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WHAT ACADEMIC RESEARCH TELLS US ABOUT SERVICE

A computing-driven revolution is under way in the global economy guided by the principle that every business must become a service business in order to survive.

Technology has revolutionized the way that companies perform service, enabling the development of long-term individualized relationships with customers. Advancements in computing have allowed companies to improve both profits and financial accountability by providing high quality, personalized service more easily and affordably than ever before. IT not only lowers the cost of service, it creates avenues to enhance revenue through service. Gone are the days of standardization, mass production, and mass marketing. Academic research has revealed that the service economy is now dominant in every developed economy. The goods sector is shrinking as a proportion of the overall economy; and as goods increasingly become commodities, service is becoming the key differentiator even in the goods sector. Thus, to compete effectively, all companies must become service companies.

For over a century, technological development has driven an economic shift from a focus on goods to a focus on service. Innovation is often associated with greater efficiency in the manufacturing of goods, namely decreasing costs through faster and cheaper production and transportation. However, new technologies also have service-related consequences. Businesses can gain information about their customers, competitors, and the product market and use this information to separate

from the competition by providing services desirable to customers. Consequently, technological advances have led businesses to focus more on service and give service a more prominent role in the economy.

The rise of service in the economy has been reflected by an explosion of academic research on service. This research has tended to emphasize different themes over time (see Table 1 for a summary). In the 1970s the emphasis was on the differences between goods and services, recognizing that services had characteristics that made for new aspects to consider. Research then set out to understand the unique characteristics of services. The quality revolution of the 1980s resulted in service research of a different flavor—emphasizing service quality measurement, customer satisfaction measurement, and complaint management systems. This evolved in the 1990s into models for making service financially accountable. At the same time, the advances in IT in the 1990s resulted in academic research paying increased attention to direct contact with individual customers, storing and analyzing individual customer data, and then using that information to serve individual customers better. Since 2000, academic research has moved to using customer relationships as a foundation for a new approach to strategy, based on "customer equity" (the discounted cash flows expected from the current and future customer base). This requires managing the customer lifetime values of individual customers, a topic that has received considerable research attention in recent years.

The explosion of service research has been facilitated by the introduction of several influential academic centers for service research. Notable centers currently include the Center for Excellence in Service at the University of Maryland, the Center for Services Leadership at Arizona State University (see the article by Bitner and Brown in this section), the Service Research Center at the University of Karlstad (Sweden), the Maastricht Academic Center for Research in Services (Netherlands), and the Center for Relationship Marketing and Service Management at the Swedish School of Economics (Finland). The progress of the service research field has been accelerated by international conferences—most notably the annual AMA Frontiers in Service Conference (which this year features speakers from 29 different countries) and the biennial Quality in Service (QUIS) conference. The most prominent academic journal in the service research field is the *Journal of Service Research.*

More than many academic fields in business, service research is often influential in leading business thought and changing business practice. The breakthroughs in service research have typically resulted from considering the advances in technology, and carefully studying their implications. Technological development has created many new services—especially information services—and has also made it possible to make physical goods more service intensive. Aside from individual products, technology has also made it much easier to track customer relationships over time, and to therefore link goods and services to serve the customer effectively over an extended period of time. With these trends, service research clearly implies that every business must become a service business, or it will fail to be competitive against competition that does. Successful businesses like IBM, GE, and Starbucks all embrace this shift.

The economic shift toward service has been ongoing as new products and technologies become available and others become cheaper to produce and transport. However, the information revolution has provided a particularly strong force. IT has advanced service, as previous technological contributions have aided mass production. Assembly line mass production lowered the cost of producing goods. IT likewise decreases the cost of providing and improving service. Thus, we witness the rise of "mass service," driven by improved coordination and a greater availability of information.

Whereas mass production focused on the product, the new philosophy is customer-centric. Since interacting with customers is now less expensive, it is easier to tailor communications to provide distinct information and service to distinct customers. Advancements in computing also allow firms to more effectively coordinate themselves, and to collaborate in partnerships. As cutting costs becomes an increasingly difficult way to

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drive profitability, IT has made increasing revenues through improved service a more attractive strategy for success in the marketplace.

The Central Role of Computing

Computing plays a central role in the service revolution by facilitating the communication, storage, and processing of information. Using IT, businesses have improved communications both internally and with customers. Different departments within the same company can easily share information electronically, and businesses and customers can now contact each other via email. Firms now have the ability to collect and analyze information on customers' entire purchase and contact histories.

Since IT has drastically decreased the cost of customization, marketing to smaller segments has become economically feasible. As technology continues to decrease the cost of customization, the logical end is one-to-one marketing, with businesses targeting each customer separately and providing individually customized marketing. Over time, firms can build relationships with customers by inferring their needs and providing service to meet those needs.

1970s	Service is different from goods
1980s	Measuring customer service and service quality
	Complaint management
1990s	Making service improvements financially accountable
	Direct marketing and CRM
2000s	Managing customer lifetime value and customer equity
	Profitable long-term relationships with customers
	Basing corporate strategy on service

Table 1. Academic research in service over time.

Information also gives the consumer power. Consumers can receive information about a broader range of businesses, as well as perform their own searches to find the product that best suits their needs. Consequently, businesses are faced with greater competition and greater need to differentiate. Firms must provide the best value for better-informed consumers or fail to attract them.

Serving the Customer

As technology has given consumers access to more information and choices, service has become increasingly important. Customer satisfaction is paramount, because customer perception is reality when it comes to buying decisions. In this viewpoint there is no such thing as actual quality except as perceived by the customer, and thus serving the customer better depends upon understanding how to increase quality perceptions and customer satisfaction.

Expectations play a significant role in customer satisfaction. Customer behavior is affected by satisfaction relative to expectations [71, 114]. Research indicates that when a customer perceives service quality to be below the desired level, increasing customer satisfaction through improved service has a large positive effect on willingness to pay. However, once the desired level of service quality has been met, additional improvements have less effect on willingness to pay. Serving the customer effectively depends upon understanding customer expectations and the antecedents of satisfaction.

Satisfying customers is particularly important because of the value of customer retention. It is less expensive to satisfy an existing customer than to invest in advertising to attract new customers. Therefore, the road to profitability is to work hard to keep current customers.

Employee policies have an important impact on customer satisfaction [70]. Businesses need to give the correct incentives to their service personnel to place emphasis on long-term profitability as well as immediate sales. By designing compensation schemes that reward employees not only for immediate sales, but also for service quality, companies can improve customer satisfaction and long-term profitability.

Customer delight has been suggested as an alternative focus to customer satisfaction. Customer delight, a more extreme form of satisfaction, requires some level of surprise, and may not be possible in contexts where there is little room for the customer's expectations to be exceeded [72]. Even when customer delight is possible, however, it may not always be consequential for future patronage, if customers suspect the level of service will not be duplicated in the future. When feasible, however, the strategy of customer delight can lead to exceptional results.

Designing and Improving Service

The delivery of service is fundamentally different from the concept and design of the service. Delivery is an aspect of implementation, not of design. The service product is "planning your work," while service delivery is "working your plan." Whereas engineering focuses primarily on the product, service concerns itself primarily with delivery, largely because of the inherent variability of service delivery. Because product development deals only with the quality of the product, firms must measure and manage service delivery to ensure the quality of the entire experience.

To measure service, metrics on customer perceptions, attitudes, and behavior are essential. Businesses should understand what customers do and why they do it. Customer behavior may simply be observed, such as

when a customer repurchases the product or files a complaint, but customer perceptions and attitudes are not as readily revealed.

For a complete understanding of customers, firms must combine computer databases of customer behavior with survey data of customer perceptions and attitudes. Databases alone provide an incomplete picture, but are still useful for a number of purposes. For example, they have been useful in studying the profit-maximizing balance between customer acquisition and customer retention efforts [82]. Although such findings have significant managerial implications, they do not explain the motivation behind customer behavior. The complementary use of databases and surveys is necessary to get a complete understanding.

research had found that companies attempting to achieve a dual emphasis of cost reduction and revenue enhancement simultaneously did not perform as well as companies that focused solely on a revenue emphasis strategy, Mittal [56] reached the conclusion that a dual emphasis can be profitable in the long-run for the few firms that have successfully achieved it. However, attempting to achieve such a dual emphasis usually doesn't work.

THEN	→	NOW
Standardization	→	Customization
Transactions	→	Relationships
Focus on goods	→	Focus on service
Cost reduction through manufacturing efficiency	→	Revenue expansion through service
Mass marketing	→	Marketing to individual customers
Limited ability to communicate, store, and process information	→	Improved ability to communicate, store, and process information

Table 2. Moving to a service paradigm.

Abandoning the Manufacturing Mind-set

To succeed in today's marketplace, firms must abandon the manufacturing mind-set and attach highest priority to customers rather than products. The manufacturing mind-set leads businesses toward standardization. Goods are easier to produce in higher quality and quantity when production is standardized. Thus, manufacturing is built around assembly lines and mass production, and success is defined as producing the same good at a lower cost. As manufacturing efficiency nears its maximum, there is little room for businesses to differentiate themselves, making it difficult to profit or find niches in the market. In contrast, better service demands customization, rather than standardization. Each customer should be treated uniquely, and not as a product going down an assembly line. Customers' varying needs and desires are not all satisfied by precisely the same service product or service delivery.

Productivity and satisfaction are not always mutually compatible goals, especially in service firms [5]. Businesses must often choose between the two, at least in terms of primary emphasis. Academic research clearly suggests that more attention must be focused on revenue expansion through service, rather than just on productivity and cost reduction. Cutting costs may improve short-run profitability at the expense of service and long-run profitability. For example, downsizing may reduce costs but have a detrimental effect on customer service, as remaining employees are spread too thin. Thus, while costs may be reduced, decreased customer satisfaction may impose long-run losses in customer loyalty and future patronage. Whereas previous

The manufacturing mind-set is also problematic in pricing perishable services. It is useful to separate purchase from consumption [96]. For example, rather than selling travel or event tickets at a single price, firms can take advantage of buyers' uncertainty about the future by offering different advance and spot prices. Advance sales can often more than offset a lower price and give firms the ability to price discriminate.

IT has facilitated the automation and mechanization of service. Traditional e-commerce focused on reducing service costs and increasing efficiency by taking advantage of the opportunities to automate service offered by the Internet. However, this approach suffers some of the same pitfalls as the manufacturing mind-set. Selling commodities online at low prices results in low profit margins due to competition because there is little room for differentiation from competitors. Indeed, despite high expectations by many, this e-commerce strategy has largely failed (recall such losing efforts as pets.com). Instead, a paradigm of "e-service" is becoming prevalent. Companies such as Dell and Amazon that have succeeded in e-commerce have done so because they have taken advantage of IT to increase revenue through improved service rather than simply to reduce costs.

Using Service to Make Money

Service was once thought of as an add-on to physical goods, an "extra" that could be used to enhance the value of the product. Today, most of the economy consists of services, rather than physical goods. To a large extent, physical goods are now seen as part of the overall service. Table 2 shows some of the elements of the paradigm shift from transactional to relationship marketing. The emphasis is now on the value of a

continuing customer relationship, rather than the value of any individual sale.

The inherently high variability in service presents an opportunity even in the goods sector. Although the goods themselves are increasingly commoditized, service levels can vary greatly. Instead of struggling to achieve profit through cost savings in the production process, goods companies can use service to set themselves apart from competition that is virtually indistinguishable from a manufacturing standpoint.

IT decreases the cost of service. This naturally presents an opportunity to profit from cost savings, but it also offers the chance to expand revenues by providing better service to customers at the individual level. Although service improvements bear short-run costs, they allow firms to attract and retain customers and build long-term relationships. Customer loyalty ultimately leads to a lifetime of sales from which a company can profit.

Service also opens the door to improvements in customer satisfaction. Companies should focus on meeting the varied needs and expectations of individual customers, keeping in mind the caveat that some customers may not be profitable to serve. Higher levels of customer satisfaction can be achieved with customization, increasing customer lifetime value through greater willingness to pay, frequency of purchase, and probability of repurchase.

Customer equity, the discounted future cash flow that will be obtained from the firm's customers [89], is a very good proxy for the total market capitalization of the firm. Viewing the health of the business in terms of customer equity makes it possible for the firm's strategic decisions to have greater financial accountability [88]. Research has taught us that companies should care more about their lifetime relationship with customers rather than standalone transactions. Thus, companies are concerned not only with the loss of a single transaction with a given customer, but with the loss of all potential future transactions with that customer. Service improvements can be justified by increased customer equity, driven by an increased ability to attract and retain customers. Companies have a compelling reason to fix problems even after a transaction has been completed because a dissatisfied customer represents a potential loss of future business. Firms can also use IT to identify valuable but potentially threatened customer relationships, and take action to improve the relationship before it is lost.

Transforming Companies

The service revolution is changing the way companies do business. As physical goods increasingly become commodities, goods companies find it increasingly difficult to stay profitable. Service allows companies to escape the "commodity trap" by providing a means for businesses to differentiate themselves from the competition. Instead of relying on profits from individual transactions, service allows companies to build relationships with customers, using these relationships to enhance long-term revenue.

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To survive and thrive, every business must become a service business. Research shows the focus on goods, tangible resources, and transactions has been replaced by an emphasis on service, intangible resources, and relationships [108]. In this new dominant logic, service, not goods, has become the fundamental economic exchange. Consequently, focus has also shifted from the producer to the consumer, who is now endowed with more power than ever before.

Despite the need, it can be difficult to convert goods companies to service companies. Some firms are locked into the manufacturing mind-set, still focusing on cost reduction through efficiency improvement rather than revenue expansion through improved service and customer relationships. However, businesses embracing the service revolution are finding success and profitability where others are failing. Companies that fail to invest in service run the risk of falling prey to competition.

The Future of Service

Computing and IT provide a particularly strong support for a shift toward service by supplying information and tools to facilitate communication and build customer relationships [90]. As the capacity to gather and process information grows, companies can use their new knowledge to offer customized service.

Thus, with more information available to improve service, information-driven service becomes necessary for customer satisfaction and profitability.

Many businesses have focused on cost reductions made possible by technology, but concentrating only on cost savings is an outmoded vestige of the production mind-set, from which companies must escape to succeed. Academic research indicates that tunnel vision on productivity and efficiency can drive unintended service quality erosion, which may hurt revenues and profits despite cost savings. Instead, companies should utilize IT to expand revenues through better service as well as to cut costs via automation.

Real-time communication with customers is becoming easier and more affordable. Companies can quickly identify customers' desires, guide them to products that meet their needs, and provide the necessary level of service. Additionally, firms can promptly detect and fix customer problems, again increasing customer satisfaction and building long-term relationships.

Companies are learning from relationships with their customers. Using computer databases in conjunction with information collected through surveys, businesses can better understand customer attitudes, perceptions, and behavior. Armed with this new knowledge, businesses can design and improve service to ensure long-term profitability.

Finally, service gives firms a new tool for financial accountability. Customer equity is a measure of future cash flows that is useful in business valuation, and facilitates the calculation of return on investment for service improvements or any other business improvement. In addition, customer equity enables companies to compare prospective returns on investment from competing service strategies. C

A complete bibliography of the literature used in the course of preparing the articles for this special section on services science is available on page 33.

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