

Linking Business Imperatives to Human Capital Strategies: The Case of Encyclopedia Britannica

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Most writing about e-business strategy and models provides little specific guidance to develop human capital strategies tied to competitive shifts, while the writing on e-HR focuses mainly on specific labor market developments or specific human resources (HR) techniques that are affected by new technology such as delivering training on the Web.

Thus, it is important to develop strategic analysis that provides a rich and actionable logic linking human capital to the significant shifts in the business landscape. There is a need for rich strategy diagnosis—seamlessly linked to implications for organizational talent. This has been variously described as a need to develop richer and more detailed descriptions of strategy and its implications for human capital,¹ as well as the need to look inside the “black box” linking HR practices to organizational success.² In this chapter we describe an approach to strategic analysis that identifies the links between strategic success and human capital, articulating the key strategic elements and then translating them clearly into implications for human capital and human resources management.

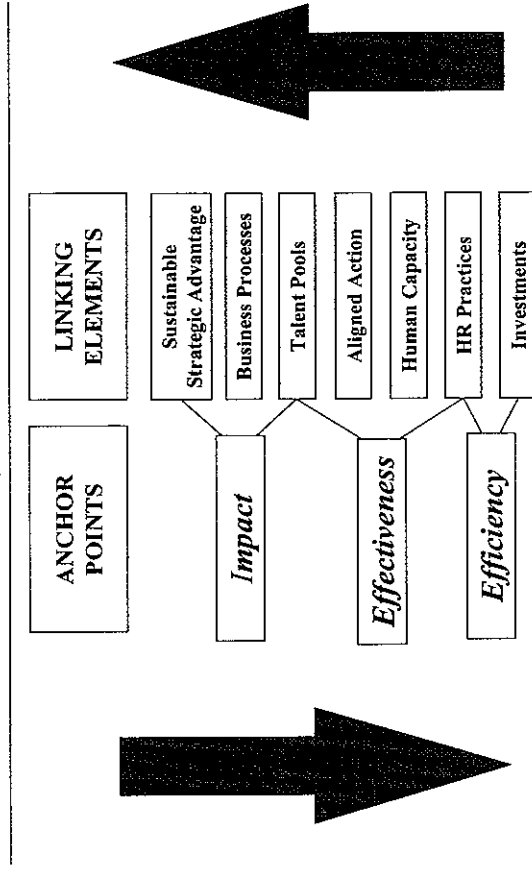
Specifically applied to e-commerce, such an analysis would begin to answer questions such as: “What human capital response is most appropriate when technology fundamentally shifts the relationship be-

tween our firm and our suppliers?” and “What is the appropriate human resources strategy to optimize the value of a sales force when our customers receive more information through the Web?”

We will use the HC BRIDGE™ framework (Figure 10-1)³ to understand these links. This framework uses three main “anchor points” as the elements that bridge decisions about human capital investments with strategic organizational success. “Impact” identifies the core elements of strategic success, including changing industry and economic factors, and refines those broad business elements to identify how particular human capital (talent pools) affect strategic success. “Effectiveness” identifies how HR practices affect talent pools by supporting employees’ aligned actions. “Efficiency” identifies how HR resources are deployed to produce the HR practices. This chapter will apply Figure 10-1 to illustrate how organizations can identify the talent implications of changes in the competitive environment due to digitalization and e-commerce.

In this chapter we illustrate how this model can be applied, using a case study of Encyclopedia Britannica (see sidebar) originally described by Evans and Wurster.⁴ The Britannica example has implications for the methods that other organizations use to translate their e-business challenges into human capital implications. Our goal is to help organi-

FIGURE 10-1
HC BRIDGE™ Framework



zation and human resources leaders not only understand some of the strategic challenges created by the emergence of electronic commerce, but to show how strategic analysis tools can help HR executives who must translate the strategic changes into specific implications for their key talent.

THE ENCYCLOPEDIA BRITANNICA CASE STUDY

Encyclopedia Britannica, founded in 1768 in Edinburgh, Scotland, was the world's first compendium of knowledge. As Britannica grew, it built a reputation for having solid, authoritative, and comprehensive content. Britannica maintained its position as a content leader by continually revising and adding innovative features to its content, such as an atlas and a yearbook. Britannica's initial market was with institutions such as libraries. While this was a slow-growth market, it provided a reliable source of income that allowed Britannica to build its financial foundation. However, the key to Britannica's market success was recognizing and extending the market to homes.

Britannica created an aggressive and direct sales force that targeted middle-income families by going door-to-door. At its peak in 1989, Britannica's worldwide sales force numbered 7,500 and was the envy of nearly every sales-oriented industry. Britannica's executives realized that middle-income parents had intensely strong desires to provide their children with educational opportunities. The sales force learned that they could convince parents to purchase the \$1,500 to \$2,500 encyclopedia as a means of improving their children's education. A fundamental value proposition for Britannica was alleviating parents' guilt, and the in-home sales experience made that guilt even more tangible and provided the product to assuage it. Market research demonstrated that the encyclopedias were actually opened less than once a year, on average, after the initial excitement of the purchase wore off. Britannica maintained its position as the industry's dominant firm. By 1990, sales reached a peak of \$650 million.

Britannica's decline began with the CD-ROM. The CD made a natural replacement for the bound encyclopedia, because it was able to store large quantities of easily searchable information (text, sound, video, and photos). In the mid-1990s competitors such as Funk and Wagnall's (later renamed as Encarta when it was acquired by Microsoft Corp.) and Grolier (formerly Encyclopedia Americana) devoted themselves entirely to CD-ROM production and stopped printing bound editions. Encarta and Grolier quickly gained market share by distributing free versions of their products with new home computers. Britannica failed to see that parents would buy a personal computer for their children (with its free CD-ROM-based encyclopedia) in favor of purchasing a bound product for roughly the same amount of money (about \$2,000).

Britannica developed its own CD-ROM in 1995, but it was too expensive (originally priced at \$800), and its initial version was text only because Britannica's vast

and rich content was too large to fit onto a single CD. Consumers opted for the cheaper, more interactive multimedia products offered by Encarta and Grolier. By 1995, Britannica's future looked bleak. Sales of print-bound encyclopedias had plummeted 80 percent from the 1990 peak, and company revenues dropped to \$400 million. Consequently, Britannica was sold in 1996 to Swiss financier Jacob Safra (an avid reader of Britannica since childhood) for half of its book value.

Lessons from this era of Britannica's experience show that the "richness" of the sales experience (a vast in-home personal sales force) made sense when expanding into a new market (in this case, moving from institutions to homes). However, "reach" and convenience can become more important when selling into an already-developed market (such as CDs bundled with personal computers). The "richness" of Britannica's vast and unique content also became a liability because even CDs couldn't hold the content. Since 1996, Safra has made sweeping changes to Britannica's strategy in an attempt to save it from sure failure. Safra began by eliminating Britannica's once-dominant sales force. In addition, he has broadened Britannica's fundamental value proposition in a crowded industry dominated by computer- and Internet-related product and strategies. Britannica now defines itself as the preeminent information community on the Web.

The core of Britannica's new value proposition is its new website, Britannica.com, which offers a wide range of products and services, from news (e.g., sports scores, stock quotes) to filtered search capabilities (edited by their expert staff) to e-mail accounts, all free of charge. "This is not an encyclopedia online," explained one marketing executive, "but a community of intellectually curious people."⁶ The Internet now makes it possible for Britannica to deliver its vast content very efficiently. The new value proposition is that this unique content, and the information-based meeting place where it resides, will attract a critical mass of repeat customers who use the site as their home base for information. With a critical mass or "community" of loyal users, Britannica can then attract advertising revenue and more effectively sell specialty educational products (such as the \$2,500 Encyclopedia of Art) offered online. Ironically, Britannica's offer of free content is now distinctive. As recently as 1998, users paid an \$80 yearly subscription rate.⁷ Currently, Britannica offers both the free online access, AND a fee-based enhanced Web site that costs \$50 per month, compared to other fee-based online encyclopedias that range from \$49.95 to \$395 (including Encarta, Americana, Grolier, and World Book) and free sites (for example, Funk & Wagnalls).⁸ What was once a source of price premium has now become the vehicle to attract customers in a crowded web space.

Britannica's recent efforts to increase its web presence appear to be paying off. USA Today reports that home user traffic has increased more than 75 percent since January 2000 when the Super Bowl ad aired.⁹ Over a three-month period, the number of unique users to the website has jumped from 594,468 to 1,003,216. Britannica has also introduced a free software application called "Britannica Traveler" that allows Palm handheld computer users wireless access to its website. Using the latest global positioning technology, the new Britannica software can be programmed to automatically send users information relevant to wherever they

are located. For example, visitors to San Francisco could be sent articles about its history and landmarks as well as information about local restaurants or entertainment. This not only provides Britannica with additional e-business partnerships, but more important, increases traffic on its website, and is another example of Britannica's effort to reach its goal of becoming the preeminent online information community. Britannica's emerging information community business model creates value by acting as an information agent to consumers. Revenues are thus generated by creating a critical mass of regular users who make direct purchases from the Britannica marketplace and attract advertising revenues.

A Framework for Understanding the Human Capital Lessons

Britannica's strategic response to the advancement of information technology provides an instructive business case study, with lessons for other companies striving to redesign their businesses to meet technology challenges. It is interesting that while the marketing and technological aspects of the Britannica case are well known, the human element remains unexamined. Of course, we know that the traditional sales force has been removed, but other, more subtle human capital lessons can be learned.

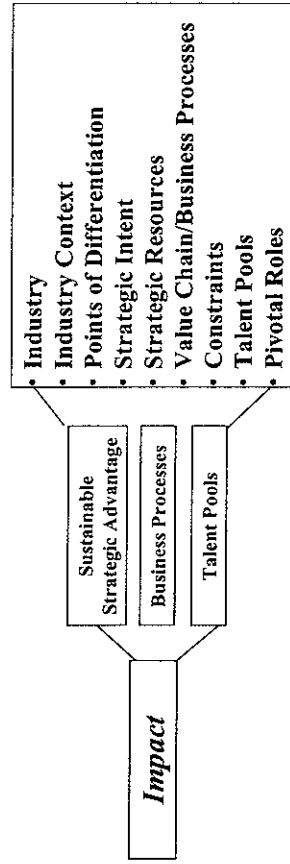
However, examining the lessons for human capital requires a framework that can look beneath the strategy and business elements of the case. It requires a mechanism to translate the strategic shifts into implications for talent, and then into implications for human resources management. Here, we use the HC BRIDGE framework to analyze the Britannica case and to derive strategic talent and human capital implications.

Identifying "strategic impact" is often the most difficult yet the most critical task in applying the model. Moreover, many of the unique elements of human capital strategy in the Internet era require a detailed understanding of the impact elements.

As shown in Figure 10-2, the "strategic impact" is expanded into ten detailed elements:

- Industry
- Industry context
- Points of differentiation
- Strategic intent
- Strategic resources
- Value chain/business processes
- Business algebra
- Constraints

FIGURE 10-2
Detailed Elements of Strategic Input Linking to Talent



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- Talent pools
- Pivotal roles

By isolating the elements of impact, it is possible to analyze strategy and competitive advantage so that they link clearly to implications for organizational talent.

Industry and Industry Context

Industry describes the markets in which the organization competes to create value—now and in the foreseeable future. It includes the list of key competitors, defined as those organizations whose actions should spur a competitive response.¹⁰ For example, if increases or decreases in the prices of a potential competitor would cause an organization to adjust its prices, then those competitors should be included in the "industry" element. The same analogy would hold true in the areas of supplier relationships, regulatory activities, or customer impressions. The result of an industry analysis is a list of competitors or future competitors.

The importance of industry analysis is underscored by the concept of "strategic groups." Strategic groups have been defined as a set of firms within an industry sharing similar strategies or mobility barriers.¹¹ Proponents of strategic groups argue that they are helpful in explaining variance in firm performance between firms within an industry and enhance understanding of the nature of competition in a firm's environment.¹² Recent work suggests that the analysis of strategic groups as a heuristic tool for managers has become increasingly useful in an era of expanding industry boundaries through strategic alliances and partnerships.¹³

In addition, one of the most distinctive characteristics of the In-

ternet era is the speed at which the composition of industries can change. Advancements in information technology can create rivals out of previously unrelated firms. The application of the competitor definition is seen in Figure 10-3. When printed reference materials defined the industry, the sole competitors were other makers of encyclopedias. However, with the development of the CD-ROM and later the Internet, the competitive landscape changed dramatically. For example, Britannica's new strategic direction places them in direct competition with a host of companies representing an array of previously unrelated industries. As an information community that also sells retail products, Britannica now competes with the likes of Yahoo.com, CNN.com, Amazon.com, and many others. By defining competitors systematically and broadly, whole new competitive arenas are identified.

In the same way, industry analysis can be applied to any organization to make more specific the implications of emerging e-commerce challenges. Broad strategic patterns such as the rise of infomediators, disintermediation, hypermediation, the virtual value chain, and the network economy are useful frameworks. By specifying how they change the competitor space, we begin to better understand their implications.

Industry context describes the forces that impact the industry.¹⁴ These forces can include the industry's size and growth rate (including the life cycle stage and the "value migration" pattern); factors affecting industry profitability (e.g., competitors, suppliers, buyers, new entrants, and substitutes), as noted by Porter;¹⁵ government regulation; and turbulence (including hypercompetition or technology development). Industry context defines the factors that determine the amount of available "rents" or profits for the players in that industry. Size and growth rate affect the absolute amount of rents; the Porter dimensions affect the amount of "excess rents" likely to be available due to imperfect competition; and regulation and turbulence reflect the riskiness of the stream of rents. Thus, industry context identifies common challenges and opportunities facing all of the industry competitors. For example, identifying that the industry will become increasingly regulated suggests developing resources such as strong relationships with regula-

FIGURE 10-3
Britannica's Industry, Then and Now

Print-Only Era (circa 1980)	Internet Era (circa 2000)
Competitors <ul style="list-style-type: none"> Compton's Americana (Now Grolier) Funk and Wagnall's (Now Encarta) World Book 	Competitors <ul style="list-style-type: none"> Compton's Grolier Microsoft Encarta IBM/World Book Encyclopedia.com CNN.com USAToday.com Yahoo.com Altavista.com MSN.com Amazon.com eToys.com

tory agencies. Identifying that an industry is entering a period of more rapid growth suggests that the emphasis may shift from gaining market share from competitors to increasing sales from emerging customer segments. Before we can understand how an individual organization will choose to compete, we must understand the profit potential of the industry.

Figure 10-4 depicts a strategic context analysis that may have occurred circa 1983, as the emergence of the PC was apparent, but before technology had actually changed the industry. In a nonelectronic world, encyclopedia makers had significant bargaining power over content suppliers and over in-home buyers, because printed versions were the only form for the information. New entry into the printed reference industry was limited due to the need to build up production, content, sales, brands, and distribution. Moreover, Britannica had developed a reputation and relationship with libraries and other institutions. While this market was very small, it provided a reliable source of revenue to cover the fixed costs of content development and production. Libraries, once sold, ordered encyclopedias regularly, paid the asking price, and placed standing orders. In fact, the two-year cycle of encyclopedia production was in part due to the two-year purchase cycle of libraries. This

FIGURE 10-4
Britannica's Industry Context, Then and Now

Print-Only Era (circa 1980)	Internet Era (circa 2000)
Bargaining Power of Suppliers Suppliers: <ul style="list-style-type: none"> Manufacturers of book printing materials Content suppliers 	Bargaining Power of Suppliers Suppliers: <ul style="list-style-type: none"> Content suppliers (e.g., AP wire) Manufacturers of print and CD-ROM materials Toy and educational product manufacturers
Bargaining Power of Buyers Buyer reach: <ul style="list-style-type: none"> Door-to-door Schools 	Bargaining Power of Buyers Buyer reach: <ul style="list-style-type: none"> Online sales Bricks-and-mortar retail Some schools
Threat of Potential New Entrants Threats: <ul style="list-style-type: none"> Companies that could match Britannica's value proposition but do so more cheaply and more conveniently (e.g., Grolier and Encarta) 	Threat of Potential New Entrants Threats: <ul style="list-style-type: none"> Companies that can copy and/or expand Britannica's new value proposition as a reference information community (e.g., Yahoo or some variant).
Threat of Substitutes Threats: <ul style="list-style-type: none"> Technologies: CD-ROM, P.C., Internet 	Threat of Substitutes Threats: <ul style="list-style-type: none"> Technologies that increase the ease of information flow. But which information and which technologies?

reliable revenue base was one factor that made it feasible for Britannica to consider investing in an in-home sales force to expand the market.

Technology also transformed the size and growth rate of the industry. In the print-only era, the market for encyclopedias was small and static. The expense of producing and purchasing the print volumes kept the market small. In the CD era, however, rivals such as Encarta and Grolier exploded the market for encyclopedias by distributing their products free with new PCs. Very quickly, millions of consumers had cheap and easy access to rich information content, and the market was instantly transformed from small and stable to rapidly growing. Admittedly, hindsight is easier than foresight, but the case does illustrate the potential value of a structured and logical approach to strategic context analysis. As e-business technology emerged, this analysis may also have helped to anticipate the emergence of competition from search engines, news services, retail educational products, and even makers of other education-related products (such as PCs, as discussed previously). Thus, identifying the industry context takes the competitor list and specifies the implications for how competition will be defined in the industry. The next step is to determine how the organization will define itself within that competitive space.

Dimensions of Differentiation and Strategic Intent

Dimensions of differentiation, the third element of strategic impact, builds a map showing the dimensions on which industry competitors distinguish or differentiate themselves to gain economic value.¹⁶ Traditionally, these dimensions focus on customer relationships, such as price, service, product customization, and innovative features.¹⁷ However, competitors can also create sustainable competitive advantage in production, resource acquisition, distribution, and support functions, such as patents, relationships with regulatory agencies, or organizational features (e.g., Dell's "Be Direct" model). These dimensions may be "invisible" to ultimate customers,¹⁸ but they are often key to competitive advantage now and in the future. This is why identifying buyers, suppliers, and substitutes is so important in defining the strategic context. The differentiation dimensions provide the "map" of possible competitive positions. Each current and potential competitor can be placed on the map according to its position on the key dimensions.

With regard to e-commerce, defining the dimensions or points of differentiation is particularly important and is a key source of insights regarding the competitive space. For example, the emergence of online providers of information about automobile features, availability, and pricing options made *the information itself* an element of the competitive space. Previously, such information was necessarily connected to the manufacturer or the dealer. Now, the timeliness, detail, and com-

prehensiveness of such information is an element defining competition in this industry. Similarly, while personal health advice was not traditionally considered an element of competition between pharmaceutical companies because the necessary information and expertise resided with physicians in their offices, consumers increasingly look to the Web for health-related information, making it a new arena for competition.

Strategic intent defines the organization's target position on the map.¹⁹ For each dimension of differentiation, it shows how different or similar the organization strives to be, compared to competitors. Deciding the organization's intended position on each dimension articulates strategic intent at a detailed level. The term *strategic intent* has been used to describe a "sustained obsession with winning at all levels of the organization" even when the firm's strategic goals transcended its current resources and capabilities.²⁰ As such, strategic intent not only articulates a desired leadership position within an industry, but also defines a set of measures to assess the firm's strategic progress. Here, we take a more specific use of the term, emphasizing that an organization may choose to position itself differently on different strategic dimensions, rather than win on all dimensions.

The Britannica case illustrates how information technology can change the dimensions of differentiation within an industry. Figure 10-5 contrasts selected elements of the differentiation and strategic intent "map" that may have been constructed for the encyclopedia industry in the 1980s to the emerging map with the advent of the Internet. Before the emergence of electronic technology, the differentiation map was fairly simple. Companies differentiated themselves on the bases of price, content quality, and alternative products. Britannica differentiated itself as a high margin leader on the basis of its premium content and packaging leadership. Britannica leveraged its history of having world-class contributors to generate a strong content reputation. Second, Britannica sought out and obtained the powerful endorsement of libraries and schools, which provided an even greater boost to its reputation as a content leader. A key source of Britannica's profit was packaging options (e.g., premium leather bindings) that carried very high profit margins. In fact, selling these additional options was both a reason for the in-home sales force and a requirement to cover the high cost of the sales force. In contrast, Funk and Wagnall's differentiated itself as a discount product, available in grocery stores. Others, such as Compton's and World Book, made their mark by serving the middle of the price and content market and also by targeting schools as a primary customer. They did not employ the in-home sales force.

Figure 10-5 also depicts elements of the industry's current differentiation map. There is much greater parity among competitors. All have a web-based encyclopedia, and most offer an array of alternative products (e.g., retail books, toys, and educational services) that are sold

online. Thus, competitive advantage is more difficult to create through the sales experience and through optional product features. Unlike the earlier era, in which Britannica was virtually the only competitor reaching into the home with a direct sales force, in the Internet era everyone can reach directly into any home with a web connection. "Presence" in the customer space is no longer differentiated through the sales force. So, what is Britannica's "strategic intent" in the Internet era?

Britannica is now trying to create a first-mover advantage through an "information community" business model, offering its premium content to consumers for free and generating revenue by attracting a critical mass of repeat visitors to entice advertisers. The information community model requires that users make the Britannica their primary source for news, stock quotes, and quality reference information, even e-mail. Now, Britannica's differentiation depends on two key factors. First, it must maintain the high standard of quality and authoritative content associated with its long-standing reputation. Second, it must ensure that users have a unique and satisfying experience when they access the site. In other words, premium content is not enough to attract a base of repeat users if the experience on the Web is poor. To accomplish the first-mover advantage and obtain the critical mass, Britannica must ensure that user experiences are uniquely compelling.

It is interesting to note that Britannica's large number of base articles (72,000) hints at a potentially valuable differentiator—the ability to offer users a uniquely *authoritative* experience. In the print era, this authoritative distinction led to endorsements by libraries and added to the compelling message of the in-home sales force, but it was seldom experienced by actual customers (since the encyclopedia was seldom opened after it was sold). Now, it may emerge as a strategic resource for a very different reason. To understand that, however, requires that we move to the next level of specificity in the strategic diagnosis and identify strategic resources and market power.

Strategic Resources and Market Power

Strategic resources and market power define the factors necessary to achieve the strategic intent and protect it from imitators.²¹ *Strategic resources* are the valued organizational elements that make the biggest difference in achieving, sustaining, and protecting strategic intent.²² Traditional examples include physical assets (e.g., locations, raw materials, plant/equipment), exclusive rights (e.g., patents, leases on raw materials), brands, core competencies, and data. The Internet has created a whole new array of strategic resources. For example, having a unique and recognizable URL, having a large customer base that has "bookmarked" your site, and having top web development talent are all strategic resources that never existed before the emergence of the

FIGURE 10-5
Differentiation Map of the Encyclopedia Industry, Then and Now

The Print-Only Era (circa 1980)		The Internet Era (circa 2000)	
<i>Britannica</i>	<i>Compton's</i>	<i>Encarta</i>	<i>World Book</i>
<i>Wagnall's Knowledge (Grolier)</i>	<i>The New Book of Knowledge (Grolier)</i>	<i>World Book Atlas, Medical Journal, and Dictionary</i>	None
Retail Price (1984)	\$1,500	\$599	\$144.99
# of Volumes	32	26	29
Primary Distribution	Door-to-door, bookstores, and libraries	Bookstores	Grocery stores
Content Quality	• expert content • World-class providers • Reputation from libraries • Endorsement	• Little library representation • "Grocery store" image not high in reputation	• Average content • Strong reputation with schools • Little library representation
Additional Products and Options	Premium packaging (e.g., leather bindings)	Webster's Dictionary	World Book Atlas, Medical Journal, and Dictionary
Channels	Libraries	Libraries	Schools
Channels	Libraries	Libraries	Schools
Channels	Libraries	Libraries	Schools
Product Channels	CD-ROM, Web, Print	CD-ROM, Print, Web	CD-ROM, Web, Print
# of Base Articles	72,000	42,000	21,000
Retail Price	CD: \$69 Web: Free Print: \$1,250	CD: \$14.95 Print: \$599 Web: \$49/year	CD: \$89.95 Web: \$49.94/year Print: N/A
Other Products	Web: News services, feature articles, search engines, e-mail, educational toys, navigation software	Web: E-games, virtual tours, books, personal plan archives, various CD products	Web: E-games, web-based lesson and products, Literacy programs
Free (Revenues through advertising)	None	None	None

Source: *The New York Times* (December 23, 1984). Bookshelf: Section 7, p. 20. Other sources: www.britannica.com, www.comptons.com, www.encyclopedia.com, www.grolier.com, www.worldbook.com, www.encycarta.com.

Internet. *Market power* is the organization's ability to extract value from others in the market (e.g., buyers and suppliers). For example, market power with buyers can be used to charge higher prices and to hold or increase market share, while market power with suppliers can be used to lower costs or obtain exclusive rights to key inputs.²³

While firms should be aware of their existing resources and market power when formulating their intent, it can be dangerous to base strategic plans strictly on existing resources to the exclusion of the industry context. Resources that are sources of sustainable advantage in one setting, due to their rareness or difficulty to imitate,²⁴ can become liabilities if clung to in the face of fundamental changes. For example, Britannica's decline illustrates that its key resource in the print era—superior content and sales force—could not prevail over competitors who adapted to changes in technology that altered the value of key resources.

There has been significant debate regarding whether strategic advantage is best created through an external perspective—adapting the organization's internal resources to address shifts in the industry's competitive environment, versus an internal perspective—building hard-to-copy internal strategic resources and finding competitive environments that capitalize on them. Many writers now acknowledge that both perspectives are necessary, and that integration is the key.²⁵ As we see here, the HC BRIDGE™ framework reflects an integrated view. Elements of external competitiveness are used to identify how internal resources can offer unique and hard-to-imitate advantages. This integration is particularly valuable in understanding the strategic human capital implications of the Britannica case.

Figure 10-6 illustrates the analysis of three strategic resources in the Britannica case. Traditional resources may be valuable only if translated to fit the electronic content acquisition and distribution channel. It is ironic that, despite technological advancement and strategic transformation, one of Britannica's current key resources is also one of its oldest: its content and brand recognition. Although Britannica has quickly transformed itself into a web-based information community, nothing prevents rivals from imitating the company. What rivals cannot imitate, however, is Britannica's content tradition and famous brand. It is especially notable that the trusted brand name and content leadership (in terms of authority and uniqueness of experience) has the potential to create not only a critical mass of users, but also a *differentiated user community* that rivals will be unable to duplicate. Users who choose Britannica's website for the authoritative content are likely to represent a desirable demographic group for advertisers and are likely to respond more predictably to product offerings. The power of the authoritative content is now that it attracts only those web users who value high-end and education-oriented experiences and products. This potential

FIGURE 10-6 Strategic Resources and Market Power in the Britannica Case

Resource	Market Power Created	Britannica's Unique Position	Competitors' Position	Future Value and Sustainability
<ul style="list-style-type: none"> • Exclusive and Unique Content • Unique information thwarts substitution and content infrastructure creation • Allows price and market share maintenance 	<ul style="list-style-type: none"> • Well-established through exclusive, long-term relationships with in-house and outside content suppliers • Historically oriented toward two-year revision cycle 	<ul style="list-style-type: none"> • Possess few in-house content suppliers—competitors rely on cheap and ready access to Web-based sources • Pure content providers (CNN) are quicker in updating information • Technology providers (Microsoft) can compete on content to threaten market share 	<ul style="list-style-type: none"> • Competitors are inferior in quality, but superior in price and accessibility • Short-term difficulty in matching Britannica's brand image, but competitors can emphasize other product features in the e-market • High potential for building a trusted community of users around a known brand and shared experience with print product 	<ul style="list-style-type: none"> • Easily duplicated • Britannica's uniqueness is less valued by customers in Internet era
<ul style="list-style-type: none"> • Knowledge of Customer Buying Patterns • Anticipating customer share and price premium • Customer information allows market innovation that new entrants cannot duplicate 	<ul style="list-style-type: none"> • Unique customer trust creates awareness and habitual purchase decisions • Product awareness creates market share and allows price maintenance 	<ul style="list-style-type: none"> • High customer brand trust is limited to printed product • Brand attributes are oriented toward a printed and bound product, and not well-transferred to electronic products/channels 	<ul style="list-style-type: none"> • Search engines and software makers do not have expertise in encyclopedias and information sales • Both types of future competitors will amass information electronically that could eventually match this resource 	<ul style="list-style-type: none"> • Sustainable only if quickly applied to the electronic information area • Significant risk of loss through attrition of sales force to competitors

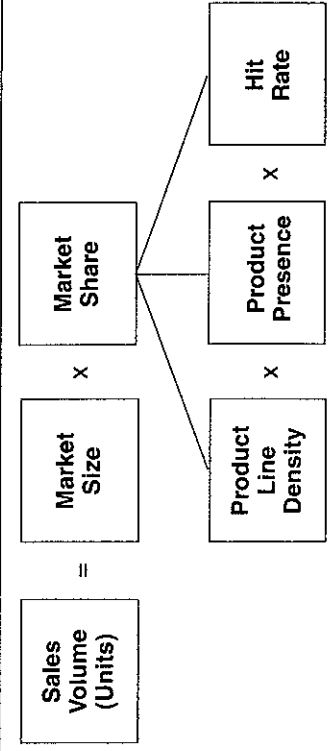
additional resource could potentially be as powerful as Britannica's massive sales force once was.

The value of integrating the external (industry-based) and internal (resource-based) strategic perspectives is clearly illustrated. Resource-based analysis would suggest that Britannica's traditionally authoritative content satisfied the "VRIO" requirements of sustainable strategic advantage.²⁶ It was valuable, rare, and hard to imitate, and Britannica was organized to exploit it. In the Internet era, authoritative content still satisfied the first three requirements (VRI), but the Internet requires organizing (O) differently to exploit the resource.

Business Algebra

Business algebra refers to the mathematical logic that shows how the organization creates value and generates profits and cash flow. This logic often draws on accounting data, but is not simply the accounting statements. Rather, business algebra expresses the logic of value creation for the particular business in mathematical form. For Britannica, a component of the business algebra related to sales volume is shown in Figure 10-7. Sales volume is seen to be a function of *market size* (the number of potential buyers) and *market share* (the percent of buyers choosing Britannica), which in turn is a function of *product line density* (the number of different products offered), *product presence* (the likelihood that buyers will encounter the product), and *close rate* (the probability that buyers choose the product when they encounter it). Business algebra provides explicit indicators of strategic success, enabling quantitative diagnosis. For example, Britannica's leaders might use the logic of Figure 10-7 to ask whether falling sales volume is due primarily to a shortage of products, lack of presence, or a poor close rate. The power of business algebra is best seen when we combine it with the value chain and constraint analysis.

FIGURE 10-7
Business Algebra for Sales Volume



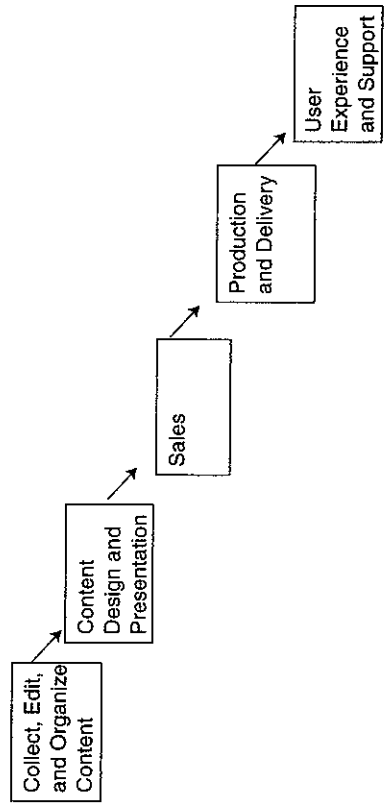
Value Chain and Constraint Analysis

Value chains are the processes that create and exploit strategic resources and market power. Physical value chains, for example, often reflect a sequence of acquiring materials, services, or components, then the transformation of those components into products or services, followed by outbound movement of finished products, then sales and customer management, then order-to-payment processes. Porter proposed that in most industries, firm-level value chains consist of five key activities—inbound logistics, operations, outbound logistics, marketing/sales, and service—plus the four support activities of technology development, procurement, human resource management, and corporate infrastructure.²⁷ Describing value chains helps us see precisely what “happens” to create or exploit strategic resources and market power. Value chain elements not only change with e-business technology, but they can also be “reconstructed” when information is combined across several value-chain elements.²⁸ For example, information from service encounters and marketing/sales may be combined to better predict customer needs and identify customer segments where high-margin service will be possible after the sale and where additional sales can be made through the service encounter.

Constraints are bottlenecks in the value chain.²⁹ They are important because relieving bottlenecks not only enhances value at the bottleneck, but allows other processes to create more value because they are no longer limited by the constraint. For example, if an organization with limited distribution adds distribution channels, it creates more valuable distribution, but it also allows the organization to exploit existing production and sales resources more fully because there is sufficient distribution capacity to accommodate them. Augmenting sales and production capacity makes little sense until the distribution constraint is addressed. Thus, understanding constraints is one key to focusing on the most critical internal processes and avoiding potentially wasteful attention to important but less critical processes.

Figure 10-8 depicts Britannica's basic value chain. The first element involves collecting, editing, and organizing the content of reference information. In the second stage, the content is designed, and the presentation approach is determined (e.g., printed, pressed onto a CD-ROM, or organized into a web page). The third stage involves the sales process (e.g., in-home sales in the print era and web-based sales in the Internet era). Next, the production and delivery of the product is either physical (i.e., via ground transportation in the printed product) or virtual (i.e., year-round maintenance of a network server on the Web). Finally, the user has a distinct experience, including the impressions and feelings the user has toward the product and related support services for getting the most from the product.

FIGURE 10-8
Britannica's Value Chain

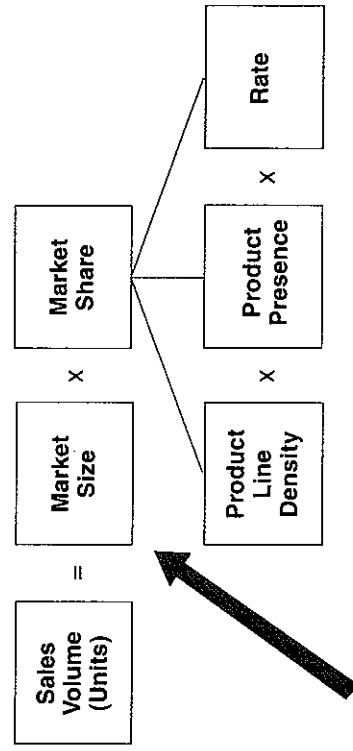


As we have noted, in the print era the user experience after the sale was not critical to success because the volumes were rarely opened after the sale. Still, content was important because Britannica sold the product to the much smaller institutional market, which in turn created Britannica's reputation as a content leader and generated the basic financial returns to cover the fixed costs. The in-home selling experience did create a unique value point, but the content and experience were not closely tied. In the new "community of users" model, the experience and content are much more closely tied. Britannica's content gets customers to the website, but they will return based on their entire web experience: the accessibility of the content, the ability of the editors to steer the user toward the most useful websites, and the presence of useful products and features that the user did not expect. It is this unique product experience that is instrumental in building the critical mass of customers—the community of users that can give Britannica a competitive advantage over rivals who also offer web-based information. Content and experience were largely distinct in the print era, but they are now inextricably linked.

This realization flows from the systematic analysis of Britannica's strategy through the earlier elements of the model in Figure 10-2. Moreover, understanding this value chain link has significant implications for talent planning and analysis, as shown in Figure 10-1.

Now let's combine the "constraints" analysis with business algebra. Recall that one of Britannica's dimensions of differentiation was the sales margin the company could generate from premium packaging options. One of the reasons that Britannica was able to succeed on these high margins was because of its ability to expand the market for print encyclopedias. In the print era, a primary constraint was the size of the market, which was limited to institutions (see Figure 10-9).

FIGURE 10-9
Constraints in the Print Era



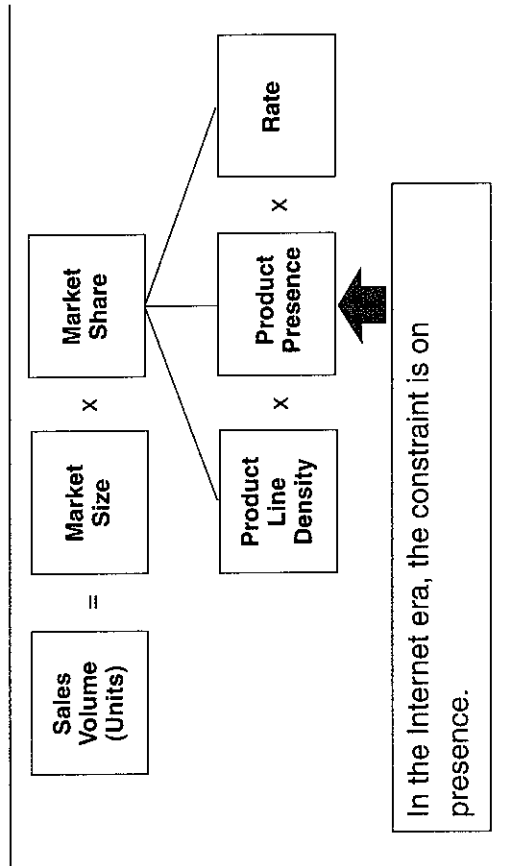
In the print era, the constraint was on the size of the market. The sales force was critical to expanding the market to new families.

Britannica successfully addressed this constraint with its massive sales force that expanded the market door-by-door, family-by-family. When less expensive, more accessible CD products made by competitors were packaged with the distribution of new PCs, millions of consumers had access to this information, and Britannica's edge in artificially expanding the market became obsolete. In an immense and quickly expanding market, the constraint was no longer the size of the market, but rather market share. Encarta and Grolier created an edge through alliances with PC distributors and quickly overtook the lion's share of the market.

In the Internet era, Britannica faced the technological transformation by embracing the "online community" business model. As a result, Britannica's primary constraint shifted again (see Figure 10-10). Market share is still more important than market expansion, but now the specific constraint is product presence rather than close rates. For the information community to succeed, Britannica must now expand its presence among consumers. A marketing executive at Britannica recently noted, "We are entering a new stage of our evolution into an Internet and news media company, and our new model requires that we raise our profile among consumers in a significant way."³⁰ It is ironic that despite all of the transformation of the value chain due to information technology, Britannica's key constraint is still centered on sales.

The nature of the market power created by sales and marketing in the Internet era is now clearer, because we can link it to the competitive

FIGURE 10-10
Constraints in the Internet Era



analysis and to the interaction of marketing and sales with the other key value chain processes using business algebra. Specifying the value chains and constraints thus calls into sharp focus the need to clearly define the nature of the talent required to create, enlarge, and support those business processes. It allows us to identify key talent pools and their specific actions necessary to carry out the new strategy.³¹ We now describe how talent links to the strategic analysis in e-business.

Talent Implications of Constraints

Talent implications link the analysis of constraints to human capital by identifying the specific human capital with the greatest potential to relieve the key constraints.³² Thus, through talent implications, we create the tangible link from strategic success to human capital. Moreover, because the implications are built on the foundation of constraint and resource analysis, they are seamlessly linked to the broad strategic imperatives. *Talent pools* are thus the linchpin in the impact model—the element that provides the bridge between strategy and people.

Pivotal roles describe the specific elements of talent that combine to create the talent pools. Roles can be pivotal through their effect on critical constraints. Roles can also become pivotal if they are clearly linked to critical resources or when differences in performance in those roles have a large effect on key resources or constraints. Job descriptions are helpful but not usually identical to pivotal roles. For example, a role in drug development is managing subjects for clinical trials. This role is a

combination of elements of the jobs of clinical subject recruiters, schedulers, data managers, and clinical experiment designers.³³ Translating strategic resources and constraints into talent and role implications reveals the key human capital areas that will have the most impact on strategy.

In the past, Britannica's key talent pool was the sales force because of the market constraint driving the need to expand the market into homes. The sales force was extremely expensive to support, but worth the investment because it was so successful in bringing new families into the market. The high margins gained from the premium packaging allowed Britannica to support the massive sales force. However, in the era of the Internet, Britannica's primary constraint has shifted. The path to increased market share is centered around increasing product presence rather than increasing hit rates.

Britannica's new critical talent pools must center around those involved in designing, refining, and promoting the new information community. Of course, important talent pools will be website designers, information specialists, and market researchers. However, the strategic analysis reveals that the talent implications go well beyond simply eliminating in-home sales representatives and replacing them with web designers and programmers. The competition to create an information community still revolves around delivering an experience that is uniquely informative. It seems likely that many of the same capabilities that made the Britannica content unique in the past will remain important. Talent pools that identify and deliver uniquely informative web content are just as important as in the past when unique content motivated libraries to purchase the product. In fact, Web customers experience this content firsthand.

The elimination of the in-home sales role does not eliminate the need for customer-savvy talent pools. Britannica's "community of users" strategy requires that it differentiate itself to attract precisely the education-oriented customers who might have purchased a print encyclopedia in earlier times. In fact, the Britannica website still features high-end bound collections, such as a \$2,500 "Encyclopedia of Art." The expertise of the in-home sales force and their intimate customer knowledge may well be valuable in creating a unique and user-driven community.

Our analysis shows vividly that the Internet era places even greater strategic value on cross-collaboration among various talent pools. The users of the Britannica website experience the content firsthand in ways that traditional users could not. The experience must integrate with the content, and vice versa. Web designers, information specialists, and market researchers must draw on one another's knowledge and expertise. This is a good example of the pivotal role concept in action. Roles become pivotal when differences in their performance make very large

differences in key resources or business processes. Roles go beyond jobs, to specify the combined work of different talent pools. With Britannica's new Internet focus, a pivotal role is understanding what consumers want from the information community (e.g., what search engine improvements or which supplementary products are in demand) and then quickly designing ways to maximize "stickiness." Stickiness, in the world of electronic commerce, is how well a site holds its visitors, brings them back, and becomes one of their favorites.³⁴ This "role" depends on the *combination* of expertise from those in jobs with customer contact, market analysis, and product design.

For HR and business leaders concerned with managing talent, the implications are now much clearer. For example, enhancing these pivotal roles requires creating opportunities for customer contact experts, technology designers, and content experts to work more closely together than in the traditional print product. By linking the talent analysis to the earlier elements of industry, processes, strategic resources, value chains, and talent, richer human capital implications can be identified. We move well beyond the idea of reducing the sales force to adding web designers. In fact, our earlier analysis suggests that it may be possible, perhaps even critical, to capture the intellectual capital of the former sales force by creating new capabilities, opportunities, and motivation systems to bring that knowledge to bear on the new electronic community. The next step, then, is to specify precisely what it is that these talent pools would *do* in their pivotal roles.

Aligned Actions

Aligned actions are observable human behaviors that support key talent.³⁵ By translating talent pools and pivotal roles into aligned actions, human resources and business leaders specify what it is they are looking for and "how we'll know it when we see it." Specifying aligned actions is essential for building "line of sight" among employees and their managers by specifying how individual behaviors relate to the strategic objectives of the organization.³⁶ Figure 10-11 and Figure 10-12

FIGURE 10-11

The Print Era: Talent Pools and Aligned Actions at Britannica

Strategic Advantage	Library-endorsed content	Expanded market of in-home users
Talent Pools and Pivotal Roles	<ul style="list-style-type: none"> • Authoritative writers • Strong, trusted relationships with libraries 	In-home sales experience providers
Aligned Actions	<ul style="list-style-type: none"> • Find and develop unique authoritative content • Sell to libraries 	<ul style="list-style-type: none"> • Sell the upgrades • Sell the in-home idea • Trade on "educational guilt"

FIGURE 10-12

The Internet Era: Talent Pools and Aligned Actions at Britannica

Strategic Advantage	Professionally endorsed content	Web-based content experience
Talent Pools and Pivotal Roles	<ul style="list-style-type: none"> • Authoritative writers • Creative information locators 	<ul style="list-style-type: none"> • "Discerning customer" marketers • Designers of information communities
Aligned Actions	<ul style="list-style-type: none"> • Find and develop unique authoritative content • Alleviate "information overload" • Develop content to fit the "community of users" marketing concepts 	<ul style="list-style-type: none"> • Build community-enhancing features • Make the experience match the content uniqueness • Respond to visitor questions consistent with the Britannica "brand"

show the contrast between the talent pools and aligned actions in the print and Internet era at Britannica.

Aligned actions were always important. For example, even in the "print" days it was strategically important for Britannica's sales force to focus on the fundamental value proposition of alleviating parental guilt. The Internet vividly reveals the value of collaboration across pivotal roles. For example, web designers can maximize their strategic impact by collaborating with information specialists to design optimal marketing strategies. The need for collaboration across the value chain was always important, but it is even more imperative in the increasingly competitive Internet era.

Creating "presence" in an Internet market is very different from the traditional role of selling a physical product, or even from determining what to put on a CD. In the present era, not only must the sales force understand and build stickiness and presence, but they must bring key market information to the design team to help them constantly understand customer changes. Not only must the design team be very good at technical innovations that support a "community," they must also be good at translating those technical possibilities into language that allows the sales and marketing talent to understand their implications and communicate them to customers. The traditional strengths of each group must be integrated.

Moreover, traditional sales actions may have new counterparts in the Internet era, where customer interactions often occur by phone or e-mail. Amazon.com reportedly has hundreds of "blurbs" that represent scripts for responding to customer complaints (such as the late arrival of an order). These blurbs are carefully written to appropriately convey Amazon.com's core customer messages.³⁷ At Britannica, this may suggest a role for former in-home sales representatives. Experi-

enced in-home representatives undoubtedly learned effective phrases or selling points in dealing with customers. Thus, former top salespersons may become top “blurb” writers in the Internet era. Once again, the integration of the internal and external strategy perspectives reveals how a resource (sales talent) can best generate competitive advantage when the competitive context changes.

Human Capacity, HR Practices, and HR Investments

The bottom three elements of the HC BRIDGE™ framework (Figure 10-1) further links *human capacity* (i.e., the potential to carry out aligned actions) to *HR practices* (i.e., the array of HR programs that serve to nurture and create the necessary capacity), and finally to *HR investments* (i.e., the resource deployments designed to put in place the HR practices).³⁸ Figure 10-13 shows how the human capacity and HR elements at Britannica flow from the aligned actions, using two of the key talent pools discussed—in-home sales for the “print” era and information-community designers for the “Internet” era.

Human capacity consists of the following three factors: capability, opportunity, and motivation (COM). Balance across these three elements is essential to achieving aligned actions, although capability (i.e., skills, competencies, and abilities) frequently receives the most attention. Figure 10-13 shows that in the print era, the human capacity was driven not only by appropriate compensation and selection, but also by the insight of placing sales professionals in the homes most likely to respond to the Britannica value proposition. Decades of successful in-home selling set Britannica apart in its ability to target appropriate households, and thus to provide the sales force with unique opportunities to excel. In the Internet era, for “community designers,” the matrix reveals an array of HR practices and investments that go well beyond the typical qualifications in technical web skills or programming. Rather, at Britannica, the unique strategic value proposition requires web designers with a strong connection to building an educational community. That includes the motivation to promote the Britannica “brand” of online knowledge and the ability and opportunity to work closely with content finders and designers. Capability, opportunity, and motivation to *collaborate* are much more important now than in the print era and, as we’ll show, possibly more important at Britannica than at other Internet companies.

A similar distinction emerges comparing the HR practices and investments in Figure 10-13. In the print era, the key practices involved promote in-home sales and investments in excellent samples of high-end products. Compensation systems based on a straight sales commission were effective in motivating the sales force to extend the market

FIGURE 10-13
Effectiveness and Efficiency Elements in the
HR BRIDGE™ Framework at Britannica

	Print Era (circa 1980)	Internet Era (circa 2000)
Talent Pools	In-Home Sales Experience Providers	Designers of the Information Community Experience
Aligned Actions	<ul style="list-style-type: none"> Sell the upgrades Sell the in-home idea Trade on “educational guilt” 	<ul style="list-style-type: none"> Build community-enhancing features Design experience to match the content Respond to visitor questions consistent with the Britannica “brand”
Human Capacity	<p>Capability</p> <ul style="list-style-type: none"> Knowledge of door-to-door sales techniques Extroverted personality Ability to accept rejection <p>Opportunity</p> <ul style="list-style-type: none"> Place the direct sales force in middle-class neighborhoods where Britannica sells the best—avoid areas where Britannica’s value proposition doesn’t work <p>Motivation</p> <ul style="list-style-type: none"> Passion for door-to-door sales Perceive a strong link between performance and pay Pride in being a part of the Britannica brand 	<p>Capability</p> <ul style="list-style-type: none"> Market research skills, understanding what is valuable Knowledge of what features cause “stickiness” behaviors in users <p>Opportunity</p> <ul style="list-style-type: none"> Frequent chances for designers and content finders to share knowledge Frequent chances for designers to work directly with user groups Eliminate structural barriers to collaboration <p>Motivation</p> <ul style="list-style-type: none"> Enjoyment of web design/ e-commerce Desire to be on cutting edge of the industry Pride in being a part of the Britannica “community”
HR Practices	<ul style="list-style-type: none"> Train on the “guilt alleviation” value proposition Provide updates on new product upgrade features Pay emphasizing sales commission, especially on high-margin features Select for door-to-door experience 	<ul style="list-style-type: none"> Provide recognition awards based on ranking of features by key community members Redesign the organizational structure to create cross-functional teams with content developers Recruit from pools of specialized “information” talent, such as libraries, museums, and schools Select based on experience using high-end educational websites
HR Investments	<ul style="list-style-type: none"> Obtain time from top sales managers to design and run classes on the “message” Budget for recruiting from leading in-home sales organizations Provide budget for high-end samples for all salespeople Hold highly public sales conferences to recognize sales leaders 	<ul style="list-style-type: none"> Budget for recruitment ads in outlets for professional librarians Increase pay allocation, to attract and retain the “best and brightest” in the information world Increase professional travel allocation to allow designers to attend professional information specialist events

into homes, alleviating a key constraint in the print business process. In contrast, the Internet era requires a significantly different business model with processes that are constrained in different ways.

This analysis reveals implications well beyond the popular general notions of changes in labor markets (e.g., the e-lance economy or talent wars or virtual teams). These developments may provide important ways to accomplish the strategic human capital goals, such as by forming virtual teams of designers and content developers. However, unique strategic human capital advantage emerges from the specific human

capital processes that link to the rich strategic analysis. By understanding the key strategic resources and process constraints, it is possible for HR leaders to be discerning adopters and responders to these developments. It is critical that HR leaders understand where to fight the "talent war," where the "e-lance" economy provides the greatest benefit and threat, and when and where investments in "virtual teams" will pay off the most. Business algebra (Figure 10-7) provides ways to measure these payoffs so that they logically link to strategic goals.

Ideally, HR investments translate the decisions about HR practices into specific resource deployments.³⁹ These resources certainly include money, so HR budgets are important; but an even more important resource is the time commitment required of key constituents (e.g., trainees and managers who do the training, the cross-functional team members, among others). Such resource commitments and requests are more seamlessly and logically linked to the strategic imperatives of the business.

In the print era, Britannica likely tolerated the fact that its sales compensation and support system was higher than competitors. It was obvious that the in-home sales force was allowing Britannica to strategically expand the market to areas where competitors could not go. In the same way, the analysis of the Internet era shows that Britannica's "community" designers must possess unique human capacities well beyond those of more typical web designers, and thus must be supported by different HR practices and investments. Britannica will likely gain an advantage through its practice of selecting web/product designers from unconventional talent pools that may have unique insight into how to "sell" informative content. For example, Britannica may recruit and select from libraries, museums, and schools. Compensation systems at Britannica are likely to set higher base salary levels because of the need for web community designers who can and will work more closely with content developers than at other Internet companies. Incentives built on positive feedback from users who best fit the target community profile make sense now. Thus, in terms of HR investments, Britannica may actually appear expensive when simple benchmark comparisons are made. Cost-per-hire and pay-per-designer may well be higher for Britannica, but they are well worth the investment because of the increased collaboration and integration with content that results.

Conclusions and Take-Aways for Managers

The Britannica case study presented here shows how a rich and logical strategic analysis can link strategic impact to talent, providing important insights as organizations anticipate challenges and opportunities in e-business. The importance of the "linking elements" between strategic changes and HR practices is clear.

"One Best Way" in the Internet Era?

The debate rages on regarding whether a particular set of HR practices is best for many situations.⁴⁰ The temptation to search for "magic bullets" is certainly no less apparent in the Internet era. As we have noted, there are already signs of emerging general prescriptions about the future of work (e.g., teams, free-lance deals, outsourced HR, individualized incentives). However, the logic and theory of sustainable strategic advantage suggests the importance of uniqueness and the ability to protect those things that differentiate a business to achieving long-run success. We continue to believe that there will be opportunities to capitalize on differentiated human capital strategies. However, identifying and executing those strategies requires the kind of rich and logical strategic links depicted throughout this chapter. There is no free lunch, and uniqueness comes through hard analytical rigor.

The Britannica case study illustrates this vividly for the Internet era. It is certainly important to engage the talent war for web design, but the analysis reveals the importance of authoritative content in the Internet era. This reveals talent pools (e.g., library professionals) that may be relatively untapped in the rush to attract more typical web design professionals. Moreover, the example has revealed the value of drawing on traditional strengths (e.g., the knowledge of the in-home sales force for writing "blurbs" or the value of traditional content experts in creating the web "community").

Implications for Benchmarking

The value of uniqueness, richly integrated with strategy, has implications for benchmarking. HR practices need to "fit" the strategy, but more important they must fit an entire array of linking elements (e.g., key constraints, talent pools, pivotal roles, and aligned actions). Best practice and benchmarking approaches to HR management become more difficult in the new economy, precisely because of the exploding variety of ways to create value. Moreover, new practices can be shared and adopted at a much faster rate due to technological communication and diffusion. The Britannica story illustrates that new business models transform entire industries, making competitors out of previously unrelated businesses and industries. Critical constraints and key talent pools change rapidly both between and within organizations, making unique, strategic alignment crucial for survival in the new economy. Benchmarking will not go away in the new economy. In many ways, it becomes easier due to greater access to information and greater cross-pollination as professionals move between organizations. However, the depth of strategic analysis necessary to benchmark effectively will increase.

General Talent Implications of E-Business

Within the caveats about overgeneralizing, it seems likely that changes from technology will make certain talent pools increasingly critical across a wide variety of industries. Certainly as Internet-related firms continue to thrive and bricks-and-mortar firms launch web initiatives, it is clear that talent pools surrounding the technological support (e.g., programmers) become strategically important. One particular talent pool becomes especially important across all industries that are related to the development and establishment of communication protocols, standards, and procedures.⁴¹ Often the primary constraint to mass communication (or "reach") is not technology, but a lack of communication standards that link different types of systems together.⁴² For example, electronic data interchange (EDI) systems have been in place for more than twenty years but have been limited in their influence because they could only be used by firms that had the same proprietary software. The success of the Internet has been largely due to the fact that it established protocols or standards by which all different types of systems could communicate with each other. Standards may take the form of routinized processes such as those in operating rooms that allow doctors, nurses, and technicians who have never seen each other to work together efficiently. For Britannica, for example, talent pools with a facility regarding emerging standards for finding content on the Internet may be a key resource for the future. This is one reason for the importance of tapping library professionals, where existing knowledge of these standards resides.

Information technology is likely to lead to a decrease in the importance of the typical managerial role as network organizations become more and more common. With the emergence of freelance (or e-lance) workers and temporary, self-managed work teams and virtual teams, managers are not needed for daily tasks; however, top leadership becomes increasingly important in terms of determining a firm's strategy (as technology changes the industry context) and creating a firm's culture that is supportive of that strategy. Thus, talent pools that involve strategic leadership are important across all industries. For Britannica, such leadership would be particularly key in facilitating collaboration between content developers and content deliverers. Developmental experiences that take these technical experts and develop their ability to lead and facilitate teams are likely to be valuable across a wide variety of future strategic possibilities.

The Importance of Context and Logic

The Britannica story clearly demonstrates that disruptive technologies such as the Internet can change not only individual businesses (affecting their business model, strategy, and value chain), but also entire

industries. In particular, the Internet generates entirely new ways of creating value, opening the door for an unprecedented array of potential substitutes and new entrants. Responding quickly to such changes creates a paradox. On the one hand, it can appear to make deep strategic analysis impossible because changes simply occur too quickly to be analyzed. However, abdicating the responsibility to understand strategic context and innovate in richly differentiated ways is likely to be counterproductive, especially with regard to human capital. Scarce and important resources require rich strategic responses. The paradox is that the rich logic provided by detailed strategic frameworks such as the HC BRIDGE framework illustrated here may actually increase the speed of response. The logic can be applied repeatedly, even if the information and conclusions change. Over time, organizations that develop shared logical frameworks can move more quickly and decisively precisely because they have no need to reinvent their strategic language and logical linkages. The strategies, processes, pivotal roles, and HR practices may change continually, but the logic of the links may provide the kind of "standards" for human capital strategy that have allowed the Internet to flourish and evolve so quickly.

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