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*E-SERVICE:  
A NEW PARADIGM FOR  
BUSINESS IN THE  
ELECTRONIC  
ENVIRONMENT*

by ROLAND T. RUST AND P.K. KANNAN

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**T**raditional e-commerce is giving way to a new paradigm known as “e-service.” This emerging paradigm represents a coherent point of view that challenges many of the traditional assumptions about how to use the online environment to raise profits [6]. It is based less on reducing costs through automation and increased efficiency and more on expanding revenues through enhancing service and building profitable customer relationships. This suggests an outward-looking view of e-commerce (focusing on understanding the customer) to complement the inward-looking view (focusing on technology and systems).

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Figure 1 shows some of the elements of this paradigm shift. We see the first wave of e-commerce was based largely on e-tailing of commodity goods, using advertising and mass media to drive transactions, and counting on operational efficiencies to reduce costs of selling and the supply chain. Unfortunately, selling commodities results in low margins through competition. It also damages profitability.

The emerging e-service paradigm looks very different. This service-focused paradigm

uses two-way dialogue to build customized service offerings, counting on knowledge about the customer to build strong customer relationships. Profitability is based on revenue expansion more than cost reduction, with revenues driven by enhanced service and higher levels of customer satisfaction (see Figure 2). Customized service offerings support high margins by enabling a monopoly on the relevant information about the customer, obtained through the course of the customer relationship.

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Firms must take full advantage of Net-based e-service opportunities, particularly in the transition of products to services, to garner long-term customer relationships and loyalty.

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ILLUSTRATION BY JEAN-FRANÇOIS PODEVIN

The transformation of physical products to pure e-service components has significant implications for building customer relationships and for exploring new service opportunities and markets, especially in the domain of network-based, digital, and information-based products.

One of the natural outcomes of the network-based economy is the emergence of customers as the focal point of all businesses whether they operate in business markets or consumer markets. Rapidly advancing technologies such as wireless, broadband, smart cards, data warehousing, data mining, and agent technologies, contribute toward the effective accessibility and servicing of the correctly targeted customers for businesses while providing more choices, options, and, ultimately, power to customers in their transactions with businesses. As the advancing technologies and possibilities shape customer expectations, organizations are under pressure to improve their business processes, to develop new markets, and to improve their competitive positions using these technologies. This focus on the customer, brought about by the diffusion of network-based technologies, in turn, is also hastening the transformation of the economy from goods-based to a service-based one, leading to the era of e-service.

This article argues that e-service provides a new business paradigm for organizations operating in the electronic environment. We contend it is imperative that businesses adopt an e-service orientation irrespective of whether they sell goods or services, because the network-based electronic environment calls for a customer-centric approach to become more efficient and effective in meeting market needs and remaining competitive. We describe how e-service provides precisely such an approach that helps develop strong business strategies and build customer equity by defining the scope of e-service and examining the tactical components of an e-service orientation in building customer equity and competitive advantage.

E-service is defined as the provision of service over

electronic networks [4]. This notion includes services provided by a typical service organization as well as the services provided by goods manufacturers where the quality of customer care plays an important role. The notion of electronic networks includes the Internet and wireless networks as well as electronic environments such as ATMs, smart card networks, kiosks, among others. E-service is an overarching customer-

centric concept, with its scope extending to the upstream and downstream channels of an organization (external customers) and including intra-organizational entities (internal customers). E-service comprises all the interactive flows in the upstream and downstream channels such as the information-based interactive exchanges, negotiation interactions, promotion flows, title exchanges, and finally, product/service flows (except the actual physical

flow of goods). In the downstream channel, e-service subsumes concepts such as customer/citizen-relationship management (CRM), relationship marketing, one-to-one marketing, and customer care. In the upstream channel, e-service subsumes e-procurement and supply chain functionalities, with one important philosophical difference—improving efficiency and cost is secondary to superior customer service and market expansion. E-service encompasses the domains of business-to-business, business-to-consumers, government-to-public, and intraorganizational entities.

The concept of e-service has been used in the last three years to describe “revenue-generating, efficiency-increasing assets in the Net” (Hewlett-Packard) to “information and Web services” (IBM and Scient). Our view of e-service is much broader than the concepts of IT services, Web services, or infrastructure services. While e-service includes all these services, it also encompasses the service product,

e-Tailing	⇒	e-Service
Goods	⇒	Services
Tangible Products	⇒	Information Products
Advertising	⇒	2-Way Dialogue
Cost Reduction	⇒	Revenue Expansion
Efficiency Focus	⇒	Satisfaction Focus
Supply Chain	⇒	Information Flows
Product Profitability	⇒	Customer Profitability
Brand Equity	⇒	Customer Equity
Mass Marketing	⇒	1-to-1 Marketing
Commodities	⇒	Customization
Low Margins	⇒	High Margins

**Figure 1. A paradigm shift from traditional e-commerce to e-service.**

service environment and service delivery that comprise any business model, whether it belongs to a goods manufacturer or a pure service provider [7]. We argue that electronic networks enable and hasten the transformation of physical products to service products. This is one reason that organizations such as IBM, HP, Sun Microsystems, and EDS are increasingly focusing on services as their prime revenue source rather than the products they traditionally address. The transformation of physical products to pure e-service components has significant implications for building customer relationships and for exploring new service opportunities and markets, especially in the domain of network-based, digital, and information-based products. In such instances, customer satisfaction and customer loyalty play critical roles in the success of the firms in the markets.

The fundamental philosophy of e-service is the focus on customers—meeting their needs precisely and thereby growing the markets and revenue. Technology is an enabler in e-service, but not an end in itself. As businesses use the opportunity provided by the technological advances to gain competitive advantage, it opens up new forms of e-service providing greater conveniences and support services to customers. Increasing customer expectations, in turn, fuel the need for greater efficiency and effectiveness in customer contact areas and service components leading to a greater emphasis on e-service within organizations, both in private and public sectors. The customer expectation for control in transactions, choice in service setting, and efficiency and effectiveness in transactions is not limited to the Internet channel, but traditional channels, too. Thus, customers will expect the use of technology-enabled innovations in traditional channels to match the Net-based control and efficiency they experience. This implies that e-service is not limited to just the Internet environment but applies to all touch points with customers. Thus, no online or offline organization can afford to ignore e-service.

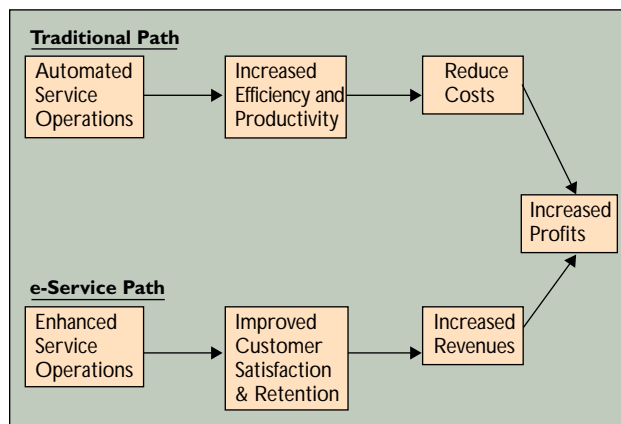
### E-Service Orientation

E-service is a customer-centric concept, and thus, the strategic and tactical components of an e-service orientation focus on increasing value defined at the

customer level. At the strategic level, an e-service orientation calls for moving the emphasis from products and transactions to service and relationships, and building customer equity. These are supported at the tactical level by personalization and customization, self-service strategies, privacy and security risk management, and e-service measurement.

**From Physical Product to Service.** As the nature of market offerings changes from the physical product to the service product, the structure of markets changes to accommodate intermediaries (such as ASPs) who are service providers. We argue that organizations across many industries will have to embrace such transformation to remain competitive. This is especially true of firms in the information products realm. Software producers such as Microsoft are viewing software as a service to which customers can subscribe.

Figure 2. E-commerce paths to profitability.



The contracts for software purchase are looking very similar to service contracts. The music recording industry is being forced to offer subscription-based music service over the e-channel in reaction to peer-to-peer media sharing, transforming their product offering to a service offering. But this necessity is not limited to information products.

Grocery chains are looking to use loyalty cards and electronic purchase tracking to use service as a differentiator to ease price competition. Focused one-to-one promotion and marketing efforts based on information gathered using these cards allow the grocery chains to develop relationships with their customers. They provide value to customers through focused information provision, reduced search time, increased convenience, and a perception of control in their transactions, as much as music subscribers could one day derive in their Internet transactions with music service providers. They sell a grocery service with value derived from service components rather than commodity-like products. In transforming product to service, organizations are forced to be customer-centric. A one-time transaction becomes a longer-term relationship providing opportunities for focused selling of products/services that increase customers' value. Firms must understand the customer better as the focus changes from brand equity to customer equity.

Organizations that have survived [the industry] meltdown have one thing in common—they learned quickly to embrace the e-service paradigm.

This transformation also applies to the B2B domain. In changing the software product to a rentable software service, firms are forced to understand how the customer uses a piece of software. The design of the software becomes more customer-centric. By providing a software service in addition to selling it as a product, the firm learns more about the usage of its software and becomes more attuned to the needs of the customer, which contributes toward a competitive advantage. We predict that firms clinging to a product-centered orientation (such as the record labels), resisting the customers' call for control, are not likely to remain in business very long in the electronic environment. Firms should take advantage of the e-service opportunities offered by the network environment to transform products to service.

**Building Customer Equity.** The other strategic underpinning of an e-service orientation is the focus on customer equity defined as the "total of the discounted lifetime values summed over all of the firm's current and future customers." Thus, an e-service orientation implies a firm's strategic opportunities are best viewed in terms of the firm's opportunities to improve the drivers of its customer equity [8]. Since customer equity is a function of the value customers provide for the firm over the lifetime, the focus of the firm should be on understanding how to choose the right customers, provide value (superior as compared to competition) to them over subsequent transactions, thus building switching costs and strengthening the relationship with customers. This orientation is more pronounced in the B2B domain where suppliers view customers as the best relationships to be cultivated over time. An e-service orientation calls for the same approach in the B2C domain. This implies that every investment made by the firm is viewed by its impact on customer equity. How does it increase value to customers? How does it increase switching cost? How does it strengthen the relationship with the right customers? The tactical components of e-service provide the best approaches to make the investments pay off.

**Personalization and Customization.** Electronic environments are ideally suited to gather information from customers—details of their transactions over the

Internet or using smart cards, or preference information through surveys and inferences using data from other sources—and provide personalized and customized offerings. Focused, relevant offerings reduce overall costs for customers (less search costs, risk costs, and transactions costs) and builds switching costs. In a supply chain environment it could be customized as just-in-time deliveries; for a grocery chain it could be personalized promotions based on transaction history; for an ASP it could be a customized outsourced computing environment. Information-based service products and service delivery through personalization and customization technologies build customer relationships through superior value and higher switching costs leading to higher customer equity. They also provide effective means to understand the customer needs better.

**Self-Service Strategies.** Customers increasingly seek control in their timing and process of conducting transactions and interacting with businesses. Many of the recent self-service offerings such as 24/7 service, order status transparency, remote problem diagnosis, among others, are geared toward providing customers the control they want [2]. Appropriately designed and implemented self-service technologies can increase customer satisfaction, reduce customer defections, and lead to higher customer equity. It also raises the bar for competition.

**Privacy and Security Risk Management.** In as much as the e-service orientation rests on the benefits derived from personalization and customization, it also requires that customer privacy and security risks be effectively minimized. Eradicating these risks is an e-service requirement, as they influence not only the acceptance of e-service by customers, but also the design of e-service by firms. E-service orientation calls for designs of systems and processes that minimize the feeling of discomfort with technology in general and the degree of insecurity regarding electronic transactions. In an electronic environment the consumer's need for control and protection of privacy is quite intense. This implies organizations should resist using the customer information they have to take advantage of customers through indiscriminate cross-selling and up-selling;

focus instead on providing value to customers. Security and privacy concerns have a critical impact on the consumer's perceived control in online situations, which in turn determines the consumer's perceived e-service quality [10]. In the era of e-service, a firm effectively managing these concerns builds the trust of its customers and contributes to their lifetime value. The desire for privacy also makes viable a market for the maintenance of e-privacy—itsself an e-service [5].

**E-service Measurement.** The focus of e-service orientation is external measures of customer assess-

response times, to delivery times, reliability, time spent in the system—are useful, all of them have to be related to the customer-level assessment measures. For example, it is well established that customers may have different patterns of response to technology [3]. Customers are true assessors of the competitive advantage of the firm and thus the returns from any activity of the firm. Their expectations are set by what they encounter in the marketplace, and they provide a true assessment of how the firm stands relative to their expectations. Thus, a

**E-service orientation.**

customer-focused measurement is a key component of an e-service orientation.

	Component	Definition	Practice	Benefits
<b>Strategic</b>	<b>Transforming the Nature of Offering</b>	Changing the physical product to a service product	Use technology to aid transformation; for example, software product becomes software service; music CD becomes online music subscription	Focus changes from transactions to managing service relationships; more opportunities to build customer value and switching costs.
	<b>Building Customer Equity</b>	Viewing value of firm using total discounted lifetime value of existing and future customers	Evaluate firm's strategic opportunities in terms of opportunities to improve drivers of customer equity.	Competitive advantage through increased value to customers, switching costs, choosing the right customers
<b>Tactical</b>	<b>Personalization and Customization</b>	Technology-based solutions to tailor offerings to individual customers	Use technology to collect data, mine data, but provide focused offerings to customers; Do not cross sell indiscriminately.	Learning about customers; Reduced costs for customers; Increased satisfaction and loyalty.
	<b>Self-Service Strategies</b>	Technology-based solutions to increase efficiencies and provide control to customers	Provide appropriately designed self-service offerings—24x7 service, order transparency, etc.	Customer control in timing and process of service. Increased satisfaction, loyalty, and raises bar for competition.
	<b>Privacy and Security Risk Management</b>	Minimize customer privacy and security risks in conducting e-service interactions	Have a clear, well-advertised privacy policy and stick to it. Do not take advantage of customer; Invest in security solutions.	Increased customer trust and value; increased customer equity.
	<b>e-Service Measurement</b>	External measures focused on customer assessment of services and products.	Measure customer satisfaction/dissatisfaction, perceived service quality; link to sales and profit.	Understanding of how firm-level activities affect customer assessment and equity.

ment of an organization's services and products, not only specifically focused on them, but also in interfacing with other products/services in the value chain. This implies an organization cannot limit its responsibility just to its products, but should be more customer-focused in providing customers a solution. The measurement of customer assessment, in turn, consists of a customer satisfaction/dissatisfaction measurement and perceived service quality on all these dimensions [9]. These measures are in turn related to measures based on sales and profit. The key focus is on understanding how investments in various firm-level activities affect customer-level assessments and, in turn, customer equity. While many of the internal measures used in the context of electronic environment—ranging from effective access,

ing people with automated systems.

An e-service orientation is all about taking advantage of the electronic environment and the technology advancements to stay competitive, nimble, and customer-focused in a turbulent business landscape. The table here provides a quick guide as to how a firm can embrace the e-service orientation. Dell Computers is a good example of how a firm selling products in an increasingly commodity market can follow an e-service orientation to build its customer equity. Its performance in the recent slump has repeatedly confounded analysts but to someone following its customer-focused strategy this should come as no surprise [1]. Many other firms are embarking on the e-service route understanding the value it accumulates for organizations—for example, Amazon, HP, and

## Conclusion

The traditional e-commerce paradigm based on e-tailing, commodity goods, and transaction sales, has largely failed, taking the Nasdaq stock market down with it. Those organizations that have survived this meltdown have one thing in common—they learned quickly to embrace the e-service paradigm. The new e-service paradigm takes advantage of the inherent nature of the online environment to feature information flows and computation, as a means of learning more about customers and building long-term customer relationships. Its profitability model is based more on revenue expansion than on cost reduction, and those revenues come from enhancing the service experience rather than just replac-

IBM. The rapid technological changes and the emerging new forms of service have made it imperative that firms stay focused on all strategic and tactical facets of e-service. Many novel ideas and technologies have characterized the last few years of e-commerce, but it is very clear a technology focus alone cannot put a business on the path to success. The key to success remains the continued focus on customers and winning them over with a superior value proposition of e-service. **□**

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