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Abstract
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Keywords
economy, business, consumer, HR, practice, commerce, work, companies, strategy

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The term "New Economy" has been coined to describe the remarkable economic performance of the 1990s. Stiroh, (1999) an economist at the Federal Reserve Bank of New York observes that its defining characteristic is a "focus on increasing globalization and expanding information technology" (pg. 87). Research suggests that revenues from electronic based business to business trade will double over the next five years from $43 billion in 1998 to $1.3 trillion in 2003. Revenues from business to consumer trade are predicted to rise from $8 billion to $108 billion over the same time period (Forrester Research, 1998). However, there is increasing attention to the challenges facing business in the new economy, and an increasing chorus of analysts suggesting how tenuous many of these business models really are. A recent Barron's article showed that many dot-com companies have only days of remaining cash (Willoughby, March 20, 1999).

Such a key emerging phenomenon has not escaped the attention of writers, though the existing body of writing has some important gaps. We would classify existing e-business literature into two groups. First, there is a growing body of literature that discusses the how the Internet is transforming business models and organizational strategies. A second, much smaller body of work has focused on e-HR, or more specifically, the implications of the Internet on various HR practices.

E-Business and Strategy

The business press describes how electronic commerce has enabled firms to extract value from markets in new ways (See for example: Garr, 2000; Hagel & Singer, 1999; Rayport & Sviokla, 1995). For example, Hagel and Singer's (1999) concept of the Infomediary suggests that in the future, firms can create value by acting as "information agents" to consumers. In this model, consumers give Infomediaries access to their personal information (e.g., demographics and purchasing habits) in return for an array of "concierge-like" personalized services (such as advice on which products to buy). The Infomediary markets their clients information to companies that match the consumers' profile and pass the revenues onto the consumer.

Much of this writing discusses the strategic implications of the internet. From this literature, two major points emerge. First, the Internet enables firms to streamline their value chains, by making existing processes more efficient or by eliminating them altogether (Evans & Wurster, 1999; Tapscott, 1999; Rayport & Sviokla, 1994). This streamlining effect of business processes has become known as disintermediation (Evans & Wurster, 1999, Tapscott, 1999). The internet also eliminates the tradeoff between richness and reach of information (Evans &

Wurster, 1999). The Internet enables high bandwidth communication of very rich or dense data. This has the effect of reducing the hierarchical structure of industries, (e.g., in the supply chain), facilitating transaction between firms where it was never before possible.

Despite the attention given to business models, there is a great deal of confusion regarding how they are defined, and how they may be formulated. One framework (Timmers, 1999) proposes the business model as having three elements: (1) The various business actors (e.g., consumers, or retailers) and their roles; (2) The potential benefits for each of the business actors; and (3) The sources of revenues for the organization.

Timmers (1999) describes new business models using two variables: a firm's *value chain* and its *market interaction patterns*. The value chain is a concept from Porter (1985), and involves the processes used to create value and competitive advantage, such as inbound logistics, throughput, outbound logistics, marketing and sales, research and development, etc. The four market interaction patterns are: "one-to-one", "one-to-many", "many-to-one", and "many-to-many."

Several of the business models that result are shown in Appendix 1, which vividly illustrates the potential strategic impact of e-business on organizations. However, business models provide only a starting point. Organizations must move beyond broad descriptions toward strategic analysis in order to identify how they should direct their businesses in the context of the e-business revolution. Thus, though observations about changing business models and industry strategies are helpful, they do not easily direct decisions about human capital.

The Impact on e-HR

What, then, is the state of writing about the human capital implications of e-business? Unfortunately, it is substantially smaller than the writing about business strategy writing noted above.

One area of writing on human capital focuses on how information technology reduces the value of traditional hierarchies. In the new economy, alternative employment forms have emerged, such as virtual teams and free lance workers (Malone & Laubacher, 1998; Townsend et, al 1998). Malone and Laubacher (1998) propose that e-lance workers will emerge as a dominant form of employment in the 21st century, where individuals will function primarily as independent contractors or consultants, leveraging information technology to complete specific tasks, and the moving on. Traditional command and control HR practices will be less effective than practices that support autonomy, collaboration, and innovation.

Regarding the e-business implications of individual HR practices, much of the attention in the popular business press associated with the increased use of stock ownership in compensation systems, (Business Wire, April 18, 2000), recruitment wars (Business Week, August 9, 1999) in the tight labor market (e.g., for tech talent), and in emerging technologies for electronic training (Internet Week, October 5, 1998).

The Gap in our Knowledge: Linking Strategy and Human Resources

The writing about e-business strategy and models provides no way to directly develop human capital strategies tied to competitive shifts, while the writing on e-HR focuses mainly on specific labor market developments, or specific HR techniques that are affected by new technology.

Thus, It is important to develop an approach to strategic analysis that provides a rich and actionable logic linking human capital to these significant shifts in the business landscape. In this paper 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 resource management. There is a need for rich strategy diagnosis, that is 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 (e.g., Chadwick & Cappelli, 1998), as well as the need to look inside the "black box" linking HR practices to organizational success (Boudreau & Ramstad, 1997, 1998).

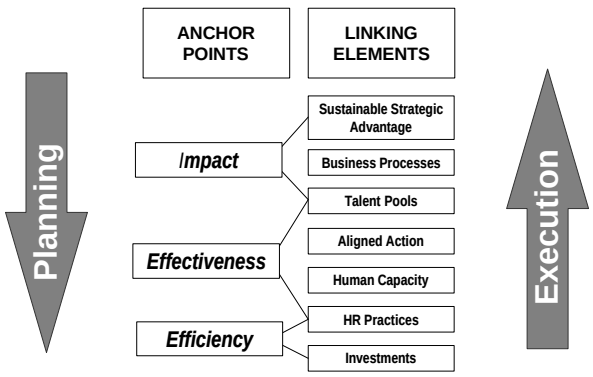
Specifically applied to e-commerce, such an analysis would begin to answer questions such as: "What human capital response is most appropriate when technology fundamentally shifts the relationship between our firm and our suppliers?" "What is the appropriate human resource strategy to optimize the value of a sales force when our customers receive more information through the web?"

The HC BRidge™ framework (Boudreau & Ramstad, 2000), is one model for articulating and understanding these links. The diagram below shows the HC BRidge™ framework. The upper three linking elements of the HC Bridge framework (see Figure 1) comprise the "Impact" part of the model. These elements focus on articulating strategic success with enough detail to identify key business processes and the link between processes and the talent pools of the organization. The "Impact" part of the model provides the strategic context to differentiate the HR response to different talent pools. With the talent pools identified, the lower part of the HC BRidge™ framework focuses on enhancing the "effectiveness" and "efficiency" of

HR investments. Effectiveness links the HR practices to changes in the key talent pools. Efficiency determines if resources devoted to HR practices are used wisely.

Identifying Impact is often the most difficult task in applying the model, yet the most critical, because it ensures that effectiveness and efficiency are "directionally correct" and focused on the most critical talent issues. Moreover, many of the unique elements of human capital strategy in the internet era require a detailed understanding of the "Impact" elements. So we will devote special attention to "Impact" in this paper.

Figure 1
HC BRidge™ Framework



We will illustrate how the model can be applied, using a case study of Encyclopedia Britannica originally described by Evans & Wurster (2000). 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 organization and human resource 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

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 1990's competitors such as Funk and Wagnall's (later renamed as Encarta when it was acquired by Microsoft) and Grolier (formerly Encyclopedia Americana) devoted themselves entirely to CD-ROM production and stopped printing the 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 multi-media products offered by Encarta and Grolier. By 1995, Britannica's future looked bleak. Sales of print bound encyclopedias had plummeted 80% 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 "Richness" of the sales experience (a vast in-home personal sales force) made sense when expanding into a new market (moving from institutions to homes), but "reach" can become more important when selling into an already-developed market (CD's bundled with personal computers). "Richness" (Britannica's vast and unique content) can become a liability (CD's couldn't hold the content)

when the market shifts toward "reach" and convenience (CD's on the PC).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." (Fortune, November 22, 1999, Useem). 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 is now one of the few on-line information sites to offer the content free of charge. 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 their web presence appears to be paying off. "USA Today" (Farrell, 4/25/2000) reports that home user traffic has increased over 75% since January when their Super Bowl ad aired. Over a three month period, the number of unique users to the web site 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 web site (see "Palm Users Get Encyclopedia Britannica", USA Today, 4-17-00). Using the latest global positioning technology, the new Britannica software can be programmed to automatically send users information relevant to where ever 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 importantly, increases traffic on its web site, and is another example of Britannica's effort to reach its goal of becoming the preeminent on-line information community. Britannica's emerging Information Community business model reflects the Infomediary concept (see Hagel & Singer "Net Worth", 1999), because revenues are

generated through generating a critical mass of regular users, who make direct purchases from the Britannica marketplace and attract advertising revenues.

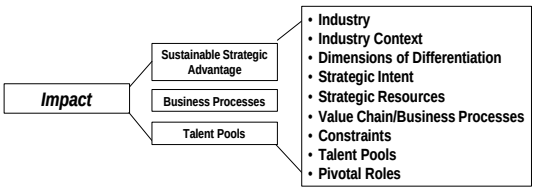
A Framework for Understanding The Human Capital Lessons

We have seen how 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 resource management. Next, we use the HC BRidge™ framework to analyze Britannica case, and to derive strategic talent and human capital implications.

Ramstad and Boudreau (2000) have expanded the Impact part of the HC Bridge™ framework into the nine detailed elements shown in the diagram below. Isolating the elements of "Impact," it is possible analyze strategy and competitive advantage so that they link clearly to implications for organizational talent. They have also analyzed how the changes created by the internet and the new e-economy.

Figure 2
Detailed Elements of Strategic Impact Linking to 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 (Ramstad & Boudreau, 2000). 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." 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.

One of the most distinct characteristics of the Internet 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 Table 1. When the industry was defined by printed reference materials, 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.

Table 1
Britannica's Industry, Then and Now.

"Print Only Era" (Circa 1980)	Internet Era (circa 2000)	
Competitors • Compton's • Americana (Now Grolier) • Funk & Wagnall's (Now Encarta) • World Book	Competitors • Compton's • Grolier • Microsoft Encarta • IBM/World Book • Encyclopedia.com	• CNN.com • USAToday.com • Yahoo.com • Altavista.com • MSN.com • Amazon.com • eToys.com

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 "infomediaries," 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 (Ramstad & Boudreau, 2000). These forces might include: the industry's size and growth rate (including the life-cycle stage and the "value migration" pattern), factors affecting industry profitability (competitors,

suppliers, buyers, new entrants, and substitutes, as noted by Porter, 1985), 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 (1985) 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 the industry competitors. For example, identifying that the industry will become increasingly regulated suggests developing resources such as strong relationships with regulatory agencies. Identifying that an industry is entering a period of more rapid growth suggests that the emphasis might 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.

Table 2 depicts a strategic context analysis that might have occurred circa 1983, as the emergence of the PC was apparent, but before technology had actually changed the industry. In a non-electronic world, the 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 reliable revenue base is one factor that made it feasible for Britannica to consider investing in an in-home sales force to expand the market.

Table 2
Britannica's Industry Context: Then and Now

"Print Only Era" (Circa 1980)	Internet Era (circa 2000)
Bargaining Power of Suppliers Suppliers- • Manufacturers of book printing materials • Content Suppliers	Bargaining Power of Suppliers Suppliers- • Content suppliers (e.g., AP wire), • Manufactures of print & CD ROM materials • Toy and educational product manufacturers.
Bargaining Power of Buyers Buyer reach- • Door to door • Schools	Bargaining Power of Buyers Buyer reach- • Online sales • Bricks and Mortar retail • Some schools
Threat of Potential New Entrants Threats- • Companies that could match Britannica's value proposition but do so more cheaply and more conveniently (Grolier & Encarta)	Threat of Potential New Entrants Threats- • 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- • Technologies: CD-ROM, PC, Internet	Threat of Substitutes Threats- • Still technologies, which increase the ease of information flow. But which information and which technologies?

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's 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 might 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 earlier). 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 the "Impact" builds a "map" showing the dimensions on which industry competitors distinguish or "differentiate" themselves to gain economic value (Ramstad & Boudreau 2000). Traditionally, these dimensions focus on customer relationships, such as price, service, product customization, innovative features, etc. (e.g., Treacy & Wiersema, 1997). 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 (such as Dell's "Be Direct" model). These dimensions may be "invisible" to ultimate customers (Chatterjee, 1998), but they are often key to competitive advantage now and in the future. This is why identifying buyers, suppliers and substitutes was 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 their position on the key dimensions.

With regard to e-commerce, defining the dimensions of differentiation is particularly important, and is a key source of insights regarding the competitive space. For example, the emergence of on-line 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 comprehensiveness 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 and in their offices, consumers increasingly look to the web for such information, making it a new arena for competition.

"Strategic Intent" defines the organization's target position on the map (Ramstad & Boudreau, 2000). For each dimension of differentiation, it will show 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 Britannica case illustrates how information technology can change the dimensions of differentiation within an industry. Table 3 contrasts selected elements of the differentiation and strategic intent "map"

that might have been constructed for the encyclopedia industry in the 1980's, to the emerging map with the advent of the internet. Prior to the emergence of electronic technology, the differentiation map at was fairly simple. Firms differentiated themselves on the bases of price, content quality, and alternative products. In particular, 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 powerful endorsement of libraries and schools, that provided an even greater boost to their reputation as a content leader. A key source of Britannica's profit were packaging options (e.g., premium leather bindings) which 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.

Table 3: Differentiation Map of the Encyclopedia Industry, Then and Now

The "Print Only" Era (circa 1980)

	Britannica	***Compton's***	***Funk & Wagnall's***	***World Book***	***The New Book of Knowledge (Grolier)***
Retail Price (1984)	$1,500	$599	$144.99	$499	$398
# Volumes	32	26	29	22	21
Primary Distribution Channels	Door to door, book stores and libraries	Book stores	Grocery Stores	Schools	Preschools & Mail order
Content Quality	World-class expert content providers Reputation endorsement from libraries	Average content and little library representation	Average content. "Grocery Store" image not high in reputation.	Average content. Strong reputation with schools	Average content. Little library representation
Additional Products & Options	Premium Packaging (e.g., leather bindings)	Webster's Dictionary	None	World Book Atlas, Medical Journal, & Dictionary	None

The Internet Era (Circa 2000)

	Britannica	***Compton's***	***Encarta***	***World Book***	***Groliers***	***Encyclopedia.com***
Product Channels	CDROM, Web, Print	CDROM, Print, Web	CDROM, Web	CDROM, Web, Print	CDROM	Web
# Base Articles	72,000	40,000	42,000	21,000	37,000	14,000
Retail Price	CD: $69 Web: *Free* Print: $1,250	CD: $14.95 Print: $599	CD: $100 Web: $49/year	CD: $89.95 Web: 49.94/year Print: N/A	CD: $49.95	Free (Revenues through advertising)
Other Products	Web: News services, feature articles, search engine, e-mail, educational toys, navigation software	Web: e-Games, Virtual tours, Books, Personal improvement products	Web: eagles, Web based Lesson plan archives, various CD products	Literacy programs and products, electronic learning aid toys	Retail Children's books, reading clubs, educational CDs	None

Source: New York Times (Dec 23, 1984). Bookshelf: Section 7, p 20.
Sources: www.britannica.com, www.comptons.com, www.msn.encarta.com., www.encylopedia.com, www.grolier.com., www.worldbook.com.
(See reference list for additional source articles).

Table 3 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 their 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, they must maintain the high standard of quality and authoritative content that brought them their long standing reputation. Second, they 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 much larger number of base articles (see Table 3) 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 (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 (Ramstad & Boudreau, 2000). *Strategic resources* are the valued organizational elements that make the biggest difference in achieving, sustaining and protecting strategic intent. Traditional examples include physical assets (locations, raw

materials, plant/equipment), exclusive rights (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 who has "book marked" your site, and having top web development talent are all strategic resources that never existed before the emergence of the Internet. *Market Power* is the organization's ability to extract value from others in the market (buyers, suppliers, etc.). 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 (Ramstad & Boudreau, 2000).

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 (Barney & Wright 1998), can become liabilities if clung to in the face of fundamental changes. For example, Britannica's decline illustrates that their key resource in the print era -- their superior content and sales force -- could not prevail over competitors who adapted to changes in technology that altered the value of key resources.

Table 4 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: it's content and brand recognition. Although Britannica has quickly transformed itself into a web based information community, nothing prevents rivals from imitating them. 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 the critical mass of users, *but also a differentiated user community* that rivals will be unable to duplicate. Users who choose Britannica's web site 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 additional resource could potentially be as powerful as Britannica's massive sales force once was.

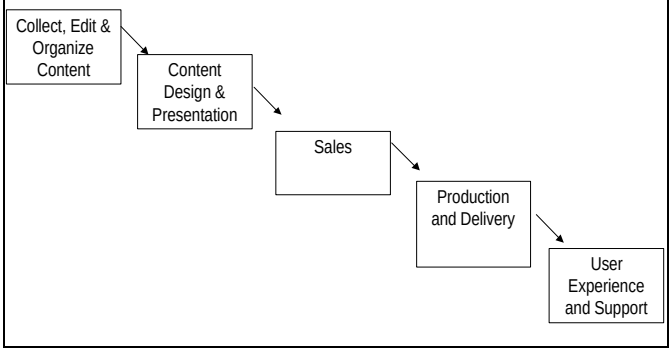
Table 4
Strategic Resources and Market Power in the Britannica Case

Resource	Market Power Created	Britannica's Unique Position	Competitors' Position	Future Value and Sustainability
Exclusive & Extensive unique Content	• Unique information thwarts substitution & content infrastructure creation • Allows price & market share maintenance	• Well established through exclusive, long-term relationships with in-house and outside content suppliers • Historically oriented towards 2 year revision cycle	• Few in-house content suppliers—reliance on cheap & ready access to web based sources • Pure content providers (CNN) quicker in updating information • Technology providers (Microsoft) can compete on content to threaten market %	• Easily duplicated • Britannica's uniqueness is less valued by customers in Internet era
Brand Recognition	• Unique Customer trust creates awareness and habitual purchase decisions. • Product awareness creates market share and allows price maintenance	• High customer brand trust limited to printed product. • Brand attributes are oriented toward a printed and bound product, & not well-transferred to electronic products/channels.	• Competitors inferior in quality, but superior in price and accessibility. • Short-term difficulty in matching Britannica's brand- image, but can emphasize other product features in the e-market.	• Brand can retain its value in trust and quality if translated into key features of the e-market. • Potentially sustainable if successful as a trusted advisor in the e- information arena. • High potential for building a trusted community of users around a known brand and shared experience with print product.
Knowledge of Customer Buying Patterns	• Anticipating customer desires creates market share and price premium. • Customer information allows market innovation that new entrants cannot duplicate.	• Long-term understanding built through intimate, in- home customer contact. • Sales force understands buying decisions and selling processes • Focus on printed product and door-to-door selling	• Search engines and software makers do not have expertise in encyclopedia and information sales. • Both types of future competitors will amass information electronically, that could eventually match this resource.	• Sustainable only if quickly applied to the electronic information area. • Significant risk of loss through attrition of our sales force to competitors.

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 transforming those components into products or services, followed by outbound movement of finished products, then sales and customer management, then order-to-payment processes. Porter (1985) proposed that in most industries, firm-level value chains consist of the following elements: (1) inbound logistics, (2) operations, (3) outbound logistics, (4) marketing/sales, and (5) service, plus these support activities: (6) technology development, (7) procurement, (8) human resource management, and (9) corporate infrastructure. 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 "re-constructed" when information is combined across several value-chain elements (Timmers, 1999). For example, information from service encounters and marketing/sales might be combined to better predict customer needs and to identify customer segments where high-margin service will be possible after the sale, and where additional sales can be made through the service encounter.

Figure 3
Britannica's Value Chain



Constraints are bottlenecks in the value chain (Boudreau & Ramstad, 1997, 1998; Ramstad & Boudreau, 2000). 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

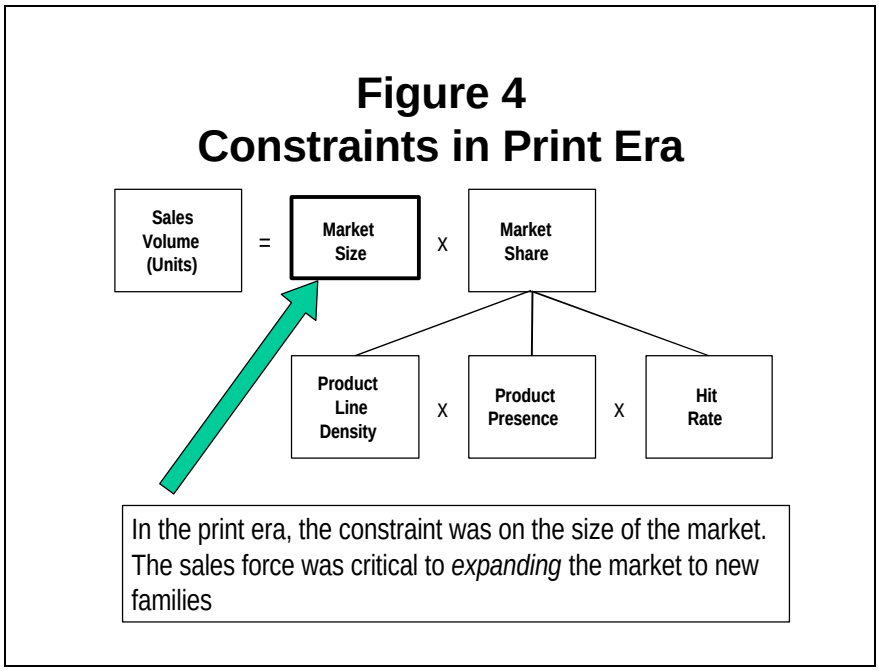
capacity makes little sense until the distribution constraint is addressed. Thus, understanding constraints is one key to focusing on the most critical internal processes, and avoiding potentially wasteful attention to important, but less critical, processes.

Figure 3 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 (printed, burned onto a CD-ROM, or organized into a web page.). The third stage involves the sales process (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 (via ground transportation in the printed product) or virtual (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.

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 it sold the product to the much smaller institutional market, which in turn created the 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 uncanny 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 will give Britannica the competitive advantage over rivals who also offer web based information. Content and experience were largely distinct in the print era, but are now inextricably linked.

This realization flows from the systematic analysis of Britannica's strategy through the earlier elements of the model. Moreover, as we shall see, understanding this value-chain link has significant implications for talent planning and analysis.

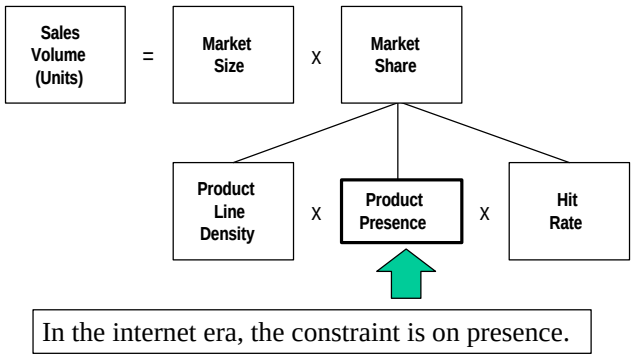
To illustrate the concept of "constraints," we will focus on the factors driving sales in the Britannica example. Recall that one of Britannica's dimensions of differentiation was sales margin they could generate from premium packaging options. One of the reasons that Britannica was able to succeed on these high margins is because of its ability to expand the market for print encyclopedias. In the print era, a primary constraint was the size of the market, limited to institutions.



Britannica successfully addressed this constraint with its massive sales force, who expanded the market door by door, family by family. When cheaper, 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's 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 5). Market share is still more important than market expansion, but now the specific constraint is product presence rather than hit rates. For the information community to succeed, Britannica must now expand their 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" (Business Wire, 1999). It is ironic that despite all of the transformation of the value chain due to information technology, Britannica's key constraint is still centered around sales.

Figure 5
Constraints in Internet Era



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 analysis, and to the interaction of marketing and sales with the other key value-chain processes. 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 (Boudreau & Ramstad, 2000). 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 (Boudreau & Ramstad, 2000). 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. As we have seen, roles can be pivotal through their effect on critical constraints, but roles also become pivotal if they are clearly linked to critical resources or when differences in performance in those roles have a large effect on a 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 (Boudreau & Ramstad, 2000). 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 once again. Now the path to increased market share is centered around increasing product presence rather than increasing hit rates.

Britannica's new critical talent pools will center around those involved in designing, refining, and promoting the new information community. Of course, important talent pools will be web site 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 now. Talent pools that identify and deliver uniquely informative web content will be just as important as in the past, when unique content motivated libraries to purchase the product. Now, web customers experience this content first-hand.

The elimination of the in-homes 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 web site still features high-end bound collections, such as an $8,000 "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 above shows vividly that the internet era will place even greater strategic value on cross collaboration among the various talent pools. The users of the Britannica web site will now not only be sold the content, they will experience it first hand. 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, business processes, etc. 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 to improve about the search engine, understanding 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 (Masie E., Jun 7, 1999). 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 add 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 Action

Aligned actions are observable human behaviors that support key talent (Boudreau & Ramstad, 2000). By translating talent pools and pivotal roles into aligned actions, human resource 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 (Boswell, 2000; Boudreau & Ramstad, 2000), by specifying how individual behaviors relate to the strategic objectives of the organization. Tables 5 and 6 show the contrast between the talent pools and aligned actions in the print and internet era at Britannica.

Table 5
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	Authoritative writers. Strong, trusted relationships with libraries.	In-home sales experience providers
Aligned Actions	Find and develop unique authoritative content Sell to libraries	Sell the upgrades Sell the in-home idea Trade on "educational guilt"

Table 6
The Internet Era: Talent Pools and Aligned Actions at Britannica

Strategic Advantage	Professionally-Endorsed Content	Web-Based Content Experience
Talent Pools and Pivotal Roles	Authoritative writers Creative information locators	"Discerning customer" marketers Designers of information communities
Aligned Actions	Find and develop unique authoritative content Alleviate "information overload" Develop content to fit the "community of users" marketing concepts	Build "community-enhancing" features Make the experience match the content uniqueness Respond to visitor questions consistent with the Britannica "brand."

Aligned actions were always important. For example, even in the "print" days it was very 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 could 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 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 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 (Wall Street Journal. April 17, 2000, p. R6). At Britannica, this may suggest a role for former in-home sales representatives. Experience 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.

Human Capacity, HR Practices and HR Investments

The bottom three elements of the HC BRidge™ framework link *Human Capacity*, the potential to carry out aligned actions, to the *HR Practices*, the array of HR programs that serve to nurture and create the necessary capacity, and finally the *HR Investments*, or resource deployments designed to put in place the HR practices (Boudreau & Ramstad, 2000). Table 7 shows how the human capacity and HR elements flow from the aligned actions identified earlier, using two of the key talent pools discussed earlier -- In-home sales for the "print" era, and information-community designers for the "internet" era.

Table 7
Effectiveness and Efficiency Elements of HC 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	• Sell the upgrades • Sell the in-home idea • Trade on "educational guilt"	• Build "community-enhancing" features • Design experience to match the content Respond to visitor questions consistent with the Britannica "brand."
Human Capacity	CAPABILITY • Knowledge of door to door sales techniques • Extroverted personality • Ability to accept rejection OPPORTUNITY • Place the Direct sales force in middleclass neighborhoods where Britannica sells the best—avoid areas where Britannica's value proposition doesn't work MOTIVATION • Passion for door to door sales • Perceive a strong link between performance and pay • Pride in being a part of the Britannica brand	CAPABILITY • Market research skills, understanding what is valuable • Knowledge of what features cause "stickiness" behaviors in users OPPORTUNITY • 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 MOTIVATION • 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	• 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	• 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	• 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	• 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

Human capacity consists of the following three factors: capability, opportunity, and motivation (COM). As Boudreau and Ramstad (2000) note, balance across these three elements is essential to achieving aligned actions, though capability (such as skills, competencies, and abilities) frequently receives the most attention. Here, Table 7 shows that in the print era, the human capacity was driven 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, their unique strategic value proposition requires web designers with a strong connection to building an educational community, including the motivation to promote the Britannica "brand" of on-line knowledge and the ability and opportunity to work closely with content finders and designers. Ability, motivation and opportunity *to collaborate* are much more important now, than in the print era, and more important at Britannica than at other internet companies.

A similar distinction emerges comparing the HR practices and investments in Table 7. In the "print" era, the key practices involved standard sales support functions, with a significant unique element to promote in-home sales, and investments in excellent high-end samples. Compensation systems based on a straight sales commission were very effective in motivating the sales force to extent the market into homes, alleviating a key constraint in the "print" business process. In contrast, the internet era requires a dramatically 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-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, 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.

Ideally, *HR investments* translate the decisions about HR practices into specific resource deployments (Boudreau & Ramstad, 2000). These resources certainly include money, so HR budgets are important, but even more important resources include the time of key constituents (such as trainees and managers to do the training, time from cross-functional team members, etc.). With the analysis shown here, 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 by 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, pay-per-designer, and designs-produced-per-month may well be higher for Britannica, but well worth the investment because of the increased collaboration and integration with content that results.

Conclusions and "Take-Aways" for Managers

The Britannica illustration 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 (Arthur, 1994; Baird & Meshoulam, 1988; Boswell, 2000; Huselid, 1995; MacDuffie & Krafcik, 1992; Pfeffer, 1998). 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 (teams, free-lance deals, outsourced HR, individualized incentives). However, the logic and theory of sustainable strategic advantage suggests the importance of uniqueness and protect-ability 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 will require the kind of rich and logical strategic links depicted here. There is no free lunch, and uniqueness comes through hard analytical rigor.

The Britannica 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 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 importantly 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 will 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 will change rapidly both between and within organizations, making unique, strategic alignment will be crucial for survival in the new economy. Benchmarking will not go away in the new economy. In many ways, it will become 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 above caveats about over-generalizing, 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) will be strategically important. Malone and Laubacher (1998) note that one particular talent pool will be especially important across all industries: those that are related to the development and establishment of communication protocols, standards and procedures. Evans and Wurster (1999) note that 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. They note for example, that EDI (Electronic Data Interchange) systems have been in place for over 20 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 to due 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 facility regarding emerging standards for finding content on the internet may be a key talent pool for the future. This is one reason for the importance of tapping library professionals, where existing knowledge of these standards resides.

Malone and Laubacher (1998) also point out that information technology is likely to lead to an 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, temporary, self managed work teams and virtual teams, managers are not needed for daily tasks. They do note however, that top leadership will be increasingly important in terms of determining firms 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 will be important across all industries. For Britannica, such leadership will 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 (effecting 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 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 counter-productive, 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 like 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.

References

Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. Academy of Management Journal, 37, 670-687.

Baird, L., & Meshoulam, I. (1988). Managing two fits of strategic human resource management. Academy of Management Review, 13, 116-128.

Barney, J. & Wright, P.M. (1998). "On becoming a strategic partner: The role of human resources in gaining competitive advantage." Human Resource Management, 37, No. 1, pp. 31-46

Boswell, W. R. (2000). Aligning Employees With The Organization's Strategic Objectives: Out Of "Line Of Sight", Out Of Mind. Unpublished Ph.D. dissertation, Cornell University.

Boudreau J. W., & Ramstad, P. M. (2000). Counting What Counts: HC BRidge as a Guide to Strategic Human Resource Measurement. Unpublished Manuscript.

Business Wire (June 16, 1999). "Encyclopedia Britannica launches largest ad campaign in its history." [Electronic Medium], Business Editors: Chicago.

Chatterjee, S. (1998). Delivered desired outcomes efficiently: The creative key to competitive strategy. California Management Review, 40, (2) 78-96.

Christensen, C. M. (1997). The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. Harvard Business School Press: Boston.

Corman, L. (September, 1996). Why Britannica got rid of its reps. Sales and Marketing Management, 148 (9), 82-84.

Evans, P., & Wurster, T. S. (1998). Strategy and the new economics of information. Harvard Business Review, 75, 70-83.

Evans, P., & Wurster, T. S. (1999). Blown to Bits: How the Economics of Information Transforms Strategy. Harvard Business School Press: Boston.

Evans, P., & Wurster, T. S. (November/December, 1999). Getting real about virtual commerce. Harvard Business Review, 85-94.

Farrell, G. (April 25, 2000). Bailing out from the Super Bowl ad binge. USA Today.

Garr, N. G. (January/February, 2000). Hypermediation: Commerce as clickstream. Harvard Business Review, 78, 46-49.

Ghosh, S. (March/April, 1998). Making Business Sense of the Internet. Harvard Business Review, 76, 126-136.

Hagel, J. & Singer, M. (1999). Net Worth: The Emerging Role of the Infomediary in the Race for Customer Information. Harvard Business School Press: Boston.

Huselid, M. A. (1995). The impact of human resource management practices on turnover,

productivity, and corporate financial performance. Academy of Management Journal, 38, 635-672.

Jasco, P. (May 1998). Multi-media strategies in online encyclopedias. Information Today, 15 (5). 40-43.

MacDuffie, J. P., & Krafcik, J. (1992). Integrating technology and human resources for high-performance manufacturing: Evidence from the international auto industry. In T. Kochan & M. Useem (Eds.) Transforming Organizations, 209-226. New York: Oxford University Press.

Malone, T. W., & Laubacher, R. J. (Sep/ Oct, 1998). The Dawn of the E-Lance Economy. Harvard Business Review,76, 144-153.

Masie, E. (July 7, 1999). Creating stickier online learning sites, classrooms. Computer Reseller News, pg. 56.

Melcher, R. A. (October 20, 1997). Dusting off the Britannica. Business Week.

Moore, T.J. (May/June, 1993). Predators and Prey: A New Ecology of Competition. Harvard Business Review, 71, 75-84.

Pfeffer, J. (1998). The human equation: Building profits by putting people first. Boston: Harvard Business School Press.

Ramstad, P. M, & Boudreau, J. W. (2000). Deep Impact for e-Business. Unpublished manuscript.

Rayport, J. E., & Sviokla, J. J. (Nov/Dec, 1995). Exploiting the Virtual Value Chain. Harvard Business Review, 73, 75-86.

Seybold, P. B. (1998). Customers.com: How to Create a Profitable Business Strategy for the Internet and Beyond. Times Books: New York.

Stiroh, K. (July-August, 1999). Is there a New Economy? Challenge, 42 (42), 82-101.

Tapscott, D. (1999). Creating Value in the Network Economy. Harvard Business School Press: Boston

Timmers, P. (1999). Business models in electronic markets. Electronic Markets. [online] http://www.electronicmarkets.org/netacademy/publications.nsf/all_pk/949

Townsend, A. M., DeMarie, S. M., & Hendrickson, A. R. (August, 1998). Virtual teams: Technology and the workplace of the future. The Academy of Management Executive, 12 (3). 17-29.

Treacy, M., & Wiersema, F. (1997). The discipline of market leaders. Reading, MA: Addison-Wesley Publishing Company, Inc.

Useem, J. (November 22, 1999). Withering Britannica bets it all on the Web. Fortune, 140, (10). 344-348.

Wall Street Journal. April 17, 2000, p. R6

Willoughby, Jack (2000). Burning up. Barron's, March 20.

Appendix 1
Emerging e-Business Models

Business Model	Description	Company Example	Source of Value
E-shop	Web marketing by one company to end users. One-to-one interaction	Dell.com WillamsSonoma.com	Additional promotion Fulfillment cost reduction Additional outlets
E-Procurement	Web-based negotiation for raw materials, goods and services with suppliers. One-to-many interaction	Automotive Network Exchange (ANX): General Motors RosettaNet: Microsoft, IBM, Sun	Additional input sources for buyer Faster order fulfillment Greater access for small suppliers
E-Auction	Electronic bidding, presentation of goods, integration with contracting, payments and delivery. Many-to-Many interaction	E-Bay	Suppliers and Buyers have increased efficiency and time-savings Technology provider sells access and advertising Suppliers sell surplus stock and small lots and lower sales overhead
E-Mall	Collection of e-shops, integration under a well-known brand or market segment, enriched with a common payment method. Integration of several one-to-one relationships	Barclay's Square Microsoft Buy.com	Customers gain access, ease of use, and brand trust. Shops gain lower cost of transactions and additional traffic. Mall provider may charge membership fees, advertising fees, and service fees
3rd Party Marketplace	A common user interface to the product catalogues of multiple suppliers, common front-end and transaction support. ISP's, banks, shipping companies or others provide quick web presence and access to their transaction support. Integration of several one-to-one relationships	Federal Express's Virtual Order TradeZone	Members lower the cost of web presence and gain traffic. Providers generate revenues through fees for membership, service or transactions, or through a percentage of transaction value.
Virtual Community	A virtual meeting place for communication and interaction on common interests or goals. Often added to other models to increase user value and gather detailed user information. Many-to-many interactions	Amazon.com HealthNet TheGlobe.com	Providers sell information and analysis of member buying patterns, and advertising. Community members benefit through access to information such as product reviews by trusted peers.