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The 3R framework: Improving e-strategy across reach, richness, and range

John D. Wells
Assistant Professor of Management Information Systems, Washington State University, Pullman, Washington (wells@cbe.wsu.edu)

David H. Gobeli
Professor of Management and Marketing, Oregon State University, Corvallis, Oregon (gobeli@bus.orst.edu)

Identifying effective strategies for designing and implementing e-business initiatives has been a persistent challenge for both practitioners and academicians. A conceptual framework is needed for leveraging digital attributes based on three dimensions: reach, richness, and range. By defining and combining these dimensions to create such an integrated e-business strategic framework, this article provides executives and managers with a way to initially assess their current e-strategy, as well as a prescriptive direction for strengthening it.

The recent dotcom failures have triggered considerable debate among practitioners and academicians on what constitutes effective e-business strategy, or e-strategy. A key challenge is understanding its fundamental characteristics and the relationship to a firm's overall strategy. Traditional strategy, simply put, is the set of decisions and actions executives use to achieve superior organizational performance, satisfy customers, and sustain competitive advantage. Information technology (IT) is one of the key areas for enhancing business strategy, which is most often achieved by improving intra- and inter-organizational efficiency and effectiveness. With the emergence of e-business, IT has taken on a higher degree of strategic importance and is the cornerstone for enhancing the operations of traditional bricks-and-mortar businesses as well as creating revolutionary new business offerings, such as eBay.

Rayport and Jaworski (2001) identify a number of unique attributes that distinguish e-business from traditional commerce, leading many academicians and practitioners to infer that a similar distinction exists between the types of strategy deployed in each domain. Porter (2001) qualifies the relationship between e-strategy and traditional strategy by acknowledging the unique characteristics of the Internet as "an enabling technology," albeit as part of a firm's overall strategy. Understanding e-strategy presents a firm with two key challenges. First, management needs to understand the unique characteristics of e-strategy and how they complement the overall strategy. Second, the strategic role IT plays in e-business needs to be examined and its unique attributes leveraged to attain and sustain competitive advantage.

Publications in both the academic and popular press have helped to clarify the complex nature of e-strategy. Three concepts—reach, richness, and range—have appeared in literature from several academic disciplines and have been cited for illuminating a number of issues related to e-business. Although they highlight several important issues, the current definitions for these three concepts are inconsistent across the various disciplines and lack the necessary clarity and cohesiveness for understanding the more complex issues related to e-business. Given the integrative relationship between IT and e-business, Evans and Wurster (1997) point to an opportunity for firms to apply these concepts to the digital characteristics associated with specific products and services. Clear and concise definitions of reach, richness, and range will allow firms to better understand and manage the digital attributes associated with a product or service and, as a result, formulate a more effective e-strategy. Our purpose is to provide such definitions and to present an integrated conceptual framework based on those dimensions—the 3R framework.

Three dimensions of e-business strategic positioning

What are these dimensions that define the different e-strategies and hence explain why many dotcoms were doomed to failure while others found the secrets of success? Reach, richness, and range provide an opportunity to understand which e-strategies are likely to fail and which are likely to succeed. However, depending on the viewpoint of a particular discipline (management, marketing, MIS, and so on), one encounters slight variations in how these dimensions are defined. These variations are addressed in **Table 1** and the following paragraphs.

Table 1
E-business strategic dimensions

	Reach	Richness	Range
Definition	The degree to which a firm can manage its value chain activities to connect its customers to an accessible product/service offering	The degree to which a firm can facilitate the exchange of information to deliver products/services that match customers' exact wants and needs	The degree to which a firm can offer its customers a value proposition containing a breadth of products/services
Low	Offline physical products and services	Pre-built, standardized products and services	Narrow set of products and services
High	Online digital products and services	Segment-of-one, customized products and services	Broad set of products and services
E-business opportunities	Online digital products and services	Tailored customer-to-firm interaction	Strategic alliances

Reach

At its most basic level, reach is the degree to which a firm can put customers in touch with products and services. It is established through the effective management of the primary *value chain* activities: supply chain management, production, distribution, sales/marketing, and customer service. From a strategic management perspective, Evans and Wurster (1999) describe reach in terms of "access" and "connectivity" and define it as "how many customers a business can connect with, and how many products it can offer to those customers."

Although this definition is useful in the context in which it was presented—navigational advantage—it is limited for two reasons. First, it includes the *breadth* of the product/service offering, a concept more applicable to range. To gain a better understanding of the true nature of reach, it is necessary to carve out range as a separate dimension. From a telecommunications perspective, Housel and Skopec (2001) define reach as the ability to "link directly to the firm's business processes and services," whereas range is the variety of information/content that is shared "directly and automatically across business functions and processes." Second, the use of *connectivity* and *access* requires further clarification. Evans and Wurster stress that reach is determined by the extent to which customers can connect to and access a firm's products/services. From a marketing perspective, Pride and Ferrell (1995) support the notion of *connection* by referring to reach as "the percentage of consumers in the target audience actually exposed to a particular advertisement." But a firm should also be able to provide *access* to its products and services. In other words, customers should not only be able to reach the firm, the firm should also be able to reach them.

Consider the traditional bricks-and-mortar environment, in which companies have experience at making their products/services accessible to their customers. McDonald's is able to market its offering through various channels, such as print media and television advertising. Reach, however, fundamentally depends on McDonalds' ability to provide its customers with access to products and services by distributing them via its network of physical stores. In reality, the essence of reach is not only the ability to market products and services, but also to get them to the customer, managing resources and capabilities across the entire value chain. Taking these issues into account, we offer the following definition:

Reach is the degree to which a firm can manage its value chain activities to connect its customers to an accessible product/service offering.

Richness

Evans and Wurster define richness as "the depth and detail of information that the business can give the customer, as well as the depth and detail of information it collects about the customer." But viewed from a broader perspective, richness presents a firm with an opportunity to exploit the potential customization of its products/services to more accurately meet customer needs. To manage customizable attributes efficiently, a firm must be able to (1) interact effectively with its customers to gather these attributes and (2) leverage them to deliver a customized offering.

To illustrate, the interaction between a local tailor shop and its customers is very rich. Individual customer preferences are observed and recorded to produce a customized clothing purchase. To manage this type of interaction effectively, the shop needs trained personnel able to offer customized treatment and record the specific information. It must also possess the resources and capabilities needed to make such customized clothing. Thus, companies must not only gather the necessary information for a customized interaction, they must also deliver products/services that meet specific customer preferences. Based on these issues, we offer the following definition:

Richness is the degree to which a firm can facilitate the exchange of information to deliver products/services that match customers' exact wants and needs.

Range

Given the rather ambiguous distinction between reach and range, and hence our earlier decoupling of the two, we can define range as the breadth of the product/service offering and how many products/services a firm can provide its customers. Housel and Skopec define range as different types of information/content that are shared "directly and automatically across business functions and processes." Simply put, a firm's range is its ability to offer variety to its customers.

Exploring this dimension allows a firm to assess the challenges associated with offering products/services that span the range from category-specific (narrow) to cross-category (broad). Depending on this relative narrowness or breadth, the challenges of managing these offerings have fundamental differences. Wal-Mart offers extreme breadth, but its degree of specialization or customization is very limited. Conversely, Dell has a more narrow set of products, but can offer a higher degree of customization. In both cases, Wal-Mart and Dell possess different resources and capabilities that dictate the relative narrowness or breadth of their products.

While the reach and richness dimensions are focused on the products/services that are directly managed within a firm's value chain activities, range can expand this focus to include any products/services associated with the overall *value proposition*. Keeney (1999) characterizes a value proposition as "the combination of end-result benefits and price to a prospective customer from purchasing a particular product." By creating strategic alliances with firms that offer complementary products/services, a company can expand its own range without assuming the overhead costs associated with managing the offering. Therefore, we propose the following definition:

Range is the degree to which a firm can offer its customers a value proposition containing a breadth of products/services.

The e-business strategic framework

Combining these three dimensions provides a conceptual framework containing eight distinct areas, as shown in **Figure 1**. Each of these areas has distinguishing characteristics, outlined in **Table 2**.

E-strategy can exist in two forms. It can simply be a complement to a firm's overall business strategy, or it can drive the overall strategy, allowing innovation on one or more of the three dimensions. Based on the chosen dimension(s) and the nature of the strategy, this framework provides several options for pursuing an e-strategy more effectively.

Figure 1
The e-business strategic framework

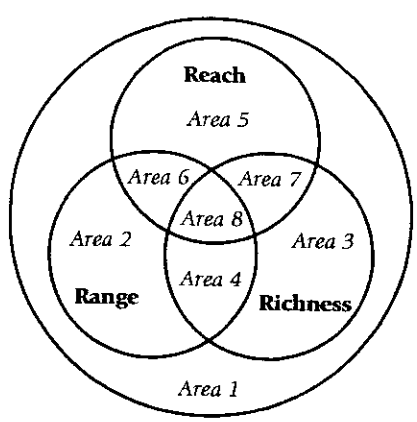


Table 2
E-business strategic areas

Area	*3R rating*	*Attributes*
1	▼Reach	Offline physical product or service
	▼Richness	Low customer-specific interaction
	▼Range	Narrow product/service offering
2	▼Reach	Offline physical product or service
	▼Richness	Low customer-specific interaction
	▲Range	Broad product/service offering
3	▼Reach	Offline physical product or service
	▲Richness	High customer-specific interaction
	▼Range	Narrow product/service offering
4	▼Reach	Offline physical product or service
	▲Richness	High customer-specific interaction
	▲Range	Broad product/service offering
5	▲Reach	Online digital product or service
	▼Richness	Low customer-specific interaction
	▼Range	Narrow product/service offering
6	▲Reach	Online digital product or service
	▼Richness	Low customer-specific interaction
	▲Range	Broad product/service offering
7	▲Reach	Online digital product or service
	▲Richness	High customer-specific interaction
	▼Range	Narrow product/service offering
8	▲Reach	Online digital product or service
	▲Richness	High customer-specific interaction
	▲Range	Broad product/service offering

Assessing current e-strategies

A firm can assess its current e-business strategic focus by plotting its location within this conceptual framework, thereby making its future direction clearer. Although our definitions for these three dimensions are presented from a conceptual or theoretical perspective, this discussion focuses on the implications for efficiency and cost-effectiveness when applying them to e-strategy. The need to qualify the issues of efficiency and cost-effectiveness is based on the fundamental differences between the traditional and electronic marketplaces. For example, in the theoretical sense, a bricks-and-mortar retail store can maximize its reach by placing an employee every 100 feet. Practically, however, this is not economically feasible. Conversely, the electronic marketplace allows not only for a virtual storefront for every client connection on the Internet, but also for the ability to distribute digital products/services to each client at a nominal cost.

E-business strategic positioning along the reach dimension

Reach is predicated on a firm's ability to effectively manage its value chain activities to provide customers with products/services. From an e-business perspective, Rayport and Sviokla's (1995) concept of the "virtual value chain" emphasizes the digital congruency of the offering as well as its supporting procedures and processes. Mahadevan (2000) points out that reach can be maximized for an online digital product/service, as compared to an offline physical one, because it can be produced and distributed at a nominal cost. This poses a key question for assessing the degree of reach for an e-business offering: *Is the product/service produced and distributed online or offline?*

The nature of the offering must be carefully qualified. A firm's core offering should not be confused with any upstream products or services. In other words, reach should not be confused with range. For instance, eBay's core offering is an exchange service, not the actual products that people buy or sell. The difference between an offline and online offering represents the fundamental threshold for the reach dimension. While certain supporting activities (advertising, order tracking) can use the digital medium to help execute an offering, the degree of reach is intrinsically limited to the offering's physical nature (production, distribution). A *digital* product or service can overcome these limitations and radically extend reach.

Because of congruency with the IT infrastructure, a firm with an online offering can produce and distribute its products/services via the digital medium, thus extending reach to any customer with access to the digital network, such as the Internet. Two prerequisites must be present for the offering to be considered *online* and thus in a position to maximize the effectiveness of digital congruency: It must exist in digital format, and it must be directly accessible on an interconnected, digital network.

E-business strategic positioning along the richness dimension

Richness hinges on how well a firm knows its customers and its ability to meet their wants and needs efficiently and cost-effectively—an area where e-business provides unprecedented opportunity. To assess the degree of richness, consider the following question: *Is the product/service pre-built or customizable?*

Two issues can help ascertain this. First, as is the case with reach, upstream products/services should not be confused with the actual offering; thus, a firm can offer a customizable navigation or portal service that facilitates the exchange of pre-built products/services. Second, a customized product or service, such as a computer, should not be confused with the pre-built subcomponents (hard drive, memory chips, and so on).

The difference between pre-built (supply-driven) and customizable (demand-driven) represents the fundamental threshold for the richness dimension. Because of its supply-driven nature, the richness of a pre-built product/service offering is limited. Although richness can be enhanced through supporting activities, such as personalized service, the uncertainty that comes with matching consumer demand to an existing offering often comes at the expense of complete customer satisfaction. Conversely, a demand-driven product/service provides an open canvas, allowing a firm to fully exploit the advantages of the richness dimension. Customers not only interact with companies at a very personal level, they can also dictate their exact desires. IT can enhance supply-driven products and services, but the potential is much greater with a demand-driven offering.

E-business strategic positioning along the range dimension

Range is determined by the focus of the product/service offering within an overall value proposition, narrow or broad. Because of the complexity of managing a variety of resources and capabilities, the breadth of the offering could impair the firm's ability to operate effectively and cost-efficiently. With the emergence of e-business, the ease with which digital attributes are shared across firms has led to an ability to offer a wider range of products and services, such as eBay or Yahoo!. To determine the degree of range, ask the following question: *Is the product/service offering within the value proposition narrow or broad?*

Contrary to reach and richness, upstream and complementary products and services are included when assessing range. In fact, the actual offering within the value proposition can be managed by either the firm itself or by one or more external partners via strategic alliances. This means that range is gauged in terms of not only the products/services a firm directly manages but also those made available to customers through such partnerships.

The difference between narrow and broad represents the fundamental threshold for the range dimension. In the bricks-and-mortar world, a broad offering typically consists of a heterogeneous set of standardized or generic products and services that cross industry segments (such as a mass merchandiser), whereas a narrow offering typically consists of a homogeneous set of specialized or customized products and services that are more tightly focused (such as a category killer). The reason for the contrast between these extremes can be attributed to the increased complexity a firm experiences as it expands its range of products and services. Thompson and Strickland (1995) maintain that this complexity can be managed in one of two ways: vertical integration or strategic alliance. Vertical integration is an effective means for reducing a firm's reliance on strategic alliances, but it introduces the risks associated with heavy overhead costs. Conversely, a strategic alliance provides the opportunity to offload a number of overhead costs but increases the firm's reliance on the performance of its partners. However, the interconnectivity and access of digital information lowers coordination costs for strategic alliances.

Figure 2
E-business descriptive assessment of a product/service offering

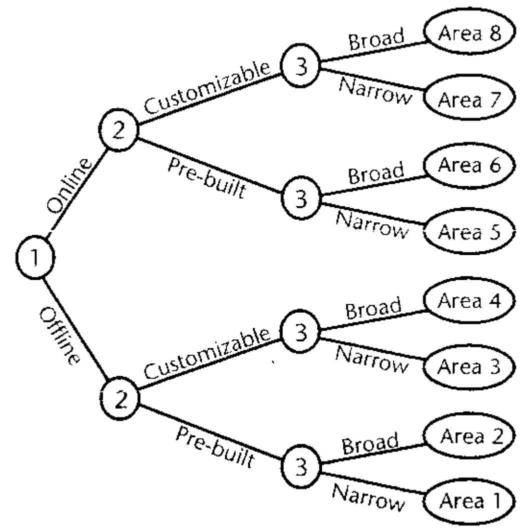


Figure 2 provides a means for mapping a firm's current strategy along the dimensions of reach, richness, and range. By answering the aforementioned questions associated with each dimension, a firm can gain an orientation as to where in the eight areas its current e-strategy resides, setting the stage for a prescriptive analysis for strengthening its e-strategy.

Strengthening e-strategy

Once the initial assessment has been attained, the next challenge is to determine how to strengthen the e-strategy. For illustrative purposes, suppose a firm resides on the lower side of all three dimensions. By examining them, the impact on e-strategy can be assessed, as well as the necessary steps for expanding across these dimensions.

Strengthening an e-strategy along the reach dimension

To strengthen an e-strategy along reach, a firm must closely examine its product/service offering and any supporting processes and procedures. As previously stated, reach can be *maximized* only if the product/service is an online offering. The optimal scenario is when the offering possesses digital attributes and is congruent with such a medium. The most illuminating example of this dynamic is the uproar caused by Napster. Traditionally, the music industry marketed, sold, and distributed its product offline, ignoring the fact that it was highly congruent with the digital medium. This left the industry vulnerable, so Napster.com seized an opportunity to demonstrate the power of presenting music as an online offering and not inhibiting its flexible attributes by transforming it into a physical medium (such as burning a CD). By leveraging such an online offering, its reach was expanded to all customers with a PC and an Internet connection. Although Napster has been saddled with certain obstacles, such as copyright infringement and audio quality, its online digital music service has fundamental implications not only for the music industry but for any company that has a product/service congruent with the digital medium.

By creating a digital product/service and making it available online, a firm crosses the reach threshold. For Napster, this transformation presents advantages for both the music providers and their customers. Music providers are able to market individual songs, avoiding the overhead associated with CD production. Customers can select only the songs that interest them, avoiding the filler songs that often accompany most CDs. To take advantage of these benefits, the music industry needs to meet the challenges presented by Napster head-on, rather than avoid them. If managed and leveraged correctly, the Napster model is a win-win for both the music industry and customers.

If a firm's offering is already online, then any eligible supporting processes should be congruent with it. This requires converting the processes from manual to automated *and/or* redesigning them to be more tightly integrated with the digital product/service. For example, a number of software vendors directly distribute their products via the digital medium. However, they need the ability to provide customers with service and support for these products. Software upgrades or maintenance patches should be distributed and applied via the customer's Internet connection, not via static media, such as floppy disks or CD-ROMs. The integration of supporting processes with digital products/services not only reduces physical overhead costs, it also dramatically extends reach.

Using Porter's (1996) perspective on strategy, Rangan and Adner (2001) point out the possibility that the product/service may not be inherently conducive to the digital medium, or that the firm's current infrastructure dictates a poor strategic fit. Under these circumstances, reach is limited along the physical/digital threshold. Assuming such constraints, all supporting processes that are conducive to the digital medium should still be automated, such as supply-chain management and payment methods.

Strengthening an e-business strategy along the richness dimension

Customization is viable for products/services that possess specialized, discriminating attributes, such as automobiles. The challenge is to identify the attributes conducive to the digital medium and leverage them effectively. When considering mass customization in an e-business environment, Dell Computer is the flagship example. There are, however, a number of other companies that have successfully leveraged this technique to improve competitiveness and profitability. One is Timbuk2, which leverages IT to manufacture custom-made messenger bags in a demand-driven environment. Despite the fact that its product offering has physical attributes and is produced and distributed offline, Timbuk2 creates a demand-driven offering by giving customers control over product design, order entry, and other information-intensive activities. It accomplishes this by providing an intuitive, Web-based product design application that is tightly integrated with its order entry and production planning systems. Only messenger bags that have been designed and purchased are actually manufactured, which is proving advantageous for both Timbuk2 (lower overhead) and its customers (higher satisfaction).

● The interaction between reach and richness

The strategy associated with richness is coupled with the reach dimension, creating opportunities for improving customer affiliation. Evans and Wurster define affiliation as "whose interests the business represents," signifying the extent to which different stakeholders reap the benefits from the business model. Seybold (2001) stresses affiliation as an essential element for prompting customer loyalty and trust, which is a vital consideration for the customer-centered nature of e-commerce. With the emergence of interactive customer relationships, it is more and more evident that firms must shift their affiliation toward their customers while maintaining significant benefits for themselves and their suppliers. Customer affiliation can be improved by crossing the reach and/or richness thresholds, as **Figure 3** shows.

A shift toward customer affiliation occurs when a firm transforms its products/services to an online offering (crosses the reach threshold) and moves toward a demand-driven economic model. As a result, both customers and the firm stand to benefit. Customers are better served because the offering is easily accessible and replicable at a nominal cost. Moreover, physical restrictions such as out-of-stock inventory or a lack of human resources are eliminated, subsequently reducing overhead for the firm and, further upstream, its suppliers.

When viewed from another perspective, a shift toward customer affiliation occurs when a firm customizes its product/service offering (crosses the richness threshold) and moves toward a demand-driven economic model. As a result, customers are better served because their needs are met to a higher degree of satisfaction. In a demand-driven model, the firm can optimize key activities such as inventory replenishment and production planning.

The relationship between reach and richness can be better understood by discussing how McAfee altered its virus-scanning software to increase customer affiliation across the quadrants in Figure 3. McAfee has crossed the richness threshold by waiting to produce and distribute its software until a customer buys it, then customizing the offering to the customer's exact wants and needs (shifting from Quadrant A to Quadrant B). Some customers might request that McAfee update its virus software every week, while others may request it every month.

To cross the reach threshold, McAfee can transform the attributes of its software product from physical to digital, thereby *moderately* increasing customer affiliation; it can produce and distribute updates by leveraging its digital attributes (shifting from Quadrant A to Quadrant C). In other words, McAfee can eliminate certain risks associated with incongruent supply and demand, such as the unavailability of software products.

Assuming that the product/service is in digital format (which means reach has been maximized), richness can be leveraged to raise the level of customer affiliation from *moderate* to *high* (from Quadrant C to Quadrant D). The digital attributes of McAfee's product/service offering are easily customized, as well as digitally congruent with supporting processes, so McAfee can add a high degree of richness by integrating the online service process with the actual software product. Prior to the digital connectivity of the Internet, McAfee customers would buy virus-scanning software every three to six months to update their current version. But now McAfee is able to distribute these updates faster and more seamlessly, thus transforming its original product into a customizable software service.

Strengthening an e-strategy along the range dimension

E-strategy can be strengthened along the range dimension by effectively integrating the digital attributes associated with a product/service offering. Because the congruency of the digital medium allows for seamless integration of complementary products and services, customers are able to manage multiple business activities that have previously been inhibited by traditional industry boundaries. Digital attributes can be used to expand range in one of two ways: (1) intra-organizationally by leveraging digital attributes applicable to a complementary offering, such as by adding online bill payment applications to a standard banking offering; and (2) integrating digital attributes across complementary partners in strategic alliances. The travel portal Orbitz.com demonstrates how a firm can integrate a common set of customer activities into a ubiquitous, online offering. Because of the integration of common travel activities such as airline ticketing, car rentals, and hotel reservations, customers have many more choices for booking travel arrangements from a vast number of companies. In addition, Orbitz uses the customer's itinerary to organize travel activities into a single, cohesive package. The success of this type of broad offering hinges on the seamless and congruent integration of the digital attributes common across the various travel activities.

● **The interaction between reach and range**

The nature of the offering presents implications for managing a firm's e-business strategic fit. Based on its reach, online or offline, the strategic challenges are very different. The issues of overhead and profit margins are readily apparent for firms managing an offline product/service in e-commerce (eToys, Egghead.com). Conversely, an online product/service encounters a different set of challenges, including the need for critical mass and an effective brand (eBay, Travelocity). Thus, the relationship between reach and range often dictates how to manage the breadth of an offering.

Amazon's recent partnership with ToysRUs provides a good context for understanding how strategic alliances vary based on the interaction of reach and range (see **Figure 4**). Initially, Amazon gained its foothold in e-tailing via the book market. In an effort to provide its customers with reliable delivery of books, it changed its original ap-

Figure 3
The effect of reach/richness on customer affiliation

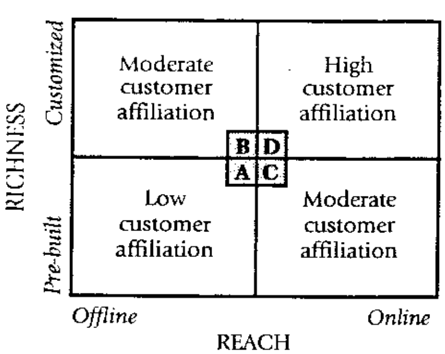
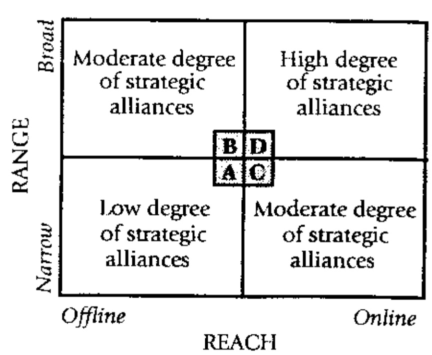


Figure 4
The effect of reach/range on strategic alliances



proach of using book distributors and bought its own warehouses to store inventory of the bestsellers. In other words, its early strategic alliances with book distributors were putting its customer base at risk. By building its own warehouses, Amazon vertically integrated its operation and reduced its dependence on those strategic alliances (positioned in Quadrant A).

Increasing the breadth of its product/service offering in the late 1990s into music and electronics, Amazon continued to vertically integrate using its warehouses. While it tried to minimize its strategic alliances by directly managing a full range of products, it nonetheless moved to a higher level of strategic alliance due to the variety of suppliers needed to populate its inventory. The expansion of Amazon's product/service offering represented a shift along the range dimension, which changed its level of strategic alliances from *low* to *moderate* (from Quadrant A to Quadrant B).

The mass merchandiser or Wal-Mart-type business model that Amazon adopted during this time period was criticized because of its lack of profitability. A number of industry analysts speculated that the primary culprit for such poor performance was the huge overhead associated with carrying inventory across a wide range of product categories. With a growing customer base and a recognized expertise in online retailing, Amazon established strategic alliances with bricks-and-mortar retailers. As the ToysRUs example demonstrates, such an alliance allows Amazon to reduce the burden of certain overhead costs, such as inventory management, while being able to shift its primary offering to an online digital exchange service (order entry, customer relationships, and so on). Such a shift represents Amazon's ability to cross reach while maintaining a moderate level of strategic alliances (moving from Quadrant B to Quadrant C).

It can be argued that Amazon's initial profitability in early 2002 can be attributed to the ToysRUs strategic alliance, which allowed it to double its gross profit margins in the toy segment. This gave Amazon the opportunity to expand range by exploiting digital attributes, such as customer information, across multiple industry segments, shifting from a *moderate* to *high* level of strategic alliances (from Quadrant C to Quadrant D). Currently, Amazon is still moving in this direction, as is evident by recent alliances with retailers such as Circuit City and Target.

Regardless of which of the eight areas a firm inhabits within the strategic framework, there are always opportunities for strengthening these positions. **Table 3** provides a summary of each strategic area along with prescriptive suggestions for strengthening e-strategy.

The 3R e-business strategic framework we have presented here is innovative and novel for a number of reasons:

- It further clarifies the definitions of reach, richness, and range.
- It provides an aggregate view of e-strategy, which spans the range of bricks-and-mortar to "pure-play" companies, as well as "clicks-and-mortar" hybrids that fall between these two extremes.
- It offers a new perspective on affiliation by presenting it as a product of the effects of reach and richness.
- It discusses the interrelationships between the dimensions of reach and range and draws a distinction between the two of them.
- It provides executives and managers with an initial orientation of their firm's current e-strategy as well as a prescriptive direction for strengthening it.

To realize the benefits of leveraging the 3R framework, a firm should consider the following high-level, strategic guidelines.

Extend reach digitally. If a product, service, or supporting process is conducive to the digital medium, it should be designed to exploit those flexible attributes. The Napster example demonstrates what happens when an inherently digital product/service is placed in its natural habitat. The realized flexibility substantially increases customer affiliation, but the record companies are weighed down by a new set of challenges. The fact that readily available digitized music causes headaches for the music industry, however, is no excuse to inhibit such an offering by prematurely burning music on a static, physical medium, such as CDs. In the long run, e-business strategic advantage will go to those companies that maximize reach by embracing the attributes of a digital product/service offering, not suppressing them.

Enhance richness digitally. As the Timbuk2 and Dell examples demonstrate, customer demand can be managed more effectively when the order is placed prior to actual production. Although some product/service offerings are fundamentally infeasible for customization, companies should carefully examine the potential of IT for moving toward a demand-driven model. Aside from the obvious benefits, such as lower inventory overhead, a major advantage is the greater customer affiliation. The ability to build strong customer relationships is enhanced when customers are able to buy a product/service they want or need (pull marketing) rather than being convinced to buy one already produced (push marketing) that may or may not meet their exact needs.

Expand range digitally. E-business customers expect a seamless integration of multiple business offerings that will facilitate the execution of a common set of activities. If the amalgamation of these offerings is to become reality, they must be digitally congruent with one another. Travel portals such as Orbitz have demonstrated the synergistic effect of combining multiple functions for a cohesive customer offering. The key challenge for companies is to expand range through either new digital offerings or strategic alliances, presenting customers with that integrated, seamless collection of related business functions that tie logical customer activities together.

Table 3
Summary of e-business strategic areas

Area	*3R rating*	*Attributes*	*Examples*	*Prescriptive suggestions*
1	▼ Reach ▼ Richness ▼ Range	Offline physical product or service Low customer-specific interaction Narrow product/service offering Low customer affiliation Low degree of strategic alliance	Online category killer: eToys	Can the product/service be transformed into an online and/or customized offering? If not, richness and range are inherently limited. The best move would be to protect your core competency in the bricks-and-mortar environment and outsource your online retail presence to a strategic partner (e.g., ToysRUs and Amazon).
2	▼ Reach ▼ Richness ▲ Range	Offline physical product or service Low customer-specific interaction Broad product/service offering Low customer affiliation Moderate degree of strategic alliance	Online cross-category: Amazon.com	As with Area 1, can the product/service be transformed into an online and/or customized offering? If not, the strongest move would be to outsource distribution directly to the manufacturer (e.g., toys), thus evolving into an online customer relationship service business.
3	▼ Reach ▲ Richness ▼ Range	Offline physical product or service High customer-specific interaction Narrow product/service offering Moderate customer affiliation Low degree of strategic alliance	Computer reseller: Dell	Assuming the product/service cannot be transformed to an online offering, this is a sound strategic area. Its offline nature limits reach, and richness is already being exploited, so the fertile area for improvement lies along the range dimension—typically via strategic alliances.
4	▼ Reach ▲ Richness ▲ Range	Offline physical product or service High customer-specific interaction Broad product/service offering Moderate customer affiliation Moderate degree of strategic alliance	Management consulting: Accenture	Unless your offering is conducive to the digital medium, options are limited. Your strongest strategic move would be to transform all supporting business processes to digital format. If the broad offering is being managed internally, it may prove advantageous to narrow the range.
5	▲ Reach ▼ Richness ▼ Range	Online digital product or service Low customer-specific interaction Narrow product/service offering Moderate customer affiliation Moderate degree of strategic alliance	Online music: Napster	The most obvious avenue for improvement in this area is via richness by providing customers with the ability to customize the offering. Range can be expanded by adding other products/services that are digitally conducive, or via alliances.
6	▲ Reach ▼ Richness ▲ Range	Online digital product or service Low customer-specific interaction Broad product/service offering Moderate customer affiliation High degree of strategic alliance	Online auctions: Excite	With high degrees of reach and range, the emphasis in this area is on richness. As with Area 5, there is little excuse not to add a high degree of richness to an online product/service, which implies a need to customize the offering.
7	▲ Reach ▲ Richness ▼ Range	Online digital product or service High customer-specific interaction Narrow product/service offering High customer affiliation Moderate degree of strategic alliance	Software services: McAfee. com	The only major area for improvement is along the range dimension. If your products/services have digital attributes that are easily integrated (internally or via alliances), range can be expanded. If they are not digitally conducive to such an expansion, you should consider alliances.
8	▲ Reach ▲ Richness ▲ Range	Online digital product or service High customer-specific interaction Broad product/service offering High customer affiliation High degree of strategic alliance	Navigator/Portal: Yahoo.com	Be careful that future strategic moves do not slide your firm toward lower-level areas. For example, a customer portal that decides to store and distribute its products has slid to the other side of the reach threshold, thus moving toward lower customer affiliation.

The observations from the application of this framework are consistent with those of Porter (2001), who points out that the Internet

> has created some new industries, such as on-line auctions and digital marketplaces. However, its greatest impact has been to enable the reconfiguration of existing industries that had been constrained by high costs for communicating, gathering information, or accomplishing transactions.

In other words, IT is the implementation lever that allows a firm to effectively design and execute an e-strategy. So the primary challenge is to exploit the information attributes that can enhance that e-strategy and subsequently strengthen competitive advantage. ❍

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