

Manufacturing and Service Processes

I've spent the past four months working on training materials for the BPTrends BPM Curriculum – specifically for our Advanced Modeling, Analysis and Design class. Sometime, in the middle of my work, I received an email from Antoine Lonjon, Director, Methodology and Standards at MEGA International regarding the important differences between manufacturing and service processes. I read through his email and then reviewed the course materials I had been working on and realized that I have been relying heavily on manufacturing examples as I presented and explained process modeling problems. Like many process analysts, I started working on processes decades ago when most of the business processes being redesigned were, in fact, manufacturing processes. As Antoine pointed out, however, many of the projects that organizations are focused on today involve service processes.

Manufacturing Processes

The analysis of traditional manufacturing processes focuses on the sequential steps that make up the manufacturing process. The process itself is initiated by the manufacturer, usually begins with a set of product specifications, moves through production and testing, and ending with delivery to the customer. If, at any point in the process, products do not meet appropriate quality requirements, they are recycled or eliminated. A good manufacturing process produces products that consistently meet quality requirements, with little or no waste, delivered to the customer on time and on budget. Analyzing the process is based on watching and describing what employees do. Quality and performance are relatively easy to measure.

Service Processes

Service processes, on the other hand, generate value as the customer interacts with the process and, ultimately, it's the customer's experience with the process that's most important. In other words, it is the service process, itself, that constitutes the product.

The distinction between the process, the delivery of the process, and the customer's responses is often difficult to define. The analyst's emphasis should initially focus on the service requests generated by the customers, and only then shift to analyzing the responses generated by the organization. One can analyze the types of things the customer might do and prescribe appropriate responses to different triggers, but ultimately the process analysis must focus on the interaction between the process and the customers. The exact sequence of a service process is often impossible to predict in advance. The goal of the analysis should be to identify and describe appropriate ways to interact with customers. It's hard to establish quality control, in advance of the customer interaction, and quality checks must be designed to evaluate the quality of the customer's experience.

Much of what is being analyzed lies outside the organization and can't be easily modeled by means of traditional flow diagrams. Employees usually play a key role in creating the dynamic interface between the customer and the company that is so critical to a good service process. At the same time, software systems also have a key role to play. Often, it is only the organization's information systems that tie everything together and make excellent service possible.

To underline this last point, consider Figure 1. In this case we are looking at a hotel value chain: Host Guests. It's easy to see how we could subdivide Host Guests into a set of several more or less independent subprocesses – Take Reservations, Greet Guest, Room Service, but it is hard to see how the whole set of subprocesses hold together. The different subprocesses don't flow from one another, like manufacturing processes typically do. Instead, they appear to be a set of isolated subprocesses, each waiting for the guest to trigger one. There is very little natural order to them. Admittedly the guest usually makes a reservation before checking in, but beyond that it is quite mutable. A guest may check in and go to his or her room, or go to a restaurant, or go directly to a meeting taking place at the hotel. The hotel can't anticipate when a specific guest might want to use sport facilities or call for room service. Each process must be ready to respond whenever a guest initiates a request.

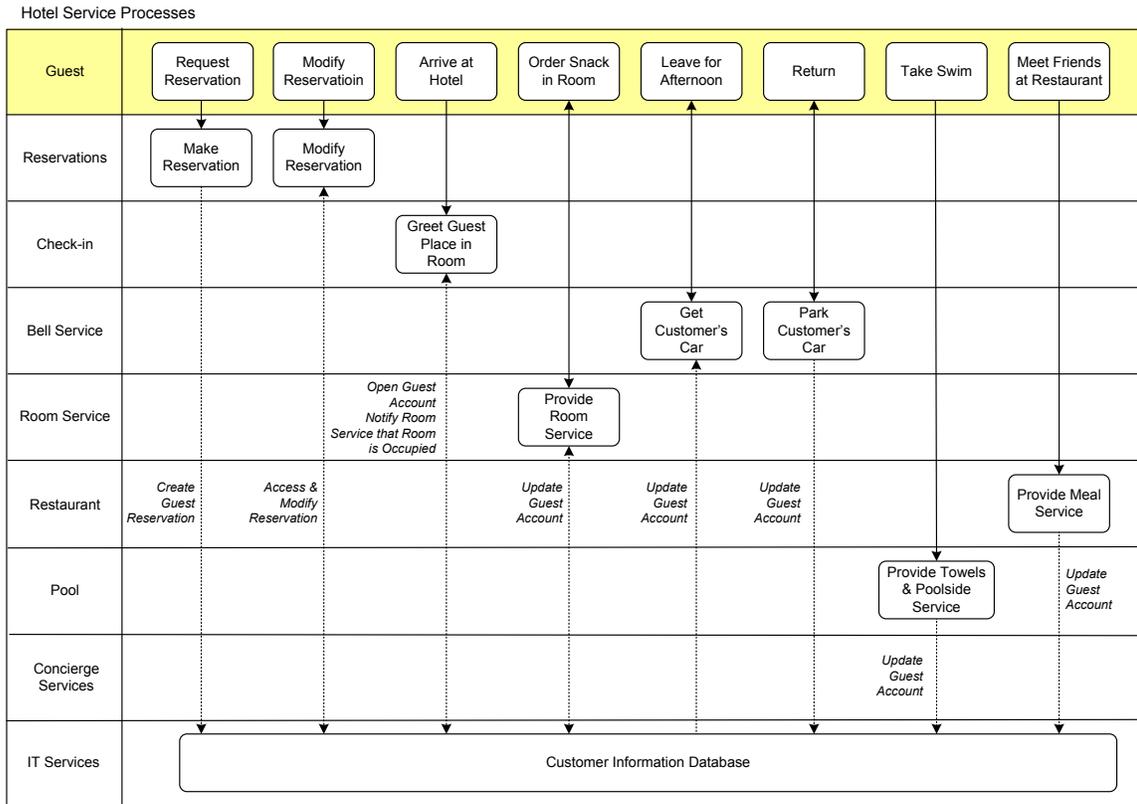


Figure 1. Some processes in a hotel's Host Guests value chain.

The problem is even more complex, because we can't anticipate how the guest is going to interact with any specific subprocess. Some guests "check out" by going to the front desk, others do it via TV, and still others simply ask for a bill to be mailed. Even when the guest checks out at the desk, it is unclear in what order the steps in the procedure will occur. The guest may have a complaint, or wish to pay in cash or with a different credit card, or wish to check out, but leave baggage in the room for another hour. The subprocesses need to be as flexible as possible.

Again, as we suggested earlier, the one thing that usually holds together the various otherwise independent subprocesses is an information system. When a guest arrives, the front desk clerk pulls up the reservation stored on the hotel's computer system. If the

system is well designed, as the guest checks in, his or her name is associated with a room number. Thus, when the guest calls for room service, 15 minutes after check-in, the room service person is able to answer the call with “Hello Mr. Harmon, how can I help you?” In a similar way, in the best hotels, room service knows that the new guest likes extra firm pillows, or doesn’t want candy left in his room when the bed is turned down. The pool side service people or the restaurant should also be able to get the guest’s name from their systems. By the same token, employees throughout the hotel ought to be able to update the customer’s record in order to capture information that can help another employee provide better service.

My health care organization, Kaiser Permanente, has recently introduced a new, integrated patient record system. Previously, each department kept its own records. Visits were often spaced out to allow time for my hardcopy records to be moved from one facility to another. Today, my physician simply looks at a computer terminal to determine all of the drugs I’m taking, all the visits I’ve made during the past 10 years, and any problems I’ve had. Moreover, as I leave the office after a visit, the doctor is usually typing in an update to describe my latest visit, and I’m pleased to think that the new information will be available whenever I go for another visit with another specialist. I had an Xray taken recently and was then shown the resulting photo, on the technician’s computer, while it was simultaneously transmitted to my physician. This system has made a huge difference in the quality of my experiences. Finally, rather than experiencing my health service interactions as a set of separate interactions, I begin to believe that they imagine my health problems, as I do – as a single process – focused on keeping me healthy.

Some interfaces are automated, as when we obtain information and then buy a product online, using a website. Most service processes, however, rely on software systems that gather and distribute information to facilitate customer interactions. Employees need to be trained and motivated to respond to the employee, and they need access to information systems to assure that they can respond in the best manner. At the same time, employees need to be empowered. Nothing is more frustrating to customers than to ask for help and be referred to someone else. Sometimes its necessary, but in most cases it can be avoided by cross-training employees, giving them more responsibility, and encouraging them to take the initiative to assure that the customer gets what they need. Encouraging groups of employees to think of themselves as a team that is focused on ensuring a quality customer experience is often a key element in a good service process strategy.

Stepping back, you begin to realize that the real analysis work, with most service processes, involves figuring out what the customer is likely to do and designing processes that respond to the likely requests of the customer. At the same time, it is important to think about what employees can learn about the customer, during each interaction, and how that information can be captured and used to make subsequent interactions with the customer more effective or efficient.

Interestingly, even traditional manufacturing processes are increasingly mutating into service processes. As companies offer more and more product customization options, manufacturing is not completed until a customer specifies the product components and configuration required to meet his or her needs.

Service processes really are quite different from traditional manufacturing processes. Techniques like Lean, Six Sigma, and Business Process ReEngineering that were developed to help improve manufacturing processes need to be reconceptualized before

they will be as effective in analyzing and redesigning service processes. Analysts need to rethink how they model processes and how modeling tools should be used to represent the important elements in service interactions. The next time you look at a business process modeling book, check to see if the examples are drawn from manufacturing or from services. Business process analysis courses need to be redesigned to teach today's analysts what they need to know to deal with the service processes that will increasingly dominate BPM efforts.