Frameworks for Business Process Management: A Taxonomy for Business Process Management Cases

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Abstract

While the body of knowledge on business process management has matured during the past decades (Dumas et al., Fundamentals of business process management. Berlin: Springer, 2013; vom Brocke and Rosemann, Handbook on business process management. Berlin: Springer, 2015), few real-world cases are available that provide practical experiences from BPM projects. This book presents a diverse set of 31 real-world BPM cases, all reported using a unified schema so the knowledge contained in these cases can be accessed readily.

1 What Is Business Process Management?

While early contributions to the field of business process management (BPM) focused on the (re-)design of single processes, contemporary research calls for a more holistic view of the management of organizational processes. To that end, BPM uses an integrated set of corporate capabilities, including strategic alignment, governance, methods, technology, people, and culture, to analyze, design, implement, continuously improve, and disruptively innovate organizational processes (vom Brocke and Rosemann 2014).

BPM's roots in early studies of organizational design (e.g., Taylor 1911) then developed into the broader discipline of industrial engineering and has since remained focused on the analysis of operational activities in the dominant manufacturing sector. An increase in the significance of services, the growing

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J. vom Brocke, J. Mendling (eds.), *Business Process Management Cases*,
Management for Professionals, DOI 10.1007/978-3-319-58307-5_1

importance of information technology for the design of processes, and the overall recognition that processes are a critical corporate asset have elevated this domain into a discipline.

According to Hammer (2010), the genesis of BPM as a management discipline is characterized by two developmental paths: process improvement and process development.

- *Process Improvement*: Earlier studies in the field focused on analyzing existing business processes in pursuit of continuous or incremental process improvement. Examples of developments on this path are Total Quality Management (Juran 1988; Crosby 1979), Lean Management (Womack and Jones 2003), and Kaizen (Imai 1986). For example, Deming's (1986) studies on statistical process control provided basic principles by conducting systematic analyses of processes using both quantitative and qualitative criteria.
- *Process Reengineering*: Hammer and Champy (1993) presented an approach that questioned existing business processes and demanded the radical redesign of extant processes from end-to-end in light of organizational goals, particularly capitalizing on the potential of information technology (IT) as a major driver of innovation (Davenport 1993).

BPM has emerged as a consolidation of disciplines that leverage process orientation to increase performance. Today, BPM has evolved into a widely deployed and comprehensively studied discipline. Universities have increasingly integrated BPM capabilities into both management and information systems education (vom Brocke 2017), responding to the strong demand of BPM experts in practice to appropriate contemporary technology in order to foster value creation in all sectors, including production, banking, retail, health, government, entrepreneurship, and others.

In course of this development, BPM has matured as an academic and professional discipline. Textbooks (Dumas et al. 2013) and handbooks (vom Brocke and Rosemann 2015) alike have documented the body of knowledge. Professional associations, conferences, journals, and forums are available for both academics and professionals to discuss the discipline's development, and BPM has been recognized and further developed as a way to drive innovation, particularly digital innovation (vom Brocke and Schmiedel 2015). However, with the emergence of the rich set of opportunities associated with digitization, the established, analysis-intensive BPM methods and tools are no longer capitalizing fully on the affordances of contemporary information systems. As a result, BPM has started to develop its intellectual core and methodological basis to strengthen its exploratory, opportunity-driven capabilities in addition to the rich set of exploitative, problem-driven capabilities. Colleagues have coined the term "ambidextrous BPM" (Rosemann 2015) to express the need to combine both exploration and exploration in BPM (vom Brocke et al. 2015a).

2 How to Structure Business Process Management

This book uses well-established BPM frameworks to characterize the cases it presents based on a shared language. We use the BPM Six Core Elements Model (Rosemann and vom Brocke 2015), the BPM Lifecycle Model (Dumas et al. 2013), and the BPM Context Framework (vom Brocke et al. 2015b).

2.1 The BPM Six Core Elements Model

The BPM Six Core Elements Model describes organizational capability areas that are relevant to BPM. The model helps decision makers to classify the actions an organization undertakes in conducting BPM by conceptualizing six BPM capability areas: strategic alignment, governance, methods, IT, people, and culture. This model expands BPM from a technical concept to a holistic management discipline (Fig. 1).

- **Strategic Alignment**: BPM contributes to the organization's superordinate, strategic goals. Related capabilities include the assessment of processes and process management initiatives according to their fit with the overall corporate strategy.
- **Governance**: BPM must be implemented in the organizational structure. Related capabilities include the assignment of BPM-related tasks to stakeholders and applying specific principles and rules to define the required responsibilities and controls along the entire business-process lifecycle.
- **Methods**: BPM must be supported by methods for process design, analysis, implementation, execution, and monitoring. Related capabilities include

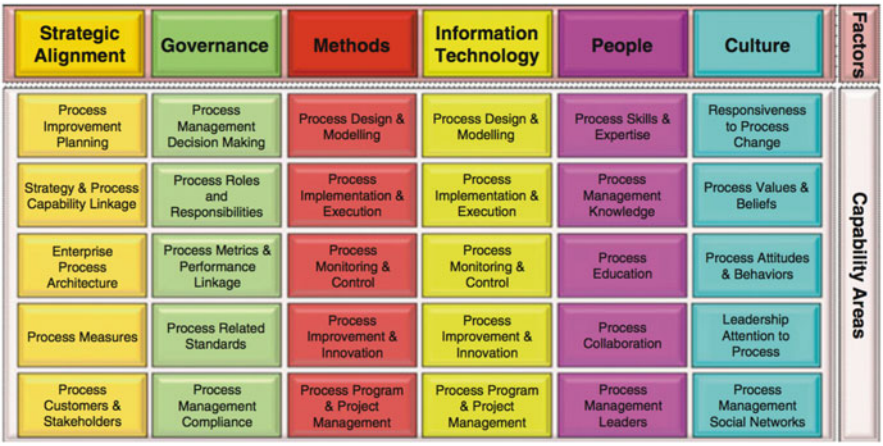

Fig. 1 Six BPM core elements (Rosemann and vom Brocke 2015)

selecting the appropriate BPM methods, tools, and techniques and adapting and combining them according to the organization's requirements.
- **Information Technology**: BPM must use technology, particularly process-aware information systems (PAIS), as the basis for process design and implementation. Related capabilities include the ability to select, implement, and use relevant PAIS solutions that covering, for example, workflow management, adaptive case management, or process-mining solutions.
- **People**: BPM must consider employees' qualifications in the discipline of BPM and their expertise with relevant business processes. Related capabilities include assessing the human-resources impact of BPM-related initiatives and programs that facilitate the development of process-related skills throughout the organization.
- **Culture**: BPM must be met with a common value system that supports process improvement and innovation. Related capabilities include the ability to assess the organizational culture's values and the ability to derive measures to develop these values accordingly.

Research has shown that all six elements must be present if a BPM initiative is to meet its objectives.

2.2 The BPM Lifecycle Model

The BPM lifecycle model describes the phases in managing business processes and illustrates how a BPM project or a BPM initiative can be organized to arrive at an improved process by means of six major steps: process identification, process discovery, process analysis, process redesign, process implementation, and process monitoring and controlling (Fig. 2).

- **Process Identification**: Process identification is concerned with setting up the BPM initiative, including a high-level description of the organization's major processes and an assessment of their current state. The main result of this phase is a "process architecture," which identifies the organization's main processes, describes the relationships between them, and defines criteria for prioritizing them.
- **Process Discovery**: With process discovery, the cycle shifts the focus from the organization's overall portfolio of processes (often also called multi-process management) to one specific process. The process discovery phase produces detailed descriptions of a business process in its current state. This description is referred to as an as-is process model.
- **Process Analysis**: Analytical tools and techniques are applied during process analysis to determine weaknesses in the as-is process and the impact of each weakness.
- **Process Re-design**: Process redesign addresses the most important weaknesses in the process and delivers a reworked design for the process, called the to-be

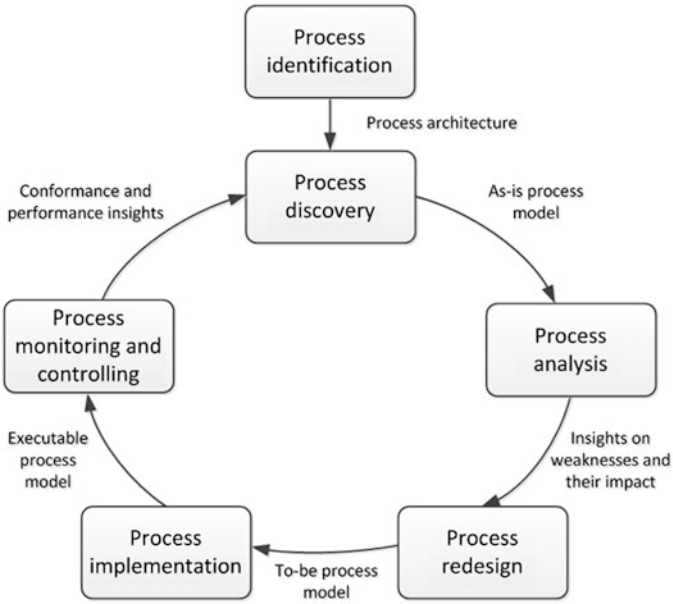

Fig. 2 The BPM lifecycle (Dumas et al. 2013)

process model. This model is subsequently used as the basis for process implementation.

- **Process Implementation**: Process implementation typically includes information system implementation and measures to facilitate organizational change.
- **Process Monitoring and Controlling**: Once the redesigned process is implemented, the process monitoring and controlling phase collects and analyzes execution data continually for their compliance with performance and conformance objectives. Deviations from these objectives and changes in the business environment or the company's goals trigger a new iteration of the BPM lifecycle.

The six phases are seldom executed exactly in this idealistic, sequential way, and the circle is not always closed. For example, a company might decide only to document its processes without considering redesign. Still, the BPM lifecycle is helpful in clarifying how BPM-related activities relate to one another and how they contribute to BPM in a holistic way.

2.3 The BPM Context Framework

The BPM context framework describes the factors in the context of BPM that are relevant to BPM projects based on their settings (vom Brocke et al. 2016). The model helps to characterize a BPM initiative according to factors like its goals, the

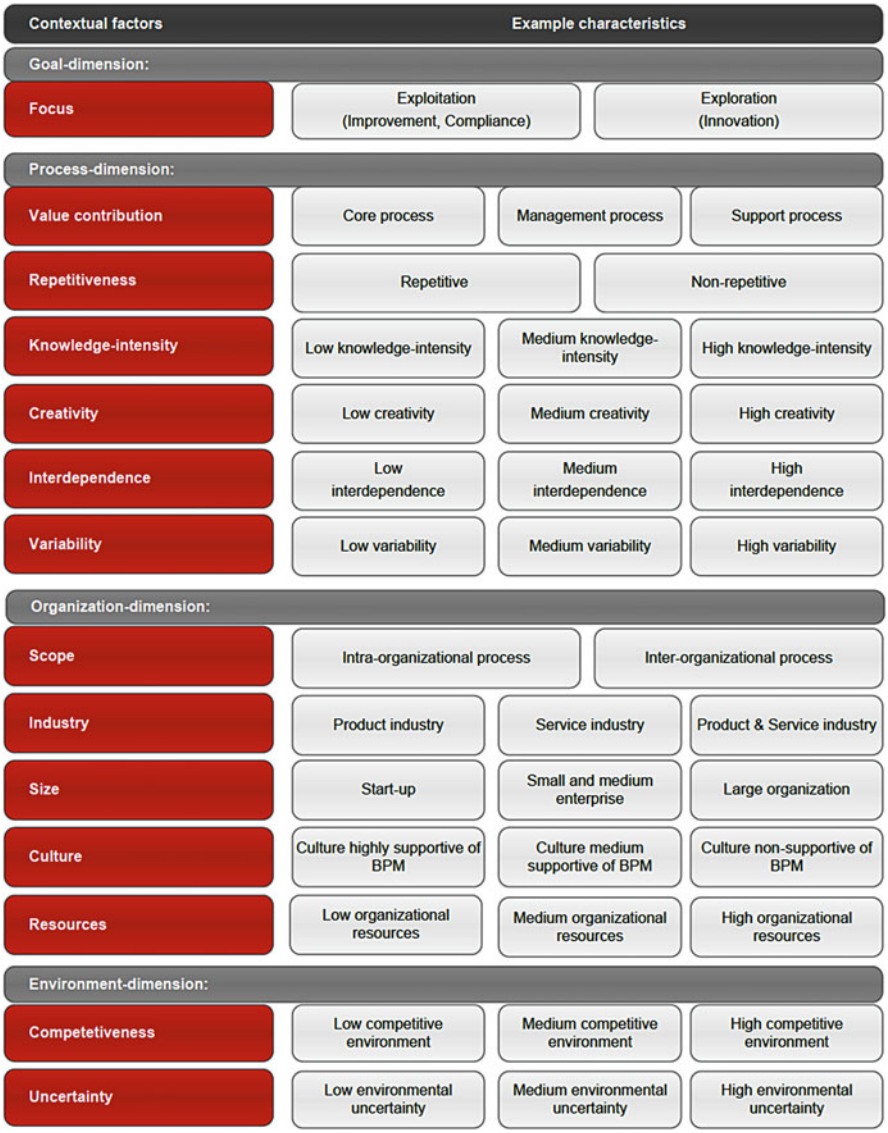

Fig. 3 The BPM context framework (vom Brocke et al. 2015b)

process's characteristics, and the organization's and external environment's characteristics. The key contribution of the framework is to capture the situation around the BPM initiative so it can be aligned to the organization's specific context. The BPM context framework helps in assessing this context (Fig. 3).

The BPM context framework captures four contextual dimensions:

- **Goal Dimension**: The goal a BPM project is targeting has a major influence on the BPM-related actions to be planned. The difference between exploitation and exploration may serve as an example, as the first fosters optimization, and the second fosters innovation.
- **Process Dimension**: BPM can be applied to a number of processes, so the process characteristics affect the appropriate BPM methodology. Examples of factors include the knowledge-intensity, complexity, creativity, and variability involved in a process.
- **Organizational Dimension**: BPM serves many organizations, but the characteristics of the organization determines the right BPM approach. Organizational factors include industry, size, and culture.
- **Environmental Dimension**: BPM can also be applied in a variety of environments, which are characterized by, for example, differing levels of competitiveness or uncertainty. Considering the dynamics of the environment is important in scoping and positioning a BPM initiative.

A BPM project must identify its contexts in order to plan appropriate BPM-related actions (vom Brocke et al. 2014).

3 Introducing Cases of Business Process Management

In addition to the body of knowledge about BPM, this book brings together the experience of organizations that have adopted BPM. The focus is neither on academic case studies nor on offerings from consulting companies but on the lessons the adopting organizations learned from using BPM. That said, both academic institutions and consulting companies have been involved, at least in part, in the analysis of these cases.

Cases and case-based learning provides advantages over other approaches to facilitating learning (Srinivasan et al. 2007). First, cases offer a rich account of a specific situation, the actions taken, and the results achieved, which helps the reader to explore ambiguity and variation. Second, cases help the reader to focus on what matters, as they are challenged to reflect on their assumptions. Third, cases are an effective way to stimulate additional reading and research on the management of business processes.

3.1 How to Read the Cases

All cases follow a unified structure that makes the case knowledge easily accessible and transferrable to other contexts and helps readers find and compare the most important parts of the cases. Each of the cases is structured with an introduction,

follows by descriptions of the situation faced, the actions taken, the results achieved, and the lessons learned.

- **Introduction**: What is the story of the case? A brief narrative of the entire case informs readers by summarizing its key aspects.
- **Situation faced**: What was the initial problem that led to the action taken? The context of the case is specified concerning needs, constraints, incidents, and objectives.
- **Action taken**: What was done? What measures were undertaken, such as in regard to process redesign or process innovation? What methods and approaches were used?
- **Results achieved**: What effects resulted from the actions taken? Results could take the form of changes in performance measures and/or qualitative statements from employees, customers, and other business partners. To what degree were expectations met or not met?
- **Lessons learned**: What did the organization learn from the case? What can others learn? Lessons learned are grounded in the case and serve as example for others.

3.2 Cases and Industry Sectors

All cases are structure using the framework presented above. The book includes cases that focus on all of BPM's core elements, cover all steps of the BPM lifecycle, and deal with diverse subsets of BPM contexts. The broad set of industries addressed includes nineteen industries, sorted by ISIC code (United Nations Statistics Division 2008):

- 06: Extraction of crude petroleum and natural gas
- 27: Manufacture of electrical equipment
- 28: Manufacture of machinery and equipment
- 32: Other manufacturing
- 35: Electricity, gas, steam, and air conditioning supply
- 36: Waste collection, treatment and disposal activities; materials recovery
- 41: Construction of buildings
- 47: Retail trade, except of motor vehicles and motorcycles
- 49: Land transport and transport via pipelines
- 51: Air transport
- 56: Food and beverage service activities
- 61: Telecommunications
- 62: Computer programming, consultancy, and related activities
- 64: Financial service activities, except insurance and pension funding
- 65: Insurance, reinsurance, and pension funding, except compulsory social security
- 82: Office administrative, office support, and other business support activities

- 84: Public administration and defense; compulsory social security
- 85: Education
- 86: Human health activities

3.3 Cases and BPM Core Elements

The cases in the book relate to the core elements of BPM and are classified in terms of their primary contributions.

Figure 4 shows that 8 of the 31 cases relate primarily to method and 9 to IT, confirming that most companies focus on these two areas of capability when conducting BPM (vom Brocke and Rosemann 2015). However, four cases relate to the people-related aspects of BPM, one of BPM's core elements that often receives little attention (Müller et al. 2014). Five chapters contribute primarily to governance and three to strategic alignment. Since culture has only recently been recognized and conceptualized in the BPM body of knowledge (Schmiedel et al. 2015), only two of the cases primarily address issues on culture in BPM. In summary, each core element is addressed in multiple cases, which makes this book useful in extending our understanding of BPM.

Table 1 Summarizes the cases per BPM core element.

3.4 Cases and BPM Lifecycle Phases

The cases reported in this book relate to a diverse set of the BPM lifecycle phases (Fig. 5). Eight of the cases report on process redesign, while seven are on process discovery, six address process implementation, five deal with process identification, three relate to process monitoring and controlling, and two focus on process analysis. The thorough coverage of the lifecycle phases addresses Recker and Mendling's (2016) observation of a gap in process redesign research, as the focus on process redesign demonstrates the innovative and transformative power of BPM, its role to leveraging digital innovation vom Brocke and Schmiedel (2015), and the importance of process improvement in practice (Vanwersch et al. 2016).

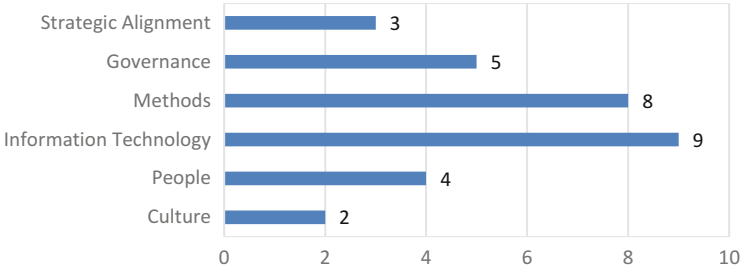

Fig. 4 BPM cases and BPM core elements

Table 1 BPM core elements with corresponding cases

Element	Cases
Strategic alignment	Woliński and Bala (2017)
	Bandara et al. (2017)
	Viaene and Van den Bergh (2017)
Governance	Reisert et al. (2017)
	Blasini et al. (2017)
	Czarnecki (2017)
	Kovačič et al. (2017)
	Kim et al. (2017)
Methods	Rosemann (2017)
	Van Looy and Rotthier (2017)
	Cereja et al. (2017)
	Karle and Teichenthaler (2017)
	Marengo et al. (2017)
	Andrews et al. (2017b)
	Thaler et al. (2017)
	Andrews et al. (2017a)
IT	Matzner et al. (2017)
	Duelli et al. (2017)
	Rau et al. (2017)
	Debois et al. (2017)
	Becker et al. (2017)
	Schrepfer et al. (2017)
	Leitz et al. (2017)
	Suchy et al. (2017)
	Schindlbeck and Kleinschmidt (2017)
People	Kloppenburg et al. (2017)
	Imgrund et al. (2017)
	Russack and Menges (2017)
	Krogstie et al. (2017)
Culture	Bührig et al. (2017)
	Alves et al. (2017)

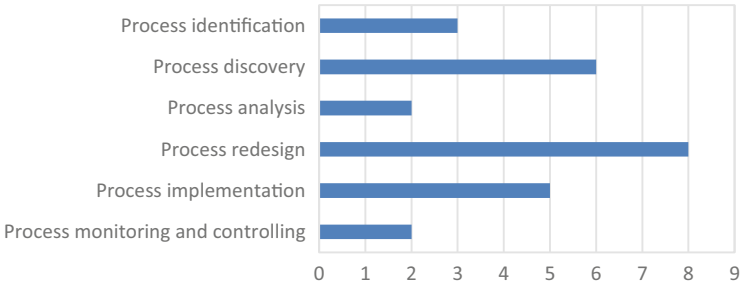

Fig. 5 BPM cases and BPM lifecycle phases

Even though only two cases contribute primarily to process analysis, most of the cases include process analysis—for example, when they discuss process redesign—which shows that the case companies went beyond process analysis and did saw the analysis as a means to an end, not as end in itself. These cases, then, help to advance the body of knowledge past what prior research on BPM has reported regarding organizations whose BPM initiatives have failed because they focused too much on analysis of processes and fell short in delivering business value through actual process improvement (vom Brocke et al. 2014). Table 2 summarizes the cases in terms of the lifecycle phase they address.

Table 2 BPM Lifecycle Phases with corresponding cases

Lifecycle phase	Cases
Process identification	Alves et al. (2017)
	Bührig et al. (2017)
	Imgrund et al. (2017)
	Debois et al. (2017)
	Viaene and Van den Bergh (2017)
Process discovery	Cereja et al. (2017)
	Suchy et al. (2017)
	Reisert et al. (2017)
	Andrews et al. (2017b)
	Andrews et al. (2017a)
	Thaler et al. (2017)
	Becker et al. (2017)
Process analysis	Matzner et al. (2017)
	Schrepfer et al. (2017)
Process redesign	Woliński and Bala (2017)
	Duelli et al. (2017)
	Van Looy and Rotthier (2017)
	Schindlbeck and Kleinschmidt (2017)
	Marengo et al. (2017)
	Czarnecki (2017)
	Karle and Teichenthaler (2017)
	Rosemann (2017)
Process implementation	Duelli et al. (2017)
	Bandara et al. (2017)
	Russack and Menges (2017)
	Kloppenburg et al. (2017)
	Rau et al. (2017)
	Krogstie et al. (2017)
Process monitoring and controlling	Leitz et al. (2017)
	Blasini et al. (2017)
	Kovačič et al. (2017)

3.5 Cases and the BPM Context Framework

The BPM context framework provides dimensions for classifying BPM in general and the cases reported in this book specifically. Under the category of the goal dimension, 23 cases focus on exploitation scenarios, such as improvement of existing processes, while seven address exploration scenarios that seek novel ways of doing processes, and one case covers exploration and exploitation equally (Fig. 6).

Regarding the process dimension, most of the cases (22) focus on core processes (22), while 11 also deal with management processes and 10 deal with support processes. There are 27 of the cases work on repetitive processes, and four tackle non-repetitive processes. The knowledge-intensity of processes is at a medium level in 20 cases, low in 7 cases, and high in 9 cases. Similarly, creativity is at a medium level in 15 cases, a low level in 14 cases, and high in 6 cases. Interdependence is at a

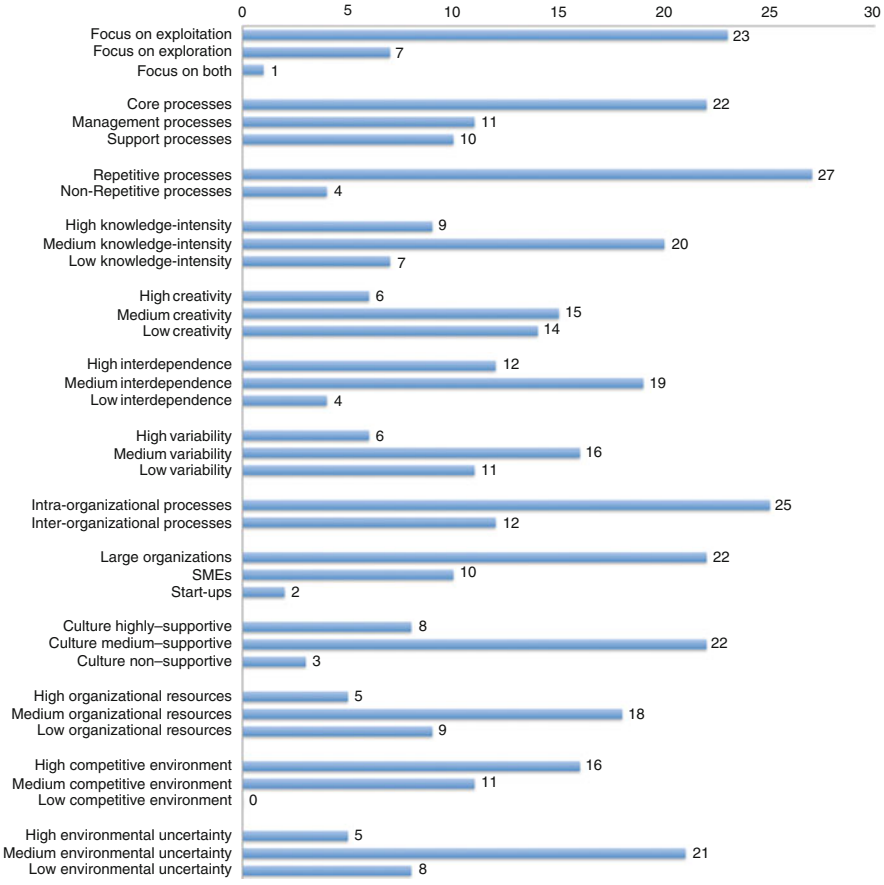

Fig. 6 BPM cases and BPM context

medium level in 19 cases, a low level in 4 cases and high in 12 cases, confirming that process work should be holistic in scope. Finally, variability is at a medium level in 16 cases, a low level in 11 cases, and high in 6 cases.

As for the organizational dimension, 25 cases focus primarily on intra-organizational processes, while 12 address inter-organizational challenges. There are 22 cases from large organizations, 10 are from small and medium-sized companies, and 2 are from start-ups. The culture in the case organizations has a medium level of support for BPM in 22 cases, is highly supportive in 8 cases, and is non-supportive in 3 cases, documenting the emerging role of culture in BPM. Organizational resources spent on the cases are at a medium level in 18 cases, a low level in 9 cases, and high in 5 cases.

Regarding the environmental dimension, about half of the cases (16) report on a highly competitive environment, supporting the notion that BPM is perceived as a way to increase competitiveness. There are 11 cases that report a medium level of competitiveness in their environments, and 6 cases report a low level of competitiveness. Most cases deal with uncertainty in business, as 21 of the cases report a medium level of uncertainty, five report a high level of uncertainty, and eight report a low uncertainty.

4 Conclusions

This book uses the BPM framework to classify the cases it presents. The classification reveals the broad spectrum and richness in the topical focus of cases collected here. We believe that this collection will be inspiring for students, teachers, practitioners, and researchers who are interested in the state of the art of BPM.

The remainder of this book is structured in four major parts. Part I gathers the eight BPM cases that are related primarily to strategy and governance, Part II presents eight BPM cases that focus on methods, Part III contains nine BPM cases that address IT, and Part IV introduces six BPM cases that highlight people and culture.

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