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Part III

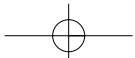
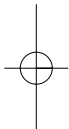
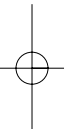
BPM and the organization

This part of the book is aimed predominantly at the executives of an organization, although project manager and team members will find that it contains useful and important information. It provides insights into how to determine the BPM maturity of the organization or business unit and how to embed BPM within an organization to ensure a continuous business process improvement culture.

Chapter 27 is jointly written by Professor Michael Rosemann and Tonia de Bruin of the Queensland University of Technology, and Brad Power, the Executive Director of the Process Management Research Center at Babson College in Boston.

Tonia is a former consultant who is currently undertaking her PhD and is working with Michael and Brad to develop a BPM maturity model that can be used as a global standard. The chapter provides a brief overview of the model and their research findings to date. While many individuals and organizations have developed BPM maturity models, this one is more sophisticated than its predecessors and addresses specific BPM complexities in a highly practical manner. The chapter will allow readers the opportunity to estimate their level of process management maturity and develop a rudimentary roadmap forward.

Chapter 28 takes the information learned from the framework and maturity model and suggests ways of embedding BPM within the organization, depending upon the level of process understanding and acceptance within the organization. The aim is to develop a business operational state that will continuously observe and improve business processes; to create a culture that has process improvement at the forefront of business and people initiatives; to provide organization agility, continuous improvement and business opportunities that may not otherwise be available.



Chapter 27

BPM maturity

Introduction

As this entire book outlines, Business Process Management (BPM) is a holistic organizational management practice that requires top management understanding and involvement, clearly defined roles and decision processes as part of BPM governance, appropriate BPM methodologies, process-aware information systems, educated and well-trained people, and a culture receptive to business processes. BPM has its roots in a number of approaches, including business process reengineering, quality management (e.g. TQM, Six Sigma), operations management (e.g. MRP II, CIM, Kanban), business process modeling and process-aware information systems (e.g. workflow management systems, service-oriented architectures). It is widely recognized as a foundation for contemporary management approaches as the analysis of business processes drives understanding to the roots of an organization. The popularity and significance of BPM leads to the question of how advanced different organizations are in their BPM development. The notion of 'maturity' has been proposed for a number of management approaches as a way to evaluate 'the state of being complete, perfect, or ready' or the 'fullness or perfection of growth or development' (Oxford University Press, 2004). This chapter describes a new business process management maturity model that has been developed for the evaluation and advancement of business process management effectiveness across organizations.

The structure of this chapter is as follows. The second section looks at the value proposition of a BPM maturity model and how different maturity stages can be represented within such a model. The third section presents a new maturity model developed specifically for BPM, and details the objectives and core framework of this model. A focus of this section is on the major characteristics of the model as represented by six critical success factors and their underlying capability areas. The fourth section discusses how this BPM maturity model can be applied within an organization to drive improved operational performance, whilst the fifth section provides the justification

and support for the model development. The final section concludes with a brief summary.

Business process management maturity

Business process management is a complex management practice that many organizations find difficult to implement and progress to higher stages of maturity. This is supported by research indicating that 97 percent of European organizations surveyed considered BPM to be important to the organization and only 3 percent had not commenced BPM practices. Despite this importance, 73 percent were considered to be only at the early stages of adoption (Pritchard and Armistead, 1999: 13). A recent review of CIOs by Gartner (Gartner, 2005) confirmed the importance of BPM, with the top issue identified for 2005 being business process management. For BPM practitioners, therefore, one concern is that the complexity of BPM may result in organizations being unable to achieve desired benefits of BPM.

Maturity models are used as an evaluative and comparative basis for improvement (Fisher, 2004; Harmon, 2004; Spanyi, 2004), and in order to derive an informed approach for increasing the capability of a specific area within an organization (Paulk *et al.*, 1993; Hakes, 1996; Ahern *et al.*, 2004). They have been designed to assess the maturity (i.e. competency, capability, level of sophistication) of a selected domain, based on a more or less comprehensive set of criteria. Therefore, a BPM maturity model is a tool that can assist organizations in becoming more successful with BPM, resulting in the achievement of greater operational and business performance benefits. In addition, the increased success of BPM adoptions will contribute to positioning BPM as an enduring management practice. In particular, maturity models can be used for three purposes:

- 1 As a *descriptive* tool enabling an ‘as-is’ assessment of strengths and weaknesses
- 2 As a *prescriptive* tool enabling the development of a roadmap for improvement
- 3 As a *comparative* tool enabling benchmarking to assess against industry standards and other organizations.

Unlike other existing models, the BPM maturity model discussed in the following sections has been developed to enable each of these three purposes.

A typology of BPM maturity stages

Paulk *et al.* (1993: 5) stress that improved maturity results ‘in an increase in the process capability of the organization’. Consequently, it is not a surprise that recently a number of models to measure the maturity of different facets of BPM have been proposed (Davenport, 2005). The common base for the

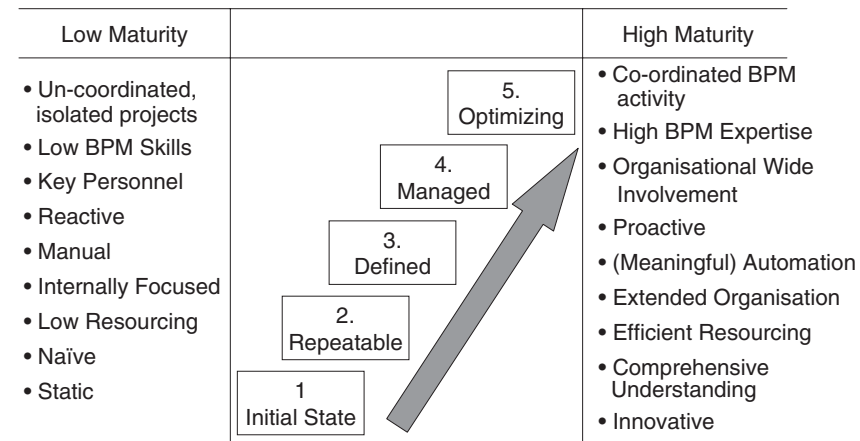
majority of these models has been the Capability Maturity Model (CMM), where the most popular way of evaluating maturity is a five-point Likert scale with '5' representing the highest level of maturity. Among others, Harmon (2004) developed a business process management maturity model based on the capability maturity model (see also Harmon, 2003). In a similar way, Fisher (2004) combined five 'levers of change' with five states of maturity. Smith and Fingar (2004) argue that a CMM-based maturity model that postulates well-organized and repeatable processes cannot capture the need for business process innovation. Further BPM maturity models are offered by TeraQuest/Borland Software (Curtis *et al.*, 2004) and the Business Process Management Group (BPMG). In addition to dedicated BPM maturity models, a number of models have been proposed that study single facets of a BPM maturity model. An example is Luftman's maturity model for strategic alignment (Luftman, 2003).

An attempt to divide organizations into groups depending on their grade and progression of BPM implementation was made by Pritchard and Armistead (1999). Whilst trying to define maturity of business process reengineering programs, Maull *et al.* (2003) encountered problems when attempting to use objective measures. They tried to define maturity using two dimensions; an objective measure (time, team size, etc.) and a 'weighting for readiness to change' (Maull *et al.*, 2003). However, this approach turned out to be too complex to measure. Therefore, they chose a phenomenological approach assessing the organization's perception of its maturity, using objective measures as a guideline. Another example of how to define maturity (or, in their case, 'process condition') is provided by DeToro and McCabe (1997), who used two dimensions (effectiveness and efficiency) to rate a process' condition.

The comparison of low and high maturity in Figure 27.1 helps to clarify the comprehensiveness and range of BPM maturity. The idea of comparing low and high maturity derives from Paulk *et al.* (1993), who presented such a comparison to facilitate the understanding of the concept of process maturity.

The proposed BPM maturity model adopts the five maturity stages of CMM in an attempt to differentiate various levels of sophistication of a BPM initiative.

Figure 27.1
Comparison of low and high maturity and the five maturity stages.



Stage 1: Initial state

An organization with a BPM maturity at Stage 1 will have made either no or very uncoordinated and unstructured attempts towards BPM. Typically, such an organization may display some combination of the following characteristics:

- *ad hoc* approaches
- individual efforts (IT or business)
- various and non-consolidated approaches to methodology, tools and techniques
- limited scope of BPM initiatives
- minimal employee involvement
- low reliance on external BPM expertise
- high levels of manual interventions and work-arounds.

Stage 2: Repeatable

An organization with a BPM maturity at Stage 2 will have progressed past making first BPM experiences and will be starting to build up BPM capability and increasing the number of people who look at the organization from a process perspective. Typically, such an organization may display some combination of the following characteristics:

- first documented processes
- recognition of the importance of BPM
- increased involvement of executives and top management
- one main purpose for exploring BPM
- extensive use of simple process modeling with simple repositories
- first attempts with a structured methodology and common standards
- increased reliance on external BPM expertise.

Stage 3: Defined

An organization with a BPM maturity at Stage 3 will experience increased momentum in its quest to develop BPM capability and expand the number of people looking at the organization from a process perspective. Typically, such an organization may display some combination of the following characteristics:

- focus on the management of the early phases of the process lifestyle
- use of elaborate tools (e.g. dynamic modeling, server-based applications, multiple and distributed users)
- a combination of different process management methods and tools (e.g. process redesign, workflow management and process-based risk management)
- more extensive use of technology for delivery and communication of BPM (e.g. process designs available to users via an intranet site)
- comprehensive and formal BPM training sessions
- less reliance on external expertise.

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Stage 4: Managed

An organization with a BPM maturity at Stage 4 will enjoy the benefits of having BPM firmly entrenched in the strategic make-up of the organization. Typically, such an organization may display some combination of the following characteristics:

- an established Process Management Center of Excellence that maintains standards
- exploration of business process controlling methods and technologies
- merging of IT and business perspectives on process management (e.g. workflow management and activity-based costing)
- formal, designated process management positions
- widely accepted methods and technologies
- integrated process management purposes
- process orientation as a mandatory project component
- continuous extension and consolidation of process management initiatives
- minimal reliance on external expertise.

Stage 5: Optimized

An organization with a BPM maturity at Stage 5 will enjoy the benefits of having BPM firmly entrenched as a core part of both strategic and operational management within the organization. Typically, such an organization may display some combination of the following characteristics:

- process management is a part of managers' activities, accountabilities and performance measurements
- wide acceptance and use of standard methods and technologies
- one organization-wide approach to process management
- established business process lifecycle management
- Business Process Management Center of Excellence reduces in size as process management becomes simply the way business is done.

The BPM maturity model

Our Business Process Management Maturity (BPMM) model extends and updates earlier maturity models by addressing the requirements and complexities identified within business process management in a more holistic and contemporary way.

Objectives and framework

The development of our model was driven by the following requirements:

- 1 We wanted to develop a model with a *solid theoretical foundation*. Consequently, we carefully studied previous research on business

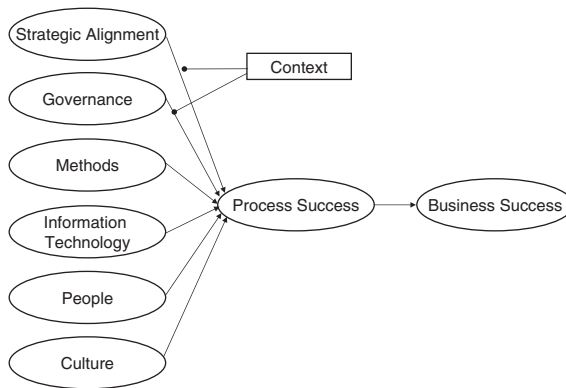
1 process management and the development of maturity models
2 across a range of domains. Our proposed model has been heavily
3 influenced by the consolidation of these previous research out-
4 comes.

- 5 2 We wanted to design a *widely accepted global standard* rather than pro-
6 viding yet another competitive maturity model. As such, we
7 approached authors and developers of previous BPM maturity
8 models for collaboration. Over a period of six months, we con-
9 ducted a series of Delphi studies designed to incorporate input of
10 recognized thought leaders in the BPM domain. Each Delphi study
11 related to a single factor of the model and used a moderated sur-
12 vey method, utilizing three or four rounds per factor to derive con-
13 sensus on a number of issues (for further details, see Erffmeyer *et*
14 *al.*, 1986; Rosemann and de Bruin, 2005). The proposed model is
15 now not only a result of merging three reasonably advanced mod-
16 els, but also includes the contributions of more than twenty BPM
17 thought leaders.
- 18 3 We were interested in developing a *holistic model* that captured the
19 entire scope of BPM. The extensive literature review that provided
20 us with a solid theoretical foundation also provided insights into the
21 success factors of business process management, perceived barriers
22 to BPM success, and details of various implementation approaches
23 for BPM initiatives. Thus our model incorporates factors covering
24 such diverse areas such as strategic alignment, information technol-
25 ogy and culture.
- 26 4 We wanted to balance the theoretical rigor of the model with *high*
27 *applicability*. As a consequence, over the last two years our model has
28 been applied, at different stages of its development lifecycle, to a
29 number of organizations in a range of industries. The continuous
30 industry feedback has been used to ensure an industry-oriented
31 structure and terminology throughout the entire model.
- 32 5 A main design paradigm was that the model should *support the indi-*
33 *vidual information needs of different stakeholder groups*. As a conse-
34 quence, the model has three levels: Level 1 – the six success factors;
35 Level 2 – capability areas within each of these factors; and Level 3 –
36 detailed questions to measure each capability area. Essentially these
37 levels form a tree structure that can be expanded based on the
38 reporting and analysis requirements of the individual stakeholder.

39
40 The resultant model is multi-dimensional, including a number of distinct
41 components: factors, stages and scope (organizational entity and time). The
42 underlying assumption of the theoretical model is that the factors (based on
43 identified BPM critical success factors, barriers to BPM success, and imple-
44 mentation approaches for BPM initiatives) represent independent variables,
45 and the dependent variable is BPM success – i.e. the actual process perform-
46 ance. A further assumption is that higher maturity in each of these factors will
47 be reflected in higher levels of success in the BPM initiative. Finally, the
48 notion of ‘process success’ has to be translated into relevant, BPM-independ-
49 ent success measures for the entire organization – i.e. actual business success
50 (Figure 27.2).

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Figure 27.2
The underlying model.



The focus of our model is on the independent factors for two reasons. First, they provide insights into how process performance can actually be improved rather than measured. Second, a number of models and solutions are already available for the measurement of process performance (e.g. IDS Business Process Performance Measurement). A brief overview of the dimensions of our model, including definition, origin and purpose, is included in Table 27.1.

Factors are considered to be the primary dimension, as they represent the elements within organizations critical to the success of BPM. (Further insights into the detailed elements of the model can be found in Rosemann and de Bruin 2004.)

It will be important in our future research to identify relevant contextual factors – for example, process-oriented incentive schema might be an indication for a mature organization, but such schema cannot be applied to public organizations. This leads to the important aspect that there is (most likely) not a common set of BPM best practices that are equally valid for all organizations. Consequently, we define the highest level of maturity (level 5) as the most sophisticated level of conducting BPM, which is *not* necessarily identical with the best way for all organizations. It is a case-by-case challenge to identify the most appropriate BPM maturity level for an organization, based on context, underlying objectives, related constraints, possible business cases, etc.

The six factors of BPM maturity

The consolidation of related literature, the merger of three existing BPM maturity models and the subsequent Delphi process led to the development of our maturity model, which contains at its core six factors. Each factor represents a critical success factor for business process management – i.e., this element has to go right in order for the organization to be successful with BPM. Each of these six factors has been expanded to a further level of detail, derived from the Delphi study. Our aim with using the Delphi technique was to access views on contemporary global BPM issues not easily identifiable through a review of existing literature. We call the resultant sub-elements of the factors *capability areas*. Table 27.2 shows the demographics of thought leaders that contributed to the Delphi studies.

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Table 27.1
Dimensions of the BPMM model

Dimension	Definition	Origin	Purpose
Factor	A specific, measurable and independent element that reflects a fundamental and distinct characteristic of BPM. Each factor is further broken down in a 1-m hierarchy	Current factors have been derived from an extensive literature review of BPM critical success factors and barriers to successful BPMs implementations	<ul style="list-style-type: none"> • To cluster important components of BPM and allow a separate evaluation of these factors, i.e. to enable identification of strengths and weaknesses within the organization that were most likely to impact on BPM success • To enable organizations to tailor specific BPM strategies with a view to improving BPM success • To enable future research into relationships and correlation between factors to improve understanding of BPM issues
Maturity stage	A pre-defined maturity stage ranging from 1 (low) to 5 (high)	Levels and names are based on those used in CMM	<ul style="list-style-type: none"> • To quantify and summarize the evaluation for one scope/time item on factor/well-defined a scale
Scope: organizational entity	The organizational entity which defines the unit of analysis and to which the model is being applied, e.g. a division, a business unit, a subsidiary	The organizational entity is defined on a case-by-case base by the participating organization	<ul style="list-style-type: none"> • Acknowledgement that in reality BPM does not conform to any one implementation and adoption route • To enable internal comparison and assessment between entities • To enable specific strategies to be implemented

(Continued)

Table 27.1 (Continued)

Dimension	Definition	Origin	Purpose
Scope: time	The point in time at which the model is applied	Variable aspect of the model that is selected by the organization applying the model	<ul style="list-style-type: none"> • To identify and maximize leverage of internal knowledge sources and sharing • To enable understanding of current position and the formation of an internal baseline • To enable the model to be reapplied over time to assess progress in a longitudinal study
Coverage	The extent to which BPM practices extend through the organization entity being assessed	Concept based on the notions of efficiency and effectiveness in similar models (DeToro and McCabe, 1997)	<ul style="list-style-type: none"> • To recognize the fact that the standardized and consistent distribution of BPM capabilities deserves recognition
Proficiency	The perceived goodness of BPM practices in the organization entity being assessed	Concept based on the notions of efficiency and effectiveness in similar models (DeToro and McCabe, 1997)	<ul style="list-style-type: none"> • To recognize the fact that the quality of BPM capabilities deserves recognition

Table 27.2

Delphi study participants (I, industry; A, academia)

Category	Strategic alignment		Governance		Method		Information technology		People		Culture	
	I	A	I	A	I	A	I	A	I	A	I	A
Region:												
USA	8	6	10	6	10	5	9	4	9	5	8	5
Australia	2	1	2	1	2	1	2	1	2	1	2	1
Europe	1	–	1	–	1	1	1	1	1	–	1	–
Asia	–	–	–	1	–	1	–	–	–	–	–	–
Category total	11	7	13	8	13	8	12	6	12	6	11	6

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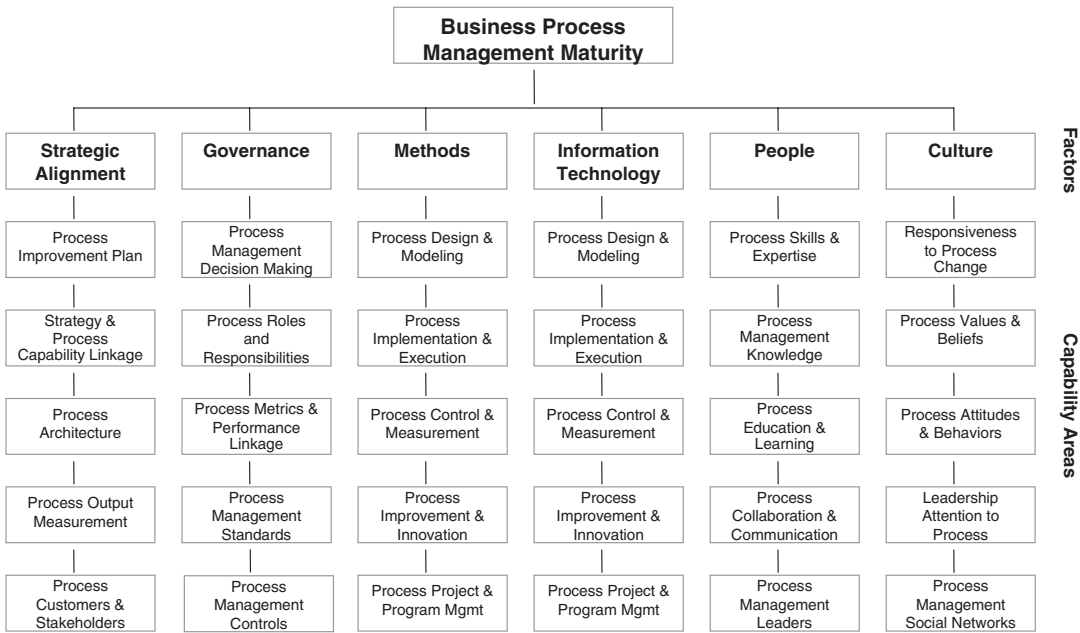


Figure 27.3
The BPM capability areas.

Whilst the following sections provide further insights into each of the factors, Figure 27.3 provides an overview of the model incorporating the capability areas that were derived through the Delphi studies.

Strategic alignment

Strategic alignment as part of our BPMM model is defined as the tight linkage of organizational priorities and enterprise processes enabling continual and effective action to improve business performance. Through our Delphi study, we identified five principle capability areas to be measured as part of an assessment of strategic alignment capabilities, as they relate to business process management. The sequence in which we present these capability areas reflects the average *perceived importance* weighting assigned by the experts participating in the Delphi study.

- 1 A strategy-driven *process improvement plan* captures the organization’s overall approach towards the BPM initiative. The process improvement plan is derived directly from the organization’s strategy, and outlines how process improvement initiatives are going to meet strategically prioritized goals. The process improvement plan provides information related to the targets for the process improvement project, together with planned review and monitoring processes.
- 2 A core element of strategic alignment, in the context of BPM, is the entire bi-directional *linkage between strategy and business processes*. Do the business processes directly contribute to the strategy, and do organizational strategies explicitly incorporate process capabilities?

1 By way of example, do we know which processes are impacted by a
 2 change of the strategy and which processes could become a bottle-
 3 neck in the execution of the strategy, is the strategy designed and
 4 continually reviewed in light of process capabilities, how are scarce
 5 resources to be allocated to perhaps competing processes, and
 6 which processes are we better off outsourcing or off-shoring?

7 3 *An enterprise process architecture* is the name given to the highest level
 8 abstraction of the actual hierarchy of value-driving and enabling
 9 business processes. A well-defined enterprise process architecture
 10 clearly depicts which major business processes exist, how the indus-
 11 try-/company-specific value chain looks, and what major enabling
 12 processes support this value chain – e.g. finance, HR, IT. A well-
 13 designed process architecture derives from a sound understanding
 14 of organizational structures from a process viewpoint. In addition, it
 15 serves as the main process landscape and provides the starting point
 16 for more detailed process analysis.

17 4 In order to be able to evaluate actual process performance, it is
 18 important to have a well-defined understanding of *process outputs*
 19 and related key performance indicators (KPIs). A hierarchy of cas-
 20 cading, process-oriented and cost-effectively measured KPIs pro-
 21 vides a valuable source for translation of strategic objectives to
 22 process-specific goals, and facilitates effective process control.
 23 Relevant KPIs can be of differing nature, including financial, quan-
 24 titative, qualitative or time-based, and may be dependent upon the
 25 strategic drivers for the specific enterprise process. Often equally
 26 important, but more difficult to measure, are KPIs related to char-
 27 acteristics of an entire process, such as flexibility or reliability.

28 5 Finally, we recognize that strategies are typically closely linked to
 29 individuals and influential stakeholder groups. Thus, how well BPM
 30 is aligned to the actual priorities of *key customers and other stakeholders*
 31 *such as senior management, shareholders, government bodies and so on*
 32 should be evaluated. For example, in practice it can be observed
 33 that a change of a CEO will have significant impact on the popular-
 34 ity (or not) of BPM even if the official strategy remains the same.
 35 Among others, this also includes investigation of how well processes
 36 with touchpoints to external parties are managed, how well external
 37 viewpoints have been considered in the process design, and what
 38 influence external stakeholders have on the process design.

40 Governance

41 Governance in the context of BPM establishes relevant and transparent
 42 accountability, decision-making and reward processes to guide actions. In the
 43 tradition of corporate or IT governance, a focus is on the decision-making
 44 processes of BPM and related roles and responsibilities:
 45

- 46 • The clear definition and consistent execution of related BPM *deci-*
 47 *sion-making processes* that guide actions in both anticipated and unan-
 48 ticipated circumstances is seen to be critical. In addition to *who* can
 49 make *what* decision, the speed of decision-making and the ability to
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influence resource allocation and organizational reaction to process change is also important.

- Another core element is the definition of *process roles and responsibilities*. This covers the entire range of BPM-related roles, from business process analysts to business process owners up to potential chief process officers, and encompasses all related committees and involved decision boards, such as Process Councils and Process Steering Committees. The duties and responsibilities of each role need to be clearly specified, and precise reporting structures must be defined.
- Processes must exist to ensure the direct linkage of process performance with strategic goals. While the actual process output is measured and evaluated as part of the factor strategic alignment, the process for *collecting the required metrics* and linking them to performance criteria is regarded as being a part of BPM governance.
- *Process management standards* must be well defined and documented. This includes the coordination of process management initiatives across the organization, and guidelines for the establishment and management of process management components such as process measures, issue resolution, reward and remuneration structures, etc.
- *Process management controls* as part of BPM governance cover regular review cycles to maintain the quality and currency of process management principles, and compliance management related to process management standards. Such controls will include the degree to which BPM governance standards are complied with in order to encourage desired behaviors.

Methods

Methods, in the context of BPM, have been defined as the approaches and techniques that support and enable consistent process actions. Distinct methods can be applied to major, discrete stages of the process lifecycle. This characteristic, which is unique to the ‘methods’ and ‘information technology’ factors, has resulted in capability areas that reflect the process lifecycle stages rather than specific capabilities of potential process methods or information technology. Whilst, arguably, defining capability areas in this way is different from the way adopted for other factors, it is important to note that the capability areas have been derived using the same Delphi process. An advantage of associating the method capability with a specific process lifecycle stage is the resultant ability to assess methods that serve a particular purpose, rather than purely all methods relating to business process management. For example, it is possible to assess the specific methods used for designing processes as distinct from those used for improving processes. This form of analysis is considered to be particularly beneficial, given the common practice of methods (and information technology) being developed, marketed and implemented to meet the needs of a specific process lifecycle stage. The methods maturity assessment therefore focuses on the specific needs of each process lifecycle, and considers elements such as the integration of process lifecycle methods with each other and also with other management methods, the support for

methods provided by information technology, and the sophistication, suitability, accessibility and actual usage of methods within each stage.

- *Process design and modeling* is related to the methods used to identify and conceptualize current (as-is) business processes and future (to-be) processes. The core of such methods is process modeling techniques.
- *Process implementation and execution* covers the next stages in the lifecycle. Related methods help to transform process models into executable business process specifications. Methods related to the communication of these models and escalation methods facilitate the process execution.
- The *process control and measurement* stage of the process lifecycle is related to methods which provide guidance for the collection of process-related data. These data can be related to process control (e.g. risks or errors), or could be process performance measures.
- The *process improvement and innovation* stage includes all methods which facilitate the development of improved and more innovative business processes. This includes approaches such as process innovation, Six Sigma, etc.
- The assessment component *process project management and project management* evaluates the approaches that are used for the overall management of the BPM program or projects, including the management of process change.

Information technology

Information technology (IT) refers to the software, hardware and information management systems that enable and support process activities. As indicated, the assessment of IT capability areas is structured in a similar way to that of methods, and refers first to process lifecycle stages. Similarly to the methods maturity assessment, the IT components focus on the specific needs of each process lifecycle stage and are evaluated from viewpoints such as customizability, appropriateness of automation and integration with related IT solutions (e.g. data warehousing, enterprise systems, reporting), in addition to the more generic considerations such as the sophistication, suitability, accessibility and usage of such IT within each stage.

- *IT solutions for process design and modeling* covers IT that enables derivation of process models automatically from log files, and overall tool-support for business process modeling and analysis (e.g. process animation, process simulation).
- *IT-enabled process implementation and execution* focuses on the automated transformation of process models into executable specifications and the subsequent workflow-based process execution. This also includes related solutions such as document management systems or service-oriented architectures. This entire category of software is often labeled 'process-aware information systems'.
- *Process control and measurement* solutions facilitate (semi-)automated process escalation management, exception handling, workflow mining, performance visualization (e.g. dashboards), and controlling based on process log files.

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- Tools for *process improvement and innovation* provide automated support for the generation of improved business processes. These could be solutions that provide agile (i.e. self-learning) tools that continuously adjust business processes based on contextual changes.
- *Process project management and project management* tools facilitate the overall program and project management. They are essential, but typically less BPM-specific.

People

While the information technology factor covered IT-related BPM resources, the factor ‘people’ comprises the human resources. This factor is defined as the individuals and groups who continually enhance and apply their process skills and knowledge to improve business performance. The focus on skills and knowledge of people involved in a BPM initiative could be seen as the ‘hard facts’ of people. The next capability area (‘culture’) covers the ‘soft side’, including behaviors and attitudes leading to the overall appreciation of BPM within the organization.

- *Process skills and expertise* is concentrated on the comprehensiveness and depth of the capabilities of the involved stakeholders in light of the requirements as formulated by the allocated role or position (e.g. business process analyst, process owner).
- *Process management knowledge* consolidates the depths of knowledge about BPM principles and practices. It evaluates the level of understanding of BPM, including the knowledge of process management methods and information technology, and the impact these have on enterprise process outcomes.
- *Process education and learning* measures the commitment of the organization to the ongoing development and maintenance of the relevant process skills and knowledge. The assessment covers the existence, extent, appropriateness and actual success (as measured by the level of learning) of education programs. Further items are devoted to the qualification of the BPM educators and BPM certification programs.
- *Process collaboration and communication* considers the way in which individuals and groups work together in order to achieve desired process outcomes. This includes the related evaluation analysis of the communication patterns between process stakeholders, and the manner in which related process knowledge is discovered, explored and disseminated.
- The final ‘people’ capability area is dedicated to *process management leaders*. The maturity assessment evaluates people’s willingness to lead, take responsibility and be accountable for business processes. Among others, it also captures the degree to which desired process leadership skills and management styles are practiced.

Culture

Culture, the sixth and final factor, is the collective values and beliefs that shape process-related attitudes and behaviors to improve business performance.

1 During the Delphi process, it was surprising to observe that consensus and mutu-
 2 al understanding of capability areas was reached within this factor with a greater
 3 degree of ease and considerably less discussion than had occurred in the earlier
 4 studies. Arguably, this phenomenon could be the result of ‘culture’ being one of
 5 the last Delphi studies in the series; however, the study for ‘people’ was run con-
 6 currently and similar findings were not present within this study.

- 8 • *Responsiveness to process change* is about the overall receptiveness of
 9 the organization to process change, the propensity of the organiza-
 10 tion to accept process change and adaptation, and the ability for
 11 process change to cross functional boundaries seamlessly and for
 12 people to act in the best interest of the process.
- 13 • *Process values and beliefs* investigates the broad process thinking with-
 14 in the organization – i.e., do members of the organization see
 15 processes as they way things get done? Furthermore, this capability
 16 area concentrates on the commonly held beliefs and values on the
 17 roles and benefits of BPM. Among them is the longevity of BPM,
 18 expressed by the depth and breadth of ongoing commitment.
- 19 • The *process attitudes and behaviors* of those who are involved in and
 20 those who are affected by BPM are another assessment item in the
 21 ‘culture’ factor. This includes, among others, the willingness to
 22 question existing practices in the light of potential process improve-
 23 ments and actual process-related behavior.
- 24 • *Leadership attention to process management* covers the level of commit-
 25 ment and attention to processes and process management shown by
 26 senior executives, the degree of attention paid to process on all lev-
 27 els, and the quality of process leadership.
- 28 • Finally, *process management social networks* comprise the existence and
 29 influence of BPM communities of practice, the usage of social network
 30 techniques, and the recognition and use of informal BPM networks.

31 Application of the BPMM model

32 The BPMM model can be applied within an organization in a number of ways,
 33 dependent upon the desired *breadth* and *depth* of application.

34 *Breadth* refers to the unit of analysis defined for assessment. A unit of analy-
 35 sis can be (in the extreme case) the entire organization, or specific lines of
 36 business within the organization. The model can be applied separately to mul-
 37 tiple units of analysis, leading to valuable internal benchmarking data.

38 For each unit of analysis, the model can be applied in two ways: factor level,
 39 and capability level. This represents the *depth* of the model application.

40 A *factor-level* application provides a high-level analysis with results collated
 41 on the basis of the six factors contained within the model – i.e. strategic align-
 42 ment, governance, methods, information technology, people and culture.
 43 Typically, this level of analysis is achieved by BPMM experts undertaking
 44 extensive one-on-one interviews with key executives providing complementa-
 45 ry views on an organization’s BPM initiatives. The BPMM experts then analyze
 46 the findings from these interviews, provide a detailed presentation and report
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1 back to the organization. This level of analysis is useful for providing a rough
2 understanding of the 'as-is' BPM position from an executive perspective, and
3 provides a good first starting point for organizations in understanding the
4 sophistication of their BPM activities.

5 A *capability-level* application provides a richer understanding of the 'as-is'
6 BPM position by conducting additional analysis into the five capability areas
7 identified for each of the six factors. In addition to the factor interviews with
8 key executives, this level of analysis involves in-depth workshops with relevant
9 employees with specialist knowledge of BPM activities within each of the capa-
10 bility areas. In addition to a more thorough understanding of the 'as-is' BPM
11 position, this level of analysis enables future BPM strategies to be formulated
12 and targeted to particular aspects of BPM. A further benefit of this level of
13 analysis is that a comparison between BPM perceptions of executives and
14 employees is possible. Moreover, a BPM maturity assessment on the capability
15 level is complemented by an analysis of BPM-related documents (e.g. process
16 models, job descriptions, definitions of process KPIs).

17 Whilst the current BPMM model can only be applied within an organiza-
18 tion utilizing the assistance of BPMM developers, it is intended that future ver-
19 sions of the model will incorporate a self-assessment component that will
20 enable an organization to achieve a basic maturity assessment without the
21 need to seek external BPM expertise.

22 23 24 Related work

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27 More than 150 maturity models have been developed to measure, among oth-
28 ers, the maturity of IT service capability, strategic alignment, innovation man-
29 agement, program management, enterprise architecture, and knowledge
30 management. Many of these models have been designed to assess the maturity
31 (i.e. competency, capability, level of sophistication) of a selected domain
32 based on a more or less comprehensive set of criteria. Unlike CMM, which has
33 reached the level of a compliance standard for software development
34 (Mutafelija and Stromberg, 2003), most of these models simply provide a
35 means for positioning the selected unit of analysis on a predefined scale.
36 Shortcomings of current BPM maturity models have been the simplifying
37 focus on only one dimension for measuring BPM maturity and the lack of
38 actual application of these models. Moreover, many existing BPM models do
39 not always clearly differentiate between the evaluation of the maturity of a
40 business process (as measured by its performance) and the maturity of the
41 *management* of business processes. Further shortcomings of many available
42 BPM maturity models are the missing rigor in the model development
43 process, the limited scope and depth of single facets of BPM, their idiosyn-
44 cratic nature due to a lack of foundation in related work, the missing consid-
45 eration of relevant stakeholders, the lack of empirical tests for these models
46 and, especially, the lack of sufficient depth in the assessment levels.

47 The proposed BPMM model addresses these shortcomings by combining a
48 rigorous theoretical framework with multiple practical applications during
49 the development process to ensure the resultant model incorporates specific
50 BPM requirements in a practical and useful manner.

Summary

This chapter has provided a brief and selective overview of the structure and components included in a holistic and contemporary model that facilitates the assessment of BPM maturity. The actual BPM maturity assessment derived by applying this model can occur on various levels. In its most detailed and recommended form, such assessment takes place one level below the capability areas. The entire assessment kit is based on a maturity assessment questionnaire, semi-structured interviews with key BPM stakeholders, and the evaluation of related documents (e.g. process-related job descriptions, process incentive schema, process models). The triangulation of these three sources of evidence leads to the final assessment score. In analogy to the original CMM, separate evaluations (ranging from 1 to 5) are calculated for each of the six factors. This provides the organization with an overview of its BPM initiatives, and helps to localize the immediate action points necessary for an increased BPM maturity. A corresponding tool semi-automates the data collection, analysis and presentation activities.

We are currently conducting a number of case studies with European, American and Australian organizations, in order to develop a deeper understanding of the requirements related to a BPM maturity assessment and to get further feedback on the appropriateness of our proposed model.

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