

Technology's Impact on the Gaps Model of Service Quality

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This chapter presents a foundational framework for service science – the Gaps Model of Service Quality. For over two decades the model has been used across industries and worldwide to help companies formulate strategies to deliver quality service, to integrate customer focus across functions, and to provide a foundation for service as a competitive strategy. It was developed at a time when most services were delivered interpersonally and in real time without the advantages (and sometimes disadvantages) of technology infusion. In the intervening years, technology has profoundly changed the nature of service(s) and at the same time it has influenced strategies for closing each of the service quality gaps. Thus, this chapter has a dual purpose: to provide a general overview of the Gaps Model of Service Quality and to demonstrate how key aspects of the model have changed and evolved due to advances in technologies. We begin with background on the Gaps Model and a discussion of the role of technology and services in general. We then discuss strategies for closing each gap in the model and illustrate the influence of technologies on these fundamental management strategies.

Introduction

Few would argue with the fact that services dominate the economies of the world's most advanced nations. In the U.S., services represent over eighty percent of our GDP and labor force. Further, it is apparent that services are increasing as an economic force in countries such as China, India, and other fast-growing and developing nations (Bitner and Brown, 2008). The growth of service(s) is a relentless, global phenomenon that is shaping the world's economies and profoundly affecting people's lives. Yet, despite the economic domination of services, there is relatively little formal focus within companies, governments, and universities on service excellence, service research, and service innovation compared to the focus on tangible goods and technologies (see IfM and IBM, 2007). Within this context of unabated growth of service economies, academics and business practitioners have pointed to the need for tools, techniques, frameworks, and metrics to support excellence and innovation in services across industries. While some already exist, many more are still to be developed. These tools and frameworks will be integral foundations for service science.

This chapter presents and expands one such framework – the Gaps Model of Service Quality - that has provided a strategic foundation for organizations that wish to deliver service excellence to their customers. The Gaps Model was first introduced in 1985 (Parasuraman et al., 1985; Zeithaml et al., 1990). For nearly twenty-five years it has been used across industries and worldwide to help companies formulate strategies to deliver quality service, to integrate customer focus across firm functions, and to provide a strong foundation for service excellence as a competitive strategy.

We believe that the Gaps Model of Service Quality can be a strong foundation for service science going forward. Thus, this chapter has a dual purpose: to provide a general overview of the Gaps Model of Service Quality and to demonstrate how key aspects of the model have changed and evolved due to advances in technologies. We begin with background on the Gaps Model and a discussion of the role of technology and services in general. We then discuss strategies for closing each gap in the model and illustrate the influence of technologies on these fundamental strategies.

Gaps Model of Service Quality

The Gaps Model provides an integrated framework for managing service quality and customer-driven service innovation. In the years since the model's introduction, service quality, service innovation, and customer focus have all become increasingly important as competitive strategies for organizations—thus foundational, integrative frameworks have more relevance across more industries than ever. A hallmark of the model is that it captures the cross-functionality inherent in

service management. Although the authors are marketing academics and the original publications appeared in marketing journals, their work has been widely cited and used across academic disciplines and implemented in different functions within organizations. The model draws heavily from logic, theories and strategies in operations, human resources, marketing, and increasingly from information systems.

Another hallmark of the model is its anchoring on the customer and integration of the customer throughout all gaps within the model. Every gap and every strategy used to close the gaps in the model retains a focus on the customer at its core. The primary goal of the model is to meet or exceed customer expectations, and strategies used to achieve that objective (whether operations, human resource, or technology-based) are ultimately anchored on the customer.

So what exactly is the Gaps Model of Service Quality? Figure 1 illustrates the full model based on the original as it appeared in the *Journal of Marketing* (Parasuraman et al., 1985) and Figure 2 describes the gaps in words. The centerpiece of the model is the Customer Gap – the gap between customer expectations and perceptions of the service as it is actually delivered. The ultimate goal is to close this gap by meeting or exceeding customer expectations. The other four gaps in the model are known as the “provider gaps” and each represents a potential cause behind a firm’s failure to meet customer expectations: not listening to customers (Gap 1); failing to design services that meet expectations (Gap 2); performance and service delivery failures (Gap 3); and not communicating service promises accurately (Gap 4). At its most basic level, the logic of the model suggests that the Customer Gap is a function of any one or all of four provider gaps. The early publications enumerate the complex reasons that lie behind each of these basic Gaps. Later publications and our text (Zeithaml et al., 2009) have further elaborated on the gaps by delineating specific strategies for closing each of them. In later sections of this chapter we will expand briefly on key strategies used to close each of the gaps.

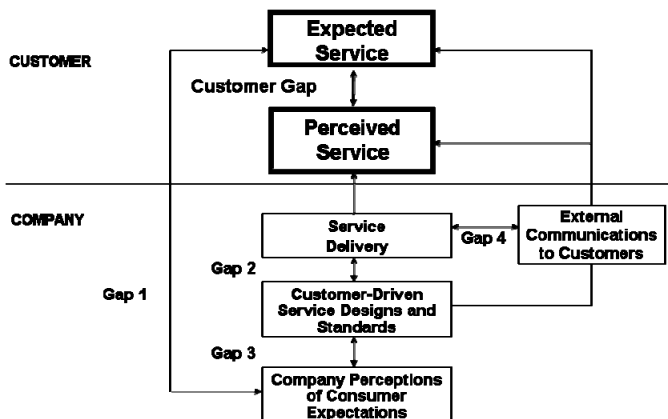


Figure 1. Gaps Model of Service Quality

- **Customer Gap**
 - the difference between customer expectations and perceptions
- **Gap 1: The Listening Gap**
 - not knowing what customers expect
- **Gap 2: The Design and Standards Gap**
 - not having the right service designs and standards
- **Gap 3: The Service Performance Gap**
 - not delivering to service standards
- **Gap 4: The Communication Gap**
 - not matching performance to promises

Figure 2. Gaps Model of Service Quality in Words

In the years since it was introduced, the Gaps Model has proved to be adaptable in meeting changes in the global business environment. For example, when the model was first introduced, few technology or manufacturing companies considered themselves to be service businesses; therefore, the message of the model was directed primarily at traditional service businesses. Today, many progressive companies in the technology and manufacturing sectors also see themselves as service businesses and the model is used in these contexts as well. Another major change in the intervening years has been the rapid development of technologies that have affected how services are communicated, designed, and delivered, as well as the types of innovative services now available to customers. An early distinction of services was the fact that they could not be provided remotely; that is, service was a local function provided in the intimate setting of a provider-customer relationship. Technology has relaxed this fundamental interpersonal, real-time requirement, resulting in increasing accessibility and globalization of services that can now be delivered and consumed anytime, anywhere. Many of these changes were not anticipated or reflected in the initial development of the Gaps Model.

Technology and Services¹

Technology, in particular information technology, has influenced the nature of services themselves, how they are delivered, and the practice of service innovation and service management. Here we overview just a few of these basic changes and trends by identifying some key themes. We will weave these general themes re-

¹ This section is based on information in *Services Marketing: Integrating Customers Across the Firm*, 5th edition, 2009, by Valarie Zeithaml, Mary Jo Bitner, and Dwayne Gremler, pp. 14-19.

lated to technology and service throughout our discussion of the individual service quality gaps and strategies to close them.

Inspiring Service Innovation

Technology has been a basic force behind many service innovations now taken for granted, such as automated voice mail, interactive voice response systems, Internet-based services, and various smart services—for example the “connected car,” smart meters for monitoring energy consumption, and remote health monitoring services. Internet-based companies like Amazon, e-Bay, and Second Life have sprung up, offering radically new services for consumers. And, established companies have developed brand new services based on information technology. For example, the *Wall Street Journal* offers an interactive edition that allows customers to organize the newspaper's content to suit their individual preferences and needs. Advances in information technology are also making it possible for entire suites of services including phone, Internet, video, photography, and e-mail to be available through one device such as the iPhone and similar products.

Providing Options for Service Delivery

Technology is also providing new opportunities for delivering existing services in more accessible, convenient, and productive ways. Technology facilitates basic customer service functions (bill paying, answering questions, checking account records, tracking orders), purchase transactions (both retail and business-to-business), and learning or information seeking. Over the past few decades, companies have moved from face-to-face service to telephone-based service to widespread use of interactive voice response systems to Internet-based customer service and now to wireless service. Technology also facilitates transactions by offering a direct vehicle for making purchases and conducting businesses. Finally, technology provides an easy way for customers to learn, do research, and collaborate with each other. Access to information has never been easier. For example, more than 20,000 websites currently offer health-related information, resulting in consumers having increasing involvement in their health decisions and care.

Enabling Customers and Employees

Technology enables both customers and employees to be more effective and productive in receiving and providing service. Through self-service technologies, customers can now serve themselves more effectively. Via online banking, for

example, customers can access their accounts, check balances, apply for loans, and take care of just about any banking need they might have—all without the assistance of the bank's employees. These online banking services are just one example of the types of self-service technologies that are proliferating across industries. For employees, technology can provide tremendous support in making them more effective and efficient in delivering service. Customer relationship management, sales support, and product information software are broad categories of technology-based information that can aid frontline employees in providing better service. These types of software also allow employees to customize and co-create services to fit customer needs.

Expanding Global Reach

Technology also results in the potential for reaching out to customers around the globe in ways not possible when, in the not-so-distant past, services were limited to local provision. The Internet itself knows no boundaries, and therefore information, customer service, and transactions can move across countries and across continents, reaching any customer who has access to the Web. Technology also allows employees of international companies to stay in touch easily—to share information and serve on virtual work teams together, thus allowing employees to work remotely and services to be provided by global workers.

The Dark Side of Service and Technology

Lest we come across as exceedingly positive on the role of technology and service, we should acknowledge some clear constraints, paradoxes, and potential negative outcomes as well (Mick and Fournier, 1998; Bitner, 2001). Legitimate customer concerns over privacy and confidentiality raise issues for firms as they seek to learn about and interact with their customers online. Nor are all customers equally interested in using technology as a means of interacting with companies. These types of concerns are what have stymied and precluded many efforts to advance technology applications in the healthcare industry. Research on “technology readiness” suggests that some customers are simply not interested in or ready to use technology (Parasuraman and Colby, 2001). Employees can also be reluctant to accept and integrate technology into their work lives for a variety of reasons, including job insecurity and reluctance to embrace change. With technology there is also less human contact which many believe is detrimental purely from a quality of life and human relationships perspective. Finally, from a company perspective, the payback in technology investments is often uncertain and the need to balance technology and human touch in developing relationships with customers can be challenging. Technology-delivered service is not always the best answer.

Reflecting on the themes briefly outlined above, it is obvious that technology has had a profound and sometimes paradoxical influence on service(s). New models and frameworks will be needed to accommodate, predict, and control these widespread technology changes. It is also clear that well established engineering, design, and management frameworks may need to be adapted to reflect these influences. In the next sections we will focus on the impact of technology on one established framework – the Gaps Model of Service Quality.

Technology's Impact on Individual Service Gap Strategies

The remainder of this chapter will bring together the Gaps Model of Service Quality (see Figure 1) and technology by focusing on each gap in the model and expanding on how the strategies to close it have been influenced by technology. We will weave the technology themes identified above into strategies related to the gaps, illustrating how service management strategy has been influenced – and will continue to be influenced – by technology.

Customer Gap

The Customer Gap is the centerpiece of the Gaps Model. It represents the difference between customer expectations and perceptions of service performance. The model suggests that closing this gap by matching or exceeding customer expectations will result in the achievement of service quality from the customer's perspective. In the years since the introduction of the model, there has been significant focus on both customer expectations and perceptions in terms of conceptualizing these constructs (Zeithaml et al., 1993; Rust and Oliver, 2000), developing measures for them (Parasuraman et al., 1988; Brady and Cronin, 2001), and studying their effects (Boulding et al., 1993).

A prominent stream of research focuses on understanding the dimensions of service quality beginning with the identification of five key dimensions; their measures have become known as SERVQUAL (Parasuraman et al., 1988). The five dimensions of service quality (reliability, responsiveness, assurance, empathy and tangibles) and the SERVQUAL measure have been applied in and adapted to many industry settings. Related streams of research have developed in parallel to study service encounters (Bitner et al., 1990; Arnould and Price, 1993; Verhoef et al., 2004), customer satisfaction (Oliver, 1997; Fornell et al., 2006), customer loyalty (Heskett et al. 1997), and their relationships with service quality (Zeithaml et al., 1996; Rust et al., 2002). None of these now prominent streams of research existed prior to the 1980s, and all continue to spawn research today.

The original focus of the Customer Gap was on expectations and perceptions of services delivered by employees in person, via phone, or in some cases via mail.

The original SERVQUAL measures, as well as conceptual models of expectation formation and service encounters, were all based in interpersonal services. Some of the early managerial and research issues identified within this gap related to how customers learn about services and form expectations for “intangibles” that they cannot see or try prior to purchase. Other research and managerial challenges focused on how customers form judgments of service quality and satisfaction during “moments of truth” represented by an interaction with an employee.

Technology's Influence on the Customer Gap

Over the last two decades, technology advances have significantly influenced the Customer Gap. First, the nature of services themselves have changed. Now, many services are *not* delivered in person by employees, but rather are delivered via technology in the form of self-service or technology-assisted service. For example, consider just one industry – the personal photography industry. Not long ago, personal photos were taken by individuals, the film was processed by a service provider, and additional prints could be ordered and shared among friends and family. Putting together albums of photos and sharing photos with others was a labor-intensive process, often involving significant time, expense, and linking together of many different service providers. Now, individuals use digital cameras to take as many photos as they wish and they can print, manage, and share their photos online. This is just one small example of the proliferation of self-service technologies that have changed consumers' lives. How customers form expectations, choose to adopt, and evaluate these self-service technologies are subjects of contemporary research (Meuter et al., 2005).

Self-service through technology automatically puts customers in a co-production role, changing the nature of service delivery dramatically. This shift results in customers having expectations and perceptions related to their own abilities and performance that will influence their overall assessment of service excellence beyond what the employee or service provider may do. In addition to altering how services are delivered, technology advances have resulted in new services that could not have been imagined even a decade ago. What customers expect from these new, innovative, technology-driven services does not necessarily fit the mold of early models of service expectations (Parasuraman et al., 2005).

Technology has also dramatically changed how customers learn about services. Customers' ability to search the web and view photos of service locations, compare prices, and even experience services through virtual tours has changed the amount and type of information customers have prior to purchasing services. The availability of this information directly influences their expectations and ability to compare and judge services. In earlier days, customers found it difficult to gather this type of information and did not have the ability to compare services as easily as they could tangible goods that were displayed side-by-side in a retail store. To

some extent the Internet now provides this same type of comparability for services.

While word-of-mouth communication has always been critical for learning about and forming expectations for service providers, technology has changed the nature of word-of-mouth communication. Web sites now include customer recommendations, glowing praise, and horror stories for just about any type of service imaginable (Ward and Ostrom, 2006). And, groups have formed online for people who are interested in particular service categories to exchange information. Many companies even sponsor these types of interactive websites themselves in order to involve customers in helping each other.

Technology has significantly impacted how customers learn about, form their expectations of, and judge services. Given these changes, it is clear that companies face new challenges as well in understanding these new expectations and designing and delivering services to meet them. In the next sections, we examine each of the provider gaps in the model, first by reviewing basic strategies for closing each one and then analyzing the effects of technology on these strategies.

Provider Gap 1: The Listening Gap

Provider Gap 1, the Listening Gap, is the difference between customer expectations of service and company understanding of those expectations. A primary cause in many firms for not meeting customers' expectations is that the firm lacks accurate understanding of exactly what those expectations are. Many reasons exist for managers not being aware of what customers expect: They may not interact directly with customers, they may be unwilling to ask about expectations, or they may be unprepared to address them. Closing the Listening Gap requires that management or empowered employees acquire accurate information about customers' expectations. Customer expectations must be assessed accurately before new services are developed, and they must be tracked after the services are introduced.

Figure 3 summarizes several key strategies for closing Gap 1. Each of these strategies is covered in greater detail elsewhere and each is backed by research and practical applications (Zeithaml et al., 2009). The first strategy is to listen to customers in multiple ways through customer research and employee upward communication. When the Gaps Model was conceived, emphasis was on traditional marketing research methods (surveys, focus groups, and complaint handling) along with methods uniquely useful in service situations such as SERVQUAL surveys, mystery shopping, and critical incidents analysis. The second strategy is to build relationships by understanding and meeting customer needs over time. In firms where customers and companies have interpersonal contact, this means anything from learning customers' names (as in a local bank) to understanding business-to-business customers' clients, changing needs, and industries. Relationship marketing is a term used to distinguish these activities from transaction-focused efforts, but relationship marketing is typically an interpersonal

activity, carried out through contact people on the front lines of the service firm. The final pivotal strategy for closing Gap 1 involves knowing and acting on what customers expect when they experience a service failure. The importance of meeting customer expectations following a failure is well studied and documented (Tax et al., 1998).

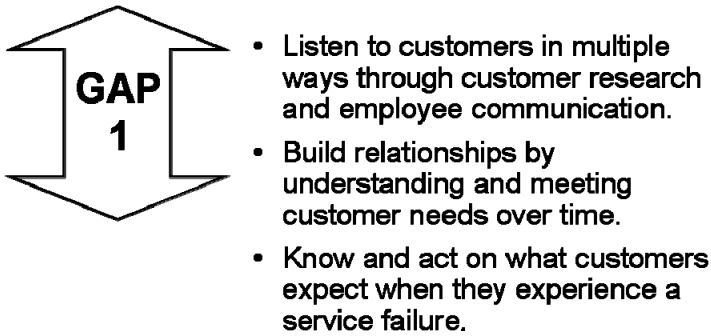


Figure 3. Strategies for Closing the Listening Gap.

Technology's Influence on Provider Gap 1

The primary way technology has influenced Gap 1 is in allowing firms to know their customers in new ways. Among the most powerful facilitators of these influences are marketing research conducted on the Internet (improving ways to listen to customers) and technology-powered customer relationship management, or CRM (facilitating relationship-building with thousands, even millions, of customers through database marketing).

One of the most intriguing technological innovations is Internet or online customer research, replacing traditional comment cards and intrusive telephone calls with cyber surveys that are challenging and even fun for consumers. The application is growing rapidly, with annual spending on online research expected to reach \$26 billion by 2010 (Li and Von Boskirk, 2005). The reasons are obvious—internet research has many benefits to marketers including more willing respondents, speed of collecting and analyzing data; equivalent or better data quality; and the ability to target hard-to-reach populations such as high-income consumers, those who fit a particular lifestyle or interest profile, and business-to-business markets. Internet research also offers the opportunity to use multimedia to present video and audio to give respondents the true sense of a service being researched. Finally, there need be no interviewers--and therefore no interviewer errors or bias that occur when the interviewer is in a bad mood, tired, impatient, or not objective. Internet research is also less expensive than traditional research—in fact it is 10 to 80 percent less expensive than other approaches. The Internet eliminates postage, phone, labor, and printing costs that are typical with other survey approaches. Re-

spondents also seem to complete Web-based surveys in half the time it would take an interviewer to conduct the survey, perhaps contributing to the reduced need for incentives.

Building relationships by understanding and meeting customer needs over time is also facilitated by technology. Customer relationship management (CRM) is an important and powerful form of relationship-building that was virtually impossible prior to advances in technology-based CRM software and systems. At its best, CRM studies customers one by one to develop profiles of their individual needs, behaviors, and responses to marketing. This approach allows a company to get very close—even intimate with—thousands of customers and to tailor services uniquely to individuals. Two of the most innovative examples of database marketing include Hallmark Gold Crown and Harrah's Entertainment.

Hallmark's database, capable of recognizing customers in all Hallmark retail stores, tracks purchases, contacts, and communications so that it learns what each customer individually values about the relationship with the company. This information includes what core product or benefit has the most value to the customer and what differentiates Hallmark from its competition. The mechanism by which the company tracks this information is a Gold Crown Card that customers use to accumulate points for purchases. They receive personalized point statements, newsletters, reward certificates, and individualized news of products and events at local stores. The top 10 percent of customers—who buy more cards and ornaments than others—get special amenities such as longer bonus periods and their own private priority toll-free number, as well as very targeted communication about the specific products they value.

Another example of a technology-based relationship management approach is in the gambling industry where it has long been recognized that certain customers are better than others and that encouraging the "high rollers" to spend time in one's casinos is a worthwhile and profitable strategy. One of the main ways casinos encourage increased patronage is "comping"—giving free drinks, hotel rooms, limousines, and sometimes chips to top customers. The strategy has been limited in most casinos to customers who could be identified and followed, making the approach spotty and missing many potential repeat patrons. Harrah's Entertainment, which owns and operates 26 gambling casinos in places such as Las Vegas and Atlantic City, found a more systematic way to extend the practice to a wider group of customers (Loveman, 2003). Harrah's developed a customer relationship management system called the Total Rewards program, a loyalty program that tracks the names and addresses of repeat visitors along with what slot machines they play, how long they play, and how much money they gamble. The company's approach uses a Total Rewards card that any customer can obtain—often with the incentive of covering their slot losses for half an hour up to \$100. To earn points toward drinks, rooms, and other benefits, customers allow their cards to be swiped on the casino floor to monitor the sums gambled and time spent at slot machines and card tables.

While the benefits to companies of using these types of CRM systems are clear, there is also the potential for misuse if these systems are applied in ways that take

advantage of customers or intrude on their privacy. Maintaining the right balance between gathering and using customer information to build desirable relationships (for both firms and customers) and misusing information or invading customer privacy in unwanted ways is an ongoing challenge that technology in and of itself cannot solve.

Gap 2 – The Design and Standards Gap

Closing Gap 1 through research and effective management of customer relationships is necessary, but not sufficient, for achieving service excellence. Even when a company has a thorough and ongoing understanding of its customers' expectations, it is still very possible, in fact quite easy, to fail to deliver quality service. Gap 2, the design and standards gap is the next step toward ensuring against such failure. This gap focuses on translating expectations into actual service designs and developing standards to measure service operations against customer expectations.

Figure 4 summarizes several key strategies for closing Gap 2. As with Gap 1, each of these strategies is covered in greater detail elsewhere (Zeithaml et al., 2009). The first strategy is to employ well-defined new service development and innovation practices for designing services. Some have referred to this as formalization of a “services R&D” practice. While standardized new product development processes and R&D are common in technology and manufacturing, they are still quite rare in services (for a major exception, we note the investment of the IBM Corporation in service innovation research through its global research labs). A formalized process typically involves a series of steps beginning with strategy formulation and idea generation and ending with full-scale implementation (Cooper and Edgett, 1999; Edvardsson et al., 2000). Because of the nature of services (their process orientation, intangibility, co-creation by customers), it is more challenging to engage in these typical steps that are so well established in other industries. However, it is clear that following a process, engaging customers along the way, and carefully planning and prototyping the complexities of service implementation are all critically important in ensuring service designs that meet customer expectations (Henard and Szymanski, 2001).

A second strategy for closing Gap 2 relates to understanding the total customer experience and designing all elements of that experience in ways that meet or exceed customer expectations. This involves considering everything that occurs from the moment the customer engages the service through the entire length of the service experience. Common elements of the service experience that need to be designed include customer-facing processes, the physical space where the service is delivered (“servicescape”), and the interactions between service employees and customers. Viewing these operational elements from the customer's perspective and designing them to be consistent with expectations, or to reinforce a desired service image, are critical to closing Gap 2. Because of the special challenges in-

herent in designing services, techniques such as service blueprinting have evolved to aid in the design process (Bitner et al., 2008).

A third strategy for closing Gap 2 involves measuring service operations via customer-defined standards. When service standards are absent or when the standards in place do not reflect customers' expectations, quality of service as perceived by customers is likely to suffer. Too often services are measured based on traditional, internal measures of success which may not be reflective of customer needs and expectations.

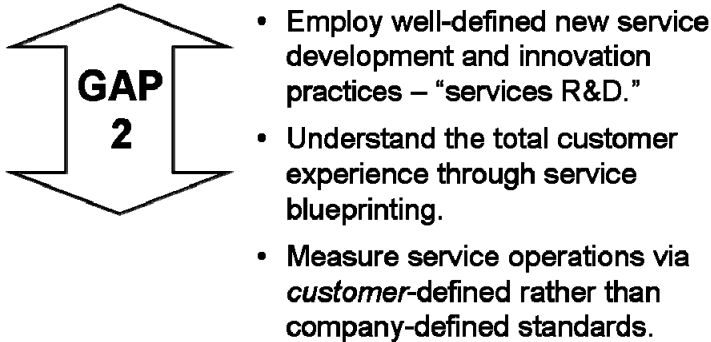


Figure 4. Strategies for Closing the Design and Standards Gap.

Technology's Impact on Gap 2

The focus of the Design and Standards Gap has primarily been on designing interpersonal services and real-time operational processes to meet customer expectations. The variability inherent in interpersonal services makes designing them and standardizing them quite difficult. While the challenges inherent in designing interpersonal, real-time, face-to-face services have not disappeared, there is now increasing focus on technology-enabled services and technology-enabled processes to close Gap 2. Increasingly, customer expectations can be met through technology-enabled and highly-standardized services provided on the web. For example, consider book sales and services (just one of its many product lines) provided online by Amazon. Through its sophisticated technology infrastructure, the company is able to provide standardized ordering, payment, tracking, and recommendation services at the individual consumer level. Attempting to provide this level of service in a traditional book sales context to masses of people would likely be very idiosyncratic, probably not very consistent, and quite costly if it were done at the level Amazon performs online.

Technology has also facilitated the development of new services to meet customer needs and expectations. For example, eBay's network of buyers and sellers has created an entire service industry that provides income for individuals and

small businesses and an outlet for over-production of products. In another realm, IBM and Caterpillar's real-time smart-service monitoring systems for their equipment represent innovative and efficient services that have changed the nature of repair, maintenance, and basic customer service in those industries. In health-care, the ability to monitor patient conditions remotely and to train physicians in simulated surgical techniques via video technology are just two additional examples of technology-based services that meet customer expectations in very new and innovative ways.

Technology has also influenced the actual *process* of service innovation, alleviating some of the traditional barriers to designing new services. Some of the most challenging steps in new service development have always been the basic concept development and prototype testing steps. Now technology can be used to develop visual prototypes and virtual experiences for testing service concepts. It can also be used to engage customers more effectively in the design process by allowing them to interact in real time with the service, offering immediate feedback that can be fed into the next iteration of the service design. Service blueprinting, which started as an entirely manual process, has been automated by companies to provide "living blueprints" accessible to key parties online (Bitner et al., 2008). Automated blueprints can also easily convey varying levels of detail buried a click or two behind basic steps in the blueprint. With technological advances such blueprints can now include photos or other images of physical evidence, as well as video clips that depict service processes, customer actions, or the servicescape.

Measuring service operations based on customer expectations is also much more efficient today due to technology. Tracking customer feedback and measuring internal operations can be done more easily and frequently through the use of web-based feedback systems and internal databases. Technology also allows easy documentation and communication of employee, team, and organizational performance related to standards, thus making these customer-driven standards more accessible and visible.

Gap 3 – The Service Performance Gap

Although a company may have closed both the Listening Gap (Gap 1) and the Service Design and Standards Gap (Gap 2), it may still fall short of providing service that meets customers' expectations if it is unable to deliver service in the way the service was designed. Gap 3, the Service Performance Gap, must also be closed to make sure there is no discrepancy between customer-driven service design and standards and actual service delivery. Even when guidelines exist for performing service well and treating customers correctly, high-quality service performance is not a certainty.

The key strategies for closing Gap 3 are depicted in Figure 5. As with the other gaps and related figures, each of these strategies is covered in greater detail elsewhere (Zeithaml et al., 2009). The first strategy is to align the firm's human re-

source strategies around delivering service excellence. In particular, in order to deliver service as it was designed a firm needs to ensure that employees are willing and able to deliver quality services and that they are motivated to perform in customer-oriented, service-minded ways (Barber and Strack, 2005). In creating such a workforce, an organization must hire the right people, develop those people to deliver service quality, and retain the best people. To effectively deliver service quality, considerable attention should be focused on recruiting and hiring the right service personnel (Berry and Parasuraman, 1991). Service employees need two complementary capacities: service competencies—the skills and knowledge necessary to do the job—and service inclination—an interest in doing service-related work (Schneider and Schechter, 1991). Once the right people are in place, to provide quality service they need to be developed through ongoing training in the necessary technical skills and in interactive skills. An organization that hires the right people and trains and develops them to deliver service quality must also work to retain them. If a company wants the strongest service performers to stay with the organization, it must reward and promote them. Organizations use a variety of rewards to retain the best employees; traditional approaches such as higher pay, promotions, and one-time monetary awards or prizes are often linked to service performance.

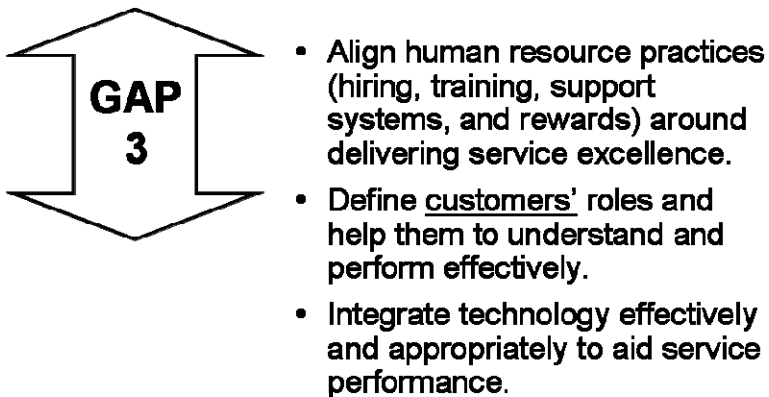


Figure 5. Strategies for Closing the Service Performance Gap.

For many services, customers are participants in service production and co-creators of value (Vargo and Lusch, 2004) and, therefore, play a key role in the service delivery process. That is, customers themselves can influence whether the service meets customer-defined specifications and can potentially contribute to the widening of Gap 3. Thus, a second strategy for closing Gap 3 is to define customers' roles and assist them in understanding and performing their roles effectively. Sometimes customers contribute to Gap 3 because they lack understanding of their roles and exactly what they are to in a given situation or because they are unwilling or unable to perform for some reason. To reduce this gap the organization needs to clearly define and communicate what the customer's role entails—in es-

sence the customer's "job description" (Schneider and Bowen, 1995). Once the customer's role is clearly defined, the firm needs to help facilitate that role. In a sense, the customer is a "partial employee" of the organization, and strategies for managing customer behavior in service production and delivery can mimic to some degree the efforts aimed at service employees discussed in the previous paragraph.

A third strategy for closing Gap 3 involves integrating technology effectively and appropriately to aid service performance. For service workers (and customers) to be efficient and effective in performing their jobs, technology that facilitates their efforts is often required. Technology can help employees to be more effective and efficient in serving customers. For example, at its Jacksonville, Florida, location Mayo Clinic invested \$18 million over the past decade in computer system technology, with a large portion of the emphasis on electronic medical records. The many systems required for patient care, including pharmacy systems, laboratory systems, and monitoring systems, are now interconnected. Mayo Clinic's technology automatically notifies physicians, pharmacists, nurses, and others in the hospital when a particular treatment needs to be performed and monitors dosage amounts (Berry and Seltman, 2007). Technology can also help customers become more educated and involved in co-creating service. As an example, one company, iPrint, has created technology to allow home-office and small-business customers to perform commercial print services for themselves. Customers with little or no knowledge of graphic design are provided detailed step-by-step instructions to educate themselves and can easily create their own designs for a wide range of products from the convenience of their own offices.

Technology's Impact on Gap 3

When the Gaps Model was first conceptualized, the focus of the Service Performance Gap was primarily on the role that service *participants*—namely, employees and customers—play in the delivery of services and the interpersonal interactions required. While the issues inherent in providing an environment that facilitates service performance of employees and customers are still present, there is now an increased focus on how technology can empower and enable each group to close Gap 3. The influx of technology has enabled employees in a myriad of new ways and has created opportunities for customers to become more involved in co-creating, and even adding value to, their service experience. Technology has also made it possible for some services to be produced entirely by the customer without any contact with the firm's employees.

Technological advances have allowed customer-contact employees to become more efficient and effective in serving customers. For example, today's technology allows Symantec customer service representatives to have several online "chats" with many customers simultaneously. In attempting to resolve customer problems or answer their questions regarding the company's software products

(e.g., Norton Internet Security), technological tools allow an employee to remotely connect to a customer's computer to fix a problem. Such capability allows employees to resolve problems much faster (increasing employee efficiency) and generally creates a more satisfying customer experience (increasing employee effectiveness). Thus, many firms today often explore ways that technology can be used to empower employees and close the service performance gap.

Technology has also empowered customers. Through technology customers can be more involved in co-creating and even adding value to their service experience. For several years airlines have provided the means through technology for passengers to "check-in" online, in advance of arriving at the terminal, and print their own boarding passes. Northwest Airlines (now Delta) has taken this one step further; customers can now use a smart phone, such as a Blackberry device, to receive an electronic boarding pass. The customer's device receives an electronic image that can be scanned by security at the airport, thus not only eliminating the need to wait in line to receive a boarding pass but also the requirement to carry any document. Although more of the responsibility during the check-in process has shifted to customers, most appreciate the reduced time spent waiting in lines and the freedom of not having to carry paper documents—and see this technology as adding value to their service experience.

Self-service technologies—services produced entirely by the customer without any direct involvement or interaction with the firm's employees—have also changed the way companies think about closing Gap 3 (Meuter et al., 2005). These technologies have proliferated as companies see the potential cost savings and efficiencies that can be achieved, potential sales growth, increased customer satisfaction, and competitive advantage. From the beginning, Netflix's business model was to use technology to provide customers with a way to receive DVDs at their home without stepping out the front door; this endeavor proved to be so successful that Blockbuster subsequently countered with a "Total Access" offering that also provided home delivery of DVDs. Paytrust, a company that receives bills and presents them online to customers for payment, allows customers several payment options—all without requiring any interactions with employees. Medical websites allow patients access to information about particular diseases, drugs and drug interactions, and specific doctors and hospitals; in this case technology enables patients to make more informed health-care decisions. As these examples illustrate, such technological advances have facilitated customer participation in service delivery—changing the way that Gap 3 is conceptualized and the thinking on how it can be closed.

Gap 4 – The Communication Gap

Even when a firm has done everything suggested by the other three gaps to ensure service quality, there can still be a failure to meet customer expectations if communications about the service do not match with what is delivered. Thus, the

final provider gap in the model that must be closed is the Communication Gap, or Gap 4. This gap focuses on the difference between service delivery and what is communicated externally to customers through advertising, pricing, and other forms of tangible communications.

Figure 6 captures several key strategies for closing Gap 4. Each of these strategies is discussed in greater detail elsewhere (Zeithaml et al., 2009). The first strategy revolves around integrated services marketing communication that ensures that everything and everyone that sends a message or signal about the service does so in a manner that is consistent with what customers expect and what is actually delivered. The challenge with this strategy is that there are a myriad of communication channels and modes that send messages to customers—more today than ever before—including traditional websites, personal sales, direct mail, print media, blogs, virtual communities, cell-phone advertising, etc. Beyond these types of channels which are also available to goods-producing firms, service customers receive additional communication from servicescapes, customer service representatives, and everyday service encounters with company employees. Ensuring that all of these channels communicate effectively and consistently is a daunting task, yet one that is essential to an integrated communication strategy.

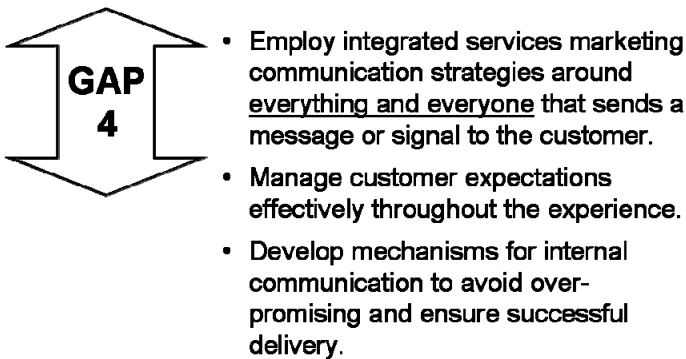


Figure 6. Strategies for Closing the Communication Gap.

A second key strategy for closing the Communication Gap is to manage customer expectations effectively throughout the service experience. Many services (for example many B2B services and consumer membership services) take place over an extended time frame that might mean a few hours, days, weeks, or even years. These types of extended service experiences often change over time, varying from the original service promise as a result of business realities (for either the provider or the customer) that change the nature of the service, customer needs that change over time, and financial pressures that may cause increases in pricing or adjustments to the service contract. Thus, it is critical that communications to the customer also change and evolve through time to ensure that expectations and service performance match. This might mean managing customer expectations

relative to new business realities, often in the form of managing expectations downwards when a service previously provided is discontinued or when prices for similar services must be increased.

A final strategy for closing Gap 4 is to develop mechanisms for internal communication so that the customer hears consistent messages before the sale and during service delivery. A common cause for Gap 4 is overpromising on the part of sales and marketing. While a certain amount of promotion is needed in many cases to gain a sale, excessive promotional activity can be detrimental when it exceeds the ability of the delivery organization to keep the promises made. Customers gained in the short term from making excessive promises can be lost just as quickly through a failure to deliver. A number of internal communication strategies can help avoid the latter problem. These types of strategies including effective vertical communication that keeps employees informed of corporate strategy and marketing messages so that they communicate accurately. Selling the brand inside the company also helps employees to see its value and to be realistic about what can and should be promised to customers (Mitchell, 2002). Horizontal communication across marketing, operations, and service design teams can also help to align promises with service delivery capabilities.

Technology's Impact on Gap 4

As with the other gaps, the early focus of Gap 4 was on traditional channels of communication, including interpersonal communication (sales and real-time communication during service delivery), tangible symbols of the service (service-scape, pricing, and other physical evidence), and service advertising. All of these traditional communication channels have been affected by technology infusion. One prominent effect across all forms of communication has been the dynamic capabilities of technologies that allow quick changes in communication (via electronic updates and adjustments), dynamic pricing, and customized communication strategies for targeted segments of customers.

In addition, there are a number of new channels that service firms can use for communicating with their customers including blogs, targeted e-mails, customer communities, and employee chat with customers. The number of channels and modes of communication that must be integrated effectively has exploded, exacerbating the challenge of providing consistent messages across all of them. These new channels are not simply options that service firms can consider – more and more they are becoming *expected* by customers as means of communication.

Virtual service experiences portrayed online provide another avenue for communicating about services that was not available when the Gaps Model was first developed. In fact, in the past, one of the challenges for service firms seeking to communicate what they offer was the inability to effectively communicate an experience or true visual image of the service process. It was believed that the intangibility and process-orientation of services were characteristics that made it

very difficult to effectively communicate the service offering to customers prior to purchase. While communicating an experience is still a challenge, virtual online experiences provide an avenue to at least approximate more closely what the customer can expect. These virtual experiences can provide customers with a view of the physical environment, the steps in the service process, and some idea of the service employees or technologies involved. Comparing virtual experiences across providers may also help customers to do “comparison shopping” for services—something virtually impossible only a decade ago.

Online brand communities and easy/quick mass communication via the Internet are new channels that, whether provider or customer-controlled, can influence customer expectations for service firms. While it is well known that word-of-mouth communication has always been especially important for services (whether B2B or B2C), these new avenues of peer-to-peer and customer-to-customer communication make word-of-mouth an even more important influence in setting expectations for services today.

The relative inability for customers to compare prices for services (as compared to goods) is another of the basic tenets that traditionally distinguished goods from services marketing. This fundamental pricing challenge is also changing due to the influx of technology that allows customers to comparison shop online by moving between websites and checking out photos and virtual experiences that give them cues to the value and relative price they would expect to pay.

An overriding challenge for service firms in the age of easy, quick, and accessible communication for customers via the Internet is the relative ease with which superior service, beautiful photos, and wonderful employees can be portrayed online (just as it has always been with advertising); yet, it is extremely challenging to ensure that these online “experiences” match with actual service delivery. While the channels and opportunities to communicate with customers have proliferated, effective integrated communication is more than ever a continuing challenge for service firms.

Conclusion

This chapter had two purposes: (1) to provide a brief overview of a well-established service marketing and management framework, the Gaps Model of Service Quality, and (2) to illustrate the impact of information technology on strategies associated with closing each of the gaps. We covered some of the basic strategies associated with closing each gap in the model and also provided examples of how technology advances and innovations have influenced these strategies. Our experience with the model tells us that it is fundamental to service science in its basic premises and that its associated strategies remain essential to managing effective and profitable service businesses today, just as they were when the model was first developed. It is also apparent that the model is adaptable to the changing business environment given its extended use and longevity. New tech-

nologies and service innovations have been and can continue to be incorporated into the model, resulting in better understanding of the gaps and new strategies for closing the gaps.

We believe the Gaps Model should be one of the fundamental frameworks for service science going forward. Its primary contributions are its cross-functionality from a business perspective, its incorporation of theories, ideas, and frameworks from multiple academic disciplines, and its keen focus on the customer. While service science will benefit from new theories and frameworks coming out of engineering, operations, computer science, and management, it is our belief that there are fundamental principles that currently exist that should be carried forward as part of the core of service science. The Gaps Model of Service Quality is, we believe, one of those core knowledge areas.

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