Manufacturing and Service Processes

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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. After reading through his email, I 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

Traditional manufacturing process analysis 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 ends 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. On the other hand, software systems often 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.
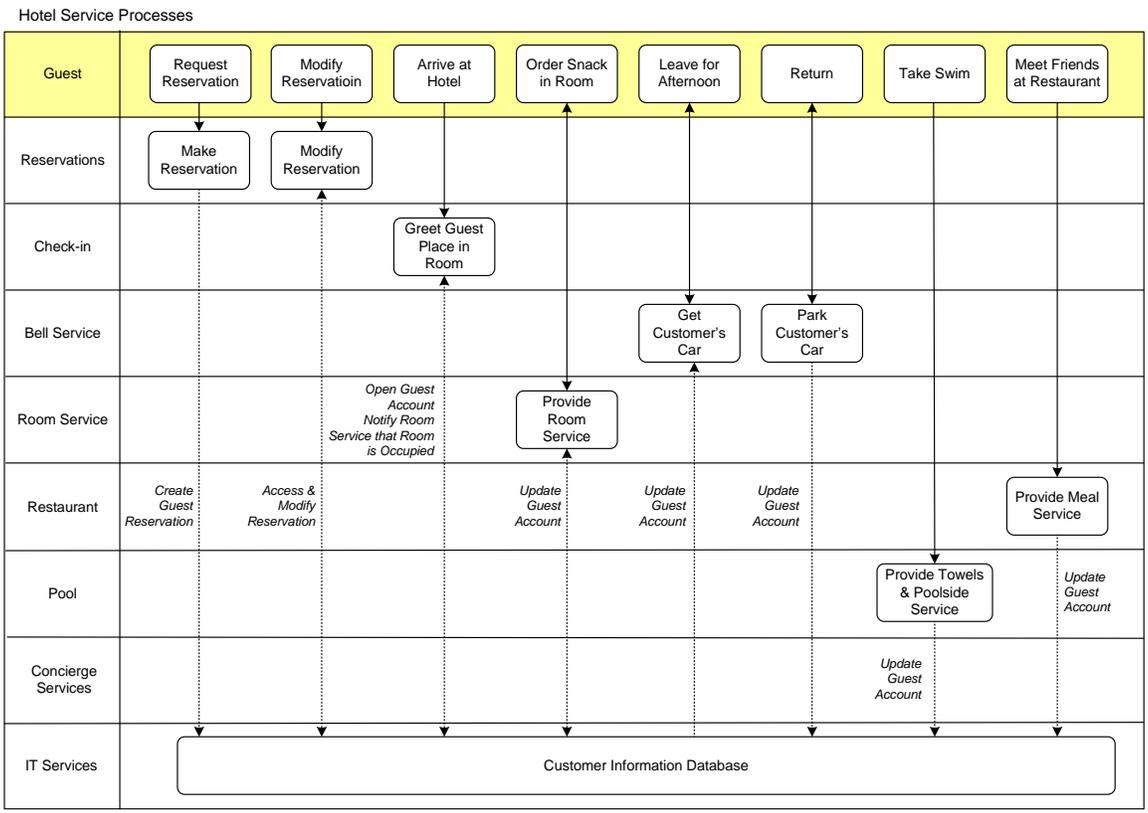
Hotel Service Processes

Guest	Request Reservation	Modify Reservatioin	Arrive at Hotel	Order Snack in Room	Leave for Afternoon	Return	Take Swim	Meet Friends at Restaurant
Reservations	Make Reservation	Modify Reservation						
Check-in			Greet Guest Place in Room					
Bell Service					Get Customer's Car	Park Customer's Car		
Room Service			Open Guest Account Notify Room Service that Room is Occupied	Provide Room Service				
Restaurant	Create Guest Reservation	Access & Modify Reservation		Update Guest Account	Update Guest Account	Update Guest Account		Provide Meal Service
Pool							Provide Towels & Poolside Service	Update Guest Account
Concierge Services						Update Guest Account		
IT Services			Customer Information Database					

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.

Finally, as we suggested earlier, the one thing that often 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.

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 you can learn about the customer during each interaction and how that information can be 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.

ABOUT PAUL HARMON

Paul is a Co-Founder, Executive Editor and Market Analyst at BPTrends, (Business Process Trends), the most trusted source of information and analysis on trends, directions and best practices in business process management, (www.bptrends.com). He is also a Co-Founder, Chief Methodologist and Principal Consultant of BPTrends Associates, a professional services company providing executive education, training and consulting services for organizations interested in understanding and implementing business process management. He has worked on major process improvement programs at Bank of America, Wells Fargo, Prudential and Citibank, to name a few.

Paul is the Co-Author and Editor of the *BPTrends Product Reports*, the most widely read reports available on BPM software products and the author of the best selling book, *Business Process Change*: *A Manager's Guide to Improving, Redesigning and Automating Processes.* He is an acknowledged BPM thought leader and noted consultant, educator, author and market analyst concerned with applying new technologies and methodologies to real-world business problems. He is a widely respected keynote speaker and has developed and delivered executive seminars, workshops, briefings and keynote addresses on all aspects of BPM to conferences and major organizations throughout the world. BPTrends Associates is partnered with Boston University to develop and deliver the BUCEC BPM Curriculum and Certification Program.