Customer contributions to quality: A different view of the customer-oriented...
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CUSTOMER CONTRIBUTIONS TO QUALITY: A DIFFERENT VIEW OF THE CUSTOMER-ORIENTED FIRM

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Regardless of the specific tools and methods a firm adopts or what quality experts an organization follows, managing for quality and competitive advantage means a firm must become customer oriented. Unfortunately, many quality-management programs and efforts to enhance competitiveness take a rather limited view of potential customer involvement in the process. This article first examines familiar roles that customers play in both manufacturing and service organizations. Then, insights from organization theory, services marketing, strategic management, and total quality concepts are integrated to develop both a conceptual model and 10 propositions based on a more complex view of potential customer contributions to competitive quality. Both a research agenda and ideas for improved organizational practice are discussed.

Competition and dynamic business environments have made achieving quality an essential part of organizational success. Moreover, if high quality is to provide a sustained competitive advantage, companies must go beyond the skilled application of tools and techniques to include a shift in values, beliefs, assumptions and premises guiding organizational activities (Bounds, York, Adams, & Ranney, 1994). The underlying logic of the organization must be changed (Bettis, 1994). Competitive quality is defined as designing, implementing, and continuously adapting systemic transformations to provide efficient, extraordinary, value-added outcomes that are important to a wide range of organizational stakeholders (Barney, 1991; Lawler, 1992; Garvin, 1988; Hamel & Prahalad, 1994; Schuler & Harris, 1992). Competitive quality is based on a systems perspective, continuous improvement, high productivity, teamwork, and most important, a customer orientation (Dean & Bowen, 1994).

Despite a persistent emphasis on the customer, authors of current models for achieving competitive quality have neglected many of their

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own axioms in defining the customer's role. Customer orientation usually means that a firm concentrates on providing products and services that fulfill customer needs (Dean & Bowen, 1994). Schneider and Bowen (1995: 84) argued that this is necessary but insufficient. To them, customer orientation means organizational commitment to customers such that customers and firms share interdependencies, values, and strategies over the long term. To do this, firms foster direct customer contact, collect information from customers about their needs, and use customer-supplied information to design and deliver products and services (Schneider & Bowen, 1995). Are there additional actions firms can take regarding customers that will yield greater systemwide competitive quality? This article explores ways in which customers might directly contribute to enhancing competitive quality.

EVOLUTION OF QUALITY CONCERNS AND CUSTOMER ORIENTATION IN RESEARCH AND PRACTICE

Customer orientation is not a new idea (Dean & Bowen, 1994; Drucker, 1954; Pfau, Detzel, & Geller, 1991). Over three decades ago, Levitt (1960) stated that customer satisfaction is the ultimate goal of any business. This viewpoint was mirrored in the quality-management literature by Deming (1986), Juran (1988), Crosby (1979), and Garvin (1988). But what, precisely, does a customer orientation require? Understanding customer roles is key to understanding customer orientation.

Quality-management approaches and concepts of customer orientation have evolved over time (see Table 1) (Bhote, 1991; Garvin, 1988; Juran, 1986; Schuler & Harris, 1992; Shewhart, 1931). Quality was initially linked with craftsmanship. Next, Garvin (1988) explained that quality was reactive and inspection oriented. Quality was focused on activities within a firm's boundaries. This view was strengthened by statistical quality control (SQC) techniques (Shewhart, 1931). Customers were recipients of quality, and it was their job to let a firm know when SQC tools had failed (Bhote, 1991). Quality meant conformance to standards.

The quality-assurance phase (Garvin, 1988) broadened the scope of quality activities to include several functional areas and new tools and techniques geared toward preventing problems. Juran's (1986, 1988) cost of quality deliberately embedded customer reactions into a firm's cost-benefit equations. Customers remained similar to final inspectors, and their dissatisfaction was seen as something that could hurt a firm. Quality meant the absence of problems.

Strategic quality management transformed quality into a potent competitive weapon, not just a potential problem area, thus shifting the relationship between customers and firms. Customers determined which dimensions of quality were important (Garvin, 1988; Porter, 1985), serving as key suppliers of design information and as ultimate judges. Preliminary co-production roles emerged in services (Bowen, 1986) and to a limited
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<th>Quality-Management Stage</th>
<th>Focus of Quality-Management Activities</th>
<th>Elements of Customer Orientation</th>
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| Craftsmanship           | — Unique craftsmanship  
                          — Informal, individual, handicraft fitting, and adjustment  
                          — Periodic oversight by senior artisans | — Customer as buyer or beneficiary |
| Inspection              | — Uniformity  
                          — Problem detection  
                          — Systematic inspection using objective, verifiable gauges and standards | — Customer as buyer  
                          — Profitability more important than customer satisfaction  
                          — Focus on selling |
| Statistical Quality Control | — Product uniformity and reduced inspection  
                          — Shewhart’s techniques for monitoring and evaluating day-to-day production activities  
                          — Acceptable variance from unacceptable fluctuation distinguished  
                          — Efficiency through statistical sampling increased | — Acceptable levels of consumer vs. producer risk negotiated  
                          — Customer measurement initiated  
                          — Some customer inputs solicited |
| Quality Assurance       | — Problem solving and coordination  
                          — Design of quality  
                          — Identification and calculation of specific costs of quality  
                          — Expansion of responsibility for quality from manufacturing to the entire firm  
                          — Initial use of quality professionals  
                          — Reliability engineering and assessment of performance over time  
                          — Zero defects | — Customer has active voice in product/service design through quality function deployment, conjoint analysis, etc. |
| Strategic Quality Management | — Deliberate choice among competing dimensions of quality | — Customer is the focus of quality activities  
                          — Customer is the final arbiter of quality |
TABLE 1 (continued)

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<th>Elements of Customer Orientation</th>
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<td>Quality as competitive leverage</td>
<td>Customer is actively involved in design and assessment of product and services</td>
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<td>Emphasis on trust and development of effective relationships between firm and customers</td>
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<td>Demonstrated commitment to customers through warranties, guarantees, etc.</td>
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<td>Co-production concept in services</td>
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<td>Sustainable Competitive Quality</td>
<td>Designing and delivering loyalty-producing goods and services</td>
<td>Customer is the focus of quality activities</td>
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<td>Investing in people and knowledge communities</td>
<td>Customer is the final arbiter of quality</td>
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<td>Creating alliances inside and outside the firm</td>
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extent in manufacturing settings (Bowen, Siehl, & Schneider, 1989). Quality meant delighting customers rather than simply meeting their expectations without problems.

Sustainable competitive quality extends beyond traditional firm boundaries. Here, quality means loyalty-producing relationships. A key
observation is that even though the concept of quality management continued to evolve, the role of customers remained fairly static.

A recognition of customer importance led to many changes in organizational practice. First, many firms erased buffers between core activities and customers. By 1990, in nearly a quarter of Fortune 1000 firms, 50% or more of the employees were directly involved with customers (Lawler, Mohrman, & Ledford, 1992). Direct contact with customers is correlated with an emphasis on quality and customer service. Second, customers were acknowledged as crucial stakeholders (Grant, Shani, & Krishnan, 1994; Schuler & Harris, 1992). Many firms have public missions that incorporate customer satisfaction as a primary goal. Assessments like the Malcolm Baldrige Award rely on criteria that emphasize customer importance. Third, customer sophistication and knowledge are increasing (Bounds et al., 1994). As expectations rise, customers’ attention to detail and ability to articulate gaps between expectations and experiences increases (Zeithaml, Parasuraman, & Berry, 1990). Firms must adapt to meet these changing conditions. Fourth, particularly in the service arena, customers are being viewed as important potential co-producers (Bowen & Schneider, 1988; Cardozo, 1965; Chase & Garvin, 1989; Mills, Chase, & Margulies, 1983). As customers’ expertise increases, their ability to make effective contributions to production activities also increases. Ways to effectively manage co-production beyond the service arena are emerging more slowly.

Customer importance has been emphasized in organizational theory (Mills, 1986), operations management (Chase, 1978), strategic management (Porter, 1985; Ulrich, 1989), and marketing (e.g., Berry, Parasuraman, & Zeithaml, 1988; Gronroos, 1994; Gutman, 1982; Normann, 1984; Oliver & DeSarbo, 1988; Parasuraman, Zeithaml, & Berry, 1985), yet only a few authors (e.g., Berry, 1995) offer specific ways to translate customer-orientation words into customer-orientation deeds. Most ideas concerning customers remain more narrow in scope than other elements of quality-enhancement programs. An ironic pattern emerges when one looks at the joint evolution of quality theory and concepts of customer orientation. Experts agree that competitive quality requires a systems view; relies on empowerment, teamwork, and involvement; and includes long-term alliances with agents outside the traditional boundaries of the firm. However, few of these ideas have been incorporated into customer roles.

Schuler and Harris (1992) argued that firms should consider customers as partners for success. A partnership perspective is a useful conceptual frame for considering customers and competitive quality. Work on strategic alliances (Borys & Jemison, 1989; Ring & Van de Ven, 1992) suggests ties with customers based on trust and respect; allowing customers to provide guidance, ideas, and technical assistance; and selecting customers to improve quality. As with other voluntary alliances, though, trust-based cooperation is complicated and vulnerable to exploitation (Williamson, 1985).
Although gains have been made, important challenges remain for firms to better manage customer inputs, co-production opportunities, customer satisfaction, perceived quality, and the use of goods and services to achieve quality goals and competitive advantage. Until very recently, quality was done for customers. Perhaps competitive quality can best be achieved by customers acting with those inside the firm to produce high-quality outcomes using high-quality processes.

A CONCEPTUAL MODEL OF POTENTIAL CUSTOMER CONTRIBUTIONS TO COMPETITIVE QUALITY

Another look at the literature on customer and organization interactions offers insights toward a partnership perspective. Although initial research on customers and organizations focused on service firms (Danet, 1981), reflecting the inseparability of customers and service providers (Zeithaml et al., 1990), these ideas can be applied more broadly.

Gersuny and Rosengren (1973) argued that diverse customer roles require new bonds of interdependence and an increasingly complex social network that crosses traditional organization boundaries. They identified four distinct roles for customers: (a) resource, (b) worker (or co-producer), (c) buyer, and (d) beneficiary (or user). This argument set the stage for research by Brickman and Lempert (1976), Daniels (1971), Garvin (1988), Hammer and Champy (1993), Haug and Sussman (1969), Lengnick-Hall (1981), Lovelock and Young (1979), McDaniel and Morris (1978), Mills and colleagues (1983), Rosenthal (1974), Schneider and Bowen (1995), and Ulrich (1989) to further examine relationships among customers, firms, and quality.

A fifth role for customers emerges from work in the human service arena (e.g., Lengnick-Hall, 1995; McDaniel & Morris, 1978). Customers can be a key outcome of transformation activities. For example, the outcome of education is a change in students’ knowledge and skills; thus, students are the product of the educational enterprise (see, e.g., 1994 AACSB guidelines). Similarly, patient wellness is a key outcome of health care delivery, so patients are end products of health care processes. The concept of customer as product is not limited to the human service arena, however. Apple Computer contends that the real value of its products is the ability to foster human change. Using a Macintosh, the company argues, changes how customers work and think. This change in the customer, rather than the production and delivery of the product, is the real end point of transformation process.

Prior research indicates five specific customer roles to manage for enhanced productivity and competitive quality. Customers cannot only receive what an organization produces and delivers, but they also can directly and indirectly influence the operations and outcomes of an enterprise. Two customer roles are at the input, or upstream, side of organizational activity: the customer as resource and the customer as co-producer.
Three roles cluster at the downstream or output side of the system: the customer as buyer, the customer as user, and the customer as product. Relationships among these roles and the transformation activities of the firm are presented in Figure 1, reflecting a familiar input → transformation → output systems perspective.

The overriding goal is to enhance the competitive quality of the system. A key question, then, is have all of these roles been fully examined and effectively used or are there some important avenues for creating competitive quality through customers who have been overlooked? The proposed conceptualization of potential customer contributions to organizational activities is intended to highlight some previously neglected opportunities for customer participation in creating competitive quality through continuous adaptation to improve productivity and the value of outcomes to a variety of stakeholders. Each of the five customer roles is discussed in terms of potential contributions to activities that are instrumental in creating competitive quality within the system. Propositions that describe the primary relationships of interest are provided to summarize each potential role contribution.

**Input-Focused Customer Contributions**

**Customer as resource.** Resources are defined as physical, informational, and/or intangible raw materials provided for use in transformation or production processes (DeGreene, 1973). Barney (1991) argued that resources that are valuable, rare, imperfectly imitable, and for which there are no strategically comparable substitutes can lead to a sustainable
competitive advantage. Valuable resources enable a firm to either exploit opportunities or avoid threats. Rare resources enable firms to either develop unique strategies or implement strategies in unique ways. Complex resources created by unconventional means are difficult to imitate. Although Barney concentrated on resources within a firm, it seems reasonable to extrapolate that if customer-supplied resources are valuable, rare, and imperfectly imitable and have few comparable substitutes, they could make an important contribution to transformation quality and competitive results.

A review of prominent quality programs (e.g., Deming, 1986; Garvin, 1988; Juran, 1988; Schuler & Harris, 1992) reveals that customers are rarely, if ever, included in a list of crucial resources. However, as Schneider and Bowen (1995) explained, if organizations treat their customers only as end users, they will lose out to other firms that involve their customers in a variety of roles that expand and deepen the relationship. Similarly, Ulrich (1989) encouraged firms to build an interdependent relationship with customers to foster customer commitment and loyalty. Clearly, there is a missed opportunity in terms of customer resources.

As a resource, the most well-documented customer role has been to supply information and/or wealth (e.g., Mills et al., 1983). Expanding on this idea, customer inputs can include any of the factors of production: capital, natural resources, ideas, or any tangible or intangible contribution to production activities. In human service settings (e.g., health care, consulting, and education), customers are the essential raw materials for the transformation process (Lengnick-Hall, 1981; McDaniel & Morris, 1978). Because human change (e.g., getting well, changing behavior, learning new skills) is the purpose of such firms, the human client (e.g., patient, client, student) is the primary physical resource for the organization.

Dependence on customer resources is unavoidable in human service enterprises and in many personal service firms (e.g., hairdressers, fitness trainers). The more impersonal the service (e.g., dry cleaners, trash collectors), the more discretionary the number, intensity, and continuity of customer-resource contacts. In manufacturing settings, customers may be physically distant from production activities. Manufacturing firms typically have used their option of creating distance between themselves and customers to buffer core technologies (Bowen et al., 1989). However, the boundaries between services and manufacturing are becoming blurred as manufacturers seek to develop stronger relationships with customers (Chase & Garvin, 1989) and as services become automated and routinized to create efficiencies (Chase, 1978; Collier, 1983; Levitt, 1976). If responsiveness, customization, differentiation, and flexibility are key elements of a firm's strategy, then high customer contact even before production takes place can be a valuable resource for a firm (Bowen et al., 1989).

Many guidelines for managing resource suppliers to achieve enhanced quality can be applied to customer resources. First, resources should be deliberately chosen when possible. Selection should be based
on an ability to add value, rather than on price or convenience. Schneider and Bowen (1995) equated market segmentation with the selection of customer resources. Identifying customers who meet delivery schedules, pay on time, and have stable expectations can enable a firm to smooth out its transformation activities. Smooth transformations and high productivity contribute to competitive quality by lowering costs. Identifying unique customer resources can enable a firm to define a niche and develop customized products. Effective customization contributes to competitive quality because a firm can offer unrivaled benefits within a focused market segment (Garvin, 1988; Porter, 1985). In contrast, concentrating on convenient customer resources may yield unreliable information and market characteristics that are incompatible with a firm's capabilities. Inconsistency, idiosyncratic preferences, and capricious relationships between customer resources and a firm can undermine quality efforts by adding to the complexity and cost of transformation activities without creating a corresponding increase in value.

Second, customer resources should be managed to ensure they provide inputs that consistently meet organizational quality requirements. Formal delivery schedules, logistics procedures, and agreed-upon terms of behavior can be negotiated and planned. If customers provide information that is incomplete or inaccurate, or if they make commitments of funds or time that they do not meet, their inputs make quality more difficult to achieve. Well-suited resources contribute to quality by reducing rework and returns (Schuler & Harris, 1992) and creating high added value (Porter, 1985). As a prerequisite for effective management, then, firms should know a great deal about their customer resources and should consistently monitor the quality of their resources (Deming, 1986). For example, some customers provide inflated assessments of needs, and others underestimate the importance of information they have. Knowledge of these tendencies can be used to design input logistics that will benefit both the customer resource and the producer.

Two conditions must be met for customer-supplied resources to enhance competitive quality (Mills et al., 1983). First, information or other resources must be useful, and the producer must both understand and be able to process the resource. Second, the producer must have ideas and methods that enable the firm to act on the resource to create opportunities or avoid problems. Knowledge of customer-resource characteristics should assist with both of these requirements.

Customer-contact personnel can adopt strategies similar to purchasing agents for other important resources. Checklists of key customer-resource characteristics can be developed and used to record trends. Customer-contact employees can participate in technical assessment and quality analysis of customer-supplied resources as they are transformed (Schneider & Bowen, 1995). Let's assume customers indicate a preference for energy efficiency over quietness in dishwashers. This information might be used throughout the product design and manufacturing process
to make crucial decisions. If subsequent buying behaviors are inconsistent with this preference, the manufacturer might want to alter the selection of its customer resources or train its customers to improve the quality of the information they supply. Reports about successes and failures during production and delivery also enable organizational learning and improved process control. Suppose all customer resources (e.g., down payments on a house) channeled through a particular contact point (realtor) were correlated with rework (change in woodwork specifications, new wiring) and delays (rescheduled electrical walkthrough, inability to make timely decisions on paint) during production activities. These problems might signal a need for new verification procedures, increased training of contact personnel, a shift in reward systems for either employees or customers, or other changes to improve inbound logistics (Porter, 1985).

Third, as with other alliances, the relationship between customer resources and producers should be designed for stability, symmetry, and mutual benefit (Borys & Jemison, 1989; Kanter, 1989). Clear, comprehensive communication of expectations and consequences should be the norm (Garvin, 1988). Customer resources need to know how their actions and capabilities affect system activities. Recurrent problems result if firms (a) have low or inconsistent expectations, (b) are unwilling to confront suppliers regarding their expectations, or (c) fail to let customers know the consequences of poor resource quality (Garvin, 1988). Consider two copy centers, which have different practices regarding customer-supplied documents (inputs) that initiate work activities. One center will handle rush jobs occasionally, depending on the mood of the operator. No specific lead-time requirements are imposed. If requests are evenly spaced, no major problems occur, but if several people have large rush jobs simultaneously, (a) someone gets bumped, (b) no one knows how much lead time is necessary, (c) jobs that initially had long lead times get put off and become crises, and (d) everyone becomes irritated. A second copy center will guarantee 24-hour turnaround on any small job, but will never put a rush job ahead of a previously scheduled job. Customer resources know that if they wait until the last minute to provide requisitions, they had better hope (a) the machine is working and (b) no one else is in the queue. However, all participants in the second system know that if requisitions are supplied 24 hours in advance, they can count on the job being handled correctly and on time.

Fourth, it is often cost effective for a firm to invest in improving the quality of its customer resources (Schneider & Bowen, 1995). If a firm's key raw materials improve, the quality of transformation activities is also likely to improve (Deming, 1981). Investments in upgrading customer-provided resources such as information inputs (e.g., requests for unusual paper always placed in the upper left corner of the document), financial inputs (e.g., payments for completed jobs made on time), tangible inputs (e.g., documents accurately, completely, and clearly filled out), and intangible inputs (e.g., interaction with production employees who are pleasant
and create a positive work environment) can have a profound effect on transformation processes.

Communication skills are particularly appropriate targets for investment because the customer resource must be able to accurately and comprehensively transmit and receive information from a variety of other participants in the system. Customer resources must know what information is important, when it is needed, and how it will be used. If customer resources are able to clearly articulate their needs and how they will use a product, the need for redesign and rework is reduced. Together, these factors suggest the following proposition:

Proposition 1: Organizations can implement practices that deliberately select and carefully manage customer resources, foster an effective alliance between the firm and its customer resources, and improve the quality of customer resources. These actions are positively related to the competitive quality of production processes and outcomes.

Two important limitations on the selection and management of customer resources should be noted. First, the customer resource is also the intended market. Therefore, narrowing the vendor base, as is recommended by most quality-management programs, seriously limits potential buyers. Any potential customer who is not selected could also be a source of negative publicity that reduces interest among other potential customers. Moreover, many firms operate in an environment governed by politically or ethically based entitlements (Schneider & Bowen, 1995). Hospitals cannot reject an individual as a poor resource because he or she is unlikely to recover from an illness. Public schools cannot reject a child as a poor resource because of behavioral problems, limited abilities, or other attributes that seriously limit the potential for high-quality educational outcomes. Second, customer-resource variation cannot be eliminated. Although uniformity is a useful goal for many resources (e.g., steel pipes, chemical solvents), it is not a realistic goal when dealing with customers. Many enterprises are expected to deliver consistent and high-quality services despite both wide variation in resources and a very limited ability to establish and screen for quality standards in resources. Effective definitions of quality incorporate both resources and process variability that cannot or should not be controlled.

Customer as co-producer. Work is defined as the process of transforming inputs into outputs of greater worth (Hammer & Champy, 1993). Competitive quality requires both appropriately directed work activities and high levels of productivity. Organizations have been called upon to redesign work, redefine employee roles, and restructure the firm. This is accomplished by providing employees with information, influence, and feedback, enabling them to optimize their behavior and choices (Lawler, 1992).

In contrast, customer interactions with most firms have remained hierarchically determined by members of the producing firm. For them, access
to internal process data is limited, and access to organization units and employees is planned, rehearsed, and carefully controlled. Firms decide whether to respond to or reject customers' suggestions. Training and investment for customers are focused on how to use a product or service once it is purchased, rather than on relationship-building skills such as communication, decision making, or team building. The involvement and empowerment culture that has overtaken other parts of the system seems to have skipped over most customers.

Interestingly, the rationale for this omission is quite similar to the arguments given in the past against allowing lower level employees (a) to manage themselves and their peers and (b) to make decisions about their work. These are lack of trust, insufficient skills, competing objectives, and lack of interest on the part of the individual. The benefits that can occur when these objections are rejected and employees are given information, power, knowledge, and rewards are well known (Lawler, 1992). It is intriguing to consider what might happen if customers were given the same opportunity as employees to contribute directly to the work of an organization and to be accountable for ensuring high-quality outcomes. What might be gained by mirroring high-involvement internal choices and pushing significant amounts of information (about processes, quality objectives, results), knowledge (know-how regarding the work and the system), power (to act and make decisions), and rewards (benefits linked to results and contribution) beyond traditional organization boundaries to customers?

Throughout the quality paradigm, internal and external customers form a chain of means and ends that cross organization boundaries. Using the same frame of reference, it seems a reasonable corollary that individuals and groups can become internal and external employees as well. Bowen (1986) argued that if firms treat their employees as "partial customers" and attempt to meet their needs in a courteous and high-quality manner, these employees will feel free to meet the needs of customers. Perhaps, if customers are treated as "partial employees" and provided with the direction, ability, and motivation to contribute to production processes, they will feel free to more fully participate in producing quality outcomes.

The more customers are co-producers, the more influence they have on quality resulting from work activities. Work activities form a continuum from traditional manufacturing settings on one end to services performed directly by or on a customer at the other end. When services are performed directly on a customer, it is not possible to avoid some measure of co-production (Bowen, 1986; Lovelock & Young, 1979). In contrast, manufacturing settings may offer a choice regarding co-production.

Customers of manufacturers can participate either directly or indirectly in transformation activities or they can completely avoid participation. Direct contributions are most common between manufacturers and industrial customers (Garvin, 1988). An end user may participate directly in product design, production scheduling, quality assurance, and delivery. With the increased use of sophisticated information systems, customers
can initiate production in manufacturing facilities. Indirect contributions are also possible. Miller and Rein (1969) demonstrated that customers can participate in managerial decision making, personnel selection and performance appraisal, policy development, and the measurement of accountability. Similarly, Ulrich (1989) argued for involving customers in determining organization policies and practices as a vehicle for gaining loyalty and commitment.

Health care provides one useful example of work that is directly dependent on the efforts, knowledge, skills, and motivations of a customer. A pregnant woman and her coach can receive extensive training on the birth process, signals of problems, and actions that can be taken by the mother, her coach, or other health care personnel. Specific tasks are clearly assigned. Feedback options are rehearsed. The mother and coach are encouraged to practice appropriate behaviors and to develop clear communication signals. The customer's role as co-producer is recognized and capitalized on through investment in skill development and managed role responsibilities to enhance both interaction and outcome quality.

Most co-production roles have been investigated through human and professional service exchanges (e.g., Brickman & Lempert, 1976; Daniels, 1971; Haug & Sussman, 1969; Rosenthal, 1974), wherein production is irrevocably dependent on the knowledge, motivation, and experience of the customer (Fuchs, 1968). However, examples also have emerged regarding manufacturing. Chaparral Steel (Chase & Garvin, 1989) relies on customers to initiate tasks through electronic data transfer systems, to make design choices as members of product-development teams, and to directly assess employee behaviors. Publishers enable professors to design their own text, serving as quasi-editors in the production process. Toy companies routinely allow customers to "manufacture" their own bicycle, doll house, or swing set, rather than purchase already-assembled units. A key question is whether co-production activities in manufacturing settings are sometimes neglected because co-production is avoidable rather than because co-production would not lead to enhanced quality (Gersuny & Rongren, 1973). This question raises important boundary issues for customer-firm interactions. To the extent that quality is linked with conformance, the costs of co-production are likely to increase. If quality is linked to customization, however, the benefits of co-production become increasingly important. As Schneider and Bowen (1995) illustrated, many firms can create opportunities for customers to augment existing human resources, substitute for leadership from bosses, and serve as organizational consultants, thereby shaping a firm's definition of quality and directly contributing to quality achievements.

When customers are active participants in the work to be done, professionals are analogous to team leaders. They serve as coaches, teachers, and stewards (Senge, 1990). They provide resources (Deming, 1986), set standards (Garvin, 1988), and manage work flows (Lawler, 1992). The customer
as co-producer, however, must demonstrate self-leadership and self-management (Manz & Sims, 1980) in order to be an effective team member.

Three factors are key to effective co-production: the clarity of the task, the ability to do the work, and motivation to do the work (Bowen, 1986; Steers & Porter, 1975; Vroom, 1964). Lovelock and Young (1979) echoed these three factors and added the requirement of understanding the determinants of consumer needs and concerns as a prerequisite for designing effective co-production systems.

How might customers become more effective co-producers of competitive quality? First, if customers know what they are expected to do and how they are expected to perform, they are more likely to do what is needed (Bowen, 1986; Mills et al., 1983). This means the specific roles, contributions, boundaries, and avenues for co-production should be clear, familiar, and consistent. Schneider and Bowen (1995) suggested realistic previews as one way to make customers aware of their co-production roles. For example, patients who are provided with realistic previews of upcoming surgery and instructed on what to do before, during, and after the operation recover more quickly. As another example, virtual reality technology allows customers to test design choices during production of products ranging from automobiles to jet aircraft.

Second, the more customer-worker abilities are consistent with production needs, the more customers will be able to contribute (Schneider & Bowen, 1995). Training in basic work activities provides a foundation for the customer worker to make an effective contribution (Lovelock & Young, 1979). Training in interpersonal and team activities is also important (Mills et al., 1983). The more co-producers know about work processes, the more likely it is they will make useful, cost-effective suggestions and engage in productive behaviors. Reduced costs and enhanced productivity are keys to competitive quality. Ongoing critique of performance is also essential (Lawler, 1992), because without knowledge of results, it is impossible for customers to take corrective action.

Third, customers must be motivated to engage in co-production. Applying employee-ownership concepts of equity, information, and influence to customer workers (Pierce, Reubenfield, & Morgan, 1991) can generate strong commitment and appropriately directed efforts, which have two benefits. Commitment can increase motivation toward co-production and toward outcome quality, and commitment can raise switching costs for the customer, providing a more stable customer population. Stability, in turn, can lead to more effective process and product improvement as customers learn the system. Schneider and Bowen (1995) identified several possible incentives for co-production: (a) productivity increases that result in lower prices, (b) increased self-esteem because of increased control, (c) more discretion and opportunities to make choices, (d) shorter waiting times, and (e) greater customization. Lovelock and Young (1979) used these ideas to identify potential co-producers. Thus, if customers are waiting for service, there may be something they could do to speed the delivery
process. If employees are doing mechanical, repetitive work, perhaps it
could be done by customers, which will reduce the cost of production.

Both reengineering concepts (Hammer & Champy, 1993) and virtual
corporation prototypes (Davidow & Malone, 1992) suggest moving work
beyond the traditional boundaries of a firm. Many service experiences
(Bowen, 1986; Chase, 1988; Mills & Moberg, 1982) and recent observations
of successful manufacturers (Bowen et al., 1989; Chase & Garvin, 1989)
suggest that customer co-producers are an effective way to increase pro-
ductivity and quality. These factors lead to a second input-related propo-
sition:

Proposition 2: Organizational practices can provide clear
opportunities for co-production, enhance customer abili-
ties as co-producers, and increase customer motivation
toward co-production. These actions are positively re-
lated to the competitive quality of production processes
and outcomes.

However, three caveats should be noted. First, co-production is not
cost free. Often, customer involvement raises the level of uncertainty in
production activities. Chase and Tansik (1983) argued, for example, that
decoupling organization and customer relationships can improve effi-
ciency. Bowen and Jones (1986) suggested using transaction cost analysis
to examine the boundaries of efficient and effective co-production. Co-
production activities must be carefully governed for the benefits of
customer-worker contributions to outweigh the costs of increased uncer-
tainty in the system. Second, despite opportunities for selection and train-
ing (Schneider & Bowen, 1995), firms do not have the same degree of
freedom regarding customer co-producers as they often have with employ-
ees. For example, regular contact may not be maintained with customers.
“Firing” a customer worker alters the demand for a product or service
more directly than firing an employee is likely to do. Third, customers
may abdicate their role as co-producers (Solomon, 1986). Some customers
may prefer firms that do not place additional burdens upon them. This
preference suggests that the willingness of customers to act as co-
producers is context dependent. Thus, co-producers are not the same as
employees, but the many parallels between these two groups can be more
fully exploited.

Relationship between customer resource and customer co-production.
As resource contributions from customers expand, opportunities to apply
these inputs directly to work activities also increase. Similarly, as co-
production enlarges work contributions, opportunities to identify and pro-
vide useful resources also grow. Customer resources and co-production
create a potential core competence for a firm that can significantly influ-
ence transformation activities. The reciprocal relationship between sup-
plying resources and co-production makes this competence unusually dif-
ficult to imitate. The combined relationship, thereby, presents a powerful
option for creating competitive quality. These factors lead to the following proposition:

Proposition 3: Efforts to enhance both customer resources and customer opportunities for co-production offer a way to achieve noteworthy gains in competitive quality.

Output-Focused Customer Contributions

Outputs are defined as goods, services, applications, personal state changes, behaviors, and transactions that result from a transformation process (DeGreene, 1973). Outputs are the consequences of manufacturing activities or service processes. Three types of customer-oriented output categories are important to consider when evaluating system quality: acquisition, use, and ultimate conversion. Integrating diverse literatures is particularly challenging when dealing with system outputs because the same terms are used in quite different ways by different researchers. Two terms, perceived quality and customer satisfaction, are particularly ambiguous. This article uses Garvin’s (1988) concept of perceived quality. He defined perceived quality as inferences about the excellence of a product or a service based on images, advertising, reputation, affiliation, and similar indirect measures of comparison. Garvin (1988) distinguished perceived quality from direct measures of quality. Garvin’s definition is consistent with the definitions of researchers who consider perceived quality as an enduring impression (Holbrook & Corfman, 1985; Olshavsky, 1985) of the relative superiority of an organization and its products and services (Taylor & Baker, 1994).

Customer satisfaction is defined here as the after-purchase judgment or evaluation of a specific product or service (Oliver, 1980, 1993; Olshavsky & Miller, 1972; Olson & Dover, 1976). In this article, customer satisfaction means the gap between expectations and actual experience, as illustrated in Hamel and Prahalad’s (1995) recommended breakthrough strategies.\(^1\) In this article, satisfaction judgments are influenced both by affective responses and by cognitive confirmation or disconfirmation of expectations (Oliver, 1993).

There is general agreement that there are two distinct constructs (Claycomb & Mowen, 1992). Particularly with product and service bundles, customers can associate high perceived quality with parts of the product but be dissatisfied with the overall experience (Lovelock & Young, 1979). Likewise, as Garvin (1988) suggested, a product can have high perceived quality along a dimension a customer cares little about, which yields a very limited effect on customer satisfaction. To contrast the two concepts as used here, perceived quality is a global, indirect, often comparative assessment based on ideals and does not require any purchase or service

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\(^1\) Many marketing scholars (e.g., Parasuraman et al., 1985) refer to this same gap as perceived quality adding to confusion in integrating bodies of knowledge.
experience (Taylor & Baker, 1994), whereas customer satisfaction is situation specific, based on affect and objective measurement, and takes place during or after use.

The relationship between these constructs has been actively debated. Bittner, Booms, and Tetreault (1990), for example, viewed customer encounter satisfaction as an input to perceived quality. Claycomb and Mowen (1992), in contrast, argued that perceived quality precedes customer satisfaction. This article does not try to resolve the debate but links perceived quality with the purchase decision (reflecting the comparison of options) and links customer satisfaction to the user experience (reflecting after-purchase judgment). An interactive relationship between perceived quality and customer satisfaction over the long term is assumed (Anderson, Fornell, & Lehmann, 1994).

**Customer as buyer.** Regarding the customer's role as buyer, a key interest is converting potential customers into actual customers. Although intention to buy is the result of many factors, two of the most important are perceived quality (Garvin, 1988; Perkins & Reynolds, 1988; Taylor & Baker, 1994) and the relationship that has been developed between the potential customer and the producing firm (Evans & Laskin, 1994; Morgan & Hunt, 1994; Peppers & Rogers, 1995). Potential buyers are more loyal and more likely to purchase a product or service if they believe it meets their needs precisely and they will get a good return on their investment (Perkins & Reynolds, 1988; Porter, 1985). Because customers often lack complete information about product or service attributes, they rely on reputation, image, and similar dimensions of perceived quality to make purchase decisions (Garvin, 1988; Gronroos, 1994). Even associations such as country of origin influence perceptions of quality (Pendleton, 1983). Of the factors that shape perceived quality, managers can exert the most direct influence through a firm's external communications, including pricing decisions (Zeithaml et al., 1990), reputation or image (Garvin, 1988), and differentiation strategies (Porter, 1985). Perceptions of quality can be quite different from the tangible reality of features, options, and performance (Berry et al., 1988; Bitner et al., 1990; Zeithaml, 1988).

Nissan Motors has capitalized on the importance of perceived quality by developing an infomercial aimed at helping women become more astute car buyers. Nissan is trying to shape potential customers' definitions of quality and perceptions of Nissan products. It is also trying to develop a pre-purchase relationship with potential customers by helping them through a challenging decision process.

Morgan and Hunt (1994) argued that the relationship established between producers and potential customers can have a profound effect on perceptions of worth. Also, Magrath and Hardy (1994) provided anecdotal evidence that bonds between customers and firms create both improved perceptions of quality and reduced costs. Finally, relationship marketers have argued that because perceptions of quality are subjective and change over time—as needs, circumstances, and alternatives shift—the
relationship developed between a firm and its customers can be essential for competitive advantage (Gronroos, 1994; Gutman, 1982).

What are some of the key factors that affect the relationship between a firm and potential customers? Forces such as trust, familiarity, devotion, and friendship can facilitate relationship building (Bounds et al., 1994; Bowen & Jones, 1986; Evans & Laskin, 1994; Nayyar, 1990). As noted previously, psychological ownership (Pierce et al., 1991) can be the basis for an enduring association, and formalized, multidimensional, repetitive exchanges can build alliances (Freeman, 1984). A firm’s structure, decision-making processes, and human resource management practices can affect the relationship between buyers and sellers (Perrien & Ricard, 1995). This line of thought implies a potential link between co-production activities and relationship marketing.

The Beech Aircraft division of Raytheon attempts to foster both relationships and perceived quality by encouraging prospective buyers to tour its assembly facility. The tour allows customers to observe first hand the caliber and dedication of employees, the detailed and sophisticated manufacturing and control processes, and the pride employees have in their work and its results. “Beechcrafters” believe the more customers know about their organization, the more likely they are to buy their airplanes rather than competitors’ products.

Relationships with actual customers can be shared directly (e.g., by word of mouth) or indirectly (e.g., through general reputation) with potential customers. Also, as illustrated by Nissan’s infomercial, firms can attempt to forge a direct relationship with potential customers prior to any purchase. Recognition of the influence that both perceived quality and a customer’s relationship with a producer can have on buyer behaviors leads to the following propositions:

Proposition 4: External communications that create sources of product/service differentiation, augment the firm’s reputation, and enhance the product/service image contribute to an enhanced perception of quality that augments the competitive quality of the system.

Proposition 5: Organizational activities that foster trust, develop interdependence, share information, and initiate friendly, mutually beneficial customer-organization bonds create ongoing relationships between customers and the firm that enhance the competitive quality of the system.

Several limitations are important to note. First, the affects of perceived quality are not uniform. Perceived quality seems particularly influential when information about a product or service is incomplete or cannot be observed directly (Garvin, 1988). This relationship suggests that new products or services are particularly sensitive to perceived quality issues. Evidence has emerged that the influence of perceived quality on buying
decisions is positively correlated with technical complexity and negatively correlated with consumer knowledge (Andaleeb & Basu, 1994). Thus, purchasers of financial services or automobile repair may be quite responsive to differences in perceived quality, but buyers of lawnmowers may not.

Second, although an interaction between a customer's relationship with the firm and perceived quality seems likely (Ganesan, 1994; Magrath & Hardy, 1994), the direction and magnitude of the relationship is not well understood. As researchers learn more about the antecedents and consequences of relationship marketing, they can expect to refine their understanding of customers as buyers. One caution is that only positive relationships have received investigation to date. It seems likely that a bad relationship between customers and a firm would probably have an equal, but negative, spillover.

Third, acquisition behavior is the result of many factors that are beyond the scope of this article. The stream of research investigating general acquisition behavior draws heavily from economics, marketing, and stakeholder analyses. These research streams offer key insights, but they also point out important areas for further inquiry. First, customers have greater power when they provide direct payment to goods or service providers and when the price is cleanly linked to a specific exchange (Bloom & Wilson, 1979). For example, a customer will have greater power in an exchange with an appliance-repair firm or lawn maintenance service than with a public school or government agency. Second, customers who have continuing relationships with a firm learn how to manage the exchange to their benefit (Danet, 1981). For example, regular users of emergency rooms learn the best times to arrive, how to present their needs, who to approach, and which symptoms to emphasize (Roth, 1972). Companies that lease fleets of automobiles develop interdependencies with automobile firms. Third, customers with direct, ongoing, multidimensional, formalized, mutually dependent, and important exchanges will have greater influence than customers with indirect, limited, narrow, informal, one-way, or trivial exchanges (Freeman, 1984). For example, buyers of blocks of season tickets will have more influence than the buyer of a single ticket to a specific event. Fourth, the perceived quality of a good or service will have a strong influence on a buyer's interest and persistence in efforts to obtain the good or service (Nayyar, 1990; Zeithaml, 1988). For example, individuals may wait all night to purchase a ticket to see Barbra Streisand in concert, but they may not be willing to pay $3.00 to see a local, unknown singer.

**Customer as user.** Considering customers as primary recipients, beneficiaries, and users of goods and services is the dominant perspective in most quality-management programs. As has been discussed, this is a crucial but insufficient view of customer roles. As users, customers can create two important outcomes. First, customers measure the gap between expectations and experience, thus determining customer satisfaction.
Second, customers can develop relationships with the producing organization that can augment the overall competitive quality of the system.

Regarding the issue of customer satisfaction, customers have a dominant voice in setting standards. Therefore, user satisfaction is often an overriding indicator of successful quality management. Customer users expect clear benefits for their expenditures. Thus, user-based definitions of quality start with the idea that quality is in the eye of the beholder.

Two views are presented in the marketing literature on customer satisfaction (Yi, 1990), that is, (a) customer satisfaction is an outcome (e.g., Tse & Wilton, 1988) and (b) customer satisfaction is an experiential process (e.g., Oliver & DeSarbo, 1988; Westbrook & Reilly, 1983). There is no attempt to resolve the issue in this article. Rather, according to the model presented here, customer satisfaction is considered as one important result of a user experience. This idea is consistent with Oliver's (1993) definition of customer satisfaction as an after-purchase judgment. During product use or service consumption, customers compare what they experience with their expectations. For this article, if the comparison meets or exceeds expectations, the result is a high-quality outcome that yields customer satisfaction (Parasuraman et al., 1985).

Shaping expectations through careful signaling and reliable external communications emerges as a critical factor for improving the match between expectations and experiences. Information accomplishes two things. First, it enables users to take full advantage of all the potential benefits embedded in a product or service. If a customer can't figure out how to sequentially program a new VCR, for example, the full benefit of even a high-quality product will not be realized. Second, communication enables users to make wise selection decisions. Just as realistic job previews (Wanous, 1980) improve the odds for lower employee turnover and higher satisfaction among new hires, realistic expectation previews can reduce product returns and improve the chances of customer-user satisfaction.

Well-managed post-production communications are only one means for shaping expectations in ways that lead to high levels of user satisfaction. Knowledge about constraints, realities, and flows of system processes can help a customer user to develop expectations that are clear and challenging but achievable. Clear and challenging goals are a crucial step in achieving performance that leads to high satisfaction with outcomes (Locke & Latham, 1984). System knowledge can help customer users to intelligently plan their interaction with goods or service providers. Knowledge of the system can enable users to influence transformation and delivery processes to better meet their needs. Customer expectations are dynamic. Many production and service delivery processes rely on complex and uncertain technologies. Therefore, adaptability is a fundamental part of achieving outcomes of high satisfaction. Knowledge on the part of the customer user can be a key factor for initiating smooth and effective changes in transformation processes and outcomes. This knowledge re-
quirement suggests a potential link between co-production and user satisfaction.

Key factors that can be managed by an organization to increase the likelihood that a user experience will yield high levels of customer satisfaction include (a) having unambiguous communication with users; (b) meeting customer needs, not just expectations (Coyne, 1989); (c) offering realistic service previews (Schneider & Bowen, 1995); (d) consistently achieving dimensions of quality that customers truly care about (Garvin, 1988); and (e) investing to ensure that actual use is consistent with intended use (Porter, 1985).

Of perhaps even greater benefit is the second user issue: developing a relationship between the customer user and the producer firm that can potentially enhance the competitive quality of the enterprise (Chase & Garvin, 1989). Customer users are uniquely qualified to provide manufacturers and service providers with crucial information about what worked as they used the product or service. In other words, customers can readily troubleshoot product design flaws. These insights can help the producer with redesign needs, maintenance requirements, repair demands, and replacement expectations and can increase the overall competitive quality of the production process and its outcomes. The partnership benefits both the firm and its customers. People who make a product are often more knowledgeable about performance, variability, and repair than service technicians (Chase & Garvin, 1989). These issues are important in the customer's value chain (Porter, 1985). Factories can demonstrate the use of products, technology, services, and systems that the company sells (Chase & Garvin, 1989). Thus, factory personnel and core service employees can assist customers in gaining the full value from their investment. In summary, then, developing a relationship between core production personnel and customers can increase the knowledge and expertise of both groups and can lead to enhanced performance quality throughout the system. These arguments lead to the following propositions:

Proposition 6: Organizational activities that foster unambiguous communication with users, focus on meeting customer needs, offer realistic previews, achieve dimensions of quality that customers truly care about, and ensure that actual use is consistent with intended use contribute positively to customer satisfaction, which, in turn, enhances the competitive quality of the system.

Proposition 7: Organizational activities that create opportunities for direct communication and interaction between users and production/core service personnel increase the quality of production processes and outcomes, which, in turn, enhances the competitive quality of the system.

Three important limitations should be acknowledged. First, maximizing customer satisfaction is not always an appropriate objective.
Researchers have begun to recognize that traditional views of customer satisfaction must be balanced with preferences of other important constituent groups (e.g., third-party payers, taxpayers, intermediate customers, other demands for resources, investment needs). The satisfaction of a chemical firm's agricultural customers, for example, must be balanced against the satisfaction of local residents facing pollution through runoff from fields treated with herbicides and the satisfaction of its nonagricultural customers. In addition, customer-user satisfaction is often constrained by scarcity and ethical considerations. Maximizing satisfaction for a single customer-user group is unlikely to be a beneficial goal for the long term.

Second, developing relationships between users and production employees can be disruptive, as was noted in the discussion of co-producers. However, under conditions of high environmental uncertainty, the benefits appear to outweigh these costs (Bowen et al., 1989). When the marketplace is uncertain or turbulent, differentiation strategies (Hambrick, 1983) and flexible, quick responses (Swamidass & Newell, 1987) are particularly important capabilities. Therefore, further examination of the costs, benefits, and conditions favoring stronger alliances between producers and users seems warranted.

Third, the literature is ambiguous regarding the relationship between expectations and satisfaction. Careful attention by researchers to construct validity and context-dependency issues is needed.

**Relationship between customer user and customer buyer.** Both Juran (1986) and Feigenbaum (1983) referred to an escalating threshold of quality expectations. Locke (1976) described a similar phenomenon in his discussion of affects of satisfaction and percept-value discrepancies. Accordingly, as customers experience satisfaction from using a product or service, or as firms develop a reputation for quality, customer expectations are likely to change. Thus, the level of quality needed to satisfy users who have been delighted in the past is likely to be greater than the quality needed to satisfy those who have been disappointed. Likewise, the level of quality needed to meet customers' expectations for products with high perceived quality is likely higher than for a product or service with lower perceived quality. Combined, these factors suggest the following proposition:

> **Proposition 8:** An interaction occurs between perceived quality and experienced customer satisfaction that, over time, shapes what customers expect.

**Customer as product.** For many goods, both the tangible product and the more intangible interaction or experience are important outcomes (Beckman, 1987). Even though it is possible to distinguish many products and services from the customer (e.g., a car's fuel economy, color, and number of doors are distinct from a customer's age, income, and gender), human and personal service experiences and customers are by necessity
more interwoven (Beckham, 1987; Zeithaml et al., 1990). As products are increasingly bundled with service components, the neat separation between product and interaction experience can become blurred (Lovelock & Young, 1979). Strategic pressures also provide an incentive to blur traditional distinctions between manufacturing enterprises and service organizations (Bowen et al., 1989; Chase & Garvin, 1989). One consequence of this trend is that the ultimate outcome of the transformation system may be a change in behavior or condition of the customer. In such situations, the customer both experiences transformation activities and becomes the final stage of the transformation process.

The relationship between customers and other tangible and intangible system outputs is a continuum with complete separation of the customer and other transformation outputs on one end (e.g., manufacturing a steel I-beam to standardized specifications), some measure of integration between tangible outputs and customer experiences (e.g., food service) in the middle, and a change in the customer's state or behavior as the primary system output (e.g., becoming an effective teacher) at the opposite end. In this latter case, the work of the producing firm is not complete until a customer not only uses the intermediate product or service but also changes as a result.

This continuum raises some interesting issues. Assessing competitive quality is more complicated when a change in the customer's state or behavior (such as with computer applications, cosmetics, training programs, and mutual fund investments) is the ultimate objective for system output. A need to signal product quality is a familiar requirement, particularly for those products competing on differentiation (Porter, 1985), but few methods have been developed to enable and encourage customers to signal their own unique transformations. Many personal products and professional services recognize the need to indicate changes in the customer as the ultimate outcome as commercials for diet programs, personal hygiene, and mental health clinics illustrate. The implications of this concept are gaining attention in public services, as demonstrated by outcome-based educational assessments and outcome criteria for continued public assistance. The key question is where the line indicating the end of the transformation process should be drawn for any product or service. If customer changes are an integral part of product/service quality, shouldn't the customer's ability to demonstrate such change be one of the criteria used to assess the overall quality of the transformation system? AACSB accreditation criteria certainly suggest that this is the case. Do changes in a customer's state or behavior become the dominant benchmark and advertising vehicle around which a firm develops its marketplace appeal? The Nike "Just do it!" campaign adopted this perspective. The reputation of consultants often rests on their ability to change individuals and firms. Advertisers have used customers' fantasies of change (buy this product and you'll be respected, beautiful, cool) for a long time. However, if actual change in a customer's state or behavior is incorporated
into our everyday concept of systemic work processes, achieving and measuring customers' outcomes becomes crucial to evaluating the system.

What kinds of changes are appropriate to consider and measure? Beginning with strategic management perspectives, Porter (1985) argued that price premiums depend upon a product's actual impact on the buyer's performance. In an industrial setting this means premiums are paid for products and services that effect a buyer's cost structure or a buyer's ability to distinguish its products from competitors. Organizational theory and psychology suggest that researchers should consider organizational or individual performance. Reengineering efforts (Hammer & Champy, 1993), for example, are assessed in terms of improvements in resource utilization, quickness, and profitability. In professional service settings, performance often means impact on an individual's efficiency and effectiveness. In the personal service arena, performance typically equates to changes in appearance, feelings, mental models, or abilities.

An incentive to change can be initiated through two channels: (a) purchase of a product or service and (b) use of a product or service. Kotter and Schlesinger (1979) identified at least five factors that influence an individual's reaction to a stimulus for change: (a) whether the change will lead to personal gain or loss, (b) understanding of the change, (c) trust in the initiators of change, (d) agreement with the change, and (e) personal characteristics such as confidence and flexibility. Both a customer's role as buyer and a customer's role as user can affect these five factors. Buyers' issues can influence a customer's intention to change so that all potential benefits are gained from a product or service. Consider, for example, a manager who attends a free, in-house afternoon seminar on time management. Although some of the ideas may be interesting, there may be little incentive to change long-standing behaviors and little cost in failing to realize a change. In contrast, a manager who invests $700.00 of his or her own money and two days of travel time to attend a seminar on time management has a much greater incentive to adopt a change in personal time-management activities in order to rationalize the purchase. In this case, failure to capitalize on the investment of time and money is seen as squandering resources. Often the higher the perceived quality, the greater the incentive to invest in a product or service (Garvin, 1993; Porter, 1985). Personal investment is typically correlated with goal acceptance and goal commitment (Locke, Latham, & Erez, 1988). Therefore, a large investment can promote a strong motivation to obtain full use and benefit from a product or service.

The relationship between firms and customers also can be important. Relationship marketing attempts to create positive regard between a firm and its customers, fostering trust and the potential for mutual gains (Ganesan, 1994; Magrath & Hardy, 1994). Also, user relationships provide customers with valuable insights regarding potential benefits, opportunities for change, and effective ways to accomplish personal changes (Chase & Garvin, 1989).
Customer satisfaction also is expected to enhance a customer's potential for change. Reinforcement theorists (e.g., Skinner, 1969) suggested that people are likely to repeat behaviors that result in desirable consequences. Therefore, if a customer achieves satisfaction from using a product or service, it is reasonable to expect use to continue. Repeated use of a product or service increases the probability that some change in the customer's state will occur eventually.

Multidimensional and long-term use of intermediate system outputs (i.e., purchased goods and services) offers the potential for widespread changes in a customer's state or behavior. When such changes occur, they can be the ultimate indication of system performance. However, similar to transfer of training effects, customers must know what to do differently, be willing to change, be able to alter their state or behavior, and actually implement new actions in order for customer-product outcomes to occur. These ideas lead to the following two propositions:

Proposition 9: High perceived quality of a good or service and a strong relationship with the customer are positively related to a customer's motivation to change as a result of purchase, which, in turn, leads to enhanced competitive quality of the system.

Proposition 10: The level of customer satisfaction a user experiences is positively related to the likelihood that a customer will change as a result of product or service use, which, in turn, affects the competitive quality of the system.

A number of limitations are important to consider. First, although acquisition and use are necessary, neither one is sufficient to guarantee a change in a customer's behavior or state. At times, acquisition alone triggers a behavioral change. First-time car buyers, for example, generally increase the amount of time they spend driving. In other circumstances, acquisition does not result in behavioral change. Many people purchase home exercise equipment that gathers dust but does not change their fitness level. At times, use triggers a change in a customer's state. Diligent use of medication can result in improved health, for example. However, use alone may not be enough to bring about change. Customers may use a money-management program to track their finances, but unless they also alter their buying and saving practices, their wealth will not increase. Goods and services that are underutilized, used inappropriately, or used briefly and discarded rarely lead to changes in a customer's state or behavior. For customers to be an effective product, they must view themselves as the final step in the transformation process. This means firms must think beyond sales and service to design ways to encourage, facilitate, and reward customers for making personal changes as a result of purchasing and using the intermediate outputs they produce.
The customer as product is not appropriate for all firms. Even though many firms advertise the transformations possible from their products and services, it is unlikely that all such firms truly expect these changes to occur (e.g., Pepsi, Waverest Waterbeds). The limits for this customer role are in the early stages of exploration. An item or experience that is transformational for one individual may have little effect on another person (e.g., a symphony, Ben and Jerry’s ice cream, the Internet). It appears that the customer as product is an interaction among the person, the product or service, and the situation, but work is needed to clarify the boundaries for this role.

Finally, it must be recognized that not all changes are positive. Customers can receive bad haircuts. Customers can react to video games with increasing violence. Some products (e.g., a handgun) arguably lead to primarily harmful outcomes. Even though examining the direction of change is beyond the scope of this article, it is important to note that change can be any direction.

**DISCUSSION AND IMPLICATIONS**

This article argues for a redefinition of customer orientation from relying on customers to merely define their preferences and evaluate what firms provide to designing systems that involve and empower customers throughout the input-transformation-output system. An expanded concept of customer orientation parallels the expanded definition of quality presented in Cameron’s (1994) work. He argued that four building blocks of competitive quality are (a) continuous improvement, (b) a systemic perspective, (c) teamwork, and (d) customer orientation. There are many ideas, resources, and strategies for achieving the first three elements. However, as he observed, there is little in the way of theory or techniques to help firms move their customer orientation beyond narrow boundaries. An expanded view of customer roles throughout the system is a first step toward developing sustainable competitive quality through customers.

Advantages of this perspective are great for both researchers and managers. From a research perspective, defining customer roles and potential contributions in new ways opens new avenues for theory development and inquiry. Do firms that empower customers to contribute as resources, as co-producers, as buyers, as users, and as products, that invest to improve customer performance in these roles, and that actively manage the relationship outperform firms that relegate customers to more limited interactions? Are some roles more important than others? Do firms that give customers disproportionate power over choices and process become unbalanced and thus perform less well than firms that maintain a balance among conflicting stakeholder concerns? What are the boundaries of effective customer involvement? Answers to these questions are important for the foundations of strategic management theory.
This conceptualization also raises important questions regarding service and manufacturing operations. Many scholars have highlighted the distinctions between goods and services and have underscored the implications of these differences for assessing various dimensions of performance (e.g., Schneider & Bowen, 1995; Zeithaml et al., 1990). Other scholars have examined the similarities between manufacturing and service operations (Bowen et al., 1989; Chase & Garvin, 1989) and have considered ways to import solutions from one setting to the other. A useful avenue for further research will be to specify and test (a) the conditions under which manufacturing and service enterprises should be considered part of the same contingency set and (b) the conditions under which findings from one setting should not be generalized to the other.

A particularly important issue that appears to distinguish service settings from manufacturing settings is the degrees of freedom available in co-production. Personal and human services offer little choice but to try to overcome costs associated with co-production. Some manufacturing firms may not even consider co-production because it is not mandatory. Not all manufacturing firms that assess co-production options determine that the benefits outweigh the costs. The underlying conditions that make co-production mandatory versus discretionary and that shape a cost-benefit assessment of co-production seem to warrant further study.

The boundary conditions for various elements in the model are worthy of examination. Research to test the relative value of customer-resource characteristics for different process contingencies (e.g., quickness, flexibility, knowledge based vs. material based) could prove useful. Research to examine the extent to which premises that guide the design of high-involvement workplaces transfer to co-production activities could provide valuable insights. Tests of the relationships among perceived quality, product use/service consumption, and customer satisfaction could advance our understanding of consumer behavior. Establishing groundrules for viewing customer change as the end of the production cycle and developing effective ways to measure changes in the customer would advance knowledge of the entire system.

The measurement and research design issues associated with this conceptualization are challenging. The process described is dynamic and often reciprocal. Construct validity will be difficult to establish for many of the concepts, particularly those that cross traditional discipline boundaries. The curvilinearity of at least some of the anticipated relationships also raises complex measurement issues. Because it is most appropriate to measure both characteristics of a firm and characteristics of its customers, unconventional research partnerships seem to be required.

From a managerial point of view, this conceptualization suggests many specific actions that can be taken to encourage and facilitate customer contributions to competitive quality. Investments can be made to enhance the basic resource quality of customers. Customers can participate directly in management decisions and production activities. Customers
can assume leadership roles within the system. Customers can be instructed on process choices, activities, and consequences so that they are more realistic buyers and users of a firm’s products and services. The magnitude of change in a customer as a result of acquiring or using a firm’s output can be measured and assessed as the completion of production processes.

There are also limitations to the application of this model. An interactive definition of customer orientation is most appropriate for situations in which a firm and its customers can agree upon target quality objectives and collaborate to achieve a win-win situation (Covey, 1989). Some provider-customer relationships are deliberately adversarial. It probably does not make sense, for example, to measure the experienced satisfaction of an individual undergoing an IRS audit as a primary means to assess the audit quality. A “high-quality outcome” would likely be defined quite differently by the service provider and the service recipient in this situation. In fact, collaboration would be viewed as a conflict of interest.

Some provider-customer relationships are noted for the number and diversity of stakeholder interests. Although this model suggests avenues for involving various customers and other stakeholders in system activities, it does not offer guidance for reconciling competing goals. How, for example, is the system changed when some customers are involved throughout the transformation process while others have more restricted access? This raises both ethical and pragmatic questions.

The relationship between customers as means and customers as ends must be carefully managed. There is a tremendous potential for customers to influence the system in either positive or negative ways. Miller (1990) described this as momentum. Traditional customers have the potential for perpetuating and amplifying their roles, contributions, and perspectives to the exclusion of other important stakeholders. In addition, the composite effects of customers as means and customers as ends should be considered. Participation studies (e.g., Cotton, Vollrath, Frogatt, Lengnick-Hall, & Jennings, 1988) suggest that if customers develop long-term, formal, influential relationships and become contributors to a process, they will be more likely to act on the outcomes and be satisfied with results. Leadership guidelines (e.g., Covey, 1989) suggest that activities should “begin with the end in mind.” Therefore, if customer-acquisition characteristics, utilization behavior, and potential for personal change are incorporated in process design, it is expected that rework, errors, and failures will be reduced and valuable dimensions of quality will be highlighted. However, goal-setting studies (e.g., Etzioni, 1964) warn against means-ends displacement, in which the means to achieving ends become ends in and of themselves. A customer orientation should not overpower other systemic concerns.

Finally, it should be recognized that not all customers can effectively serve in all five role capacities. Also, not all work can accommodate customer interventions throughout the process. Appropriate boundaries for customer involvement should reflect deliberate decisions regarding the
costs and benefits of greater inclusion. Issues such as the customer's expertise, transformation process sensitivity, and customer motivation should be carefully considered. However, most current practices do not appear to be even approaching the outer limits of potential customer contributions to competitiveness. Current practice often reflects the assumption that if customer involvement in transformation activities is discretionary (as it is in many manufacturing settings), it should be avoided. Current practice often implies that only if customer involvement is unavoidable (as in many personal services) should a firm consider ways for customers to contribute to co-production. Similarly, there is a fair amount of rhetoric surrounding customer change as the result of using a good or service, but few transformation-process evaluations extend that far beyond a firm's boundaries. Perhaps through strategic alliances, work-team partnerships, improved knowledge of application options, and investment in developing customer capabilities, quality-management processes will reorient the role of customers just as they have reinvented the work of employees, managers, suppliers, and technologies.

REFERENCES


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