Chapter 7
Managing Inter-enterprise Processes

Many organizations still struggle with the management of their internal business processes to overcome functional barriers. However, an increasing number of companies are targeting the integration between organizations or so-called inter-enterprise processes. Successful companies operate in a network with other organizations to leverage their strengths and compensate for their weaknesses. Mutual interdependencies are created and managed to drive additional value and to ensure high performance for the "inter-enterprise organization" as a whole. Companies become "platforms" that integrate customers with various suppliers, as enterprises like Amazon, eBay, or Uber show. Uber, for example, does not own many physical assets like a traditional taxi or limousine company. But they have processes in place linking clients to the owners of cars who are the suppliers of Uber.

These changing management paradigms are reflected in a changing information technology focus. The focus moves from integrated intra-enterprise application packages, such as ERP systems, to Internet-based "e-enabled" and inter-enterprise-focused digital technology, using next-generation automation and integration approaches. The "Internet of things" enables the communication between objects, people, and processes across different organizations. This leads to "e-business processes" which means, inter-enterprise processes supported through Web-enabled digital technology. These processes require a specific approach for BPM [1–4]. The discipline of value-driven BPM has to master these requirements to support a successful strategy execution in a digital world.

This chapter discusses appropriate approaches, methods, and tools to manage inter-enterprise processes enabled through the Internet of things. This is a core capability that vBPM provides. The positioning is visualized in Fig. 7.1.

M. Kirchmer, *High Performance Through Business Process Management*,
DOI 10.1007/978-3-319-51259-4_7

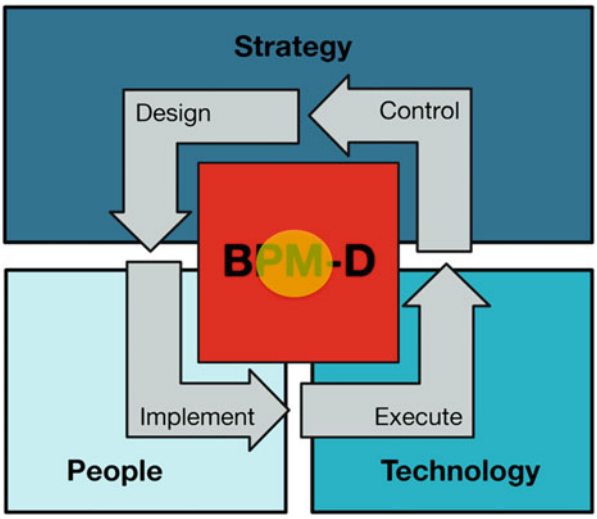

Fig. 7.1 Positioning of the management of inter-enterprise processes

7.1 Why Is the Management of Inter-enterprise Processes So Important?

Inter-enterprise processes are business processes that are distributed across two or more organizations that are independent legal units; thus, there is generally no centralized control. Therefore, the organizational environment of the processes is even more heterogeneous than one of intra-enterprise processes across various organizational units of one and the same company. This results in special integration and coordination requirements regarding people and technologies. The BPM-Discipline needs to handle this special situation to deliver on the overall strategy execution and benefits from a strong integration with market partners. The Internet or even better the Internet of things plays a key role in the management of those processes. Our digital world provides significant improvement opportunities for those inter-enterprise processes which need to be realized through the value-driven BPM-Discipline.

The management requirements in the field of inter-enterprise processes are constantly increasing because companies are more and more often forced to be part of several "enterprise networks" and, with that, participate in multiple inter-enterprise processes. "Platform enterprises," like Uber or Amazon.com, who bring buyer and seller markets together through appropriate processes are especially dependent on managing inter-enterprise processes. Amazon, for example, needs to connect buyers seamlessly with sellers which are parts of other business organizations or private households. The members of inter-enterprise processes are often dispersed around the globe, leading to additional challenges [2]. We will discuss the aspect of globalization in detail later and focus now on inter-enterprise challenges.

On the technology side, flexible and integrated application architectures and the use of the Internet and the cloud support those inter-enterprise processes. These technologies enable the integration of heterogeneous digital technologies, on the basis of capabilities of the Internet and related standards. This results in Internet-based processes that are often referred to as e-business processes. The organizational integration must be organized through an appropriate process management approach to deliver the overall value proposition of the combined organizations. This also means that the use of the integrated digital technologies based on the Internet of things must be managed in a process-oriented way.

In most cases, an organization's integration in inter-enterprise processes allows the organization to focus on its core competencies, while benefiting from the key strengths of other organizations. For example, in an inter-enterprise scenario, one company may focus on the engineering activities, delivering world-class blueprints for machines. The second enterprise is a leading manufacturing company, producing the machines on the basis of the blueprint from its "supplier." The third organization is a logistics company that specializes in distribution activities. This company ensures the final delivery of the manufactured machine. Every company has one main core process, based on the specific offering. However, for the final customer who buys the machine, only the overall inter-enterprise process and its performance are relevant. If a customer receives the machine too late, it does not matter if the blueprint was not finished in time or if the production was delayed or whether delivery problems occurred. If the final customer is not satisfied, it is an issue for each company involved in the inter-enterprise process. The whole scenario has to be seen and managed as one overall business process. This inter-enterprise process is shown in Fig. 7.2.

Supply chain processes are typical examples for inter-enterprise processes. They integrate suppliers and customers within an overall process [5]. Collaborative engineering processes or maintenance processes are often mentioned examples. In general, inter-enterprise processes enable "enterprise networks" that deliver more value to the end client than single enterprises—when managed accordingly. You can distinguish several different types of enterprise networks [6]:

- Vertical networks
- Horizontal networks
- Regional networks
- Out-of-necessity networks
- Self-promoted networks
- Other networks

Vertical networks, more or less, represent the classic supply chain: one company adds value to a product and passes it onto the next one in the network. In horizontal networks, the involved companies have the same core competencies and all share capacity (e.g., production capacity to avoid bottlenecks). Companies of one region may create a regional network to facilitate close collaboration. For example, this can allow several small organizations to combine their capabilities to fulfill larger orders or demonstrate greater stability. All regional manufacturing companies, for

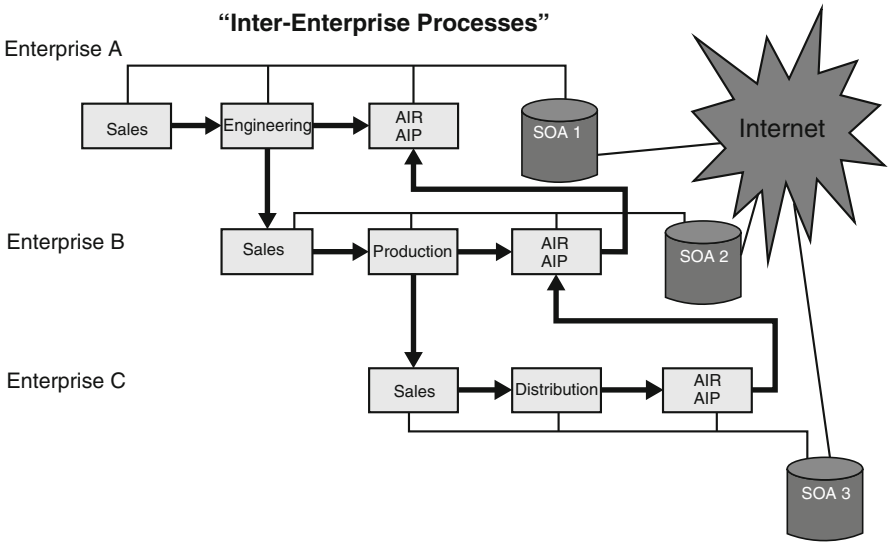

Fig. 7.2 Example of inter-enterprise processes

example, may share one logistics company for their transportation activities. These regional networks are similar to the out-of-necessity networks. For example, if one company cannot pay necessary research and development (R&D) for a new product, it may conduct R&D in an inter-enterprise engineering process together with other organizations. Or a set of companies using similar ingredients for their products form a common laboratory for safety tests of materials they use. A member of a self-promoted network is a company with a core competency that it wants to include in as many networks as possible, independent of the specific final product. Collection companies, e.g., may strive for inclusion in as many inter-enterprise processes as possible and, therefore, form a self-promoted network.

All those networks and the underlying inter-enterprise processes benefit from the easier and more comprehensive integration based on the Internet. This can lead to disruptive innovative business models based on the tight integration of different organizations and their offerings, called "collaboration innovation." General Motors' OnStar system, for example, is based on a tight integration between the offerings of AT&T and GM to deliver directions and supply-related information and provide concierge services. This has been an important competitive advantage of Cadillacs and other GM cars for more than 10 years.

The use of standards, such as best practices, can also lead to the creation of new inter-enterprise processes. For example, if many companies use the same "industry standard process" in a commodity area, this process could be outsourced, resulting in inter-enterprise processes [7].

The participation in enterprise networks and the related inter-enterprise business processes results in many advantages, such as [6]:

- Synergy: Networks leverage each member's strengths.
- Speed: You can react quickly to a change by adding a new company with new capabilities to the network.
- Flexibility: You can, for example, advance offerings through the capabilities of a new partner or adjust production capacities by leveraging the facilities of a partner.
- Risk reduction: You share risks with other enterprises, reducing your own risk.
- Independence: You are not forced to integrate fully into a larger enterprise group.
- Faster growth and increased profits: You achieve that through the use of the aforementioned synergies.
- Lasting customers: You serve customers over a long time through the broad capabilities of the network.
- Less capital required: This is enabled by the use of mutual capabilities, e.g., shared warehouses.
- Quick failure recognition and feedback: The relationships between the partners of an inter-enterprise process are open enough to provide prompt feedback.
- Increased ability to deal with change: This is due to speed and flexibility achieved through expansion and adjustments of the network.

However, an extensive collaboration in networks and the resulting inter-enterprise processes can also lead to disadvantages, including [6]:

- Too much reliance on one partner in the network and, with that, dependence on the condition of this partner.
- Too much mutual dependence, so that individual survival, for example, in case one partner resigns from the network, is no longer possible.
- Cost and pressure resulting from substantial coordination requirements.
- Lack of overall agility and responsiveness to market changes due to intense cross-company planning requirements.
- Exclusive arrangements between partners of an inter-enterprise process, slowing down innovation and agility. Partners lose the "big picture" view.
- Failure to support a struggling partner of the network in a timely manner due to the overall complexity.
- Risk of missing outsourcing opportunities for support and management processes because everyone focuses on the core inter-enterprise process.
- Ignoring alternative networks or processes.
- Too much or too little mutual trust.
- Neglecting other core competencies currently not present in the network.

An appropriate BPM-Discipline reduces those risks. This management discipline is very important for a systematic strategy execution in this extended business environment. Let's briefly discuss some main aspects of the BPM-Discipline.

In general, the BPM-Discipline discussed earlier, with its approaches, methods, and tools, can also be used for inter-enterprise processes. The views of the ARIS Architecture [8], organizational structure, data, functions, deliverables, and workflow control, are also relevant for those processes across organizations. The structured approach facilitates the comprehensive management of all aspects of inter-enterprise processes. Especially the examination of the "deliverables" of processes in forms of offerings is important. As explained above, the integration of organizations and their individual offerings can provide disruptive new offerings requiring appropriate processes.

Inter-enterprise business processes enable the efficient and effective collaboration between enterprises. In other words, responsibilities are shared between organizational units of the collaborating enterprises. As a consequence, the examination, and sometimes the change, of organizational structures become key for the design and implementation of inter-enterprise processes. This is a key process governance challenge that a BPM-Discipline resolves. The analysis of the "organization view" on an inter-enterprise environment is therefore also of key importance.

The collaboration of different organizations leads to "process-to-process" integration [9]. The coordination of all aspects necessary to achieve this integration is handled as a key aspect through the "control view" of the ARIS Architecture. This topic is again closely related to an appropriate governance approach.

Inter-enterprise processes are subject to even faster change. They are not only influenced through the environment of one company, but through changes relevant for a whole network of enterprises. Therefore, the continuous management and controlling of those processes is especially important and challenging.

We have now identified the importance and key characteristics as well as challenges of the management of inter-enterprise processes. But what does it mean to establish the BPM-Discipline in the different companies? How do the characteristics of inter-enterprise processes influence the design and implementation of business processes? How must the execution and controlling of processes be extended? What does the discipline of value-driven BPM need to deliver to achieve the required performance of inter-enterprise processes?

7.2 What Is Special with the Design and Implementation of Inter-enterprise Processes?

Is the design and implementation of inter-enterprise processes truly different? What has to be changed in comparison to the business processes within an organization? The design of such inter-enterprise processes requires the examination of three key areas [10]:

- A company's business processes, including the current interaction with external players, such as customers, suppliers, or research partners

- The value proposition a company offers to its customers
- The planned degree of collaboration with other organizations in creating shared business processes, harmonized across the inter-enterprise environment

The differences between inter- and intra-enterprise initiatives already begin during the identification of strategic goals and related value drivers that guide process improvement. Contrary to pure intra-enterprise processes, the distribution of benefits between involved organizational units plays an important role. A company's business proposition must improve through the collaboration reflected in an inter-enterprise process. Within one company, the investment of additional resources in one department can be justified through the achievement of additional benefits in other departments. In an inter-enterprise environment, however, the distribution of expected benefits between various involved organizations becomes an important aspect of the definition goals driving the process improvement. All involved organizations should realize benefits. At the very least, organizations involved in an inter-enterprise initiative should not have more disadvantages than benefits. Otherwise, the intended inter-enterprise projects will not be accepted, and the planned process cannot be realized. The identification of a win-win situation is a precondition for establishing sustainable inter-enterprise processes. Defining and targeting win-win situations is a crucial initiative at the beginning of inter-enterprise initiatives.

Strategic goals are defined based on the strategies of the different organizations involved in the inter-enterprise process. This requires that the strategies have to be harmonized as a precondition for proceeding with such collaboration initiatives. Once the strategies are consistent, they can be translated into strategic value drivers using an inter-enterprise "value driver tree." The segmentation of inter-enterprise processes to identify high-impact or commodity areas can then be done using the same approaches applied to intra-enterprise processes [11–13]. This allows the assignment of the right value drivers to the subprocesses of the inter-enterprise network. As a result, the inter-enterprise initiatives systematically target value for all involved organizations [11].

The next important activity in preparing the process design is the definition and extension of each organization's market offerings, consistent with the identified goals. The definition of offerings includes all customer-relevant aspects of the following:

- Physical goods
- Services
- Information
- Rights
- Others

In an inter-enterprise environment, you start with the definition of the "final offering" that is delivered to the end customer. Intermediate offerings of the different organizations involved in the network are adjusted to optimize this final offering. While this process is supported and enabled through the harmonized

strategies, it can still be a significant effort. Let's look at an example. A consulting company partners with an application software vendor to deliver automated process solutions to the end customer. Both companies may have to adjust their offerings, e.g., add service components to the consulting offerings or simplify the configuration approach for the software, to come up with an optimal solution for the end client. This is a precondition for the design of successful inter-enterprise processes.

In our digital world, new and often disruptive offerings are mainly created though the following measures:

- The replacement of goods or services through information, for example, the replacement of CDs through digital MP3 files.
- The combination of different products and services from several companies to one new offering, for example, to offer transportation services from different companies through one new "transportation portal."
- The enhancement of existing offerings through new processes, for example, books, accessible through a convenient online store or the custom configuration of snacks that get delivered every month.
- New products leveraging the opportunities of digitalization, for example, deliver information about the stickiness of visitors on a Web page or user-sensitive online marketing packages; aspects like "personalization" and "self-control" of offerings play here often an important role.

It is essential to create new value for the final customer through inter-enterprise networks. Although this can and often does include positive cost effects, the main focus is on additional value creation. A common approach is the development of new service processes around existing offerings, which often becomes an important competitive factor and drives inter-enterprise initiatives. New offerings can be designed and described in product models [14, 15], supporting an analytic approach to the definition of offerings.

Business model and technology innovations are important components of this and the following process design steps [16]. Business process innovation plays a major role. In many instances, inter-enterprise initiatives force organizations to develop process innovations to support new offerings provided by the combination of the different inter-enterprise partners. This can even lead to disruptive new business models for one or several of the involved organizations, for example, through the move of "traditional individual manufacturing" to mass individualization using transponder technologies to coordinate involved production units.

Once the new or modified offerings are defined, you may discover that additional partners are required in the network in order to deliver the final solution. New partners, with new capabilities, can lead to "collaboration innovation." While selecting and adding business partners to a network, it is important to identify the specific strengths of a company and its possible partners to come to the win-win situations [17].

Now, it must be determined how these market partners should be integrated into a collaborative inter-enterprise business process. There may be direct point-to-point integration or a "star integration" through existing or to-be-created, so-called

e-marketplaces. These e-marketplaces facilitate the business relations of its members, based on the Internet. The point-to-point integration generally results in an optimized implementation of one relation; the use of an e-marketplace typically ensures increased flexibility to switch among partners. Marketplaces may be industry specific, regional, and/or even focused on the needs of one company trying to optimize its partner network (private marketplace) [18–20]. The discovery of existing e-marketplaces may result in changes in the defined partner network: partners may be added or eliminated, ultimately resulting in the definition of the topology of the partner network.

When the offerings and the partner network topology are defined, the resulting inter-enterprise scenarios can be designed. That means different business processes across multiple organizations are specified. These inter-enterprise processes outline the collaboration between the involved organizations. General business strategies, like collaborative engineering or planning, are defined in this activity. The key here is the knowledge about the organization's current business processes, to know how much they need to change or where it is necessary to harmonize those processes across all partners of a network. Even if the decision is taken to implement completely new processes, for example, to enable a disruptive innovation, knowledge about the existing enterprise environments is important to use benefits from strengths and eliminate current weaknesses where necessary.

It is important to evaluate the current intra-enterprise processes. If they cannot keep up with the required new inter-enterprise capabilities, the targeted results will not occur. On the contrary, the tight integration may reveal the organization's own weaknesses to the other members of the network which can in the worst case lead to a revision of the partner selection.

Each organization plays one or several specific roles in a scenario. The definition of these roles is another important step in the definition of the entire scenario [21]. Partners may play roles, for example, as suppliers, buyers, and facilitators.

The definition of inter-enterprise scenarios and resulting processes is a key deliverable of the process design executed through the projects of a value-driven BPM-Discipline. These scenarios are the guidelines for all following activities.

Related process reference models can be used as a starting point for the definition of such inter-enterprise scenarios. These reference models allow the structured transfer of best practices and experiences within specific business fields. In addition, they are used to establish standards across various organizations, for example, by establishing a common terminology, enabling efficient and effective inter-enterprise process design.

On the basis of the general process scenarios, the detailed inter-enterprise processes can be designed. The analysis of the relevant existing processes ensures a realistic implementation strategy. Processes to be analyzed include inter-enterprise and intra-enterprise processes. Both must fit together to enable appropriate business results. However, a special focus is naturally on the processes or subprocesses responsible for the collaboration of the involved partner organizations.

Companies must decide on three groups of processes to come up with the optimal inter-enterprise processes in your collaboration scenario [10]:

- Processes you perform yourself—mainly intra-enterprise processes
- Processes you perform with others—mainly inter-enterprise processes
- Processes others perform for you ("outsourced processes")

The grouping of processes is the basis for the definition of appropriate process governance across enterprise boundaries. This can be a time-consuming process because all involved enterprises must reach a consensus. Some questions to support that task include [10] the following:

- Of all companies in an inter-enterprise network, which has the best capabilities to manage a process?
- How will the capabilities of the different organizations be used in the inter-enterprise process?
- Have the responsibilities in the processes been clearly assigned?
- How do we determine when one company is not performing sufficiently?
- Do we need governance bodies with members from several involved organizations?
- How can a joint governance body or role influence what happens within one of the involved organizations and drive necessary change?
- How do you integrate inter-enterprise and intra-enterprise process governance?

On the one hand, the analysis focuses on general business approaches, as defined in the inter-enterprise scenarios, for example, to check if a collaborative engineering approach already exists or if it still has to be defined. On the other hand, process inefficiencies are discovered and resolved through the inter-enterprise collaboration.

The "to-be" of the core business processes can be specified on the basis of the defined inter-enterprise scenarios. This includes the assignment of the various governance responsibilities. The specification contains all ARIS information systems views: organizations, functions, data, deliverables (products), and control flow. The different views may be specified in an integrated representation or separately, depending on the complexity of the aspects to be specified. The previously discussed approach of the vBPM process factory is applied again in this design phase.

The structure of the design of inter-enterprise business processes is shown in Fig. 7.3.

On the basis of the business process specifications and the inter-enterprise scenarios, the required digital technologies can be selected. The focus here is on collaborative technologies and the Internet of things, as discussed previously. In this stage, one may even define new online communities for the members of the inter-enterprise processes. This allows members to facilitate the collaboration using techniques, such as blogs or other means of joint content creation.

The process specification is the basis for the realization of the inter-enterprise scenarios, similar to the implementation of intra-enterprise processes. The business

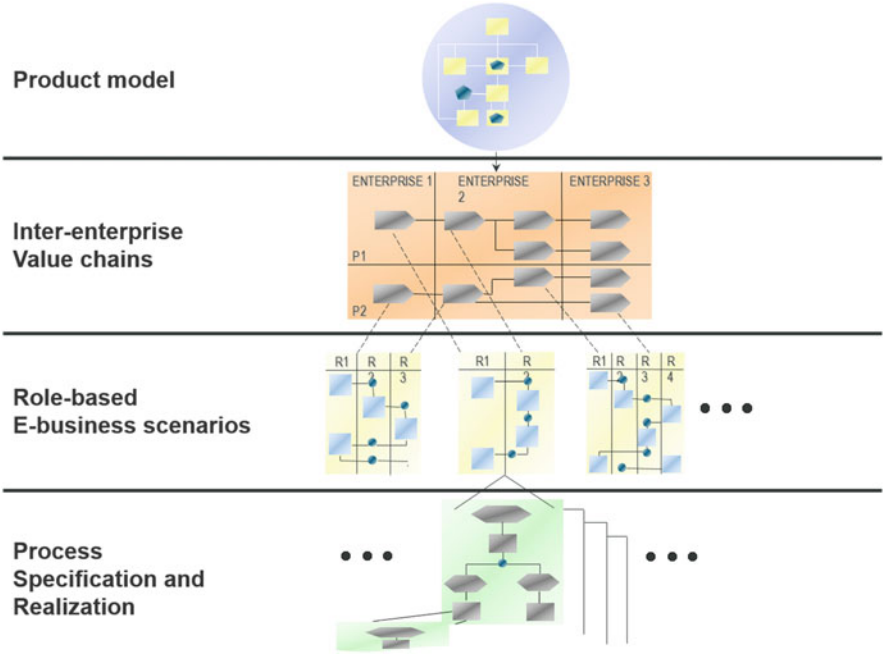

Fig. 7.3 Design of inter-enterprise processes

process models are used as a guideline for the implementation of the selected digital technologies, for example, the application software components. To ensure a fast and effective implementation in an inter-enterprise environment, different subprocesses or functions are realized, according to the capabilities and priorities of the enterprises within the network—based on the common strategic goals and resulting priorities. Since all individual activities refer to the integrated process design (a "master plan" for inter-enterprise scenarios), subprocesses are reassembled step by step to support end-to-end processes across the organization.

The specific realization activities vary greatly, depending on the environments of the involved companies. Therefore, it is impossible to describe all necessary activities in detail. However, a basic structure of the realization measures can be defined, similar to the realization of intra-enterprise processes [22]. The major steps are:

1. Technology-related activities
2. Organizational activities
3. Go live

Contrary to pure intra-enterprise processes, the technology measures of an inter-enterprise process implementation may include more integration work, for example, the use of additional enterprise application integration software, due to heterogeneous IT components of the involved enterprises.

All realization activities can be subject to general company-specific guidelines, for example, from marketing and legal. The development of external Web pages may require a design based on marketing guidelines. The exchange of specific information may be impacted by legal contracts and specifications.

As part of the organizational activates, personnel, process organization, and general infrastructure-related activities can be distinguished. Personnel measures include all change management activities, especially training, but also information and communication, as discussed earlier. These change management activities are all conducted, based on the business process models developed in the design. With regard to process organization-related measures, for example, legal or security aspects of inter-enterprise processes must be resolved.

Once technology and organizational measures are executed, the specified business processes can "go live" based on the new technology and organizational realities. In other words, the process will change according to the design of the inter-enterprise scenarios. This requires appropriate support from the involved organizational units, similar to intra-enterprise projects.

The inter-enterprise processes are now ready to be executed and controlled. This leads to the next question: How do the specifics of the inter-enterprise environment influence those vBPM activities?

7.3 What Is Special with the Execution and Controlling of Inter-enterprise Processes?

The implementation phase begins the process execution, which then requires the management and controlling of the inter-enterprise processes, as explained in the general discussion of vBPM. Continuous process improvement must begin immediately to ensure that the targeted goals are actually achieved and to adapt to changing business environments. Because of the higher rate of change, this is even more important in an inter-enterprise environment. Therefore, the current business situation has to be monitored constantly and compared with the design results. It must be determined whether the defined goals are achieved. If they are not achieved, either smaller improvement steps may be defined and executed in a "kaizen" approach of continuous improvement [23] or a new strategy or design phase must begin to react to a drastically altered environment [24].

In an inter-enterprise environment, the major challenge of this activity is that one company generally cannot make that decision alone. It often requires discussions between members of the involved organizations. This issue can be minimized if clear responsibilities are defined in the design phase. In many cases, there is one "dominating" partner in such an inter-enterprise network. This company can drive the necessary decisions at least in some areas. This situation often occurs in the automotive industry but also in other industry sectors, for example, in the retail area.

To monitor and analyze inter-enterprise business processes means to collect business process performance data and check if the defined goals have been realized, based on the newly implemented processes. Once again, it is most efficient to focus on high-impact processes because they are most relevant for achieving business goals. The analysis determines whether or not the goals are realized. If the goals are not realized, the reasons must be determined, for example, inconsistencies between an actual process and the relevant process design. In addition, the business environment has to be continuously monitored for new developments, such as new products, competitors, business models, or technologies, that may change the basis upon which the inter-enterprise design had been developed.

The collection and analysis of the relevant information is generally very time and work consuming. To execute this step efficiently and effectively, appropriate software tools play a key role. The manual execution of this step must basically be replaced by an application software system. One example of a tool focused on this process performance monitoring is business monitoring and decision software that can be used as "Process Performance Manager" [25]. It can be integrated with application software to collect the necessary process performance, such as cycle times.

Such a process management system can be used specifically to monitor inter-enterprise business processes, as shown in Fig. 7.4. In this case, it is recommended that a third-party service provider host the process management application to ensure that no confidential data is transferred between the involved organizations. This would be part of a process outsourcing offering of a third party.

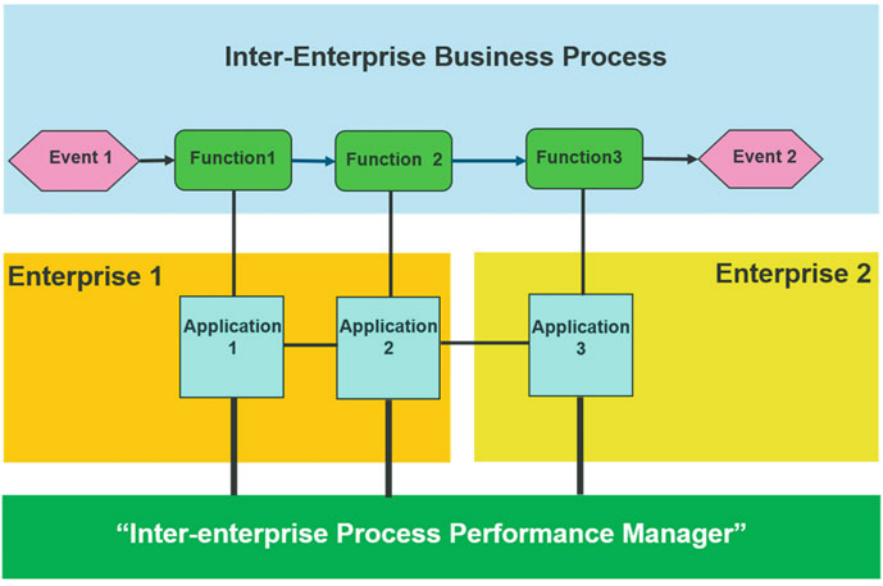

Fig. 7.4 Process performance management applied to inter-enterprise processes

In addition, the general business environment must be continuously evaluated. This can be achieved through the integration of external information sources, as explained previously in the discussion of the new digitalization and collaboration technologies. Membership in various business online communities or the integration of research institutions in the "virtual organization" created through inter-enterprise processes can help to address this situation.

Since the governance of those inter-enterprise processes is challenging, it is recommended to document the key governance rules again in process models, so the governance processes can be managed effectively. An example of such a process is the reaction to certain business environment changes, such as a price increase of raw materials, synchronized across all organizations of an inter-enterprise network.

Communication between the people involved in the process must also be organized, and it is best to include face-to-face meetings to help people "feel good" in the new extended enterprise. This is necessary to bridge various cultural environments in the companies involved in inter-enterprise processes.

The general approach and philosophy of vBPM also fits the requirements of inter-enterprise processes. However, extensions of the general management discipline in key areas like the design and controlling of processes are required.

7.4 Bottom Line

- Inter-enterprise processes are business processes that are distributed across two or more organizations that are independent legal units (Sect. 7.1).
- Inter-enterprise processes require special integration and coordination activities in regard to people, as well as technology aspects as part of the BPM-Discipline so that they enable high performance (Sect. 7.1).
- The Internet of things and the related new digital technologies enable the collaboration along inter-enterprise processes. The organizational integration requires appropriate process governance, addressing all involved organizations (Sect. 7.1).
- In most cases, an organization's integration in inter-enterprise processes allows the organization to focus on its core competencies, while benefiting from key strengths of other organizations (Sect. 7.1).
- An extensive collaboration in networks and the resulting inter-enterprise processes can also lead to disadvantages (Sect. 7.1).
- Inter-enterprise processes are even more subject to change (Sect. 7.1).
- Contrary to pure intra-enterprise processes, the distribution of benefits between involved organizational units plays an important role. Win-win scenarios need to be defined (Sect. 7.2).
- An important activity to prepare the design of inter-enterprise processes is the definition and extension of an organization's market offerings. This can result in disruptive innovation, especially process innovation (Sect. 7.2).

- New partners in inter-enterprise processes can lead to "collaboration innovation," a special form of process innovation (Sect. 7.2).
- Inter-enterprise scenarios, or different business processes across multiple organizations, are specified in collaborative initiatives. It is important to evaluate and, if necessary, adjust the related intra-enterprise processes (Sect. 7.2).
- Each organization of an enterprise network plays a specific role in a specific scenario. The definition of these roles is very important for the definition of the entire scenario (Sect. 7.2).
- Responsibilities must be clearly assigned to the different partners of an enterprise network. This is a new dimension of a process governance approach (Sect. 7.2).
- The specific realization activities for inter-enterprise processes vary heavily, depending on the specific situations in the various organizations involved (Sect. 7.2).
- A continuous process improvement must begin immediately after the "go live" to ensure that targeted mutual goals are actually achieved and to adapt to changing environments. Due to the higher rate of change, this is even more important in an inter-enterprise environment than for intra-enterprise processes (Sect. 7.3).
- The major challenge of continuous improvement activities in an inter-enterprise environment is that there is generally not one company who can make the necessary decisions. Process governance models must be more comprehensive. Tools supporting the process performance management may be run by third-party service providers to avoid conflicts (Sect. 7.3).
- Collaboration technologies can be very valuable to coordinate inter-enterprise processes, for example, through process-related online communities (Sect. 7.3).
- Since the governance of those inter-enterprise processes is challenging, it is recommended to document the key governance rules again in process models (Sect. 7.3).

References

1. Kirchmer, M.: e-Business process improvement (eBPI): Building and managing collaborative e-Business scenarios. In: Callaos, N., Loutfi, M., Justan, M. (eds.) Proceedings of the 6th World Multiconference on Systemics, Cybernetics and Informatics, vol. VIII, pp. 387–396. International Institute of Informatics and Systemics, Orlando (2002)
2. Fingar, P.: Extreme Competition—Innovation and the Great 21st Century Business Reformation. Meghan-Kiffer Press, Tampa (2006)
3. Scheer, A.-W., Habermann, E., Koeppen, A.: Electronic business und knowledge management—Neue Dimensionen fuer den Unternehmenserfolg. In: Scheer, A.-W. (ed.) Electronic Business und Knowledge Management—Neue Dimensionen fuer den Unternehmenserfolg, pp. 3–36. Physica Verlag, Heidelberg (1999)
4. Hammer, M.: The internet and the real economy. Documentation of Sapphire 99, Philadelphia (1999)

5. Kirchmer, M.: E-business process networks—successful value chains through standards. J. Enterp. Manage. **17**(1), 20–30 (2004)
6. McHugh, P., Merli, G., Wheeler, W.: Beyond Business Process Reengineering—Towards the Holistic Enterprise. Wiley, Chichester (1995)
7. Davenport, T.: The coming commoditization of processes. Harv. Bus. Rev. **83**(6), 100–108 (2005)
8. Scheer, A.-W.: ARIS—Business Process Frameworks, 2nd edn. Springer, Berlin (1998)
9. Reilly, B., Hope-Ross, D., Knight, L.: Marketplaces and process mediation—The missing link. In: Gartner Group (ed.) Research Note, COM-11-6855, 19 Sept 2000
10. Champy, J.: X-Engineering the Corporation—Reinventing Your Business in the Digital Age. Warner Books, New York (2002)
11. Kirchmer, M., Franz, P.: Targeting Value in a Digital World. BPM-D Whitepaper, Philadelphia (2014)
12. Franz, P., Kirchmer, M.: Value-Driven Business Process Management—The Value-Switch for Lasting Competitive Advantage. McGraw-Hill, New York, e.a (2012)
13. Kaplan, R.S., Norton, D.P.: The Balanced Scorecard. Harvard Business School Press, Boston (1996)
14. Kirchmer, M.: Market- and product-oriented definition of business processes. In: Elzina, D.J., Gulledge, T.R., Lee, C.Y. (eds.) Business Engineering, pp. 131–144. Kluwer, Norwell (1999)
15. Kirchmer, M., Enginalev, A.: Internationales Informations-management—Aufbau von Informationssystemen im Internationalen Verbund. In: Zentes, J., Swoboda, B. (eds.) Fallstudien zum Internationalen Management, pp. 717–729. Gabler, Wiesbaden (2000)
16. Davila, T., Epstein, M.J., Shelton, R.: Making Innovation Work. Wharton School Publisher, Upper Saddle River (2006)
17. Robinson, M., Kalakota, R.: Offshore Outsourcing—Business Models, ROI and Best Practices. Mivar Press, Alpharetta (2004)
18. Williams, L.: E-Market OS: how BtoB marketplaces are creating a commerce operating system. In: The Yankee Group (ed.) BtoB Commerce & Applications Report, vol. 5, no. 11. The Yankee Group, Boston (June 2000)
19. Williams, L.: Corporate-sponsored vs. independent BtoB exchanges: who will win? In: The Yankee Group (ed.) BtoB Commerce & Applications Report, vol. 5, no. 12. The Yankee Group, Boston (July 2000)
20. Runyan, G.: Logistics marketplaces: shaping the evolution of BtoB commerce. In: The Yankee Group (ed.) BtoB Commerce & Applications Report, vol. 5, no. 13. The Yankee Group, Boston (July 2000)
21. Kalakota, R., Robinson, M.: e-Business Roadmap for Success. Addison Wesley, Berkeley (1999)
22. Kirchmer, M.: Business Process Oriented Implementation of Standard Software: How to Achieve Competitive Advantage Efficiently and Effectively, 2nd edn. Springer, Berlin (1999)
23. Imai, M.: Kaizen—Der Schluessel zum Erfolg der Japaner im Wettbewerb, 8 Auflage. Muenchen (1993)
24. Nolan, T., Goodstein, L., Pfeiffer, J.W.: Plan or Die! 10 Keys to Organizational Success. Pfeiffer, San Diego (1993)
25. See, e.g., http://www.softwareag.com/corporate/products/apama_webmethods/default.asp (2016) or https://www.pega.com/products/pega-7-platform/decision-hub (2016)