
Excellence in executing business processes is widely recognized as the underlying basis for all significant measures of competitive performance in an organization. Consider these measures, for example:

- **Customer satisfaction**: The result of optimizing and aligning business processes to fulfill customers’ needs, wants, and desires.
- **Cost reduction**: The result of optimizing operations and supplier processes.
- **Cycle and fulfillment time reduction**: The result of optimizing the manufacturing and logistics processes.
- **Quality**: The result of optimizing the design, development, and production processes.
- **Differentiation**: The result of optimizing the marketing and innovation processes.
- **Productivity**: The result of optimizing each individual’s work processes.

The question is: How does an organization ensure business process excellence?

In their book *Reengineering the Corporation*, first published in 1993, Michael Hammer and James Champy argued that to become more competitive, American businesses needed to radically redesign their business processes to reduce costs and increase quality. The authors further asserted that information technology is the key enabler of such change. This radical redesign, called **business process reengineering (BPR)**, is a strategy for making an organization’s business processes more productive and profitable. The key to BPR is for enterprises to examine their business processes from a “clean sheet” perspective and then determine how they can best reconstruct those processes to improve their business functions. BPR’s popularity was propelled by the unique capabilities of information technology, such as automation and standardization of many process steps and error reduction due to improved communication among organizational information silos.

Although some enterprises have successfully implemented BPR, many organizations found this strategy too difficult, too radical, too lengthy, and too comprehensive. The impact on employees, on facilities, on existing investments in information systems, and even on organizational culture was overwhelming. Despite the many failures in BPR implementation, however, businesses increasingly began to organize work around business processes rather than individual tasks. The result was a less radical, less disruptive, and more incremental approach, called **business process improvement (BPI)**.

BPI focuses on reducing variation in the process outputs by searching for root causes of the variation in the process itself (such as a broken machine on an assembly line) or among the process inputs (such as a decline in the quality of raw materials purchased from a certain supplier). BPI is usually performed by teams of employees that include a process expert—usually the process owner (the individual manager who oversees the process)—as well as other individuals who are involved in the process. These individuals can be involved directly; for example, the workers who actually perform process steps. Alternatively, these individuals can be involved indirectly; for example, customers who purchase the outputs from the process.

Six Sigma is a popular methodology for BPI initiatives. Its goal is to ensure that the process has no more than 3.4 defects per million outputs by using statistical methods to analyze the process. (A defect is defined as a faulty product or an unsatisfactory service.) Six Sigma was developed by Motorola in the 1980s, and it is now used by companies worldwide, thanks in part to promotional efforts by early adopters such as GE. Six Sigma is especially appropriate for manufacturing environments, where product defects can be easily defined and measured. Over the years, the methodology has been modified so that it focuses less on defects and more on customer value. As a result, it can now be applied to services as well as products. Today,
Six Sigma tools are widely used in financial services and healthcare institutions as components of process-improvement initiatives. Regardless of the specific methodology you use, a successful BPI project generally follows five basic phases: define, measure, analyze, improve, and control, or DMAIC.

- In the define phase, the BPI team documents the existing “as is” process activities, process resources, and process inputs and outputs, usually as a graphical process map, or diagram. The team also documents the customer and the customer’s requirements for the process output, together with a description of the problem that needs to be addressed.

- In the measure phase, the BPI team identifies relevant process metrics, such as time and cost to generate one output (product or service), and collects data to understand how the metrics evolve over time. Sometimes the data already exist, in which case they can be extracted from the IS that supports the process, as described in the previous section. Many times, however, the BPI team needs to combine operational process data already stored in the company’s IS systems with other data sources, such as customer and employee observations, interviews, and surveys.

- In the analysis phase, the BPI team examines the “as is” process map and the collected data to identify problems with the process (such as decreasing efficiency or effectiveness) and their root causes. If possible, the team should also benchmark the process; that is, compare its performance with that of similar processes in other companies, or other areas of the organization. The team can employ IT applications such as statistical analysis software or simulation packages in this phase.

  It is often valuable to use process simulation software during the analysis phase. Utilizing this software provides two benefits. First, it enables a process manager to quickly simulate a real situation (e.g., with a certain number of people undertaking activities) for a specific amount of time (e.g., a working day, a week, or a month). The manager can then estimate the process performance over time without having to observe the process in practice. Second, it allows the manager to create multiple scenarios; for instance, using a different number of resources in the process and/or using a different configuration for the process steps. In addition, process simulation software can provide a number of outputs regarding a process including the time used by all resources to execute specific activities, the overall cycle time of a process, the identification of resources that are infrequently used, and the bottlenecks in the process. Simulating a process is extremely valuable for process managers because it is a risk-free and inexpensive test of an improvement solution that does not need to be conducted with real resources.

- In the improve phase, the BPI team identifies possible solutions for addressing the root causes, maps the resulting “to be” process alternatives, and selects and implements the most appropriate solution. Common ways to improve processes are eliminating process activities that do not add value to the output and rearranging activities in a way that reduces delays or improves resource utilization. The organization must be careful, however, not to eliminate internal process controls—those activities that safeguard company resources, guarantee the accuracy of its financial reporting, and ensure adherence to rules and regulations.

- In the control phase, the team establishes process metrics and monitors the improved process after the solution has been implemented to ensure the process performance remains stable. An IS system can be very useful for this purpose.

Although BPI initiatives do not deliver the huge performance gains promised by BPR, many organizations prefer them because they are less risky and less costly. BPI focuses on delivering quantifiable results—and if a business case cannot be made, the project is not continued. All employees can be trained to apply BPI techniques in their own work to identify opportunities for improvement. Thus, BPI projects tend to be performed more from the bottom-up, in contrast to BPR projects, which involve top-down change mandates. BPI projects take less time overall, and even if they are unsuccessful, they consume fewer organizational resources than BPR projects. However, if incremental improvements through BPI are no longer possible, or if significant changes occur in the firm’s business environment, then the firm should consider
BPR projects. One final consideration is that over time, employees can become overstretched or lose interest if the company undertakes too many BPI projects and does not have an effective system to manage and focus the improvement efforts.

To sustain BPI efforts over time, organizations can adopt **business process management (BPM)**, a management system that includes methods and tools to support the design, analysis, implementation, management, and continuous optimization of core business processes throughout the organization. BPM integrates disparate BPI initiatives to ensure consistent strategy execution.

Important components of BPM are process modeling, Web-enabled technologies, and business activity monitoring. BPM begins with **process modeling**, which is a graphical depiction of all of the steps in a process. Process modeling helps employees understand the interactions and dependencies among the people involved in the process, the information systems they rely on, and the information they require to optimally perform their tasks. Process modeling software can support this activity. IT’s About Business 2.2 shows how Chevron has employed BPR, BPI, and BPM.

**Web-enabled technologies** display and retrieve data via a Web browser. They enable an organization to integrate the necessary people and applications into each process, across functional areas and geographical locations.

Finally, **business activity monitoring (BAM)** is a real-time approach for measuring and managing business processes. Companies use BAM to monitor their business processes, identify failures or exceptions, and address these failures in real time. Further, because BAM tracks process operations and indicates whether they succeed or fail, it creates valuable records of process behaviors that organizations can use to improve their processes.

BPM activities are often supported by **business process management suites (BPMS)**. A BPMS is an integrated set of applications that includes a repository of process information, such as process maps and business rules; tools for process modeling, simulation, execution, coordination across functions, and re-configuration in response to changing business needs; as well as process-monitoring capabilities.

BPM is growing in business value. In 2012, Capgemini (www.capgemini.com), an international consulting firm, surveyed more than 1,000 senior business executives. The majority of the respondents indicated that BPM would play a more prominent role in their organizations in 2013 and 2014.

Further, Gartner (www.gartner.com), a leading IT research and advisory firm, stated that companies need to focus on developing and mastering BPM skills throughout the organization. Gartner predicts that by 2016, high-performing companies will use BPM technologies such as real-time process monitoring, visualization, analytics, and intelligent automated decision making—all of them integrated in second-generation BPMS—to support intelligent business operations.

Another promising emerging trend is **social BPM**. This technology enables employees to collaborate, using social media tools on wired and mobile platforms, both internally across functions and externally with stakeholders (such as customers or experts), to exchange process knowledge and improve process execution.

BPM initially helps companies improve profitability by decreasing costs and increasing revenues. Over time, BPM can create a competitive advantage by improving organizational flexibility—making it easy to adapt to changing business conditions and to take advantage of new opportunities. For many companies, BPM can reduce costs, increase customer satisfaction, and ensure compliance with rules and regulations. In all cases, the company’s strategy should drive the BPM effort. The following example illustrates these benefits.

**Example**

**The State of Alaska Streamlines Its Processes**

The Alaska Department of Natural Resources (DNR) manages most state-owned land, water, and natural resources on behalf of Alaska residents. The group’s primary mission is to responsibly develop and use Alaska’s natural resources for the maximum benefit of the public.

One of the largest divisions of the DNR, the Division of Mining, Land, and Water (DMLW), is responsible for processing authorizations that allow individuals, corporations, or nonprofit organizations to use state resources. The authorization process begins when applicants submit a request. The DMLW then decides whether to allow the activity based on many criteria, such as how the
activity will affect the adjoining properties, the neighbors, or current or future land development. It is advantageous for the state to process as many of these permit authorizations as possible because allowing such activity can generate significant revenue and an increase in jobs for the state and its residents. In fact, the state derives approximately 90 percent of its state budget from oil and gas revenue. In addition, these operations can create job opportunities that benefit the state economy.

However, for 20 years the DMLW has experienced a backlog of permit authorizations, resulting in missed revenue and business opportunities. Facing a mandate from the state legislature to fix the problem within three years, the Division needed to identify a solution that would enable it to streamline its processes and to eliminate the backlog (and prevent it from recurring).

In the past, the Division had used Microsoft Visio diagrams to map processes, and, on paper applications, to manage the permit authorization process. These manual, paper-based methods contributed to the backlog. Today, the Division uses IBM Business Process Manager Advanced software to handle the authorization process. Now, authorization requests are scanned and entered into a content management system. The act of entering the request triggers a new business process, which enables staff members to begin processing the application. Employees use the software to complete the adjudication process consistently and appropriately.

In the past, Division managers found it nearly impossible to easily assess the backlog. Managers had no way to effectively track the status of work in progress or work completed, resulting in processing delays. With the IBM software, managers use dashboards (you will learn about dashboards in Chapter 12) to quickly determine how much work is outstanding, the status of all work in process, and the target due dates of work in the queue.

The IBM software also helps the Division establish greater process consistency. Under the old system, where three regional offices employed manual and generally undocumented processes, enforcing consistency was a sometimes overwhelming challenge. An application that was approved by one office, for example, might be denied by another. Today, the new system guides employees through the application processes, and it coaches them on the next steps to take. By mid-2013, the backlog was decreasing, and all stakeholders were benefiting from the Division’s improved authorization process management.