, otherwise you can end up in a situation where you have delegated the important business issues to IT people.

In order to study organisations holistically, according to Ackoff (1994), it is critically important to engage with as many of the companies' stakeholders as



possible in the planning process. He stresses that if you do not plan, you will be planned for by someone else, internally or externally.

Ackoff (1994) proposes interactivism as a methodology to coordinate and engage individuals' participation in planning and decision-making. This approach is based on the three operating principles: the participative principle, the principle of continuity and the holistic principle.

The *participation* principle provides the members of an organisation with the possibility to develop and acquire an understanding of the organisation. The most important reason for *continuous* planning is the fact that its principal benefit derives from engaging in it. The *holistic* principle has two parts: the principle of coordination and the principle of integration. The principle of coordination states that no part of an organisation can be planned effectively if it is planned independently of other units at the same level. The principle of integration states that planning done independently at any level of an organisation cannot be as effective as planning carried out interdependently at all levels. When the principles of coordination and integration are combined, we obtain the holistic principle, which states that the more parts of a system and levels of it that are planned for simultaneously and interdependently, the better.

### 2.2.2 Organisations as Networks of Commitments

Organisations as networks of commitments are presented in the seminal work of Winograd and Flores (1986). This approach stresses the fundamental role of language that is played in creating social actions, communications, conversations and commitments among individuals in an organisation. One important underlying theory of this approach is the speech act theory. This theory emphasises that language is a form of human social action, and speech acts create commitments. Winograd and Flores (ibid, p. 76) argue that:

To be human is to be the kind of being that generates commitments, through speaking and listening. Without our ability to create and accept (or decline) commitments we are acting in a less than fully human way, and we are not fully using language.

Therefore, the authors suggest that this approach can guide organisation design centred around what they named as a “conversation-for-action” model that would be developed through certain speech acts. They describe a manager as a person in a position to direct actions that affect the economic, political or physical conditions of others in the organisation. That means that an essential part of all of the management work is dealing with coordination based on conversations and communication, which builds the network of commitments. The authors argue that management decision-making should focus on the problems of communication. *“that the key elements are the conversations among the affected parties and the commitment to action... Success cannot be attributed to a decision made by a particular actor, but only to the collective performance”* (p. 151, emphasis added).

The authors further articulate that management should create, take care of, and initiate new commitments with an organisation for assuring effective cooperative action, as well as generating a context in which an effective action can be consistently realised.

Winograd and Flores (1986) stress the importance of pre-understanding, tradition and background for the understanding of conversations.

An individual's pre-understanding is a result of experience within a tradition. Everything we say is said against a background of that tradition, and makes sense only with respect to it (Winograd and Flores 1986, p. 74).

The authors also point out that (ibid, p. 78):

Knowledge and understanding... arise from the individual's committed participation in mutually oriented patterns of behaviour that are embedded in a socially shared background of concerns, actions, and beliefs.

This approach emphasises the socially situated knowledge and understanding that are vital for management to create a network of commitments, and in their decision-making.

The seminal text of Winograd and Flores (1986) is largely considered as a basis for understanding language, communication, conversation, and designing new computer-based tools for training and improving an individual's participation in organisational life, e.g. planning, or decision-making (Suchman 1993). Winograd and Flores explain that:

New tools can be designed to operate in the domain of speech acts and conversation – the one in which terms like 'reminding', 'requesting', and 'agreeing' are relevant. We will argue that this is the most fruitful domain for understanding and facilitating management (Winograd and Flores 1986, p. 144).

In their summaries of the key thoughts regarding the influence of speech acts on organisations and management, the authors argue the key ontological design principles for a system design, among others, should focus on:

- (1) In creating tools, new conversations and connections are designed;
- (2) Design includes the generation of new possibilities;
- (3) Tools are designed to conduct the network of conversations (commitments).

### ***2.2.3 Bounded Rationality in Management Decision-Making***

Peter Drucker, as a management philosopher and communicator has defined the manager by saying "*the manager is the dynamic, life-giving element in every business*" (Drucker 2007, p. 3). The manager has two specific tasks in his work, which are: (1) "to create a true whole that is larger than the sum of its parts, a productive entity that turns out more than the sum of the resources put into it"

(ibid, p. 295), and (2) “to harmonize in every decision and action the requirements of immediate and long range future” (ibid, p. 296). Langefors (1970) also emphasises that business management has two main tasks, which are: (1) to achieve suitable efficiency for units, and (2) to achieve cooperation between the units in accordance to the strategies and goals for the company. The main activity of the manager’s work is management, which is always a decision-making process. Decision-making usually involves two elements, fact and value (Simon 1997). These two elements lead to the two kinds of decision-making processes, structured and judgemental (Keen and Scott Morton 1978).

Structured decision-making has been shaped by rationalistic tradition as a source of understanding. Rationalistic tradition and its orientation can be depicted in a series of steps in decision-making: (1) characterise the situation in terms of identifiable objects with well-defined properties; (2) find general rules that apply to situations in terms of those objects and properties; and (3) apply the rules logically to the situation of concern, drawing conclusions about what should be done. The rationalistic tradition is supported by the mathematical analyses of decision-making and with the behavioural analyses of human conduct. In this discipline, decision-making is regarded as the central task of management and the task is characterised as a process of information gathering and processing. Then, rational behaviour is seen as a consequence of choosing among alternatives according to an evaluation of the outcomes (Simon 1957, 1997).

Decision-making, in practice, roughly approximates this ideal as Simon points out. However, it is impossible for the behaviour of a single, isolated individual to reach any high degree of rationality. Rationality requires a complete knowledge and anticipation of consequences. Since an individual cannot obtain comprehensive knowledge, and consequences lie in the future, they can only be imperfectly anticipated, so merely “bounded rationality” can be achieved (Simon 1957).

Simon’s original view of bounded rationality has three features: search for alternatives, satisficing and aspiration adaptation. This theory defines that a person makes a “good enough/satisfactory” decision among the alternatives if this decision reaches above his/her aspiration level. Simon recognises the role of intuition and judgement played in decision-making in administration and management (Simon 1997). The unstructured or judgemental decision-making has been considered as the art of management, which is dependent largely on a manager’s intuitive skills, the feeling of the phenomena, tacit knowing and reflection-in-action (Schön 1983). Although the decision support systems, designed by the rationalistic tradition, cannot replace a manager’s judgements and reflections in decision-making, especially in a situation characterised by uniqueness, uncertainty and complexity (Schön 1983). Accordingly, Schön argues that the design, which is aimed to create a new solution or improve a situation, should be considered as “a reflective conversation with the situation”, and consider a manager’s “reflection-in-action”, the artistry elements in decision-making. The process is aimed for satisficing, instead of optimising. Simon (1997, p. 139) emphasises that:

Every manager needs to be able to analyse problems systematically... Every manager needs also to be able to respond to situations **rapidly, a skill that requires the cultivation of intuition and judgement** over many years of experiences and training.

Process management and process prioritisation in organisations are characterised as complex, unique and uncertain problems, thus, the design of the Prioritisation and Categorisation Method should follow the “bounded rationality” theory and be complemented by a manager’s reflection-in-action in the decision-making processes.

## 2.3 Implications of the Knowledge Base for Designing the PCM

The design of the Prioritisation and Categorisation Method (PCM) is influenced by the knowledge base that is presented in Sects. 2.1 and 2.2. The knowledge from both an exploitative BPM and a new explorative approach serve as the departure points of the design. While the systems thinking, which are: organisations as social systems, organisations as the network of commitments and bounded rationality in decision-making, influences the design choices. The implications of the theories for designing the PCM are summarised in Table 2.2.

## 2.4 Summary and Reflections

Although the research studies by Rosemann (2014), vom Brocke et al. (2016) provide some directions for explorative BPM research and suggest an extension to our understanding of BPM in a more holistic and context-sensitive way, no enabling and implementable method has yet been developed. Such a method should demonstrate that an explorative approach is feasible, while at the same time providing the empirical evidence, based on real business settings, and that such a method creates more values for BPM practice and research. In this thesis, the Prioritisation and Categorisation Method (PCM) is designed and evaluated to solve the problem of process prioritisation. As we discussed, this problem is complex, ill-structured and dynamic. Both researchers and practitioners are aware of the difficulties in solving this problem.

In dynamic environments, or high velocity markets, change becomes nonlinear or explorative. In order to maintain competitive advantages, organisations need to make consistent efforts for process improvement, and this is a management responsibility. Business Process Management is multi-faceted and complex. It has different elements and capabilities that must be coordinated and integrated, elements such as strategic alignment, governance, methods, information technologies, people and culture.

**Table 2.2** The implications of the theories for designing the PCM

Theories/knowledge	Implications for designing the PCM
<i>Exploitative BPM</i>	
Model, analyse, automate and streamline processes for achieving operational excellency	PCM should identify problems of processes that hinder their alignments with operational goals
<i>Explorative BPM</i>	
Being inclusive and holistic (e.g. the six factors of BPM)	PCM should support companies to investigate the interrelationships among different dynamic capabilities, business contingencies, contextual factors, business models, products, services, etc.
Being proactive and exploring process opportunity and new revenue streams	PCM should support companies to become more explorative and ambidextrous
<i>Organisations as social systems</i>	
The social system model points out that the system should be viewed as a whole that cannot be divided into independent parts because the behaviour of each part and its effect on the whole depend on the behaviour of other parts	PCM should be theoretically built upon the holistic approach. PCM should not focus only on IT, process modelling or methods. Strategy, governance, people and culture, together with IT and models should be considered [six core elements of strategic BPM]
Organisations are non-mechanistic they should not be conceptualised as machines that work by internal structures and processes together with the causal laws of nature	PCM should be designed as a novel “social” method for prioritising purposes
It is critically important to engage as many stakeholders as possible in interactive decision-making processes: The three operating principles: – the participative principle – the principle of continuity – the holistic principle	PCM should support interactive evaluations and common understandings PCM should facilitate continuous process evaluations based the needs of an organisation. PCM should facilitate holistic principles
<i>Organisations as networks of commitments</i>	
Management is centred on the “problem of communication” and “conversation for action”	PCM should facilitate the communication and conversation among the stakeholders
Pre-understanding and background is very important in making the relevant decisions Knowledge and understanding arise from a shared background of actions	PCM should support the efficient collection of information and consider any pre-understanding of contexts and units of analysis from stakeholders of an organisation PCM should facilitate shared understanding between stakeholders
Success cannot be attributed to a decision made by a particular actor, but only to the <i>collective performance</i>	PCM should improve all of the stakeholders’ participation and contribution to decision-making

(continued)

**Table 2.2** (continued)

Theories/knowledge	Implications for designing the PCM
<i>Bounded Rationality in decision-making</i>	
Bounded rationality is a satisficing process to search for a satisfactory decision. A manager’s reflection-in-action plays an important role in the decision-making process	PCM should support a decision/planning process by involving the key stakeholders in collective reflection-in-action The decision generated by the PCM should be satisfactory

Business processes have different characteristics. They can be understood as a strictly formal process where the operation and the behaviour of the process can be automated by formal BPM methodologies and BPM systems. They can also be understood as adaptive, where human activities and knowledge are crucial in a process, as in high-level management work and knowledge work.

The task of prioritising and deciding on improvement initiatives is difficult. Because of this complexity, managers are limited by bounded rationality in making these type of decisions. In other words, it is hard for managers to make purely fact-based or mechanistic decisions since many of the “truths” and facts are embedded as tacit knowledge and reflections in the minds of key stakeholders in the organisation. Process selection criteria for improvement work have to consider all of the aspects of BPM, but at the same time, being relevant for managers. This makes analysing business processes both an art and a science, thus both qualitative and quantitative methods should be applied in process analysis. The majority of the existing methods and models in BPM research are quantitative in nature, such as maturity models, that aim to quantify qualitative information by, for example, staging in maturity levels. These models are also limited when it comes to applicability.

In conclusion, knowledge about BPM and BPM capabilities in an organisation can be subjective. Thus, approaches, both for doing research in the area and designing novel methods applicable for practitioners, should aim to be complementary to mechanistic methods, and capture the subjective interpretations of the “topic in scope” or “unit of analysis”. In practice, the unit of analysis could be a certain business process or another part or subset of the organisation that is being analysed. In this specific research the question is how the Prioritisation and Categorisation Method can be designed in order to support managers in deciding on their process improvement initiatives and how to engage the managers, and make them participate in the process by sharing their subjective and objective interpretations in an efficient way. It is also important that such a method also engages stakeholders, and generates networks of commitments (anchoring) in the company, and at the same time collects relevant holistic information based on the stakeholders understanding regarding the unit of analysis and it’s contextual (external context and internal context) capabilities.

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