

Chapter 2

Innovation: Enabled by Process Management

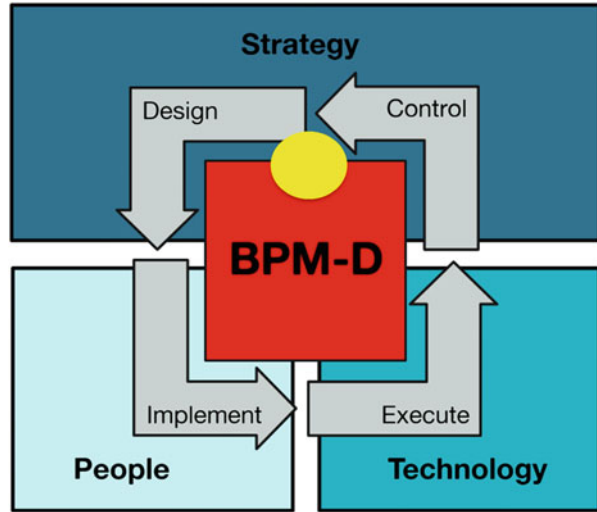
Today's business environment is constantly changing—new opportunities and challenges arise every day—often driven through increased digitalization. Achieving and sustaining high performance has become more and more difficult. New competitors emerge from all around the world empowered through the “Internet of things,” while others disappear. A company becomes a member of many enterprise networks, resulting in more changes and additional competitive situations. Fingar, a well-known BPM expert, introduces “extreme competition” as a result of different market forces, like knowledge as business capital, the Internet, “jumbo transportation,” billions of new “capitalists,” as well as the new dimension of information technology and digitalization [1].

To master the resulting challenges, innovation—especially business process innovation—has become a core focus area for successful organizations. To ensure long-term survival, an enterprise must make innovation part of its day-to-day business. Only then can enterprises attain desired revenue and profit targets—and with that high performance.

Two major forms of innovation can be distinguished: business model innovation and technology innovation. Both require the change of existing or the development of new business processes. Business process innovation is a major success factor for the next-generation enterprise and often necessary to benefit from opportunities in a digital world. Companies need to create an environment that encourages and enables process innovation. Business process management (BPM) becomes the driver of innovation initiatives. The discipline of value-driven BPM moves to the center of an organization's innovation initiatives.

Value-driven BPM applies the philosophy of “open BPM” to connect various components of the BPM-Discipline seamlessly. This concept delivers a business process infrastructure that provides optimal agility at the lowest cost level through the use of business and technology standards. Open BPM enables an agile BPM-Discipline and, in turn, the efficient and effective management of business process innovation [2]. Innovation opportunities can be identified and easily tried out leveraging new open components within an existing BPM-Discipline

Fig. 2.1 Focus of innovation through vBPM



infrastructure. This enables the use of innovation techniques like design thinking and the agile development of innovative business processes.

This chapter discusses characteristics of innovation and how to achieve it through BPM. It explains the importance of process innovation for all forms of creating innovation. You will learn how vBPM serves as a key enabler for business process innovation—one of the key values of a BPM-Discipline.

I stress the aspect of innovation and BPM's role in achieving it since this is an area where I experienced many misperceptions in today's business community. There are still many people who think BPM kills creativity and innovation. This is a huge misunderstanding. The right approach to process management identifies the appropriate degree of freedom for people to deliver the right innovation that moves an organization forward—fast and at minimal risk.

The chapter's focus on innovation as one of the key outcomes of a value-driven BPM-Discipline is visualized in Fig. 2.1. The yellow dot shows that the innovation topic the chapter addresses is closely related to the business strategy of an organization; hence, we discuss important aspects of the link of vBPM to strategy.

2.1 What Has Innovation to Do with Business Processes?

According to Wikipedia [3], the classic definitions of innovation include the following:

- The introduction of something new (Merriam-Webster Online)
- A new idea, method or device (Merriam-Webster Online)

- The successful exploitation of new ideas (Department of Trade and Industry, UK)
- Change that creates a new dimension of performance (Peter Drucker, Hesselbein)

Innovation as something “new” must be substantially different, not an unimportant change. The change must increase value, customer value, producer value, or a combination of both. These are very straightforward characteristics of innovation, but what has it to do with business process? Why can process management help to drive innovation?

In the last 10 years, more and more companies have been built on the principles of business process innovation, the invention, and successful application of new processes to create significant value. When Dell was founded, for example, the company did not invent the PC. But it did invent new business processes to bring PCs to market, eliminating unnecessary steps in the supply chain, while offering more flexibility and control to the customer. These processes had become Dell’s main differentiator in the competitive marketplace. Process innovation was the basis for starting and growing this company. Amazon.com did not invent the book, but it introduced a now popular process of buying books online from the comfort of your living room. This is a process innovation based on digitalization using the Internet with its new capabilities. In a further innovation step, Amazon became a broader online retailer. And now it offers its retail platform to other companies so they can sell new products online. eBay did not invent the auction, but its digital, easy-to-use processes increased the popularity of the auction and the opportunity to make money with it. This is again a process innovation as the basis for a new business. LinkedIn and Facebook invented new processes to manage relationships and personal networks, using this to make money through advertisements or subscriptions.

Traditional companies are also focusing more and more on process innovation. For example, enterprises in the machinery industries offer more convenient and reliable service processes based on Internet connections to their clients or directly to the delivered equipment. Airlines have simplified the ticketing process to reduce cost and increase, or at least stabilize, service levels through online ticketing. This is a process innovation that eventually became the standard, hence an industry best practice. Banks reduce cost and improve their service levels through online banking. An electronic company like Apple becomes more and more of a content provider, reselling music and more in a digital format—through appropriate innovative business processes. Think of all the online travel tools to book hotels, flights, or cars. I am sure you can find many more examples for the power of process innovation.

Examples for the significant impact of business process innovation are shown in Fig. 2.2.

Business process innovation is clearly of highest importance for every company. So we have sown one very strong link between “innovation” and “process management.” Let’s look at that relation a bit more systematically.

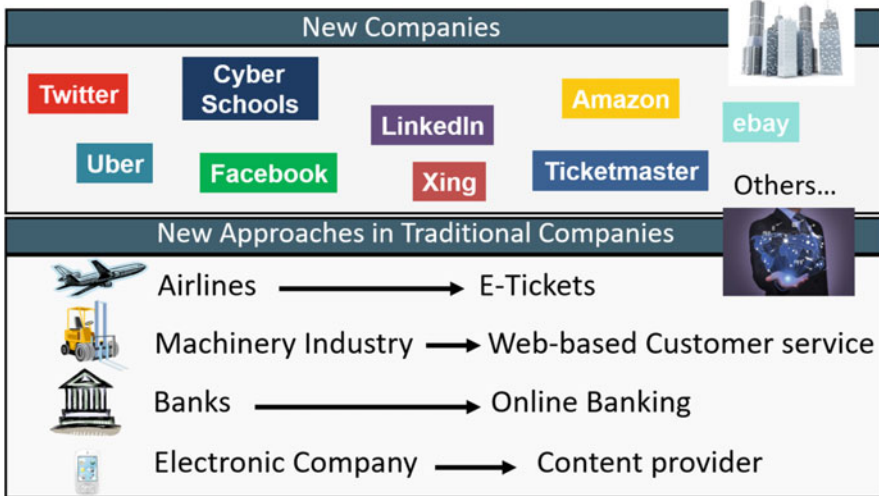


Fig. 2.2 Examples of business process innovation in different organizations and industries

A useful structure to deal with innovation and understand its characteristics is proposed by Davila et al. [4]. According to them, innovation has two major forms:

- Business model innovation
- Technology innovation

Business model innovation includes a new or modified value proposition, new business processes, especially in the supply chain, or new target customers and markets. Let us look at a few examples. Levis Strauss & Co. introduced denim jeans. Because of the company's new process of putting rivets in pants for strength, jeans were introduced as working clothes for farmers and factory workers. Since the first introduction of the denim jeans, the company's value proposition has changed and evolved, as denim jeans have become an expensive fashion product enabling a new business model through a new value proposition. In its PC offerings, Dell's value proposition was the convenient custom configuration and ordering of products—the supply chain processes eliminated dealer networks and enabled individual configuration by the client, while the target customers remained, more or less, the same as those of competitors. Hence, the business model innovation here is achieved mainly through a process innovation. The opening of new markets for existing offerings is another kind of business model innovation. If a company has always sold to the US market but now decides to also provide products to Europe, this is a form of business model innovation, the integration of a new market. Sometimes the pricing approach is considered as an additional component of the business model; however, it can also be seen as part of the general value proposition.

Business model innovation, with processes innovation as a main lever, plays a more and more important role [5]. Many of the previously mentioned examples for the business impact of innovation and the role of processes are mainly business model innovations, realized through the lever of process innovation. But also new value propositions or target customers require in general new or adjusted processes. Hence, the relation between business model innovation and “business processes” is even stronger.

The second form of innovation, technology innovation, has different levers: offerings, including products and services; process technologies; and enabling technologies. New product technologies, e.g., the introduction of digital cameras, are some of the most obvious forms of innovation. Process technologies support efficient and effective business processes. Enterprise resource planning (ERP) systems, for example, were able to make many processes more efficient and effective. Supporting technologies improve either product or process technologies. A good example is the development of efficient relational databases that support the development of integrated application software, such as the aforementioned ERP systems. Technology innovation is what most people still think first about when they hear the term innovation, although business model innovation has become more and more powerful. Technology innovation also requires in most cases the adjustment of processes to realize the full potential of new technologies. Without the right processes, you cannot produce or sell new products, you don’t get the full benefits from an ERP system, or you don’t end up with the best process technology through enabling technologies. So technology innovation is also closely related to “process” and BPM.

A technology innovation can also enable a business model innovation: the digitization of music in the form of MP3 files and the development of MP3 players opened the way for Apple’s development of a new business model for selling music through the Internet [6]. Digital cameras and their digital photos enable new business models focused on the use of “photo data” such as Shutterfly or Snapfish.

Basically, any form of innovation requires new or modified business processes and often business process innovation: processes with new structures; more accurate, granular, or timely data; new organizational responsibilities; new functions; or superior process deliverables. The levers of innovation and their relation to “business process” are shown in Fig. 2.3.

2.2 Some More Thoughts About Innovation and Processes

The close relationship between innovation and business processes is reflected in various innovation theories that are applied in practice, such as Christensen’s “value chain evolution” (VCE) theory and his “resources, processes, values” (RPV) theory [7, 8]. Christensen is one of the leading innovation experts. The

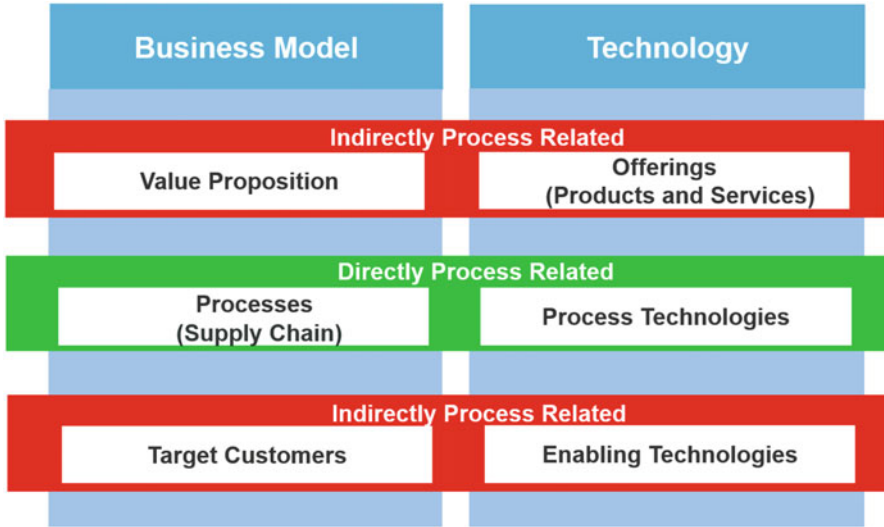


Fig. 2.3 Levers of innovation and the relation to processes

VCE theory is defined around a company's value chain, which is the process beginning with marketing and sales and ending with product distribution and accounts receivables. Customer preferences strongly influence an enterprise's determination of which parts of the value chain process are outsourced and which are executed in-house. The more important the process steps are to the customer, the more likely the enterprise will execute the related process components in-house. Innovation initiatives are focused on the subprocesses executed in-house, making them as competitive as possible. Consequently, business process outsourcing decisions also drive the focus of innovation decisions, especially regarding process innovation. Hence, outsourcing initiatives are another example to show how process management decisions and innovation go hand in hand.

If you outsource an area that is important for your clients, you leave the related innovation basically to your partners. This may in specific situations be justified, but in most cases, an organization should control those key areas and therefore execute them in-house [9]. The VCE theory is visualized in Fig. 2.4.

Christensen distinguishes between sustaining and disruptive innovation. Sustaining innovation strives to improve existing offerings. In that way, "undershot customers," or customers for whom the current offerings are insufficient, can be reached. Disruptive innovation targets "overshot clients" or completely new markets. "Overshot clients" are clients who are not interested in the expensive features of the currently offered products. The present offerings are too sophisticated for them. This distinction is visualized in Fig. 2.5. In the field of process repositories, for example, the ARIS Toolset was one of the first tools on the market. Over time, its functionality had become more and more comprehensive. This allowed new players with simpler tools to enter the market and gain market share. As a reaction,

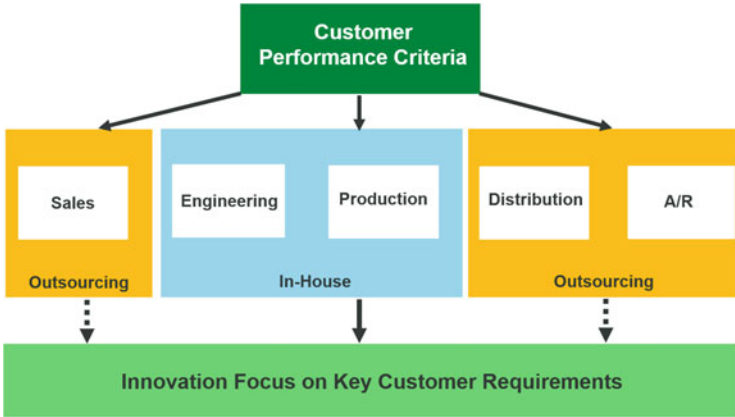


Fig. 2.4 Value chain evolution (VCE) theory

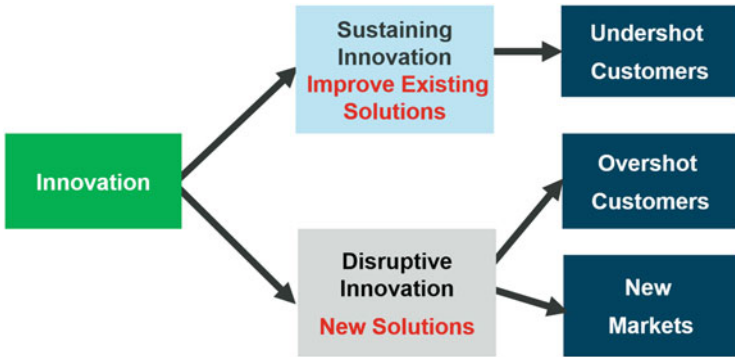


Fig. 2.5 Sustaining and disruptive innovation

IDS Scheer (now Software AG) brought a simplified tool, ARIS Easy Design, to the market to compete in this new segment. However, this answer has, up to date, not been sufficient to prevent the market entrance of start-ups with cheaper simpler solutions like Signavio. Disruptive as well as sustaining innovation is driven through appropriate business process. Disruptive innovation often requires transformational process changes, sustaining innovation can often be achieved through incremental adjustments. BPM is important for both.

The RPV theory demonstrates that innovation is significantly influenced through a company’s resources, processes, and values. Resources are transformed through processes from an input to an output. Company values are the basis for setting priorities, thus determining how to use the resources. Successful companies have developed and combined resources, processes, and values to clearly focus on the existing offerings that currently make the organization successful. The result is sustaining innovation that constantly improves existing offerings. But those

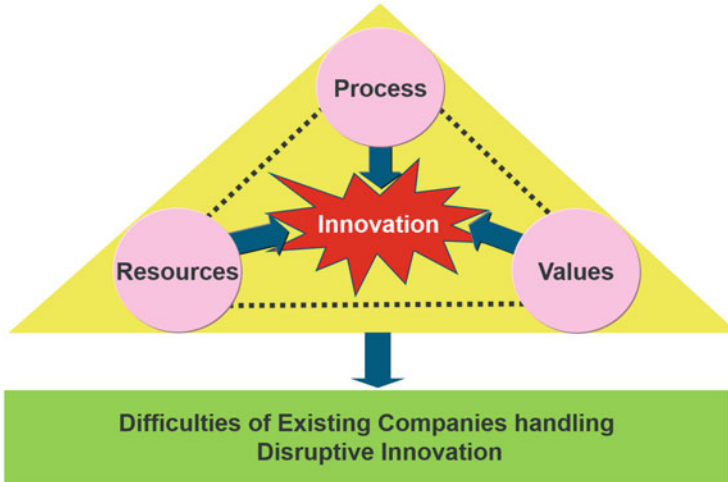


Fig. 2.6 Resources, processes, values (RPV) theory

companies often lose the agility to do something completely new, something that does not simply sustain their existing products. Therefore, if other enterprises introduce disruptive innovations, focusing on new market segments with new solutions, the existing companies are faced with tough challenges. Their focus on sustaining innovation and their lack of flexibility make it difficult to react to disruptive innovation. Their business processes are generally not agile enough to deal with the wide impacts of disruptive innovation or to produce innovations that are really addressing new markets. In this instance, a BPM approach resulting in agile business processes, enabling and simplifying process innovation, can become an important factor for long-term survival. It is important to use the transparency vBPM provides to identify where to innovate to stay competitive and where to conserve existing good and successful practices. The RPV theory is explained in Fig. 2.6. A good example here is Leica: The company had been the leader in high-end optical cameras—but got into trouble because they underestimated the significance of digital cameras. They thought this would only be something for amateurs, not touching their core business in the market for professional photographers—in which they excelled. They have been too focused on their current and past success, used resources accordingly, and aligned processes with that. This almost killed the company. Only a radical shift to delivering optical components for the producers of digital cameras and the entrance into that field saved the prestigious company. The discipline of value-driven BPM is an important enabler of this strategy execution.

“Collaboration innovation” is an extension of business process innovation. In this case, inter-enterprise processes are implemented to support innovative forms of collaborations between organizations [10]. For example, ING is a bank that works together with coffee shops. When customers visit an ING location, they feel like they are in a coffeehouse—with some terminals in the back for banking

transactions. Therefore, the BPM infrastructure has to support this collaboration between organizations. Processes of different organizations must be integrated to deliver value to the final client. Thus, process innovation is again the underlying principle of that new form of collaboration. We will discuss inter-enterprise processes and their BPM requirements later.

An important and very specific form of process innovation is the innovation of service processes. A service as rendered by a consulting company, financial services company, etc., is also a process. That means the “product” they deliver to the market is a “business process.” Therefore, the innovation of the offering (the service) must be a process innovation—which is consumed directly by the customer. Product innovation in a service company is essentially always process innovation. Therefore, process innovation in such enterprises is even more of a core focus of their activities. BPM enables this innovation.

It is now clear that innovation is tightly linked to business processes—in the form of process innovation and enabler of other forms of innovation: business model and technology innovation. Value-driven BPM provides the management discipline to deal with process innovation successfully. But the discipline of value-driven process management is also important to organize innovation in general and make it part of the daily business of a company. Value-driven BPM enables the “innovation process” of an organization. Let’s look into that topic.

2.3 What Is the Business Process of Innovation?

How does an enterprise organize innovation? How does the organization make sure that business model and technology innovation happen systematically, as part of “business as usual”? The answer is process management: the management of innovation within an enterprise is a business process in and of itself. This process must be defined, implemented, executed, and controlled just like any other business process. It goes through the same process life cycle and can be managed using the discipline of value-driven BPM. The “innovation process” is a key process to be managed by vBPM.

A generic example of one such innovation process is shown in Fig. 2.7. The process develops from the preparation of an innovation initiative to the “idea-finding” activities and finally to the execution of the innovation idea. The “innovation manager” identifies relevant megatrends and, on the basis of those, the relevant innovation fields of a company. These innovation fields guide the definition of the company-specific innovation focus. This focus directs the “idea finding,” using internal and external resources to come up with ideas for innovations related to the defined focus. The innovation ideas are evaluated, and the most interesting ones become innovation projects. These projects develop prototypes and business cases on the basis of the innovation idea. Then, the innovation team can decide which innovation ideas will be brought to market. These ideas will actually become innovations.

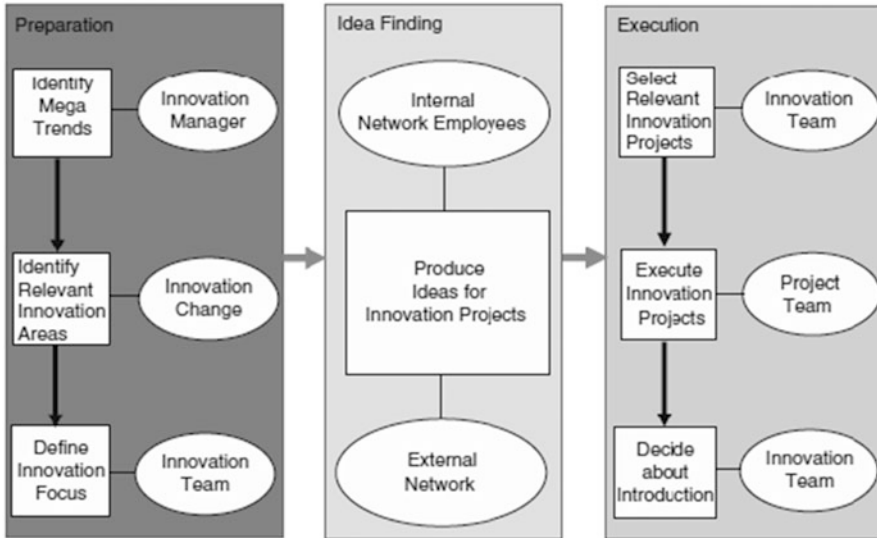


Fig. 2.7 Example of an innovation process

During the idea-finding process, it is key to anticipate the customers' future interests and needs. It is about planning the customer journey. Fingar claims that you should even know customer interests and needs before the customers themselves are aware of them [1] just like Steve Jobs at Apple did [6]. It generally makes sense to include external partners in the innovation process to broaden the input. Examples of such partners include the following:

- Key customers
- Important suppliers
- Additional market partners (e.g., banks)
- Research institutions
- Universities

Generally, the subprocess resulting from idea finding is an emergent process, which cannot initially be defined from start to finish. Later, we will discuss how to manage these processes.

In most cases, however, the step from the idea to the innovation itself is the most challenging. Therefore, the management of innovation initiatives and their evaluation is a key task in the innovation process. An organization can truly achieve competitive advantage by organizing that task carefully, considering the specific company and market context.

Because of the importance of business model innovation and specifically process innovation, the innovation process must support this form of innovation effectively. For many traditional companies, this will require a large shift because they formerly thought of innovation in terms of technology innovation, especially product innovation. This shift can be supported by selecting a specific approach for process

innovation, for example, based on design thinking [11–13], and appropriate external partners to participate in the innovation process. The structured design of business models and customer value propositions, as suggested by Osterwald, can play a key role here [12, 13].

Davila, Epstein, and Shelton suggest some rules to support and manage the innovation process [4]:

- Implement strong leadership regarding innovation strategy and innovation portfolio.
- Integrate innovation into day-to-day business.
- Align amount and type of innovation with the specific business situation.
- Manage tension between creativity and daily business requirements (“achieve numbers, etc.”).
- Control the resistance to innovation and change.
- Form an innovation network consisting of internal and external members.
- Define and manage the appropriate metrics and rewards.

When implementing and improving an innovation process, it is in most cases of highest importance to accelerate the time until the innovation can be introduced into the market. This reduces innovation cost and increases the probability of high revenue effects [14, 15]. At a telecommunication company, for example, it was crucial to reduce the new product launch cycle time by over 50% to stay competitive. BPM has been the key enabler to achieve that.

Hammer, the renowned BPM thought leader, recognized that operational innovation, or business process innovation, is not easy to achieve. For a successful innovation process, he recommends six key factors [16]:

- Business process focus, from the beginning of an innovation initiative
- Definition of process owners, including a senior executive who can make change happen
- Full-time design team
- Managerial engagement, ensuring the implementation of the innovation
- Building buy-in
- Bias for action

Once a process innovation has been implemented, one must recognize that the interrelationship with other processes may require additional change. Therefore, one process innovation initiative may immediately trigger the next process change project.

The innovation process can be centralized in an organization or carried out in decentralized units. The more effective approach has to be defined on the basis of a company’s specific context and its strategy.

How can an enterprise provide a “process environment” to support innovation? How can the discipline of process management make a difference and become a key enabler for innovation?

2.4 How Does BPM Enable Innovation Systematically?

Value-driven business process management provides a management discipline delivering the transparency and agility required to enable innovation, especially business process innovation and the closely related business model innovation. BPM also optimizes the performance of the innovation process as part of the daily business. Process management sets the parameters so that an organization is able to react to change fast and effectively. Innovation in general and process innovation specifically are powerful ways of dealing with change—and driving it proactively.

The discipline of vBPM helps to identify the 15–20% of high-impact processes where innovation really matters. It points the innovation activities to the right target to get the best value out of it [9, 17].

The discipline of vBPM identifies the process steps of the innovation process that are purely administrative but necessary. Those areas are managed with the goal of highest efficiency. The subprocesses which really matter for the quality of innovation are optimized differently. Optimizations to achieve best possible results are appropriate. Here, people get the necessary freedom to be creative and develop new ideas.

vBPM enables the right degree of freedom for successful innovation. It also provides the right agility necessary to implement and roll out the new processes. The double impact of the discipline of value-driven process management on innovation is visualized in Fig. 2.8.

As previously mentioned, process innovation is in general customer driven and facilitated through design thinking. Hence, the innovation process is organized around the design thinking principles [11]. A new process idea is developed based on the outside-in customer view, the transfer of experiences from other areas (e.g., other industries or different processes), based on a visionary overall story. The implementation is done through rapid prototyping—which requires the agility vBPM provides. vBPM enables the rapid implementation of process changes to examine the outcomes which drive further improvements. But it is also used to organize an appropriate innovation process, as discussed before. Value-driven BPM treats innovation as a key value it has to deliver.

Value-driven BPM applies the notion of “open BPM,” which is the consequent use of business and technology standards around the process life cycle, resulting in an infrastructure that provides optimal process agility at the lowest cost level. This enables an effective implementation and rollout of new “innovative” business processes. Since this is an important success factor for innovation initiatives, the concept of open BPM is discussed now more in detail. The use of standards to support business process management allows business process changes with the lowest effort because the information about the change can be seamlessly transferred through all phases of the process life cycle, from design, implementation, and execution to control of the new processes. The concept of open BPM is shown in Fig. 2.9.

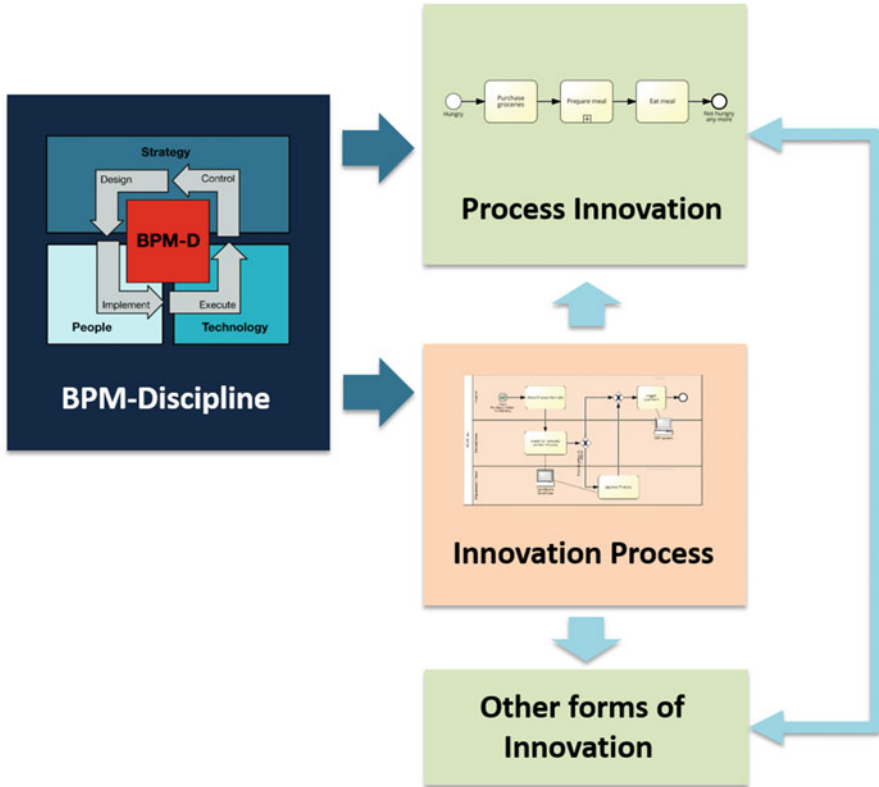


Fig. 2.8 The impact of value-driven BPM-Discipline on innovation

The philosophy of open BPM must be applied to the entire process of vBPM. This includes technology standards for the underlying software tools but also business standards, such as enterprise architecture frameworks, governance processes, or prioritization approaches. Business standards enable the people-based integration of the different process management activities along the process life cycle. Technology standards facilitate seamless integration of the supporting software.

Business standards that can be applied to guide the process design include architecture standards like the SCOR framework developed by the Supply Chain Council, the ARIS Architecture developed by Scheer, or the Zachman Framework [18, 19]. Processes can be described using modeling standards, such as event-driven process chains (EPCs) [20] or the business process-modeling notation (BPMN) [21].

The execution of processes in an open environment is best supported by a “service-oriented software architecture” (SOA) and the technical standards available in this context [22, 23]. This highly flexible next-generation process automation will be later discussed in more detail. The related technology standards directly

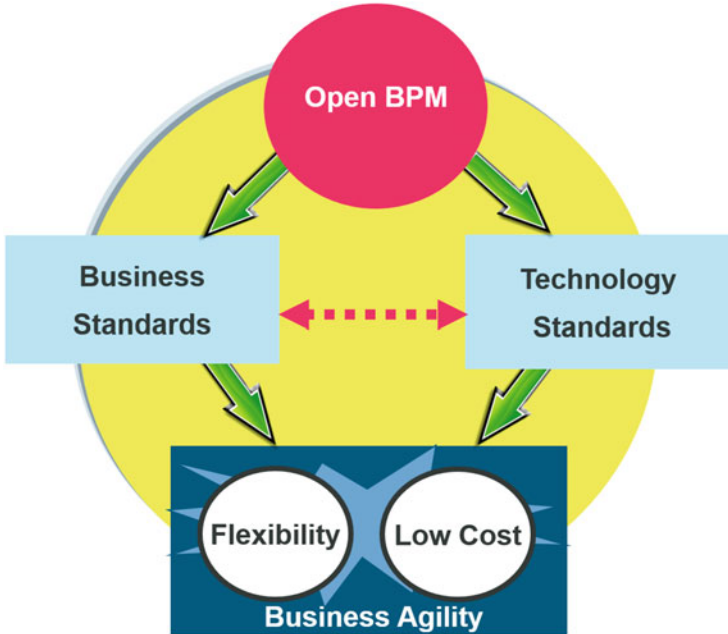


Fig. 2.9 Concept of open business process management

deliver the agility necessary to enable rapid prototyping for an agile development of process innovation.

People enablement plays a central role in the roll out of new processes. The main activities of people change management are information, communication, and training. These activities can be supported by the same process models used for the software solution design, provided that a consistent process-modeling standard is used that is delivering a common language of change. Such formal process-modeling methods can be transferred automatically into process descriptions that are easy-to-understand and easy-to-use, even for employees less familiar with process management methods and tools. Change management encompasses the people side of process execution. Agility in the technical execution of processes requires equal agility from the people working directly or indirectly with those processes and supporting technologies.

Process monitoring and control systems can be linked to the process execution systems through standardized adapters to monitor and measure the business processes [24]. Information, such as cycle times or execution frequency, is monitored. Thus, it becomes easier to provide fast information about potential process issues so that appropriate actions can be taken. This again is very important for rapid prototyping during the innovation process. To measure the appropriate processes or subprocesses, such controlling systems are configured on the basis of the aforementioned process models. They allow the “measurement” of the success of

a process innovation and provide the information necessary for “smart” decisions to improve the innovative prototype of a process.

The consequent use of standards within open BPM also supports the management of processes across organizations, resulting in the efficient and targeted collaboration of enterprises [25]. Therefore, collaboration innovation is also enabled through this approach. This can, for example, lead to a new more flexible supply chain process or collaborative research and development. Interactive Web-based applications, as offered by the “Web 2.0” [10] movement, can be used as standards for business processes and support a collaboration environment within and across the organization effectively.

The design of business processes based on modeling standards is a good starting point in process innovation through vBPM. An example is a North American producer of commodity chemicals, such as plastic foils. Differentiation through products is nearly impossible. Process innovation and the competitive advantage it provides are extremely important. Therefore, the company identified process innovation as a key corporate initiative. Every business unit manager delivers suggestions for process innovation in the form of process models in EPC format, so that an evaluation and potential implementation can be carried out easily. Open BPM is key for managing the innovation processes.

2.5 Examples for Innovation Through Appropriate Process Management?

Siemens and Intel, both high-tech enterprises, similarly facilitated the innovation of their mutual supply chain management (SCM). The intercompany collaboration processes were defined on the basis of the SCOR standard delivered by the Supply Chain Council [18]. Innovations included in the supply chain structure enabled an efficient rollout of changes and standards across the organizations. Their approach is visualized in Fig. 2.10. The graphic shows on the top part the supply chains of the companies defined based on the SCOR standard and the collaboration scenarios designed based on this. The lower part of the figure shows the detailed process execution and data exchange based on RosettaNet standards. Open BPM was used as enabler process innovation on the one hand but also to provide the appropriate standards to simplify the innovation process.

Mitsui, a leading Japanese trading company, has followed a similar innovation facilitation initiative. As a service company, process innovation is basically the only effective form of innovation. Mitsui can use its existing BPM environment with the defined standards to transfer innovation ideas from one location to another and to measure the effects of such innovation initiatives. The powerful role of BPM for innovation is directly clear.

Business process innovation has also found its way into the educational and academic practice. Universities, such as Widener University in Philadelphia,

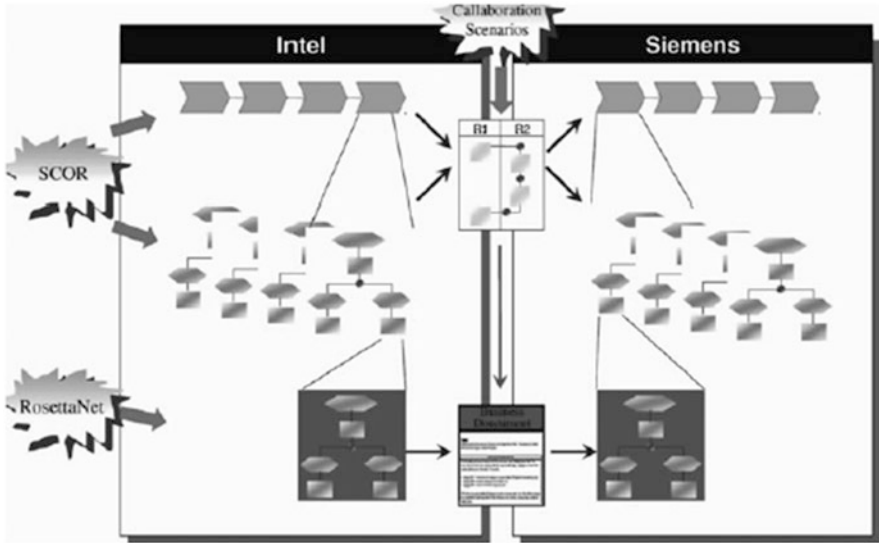


Fig. 2.10 Intel-Siemens: supply chain management (SCM) innovation

Pennsylvania, offer certifications and master's degree programs with a focus on business process innovation [26]. This allows enterprises to recruit employees who are familiar with innovation enabled through business process management.

The role of the BPM-Discipline as enabler of innovation has become an important value proposition for this emerging management discipline. It underlines the importance of process management for strategy execution.

2.6 The Bottom Line

The key messages of this chapter include the following:

- The main types of innovation are business model innovation and technology innovation (Sect. 2.1).
- Business model innovation includes new or modified value propositions, new business processes (especially in the supply chain), or new target customers and markets (Sect. 2.1).
- Technology innovation has the following levers: products and services, process technologies, and enabling technologies (Sect. 2.1).
- Business processes play an essential role in both types of innovation; thus, business process innovation plays a pivotal role in all innovation initiatives (Sect. 2.1).
- Some companies are completely based on the notion of business process innovation (Sect. 2.1).

- Thinking frameworks can help to understand more about the relation of process management and innovation (Sect. 2.2).
- To help ensure long-term business success and high performance, innovation must be part of daily business and an innovation process has to be put in place (Sect. 2.3).
- The innovation process defines the areas of innovation, the development of innovation ideas, and the realization of innovations, based on those ideas (Sect. 2.3).
- Design thinking plays an important role in process innovation (Sect. 2.3).
- The transparency created through the discipline of value-driven process management enables the identification of the right target processes for innovation (Sect. 2.4).
- The innovation process can be managed successfully by applying vBPM (Sect. 2.4).
- Through the use of business and technology standards as part of an “open BPM” approach, vBPM enables optimal agility at minimum cost, thus establishing the basis for successful implementation and rollout of business process innovation (Sect. 2.4).
- BPM has become a key enabler for innovation. This underlines again its strategy execution (Sect. 2.4).

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