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# Curriculum and Research in Service Operations Management

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Because of the short life cycle of high-tech products (e.g., twelve months is considered extraordinary for a personal computer model), the topic of product development has received considerable attention in the past few years by engineering academics and practitioners with some input from marketing people. Little attention, however, has been paid to the more multidisciplinary service product development, which is beginning to suffer from increased global competition and lack of patent protection offered products.

Furthermore, services are in the process of transforming from the traditional concept of a service transaction to one of an experience. Consider how Starbucks Espresso Bar, Disney World, and Planet Hollywood have defined their respective services as an experience. Experiences create added value by engaging and connecting with the customer in a personal and memorable way. Business students are uniquely qualified to take the lead in establishing these new experience based services. Table 1 contrasts the features of economies from agrarian to the new experience economy (Pine and Gilmore 1998).

To prepare students for the transition to the experience economy, the operations

management curriculum should include topics such as process of service innovation, technology-driven services, services derived from products, service prototyping, location and site planning, design of front and back office operations, service fail-safeing and recovery planning, creation of a service climate and culture, electronic delivery of service, service branding, recruitment and training for the service encounter, customer selection, managing customer expectations, and creating a sustained competitive advantage.

## Why Service Operations Management?

The first argument for a curriculum in service operations management is based on the job placement of business school graduates. Tables 2 and 3 represent placement statistics grouped by manufacturing and service industries for University of Texas undergraduates for the year 1997-98. As seen in Table 3, approximately 75 percent of the graduates found employment in service firms. Many of the students with manufacturing employment were actually engaged in service activities such as accounting and finance. Not lost on students

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Economy	Agrarian	Industrial	Service	Experience
Offering	Commodities	Goods	Services	Experiences
Function	Extract	Make	Deliver	Stage
Nature	Fungible	Tangible	Intangible	Memorable
Key attribute	Natural	Standardized	Customized	Personal
Method of supply	Stored in bulk	Inventoried after production	Delivered on demand	Revealed over a duration
Seller	Trader	Manufacturer	Provider	Stager
Buyer	Market	User	Client	Guest
Value to customer	Characteristics	Features	Benefits	Sensations

Table 1: The new experience economy.

is the fact that starting salaries in services are every bit as attractive as those in manufacturing.

The second argument is based on students' realization that service operations is relevant to their future careers. And for reasons of pedagogy, students can relate to service management topics based on their experience in part-time jobs and as a customer.

Third, operations has traditionally taken a process view of management and for services the "process is the product." Thus operations is central to the success of the firm.

Finally, service management is interdisciplinary in scope, including behavioral, marketing, operations, and information technology aspects. Service operations management therefore, integrates the operations faculty into the business school and removes the stigma of being engineering transplants. There is no doubt that the subject area of service operations management belongs in the business school.

### Service Process Orientation

The process orientation of service operations is enriched beyond that found in manufacturing because of the customer participation in the service delivery process. In fact, customers are often considered coproducers because of their contribution to the value of the service offered. However, a distinction is made between the front office (e.g., the dining area of a restaurant) and the back office (e.g., the kitchen).

Quality in services is challenging because the customer evaluates the service experience based on prior expectations and compares these with the perceptions of the actual service. Customers are delighted with the service when perceptions exceed expectations.

The concept of a "service profit chain" can be used to explain the links between elements of the service process, beginning with attention to internal service quality and employee satisfaction to customer satisfaction and loyalty resulting in the firm's growth and profitability. This attention to internal and external customers is also seen in the application of information technology that enables service personnel to be responsive to customers (e.g., use of relational databases) and allows customers the convenience of access to service at their

Business Category	Starting Salary (\$)	Percent (%)
Petroleum refining	35,628	8
Consumer goods	34,217	5
Communications	32,942	2
Computer	36,123	2
Food/Beverage	35,714	2
Government	24,641	2
Automotive	35,532	1
Chemicals	33,500	1
Other	27,014	2

**Table 2: Manufacturing BBA placement.**

Business Category	Starting Salary (\$)	Percent (%)
Public accounting	36,235	17
Consulting services	36,789	15
Computer software	35,889	8
Banking (Investment)	37,780	7
Communications	37,345	6
Financial services	32,716	5
Merchandising	28,095	5
Banking (Commercial)	30,748	4
Insurance	27,273	2
Hospitality-Hotels	37,000	1
Hospitality-Fast Food	29,000	1
Real estate	35,000	1
Transportation	31,500	1
Utilities	33,200	1
Other	28,900	2

**Table 3: Service industry BBA placement.**

Traditional Topic	Service Focus
Project management	Consulting
Inventory management	Perishables
Facility location	Revenue and cost
Facility layout	Customer in system
Scheduling	Labor
Quality	Intangibles
Forecasting	Customer demand by hour

**Table 4: Traditional operations topics with service focus.**

discretion (e.g., using the Internet). From this discussion it should be clear that a service process orientation requires attention to both efficiency and effectiveness, thereby removing the artificial wall between operations and marketing for services.

## Service Operations Management Curriculum

As Table 4 below illustrates, many traditional operations topics retain their importance for service firms. The focus, however, will be altered to incorporate the unique nature of service operations. For example, facility layout now must accommodate the customer as a participant in the delivery process.

Table 5 lists some topics unique to service operations, again to accommodate the customer, such as “managing the service encounter” and “managing customer queues” analogous to work-in-process inventory for manufacturing. Several new analytical modeling approaches to service management include “yield management” and “data envelopment analysis.”

A student with a service management major would be advised to take electives that appear in Table 6, beginning with the prerequisite “Service Operations Management.” Table 7 lists schools that offer innovative service management programs.

## Research Topics In Service Operations

Traditional operations management research topics are found in services, but they have a twist. For example, the study of service quality should include the consideration of service recovery that can often turn a failure into a memorable experience. Information technology is perhaps the foremost enabler of service productivity improvement, but must include the impact on both the front (customer acceptance) and back office (employee empowerment) operations. For example, the Internet provides a new channel for service delivery in the marketplace where customers can get expert advice before ordering wines at the successful Virtual Vineyards web site. The globalization of services is complicated by the cultural implications of exporting a system in which both customers and employees are expected to play a role in the delivery process. New Service Develop-

Managing Capacity and Demand
Yield Management
Data Envelopment Analysis (DEA)
Customer Facing Information Technology
Managing the Service Encounter
Managing Customer Queues
Growth and Expansion

**Table 5: Unique service topics.**

Service Operations Management
Service Marketing
Yield Management
Service Quality Management
Project Management
Information Technology in Services
Managing the Service Encounter
New Service Development

**Table 6: Courses for proposed service management major.**

Service Management Program	Contact
BS in service management at University of Wisconsin-Stout	Leland Nicholls
BBA in service operations management at City University of Hong Kong	Xiande Zhao
Service operations management major at Florida State University	Michael Showalter
Service operations fast track MBA at George Mason University	Ravi Behara
MBA service emphasis at Vanderbilt University	Rich Metters
MBA service marketing and management track at Arizona State University	Sue Siferd

**Table 7: Schools with service management programs.**

ment is emerging as a topic of competitive importance equal to that found in new product development in manufacturing. Finally, the role of services in manufacturing as a method for competitive differentiation is gaining attention as products mature and become commodity-like. The following journals, including two new publications, are excellent outlets for service related research:

- *International Journal of Service Industry Management*
- *Journal of Service Research* (new)
- *Manufacturing & Service Operations Management* (new).

## Reference

Pine, B. Joseph & Gilmore, James H. (1998). Welcome to the experience economy. *Harvard Business Review*, July-August, 97-105. ■

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