

Managing the Transition To Bricks and Clicks

C. RANGANATHAN, VERN GOODE,
AND ARKALGUD RAMAPRASAD

Egghead, a brick-and-mortar computer retailer, with stores across 200 locations, abandoned its brick establishments to become a pure Internet set-up, Egghead.com.

*Charles Schwab was quick to react to the strategies of E*Trade and other competitors and moved its brokerage services to the Web. It gradually expanded its Web services to many areas, integrated its offline and online operations and became a brick-and-click set-up.*

Through effective use of the Internet, UPS has been able to offer all of its services on the Web, as well as extend them. Apart from offering Web-based package tracking and delivery confirmation services, UPS offers document exchange service through which its business clients can transmit documents over the Net.

Egghead's case was an example of experimenting with a radically new business model, while Charles Schwab and UPS were examples of enhancing traditional business operations to a brick-and-click mode. While a few organizations, like Egghead, have become pure net companies, many traditional organizations are trying to enhance their existing business processes using the Web, thus making a transition to e-business [3].

The transition from a brick-and-mortar to a brick-and-click organization is happening in several firms across a wide range of industries. How to manage and succeed in this e-business transition is a question weighing heavily on the minds of many executives. Managers are looking for ways to integrate their online and offline business components, achieve economies of scale, reduce channel conflicts, and obtain an edge over their traditional rivals as well as the new net-based competitors [5]. However, there are few guidelines available to them for making a successful e-business transition. This article addresses this lacuna: How can managers successfully manage the transition to e-business? What can they learn from other firms that have managed this transition?

C. RANGANATHAN (ranga@uic.edu) is an assistant professor at the Information and Decision Sciences Department at the University of Illinois at Chicago.

VERN GOODE (rever@cba.siu.edu) is an academic advisor at the College of Business Administration at Southern Illinois University, Carbondale.

ARKALGUD RAMAPRASAD (prasad@uic.edu) is a professor at the Information and Decision Sciences Department at the University of Illinois at Chicago.

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Based on two cases each from two industries, we identify the issues involved in successful transitions and present an e-business transformation matrix to better understand the dynamics underlying e-business transition. We then discuss a range of choices that managers can make to ensure successful alignment of bricks and clicks.

Organizational Experiences in E-business Transition

Hotels. Consider the experiences of Hyatt and Marriott, two leading players in the hotel industry in the same environment but with slightly different business strategies. Both firms use similar Web technologies to enhance their respective business strategies through the Internet.

Marriott targets its products and services at a broad range of customers such as leisure travelers, business travelers, and convention organizers. When Marriott geared up to make its online debut, it decided to use its Web site as a means to enhance its appeal to these multiple segments. Marriott designed its Web site to provide a vacation planner for leisure travelers and an event planner for business planners. Marriott also incorporated an online personal profile feature to track customer preferences across its entire portfolio of brands. This enabled Marriott to better understand its customers and extend their offline tactics online.

Unlike Marriott whose focus was on a broader customer base, the strategic thrust of Hyatt has been on its business users, specifically meeting and event organizers. Traditionally, Hyatt provided dedicated staff for organizing meetings and conventions to its business clients. On the Web, it provides meeting planners with online facilities for planning and organizing meetings and events. It also offers a Web-based facilities guide that generates a list of appropriate hotels to meet the planner's needs, its floor plans, and a virtual tour of available facilities. Further, the site allows clients to create a personalized Web site that enables attendees to register for the events, reserve rooms and facilities, and so forth. Such measures have helped the firm strengthen its position with business customers, thus extending their offline business tactics into their online operations.

Book Retailers. The book retailing industry has undergone major changes since the inception of Amazon.com in 1995. The rapid growth of Amazon.com and innovations such as one-click shopping has forced the traditional booksellers to come up with effective online strategies.

In early 1997, Barnes & Noble (B&N) went online by becoming the exclusive seller of books at America Online's Marketplace. Later, B&N spun off its own dot-com division, BarnesandNoble.com, as a distinct business unit. This move allowed Barnes & Noble to develop a more flexible organization. Though the dot-com unit functions as a separate entity, Barnes & Noble has been trying to align its brick-and-click operations in several ways.

Barnes & Noble has traditionally viewed its bookstores as community centers, designing its brick stores to meet the specific needs and tastes of communities where the stores are located. B&N extended this philosophy into its online operations by using customer input profiles and book ratings. On the Web, B&N enables the users to store their profiles to create "virtual communities" of readers with similar profiles and tastes, which is in alignment with its traditional strategy of creating community centers.

Barnes & Noble's brick stores provide an atmosphere where customers can relax and read books while enjoying coffee and music. B&N also organizes special events

for children, author appearances, and so forth. The online store of B&N provides author interviews, chat rooms for interacting with authors, and a *BNTV*, that shows in-store events on the Web. The Web site also provides *B&N Radio*, through which customers can listen to music while shopping online. These measures are aimed at giving the customers very similar experiences offline and online, thus creating an image of strong integration between its brick business and click business in the customer minds, though they are separate entities.

Borders has lagged behind its rivals B&N and Amazon.com in going online. Unlike B&N that made its online store a separate business entity, Borders decided to use its Web site to push both its online and offline sales. Borders.com, launched in 1998, was aimed at promoting and drawing more customers to its brick outlets. A senior executive at Borders said, "By keeping the Web site tied to retail, we have the ability to serve one customer who likes to shop in a variety of fashions, but is clearly looking for books."

One way Borders has integrated its offline and physical stores is through cross-promotional strategies such as the use of online coupons and gift certificates redeemable at the physical stores. Also, Borders put up kiosks in many stores through which customers can access titles, and order books out of stock at the physical stores. Customers can order an item online with delivery either to their home, or to a store for later pick-up. Further, the customer service personnel at Borders' brick stores can make instant online orders for books that are not in stock. All these measures have created a tight alignment between their click operations and their brick operations.

Both Barnes and Noble and Borders have integrated their product-return policies for online as well as in-store purchases. Customers who buy books online can return the books to the physical stores. Similar to B&N, Borders also provides in-store cafés and an environment where customers may sample compact discs and books before making purchases. The company has transitioned this facility online with "NetCafe", which offers customers an area for reading excerpts from books and downloading music samples. Various in-store events, such as concerts or author appearances, have been replicated on its Web site through a facility called "Borders Vision" that allows online customers to view in-store events.

The E-business Transformation Matrix

These cases throw light on the dynamics of a firm's transition to e-business. The businesses discussed faced similar situations, but followed different paths to e-business transition. As a result, they experimented with various initiatives such as separate dot-com units and dot-com operations integrated into their current business units. They also engaged in several levels of implementation, varying from a discrete, isolated initiative, or an incremental development, to radical e-business commitments. Based on these cases, we propose a matrix called the e-business transformation matrix (Figure 1) to understand the transition from brick-and-mortar to a brick-and-click firm.

To engage in the e-business transition, a firm must embrace varying levels of innovation and integration tactics. We define *innovation* as the application of Web technology as either new to the business process or unit being discussed, or new in terms of being a new IT capability in the industry. Further, we refer to *integration* as the alignment of online and offline processes, resources, and capabilities.

		Integration of processes, resources, and capabilities	
		Low	High
Innovation in application of Web technology	Low	Q 1 Experimentation	Q 2 Operational alignment
	High	Q 3 Business is paralleled on-line	Q 4 Strategic alignment

Figure 1. E-business transformation matrix.

Quadrant 1. [Low Innovation, Low Integration]

This is where many brick-and-mortar firms begin development of their online presence. They recognize the potential of the Web and experiment with the Web technologies. They tend to establish a Web site that is largely informational in nature, with low interactivity, and try and test the use of the Web in one or two business functions. Usually, firms in this quadrant use a bottom-up approach to online initiatives through a few tech-savvy individuals. Commitment of firm resources and capabilities are very limited and are often independent of other programs and strategies of the firm.

Quadrant 2. [High Innovation, Low Integration].

This represents firms that are willing to utilize extensive resources to develop online business processes that are duplications of their offline business units. However, integration of online and offline functions is often limited. As a result, these firms encounter high coordination costs to reconcile separate online and offline information. Marriott’s entry into the online business is an example of development of parallel business functions. Marriott designed its Web site to accommodate customers that preferred online transactions by providing them with duplicated planning and reservation capabilities, even though these capabilities were not interactive with offline business units.

Quadrant 3. [Low Innovation, High Integration].

Firms in this quadrant typically use limited or incremental steps of technological development to extend their operations online. The new online initiatives must be fully integrated with offline operations, such that customers can accomplish the same transactions online or offline, with the same levels of customer service.

An example of a firm in this quadrant is Hyatt. It used a moderate amount of incremental resources to develop a Web presence that allowed business customers to reserve, plan, and register conferences online or offline. With either method, customer information was automatically updated and stored. Costs of coordination of information transfers were lowered significantly through integration of online and offline operations.

Quadrant 4. [High Innovation, High Integration].

This quadrant has firms that have developed a fully integrated alignment of their online and offline operations. In this quadrant, firms achieve the highest level of inte-

gration and fully utilize technological initiatives as they apply to the firm's business. Pure online firms that have built their brick infrastructures, like Amazon.com, qualify for this quadrant.

Another example for this quadrant is Borders. Customers at Borders can combine online and offline transactions nearly seamlessly. Borders has further integrated its e-business by cross-promoting its products across its bricks and clicks by issuing coupons or special offers online that are redeemable in-store and vice-versa. Borders has integrated its ordering and delivery systems to provide at home or in-store delivery using online orders from home, in-store clerks, and in-store kiosks.

A firm needs to consider a number of parameters like the market characteristics of its customers and suppliers, firm characteristics such as the nature of products/services, the processes associated with sourcing, development and delivery of products/services, business strategy, and so on, before choosing any of its options regarding e-business transition (see [1, 2, 8, 9] for a more detailed discussion). Once the firm analyzes and evaluates these factors, the proposed matrix can be useful for charting the course of its transition to e-business.

It should be noted that the e-business transformation matrix represents a dynamic framework and firms can be continuously moving across different grids in order to enhance their business performance. Though many firms might seek to move towards Quadrant 4, firms may choose to place themselves on other quadrants based on their circumstances. The matrix can serve as a useful tool for executives to evaluate the position of their firms in the grid, to identify the appropriate position for their firms in the matrix, and to chart the movement of their firm in order to achieve this position.

Charting the Movement Across the Matrix

We now turn to the movements that can be made by firms across different dimensions of the matrix. Once a firm identifies its current position and its target position in the e-business transformation matrix, how can it plan its transition? Table 1 presents the dynamics across different levels of innovation and integration strategies in a firm's transition to e-business. The typical characteristics of each of the stages, along with key organizational challenges faced by a firm in those stages, are also illustrated in Table 1.

Depending on the external environmental conditions and internal organization context, a firm may decide to pursue different levels of innovation and integration in its e-business transition efforts. The extent of innovation desired could be *incremental* with small, definite improvements, or *radical*, characterized by drastic changes in the current methods of operations. Examples of incremental innovations include opening up a new channel of marketing via the Web, or establishing a Web-based application for a particular business process. An incremental innovation, typically, is an independent, isolated e-business initiative. The key challenges during this stage include recognizing the potential of the Internet by key organizational stakeholders, and gaining their commitment for e-business. Once such isolated, incremental innovations start diffusing across the organization, it becomes imperative to identify appropriate areas for applying e-business efforts, prioritize these initiatives, build necessary technical capabilities and start taking a more focused approach towards e-business transition.

After tasting the success of some incremental innovations, a firm could choose to apply Web technologies to make drastic changes in its core operations. A value chain

INNOVATION

INTEGRATION

	Incremental (low)	Radical (high)	Incremental (low)	Full Coordination (high)
Key Characteristics	<ul style="list-style-type: none"> -Discrete, isolated, e-business initiatives -Informational Web sites -e-business applications on discrete value-chain components 	<ul style="list-style-type: none"> -Parallel key business processes with e-business initiatives -Digitalize channels - Highly interactive Web sites -Redesign of value-chain components as e-business applications 	<ul style="list-style-type: none"> -Extend discrete business processes on-line - Replication of selected business processes online, but offline processes remain critical to online ones. -e-business applications emerge along operational lines 	<ul style="list-style-type: none"> -Key areas are developed into a corporate e-commerce strategy -Integrated corporate portals -Extend e-business applications across entire extended value-chain
Structure and Process	<ul style="list-style-type: none"> -Bottom-up approach -e-initiatives are independent of other programs and strategies -Informal organizational structure with autonomous teams 	<ul style="list-style-type: none"> -Top-down approach -Coordinated e-initiatives to replace or parallel business processes -Formal structure for e-business initiatives 	<ul style="list-style-type: none"> -Bottom-up approach -Functionally focused e-business initiatives - Formal structure, segregated along business process lines -Independent teams with clear objectives 	<ul style="list-style-type: none"> -Top-down approach -e-business initiatives derived from overall business objectives -Formal structures and processes for managing e-initiatives -Cross-functional teams develop and implement e-initiatives
Strategic Planning	<ul style="list-style-type: none"> -Ad-hoc e-business plan 	<ul style="list-style-type: none"> -Narrow e-business plan focused on single business processes 	<ul style="list-style-type: none"> -Focused e-business plan that establishes objectives and priorities for single business units 	<ul style="list-style-type: none"> -Formal e-business plan that spells out clear priorities and objectives
Key Organizational Challenges	<ul style="list-style-type: none"> -Recognizing the potential of internet and e-Business - Gaining stakeholder commitment for e-Business efforts -Identifying areas of bricks to connect to clicks -Prioritizing initiatives -Building technology capabilities 	<ul style="list-style-type: none"> -Commitment of resources -Training on new e-processes and technologies -Selection of key process to be converted on-line -Acquire IT and e-process capabilities 	<ul style="list-style-type: none"> -Manage information transfers -Build e-process capabilities - Manage systems and process integration issues - Manage co-ordination between parallel brick-and-click processes 	<ul style="list-style-type: none"> -Overcoming resistance to change -Managing enterprise network of partners, suppliers, and customers -Extend coordination of brick-and-click alignment to new markets and products -Integrate technology, e-process and business capabilities

Table I. Transition to bricks-and-clicks.

component could get completely “digitized,” after which similar efforts are initiated on other portions of the value chain. For achieving success with such innovation efforts, careful and coordinated planning becomes a prerequisite. Formal teams, intra-departmental task forces, and formal proposals are used to shape up the e-business initiatives. The key challenges that face a firm in this stage are larger resource commitment in terms of financial, technical, as well as techno-human resources. It also becomes important to choose the “right” components in the value chain that are appropriate for Web application deployment, and those that could give some definite, tangible results.

When a firm considers Web-based innovations, it should also decide on the degree of integration of its current brick-and-click operations [9]. A firm might choose to run Web-based processes in addition to its traditional processes for a while before it makes a complete transition to Web-based processes, or it might choose to have parallel business processes operating side-by-side [3]. A number of considerations come into play when a firm makes this choice. The criticality of the function chosen for e-business and the operational risks involved in a possible transition fail-

ure become dominant concerns. When a firm decides to have less integration between its brick-and-click operations, it will typically establish parallel processes online as well as offline, have integrated Web sites to extend current marketing channels, and have e-business application in fewer operational areas. Identifying and prioritizing the operational areas for application to e-business, securing resource commitment for commissioning the Web applications, and training of personnel in running and using these applications become some of the critical challenges facing the organization.

When a firm chooses to have tighter integration across its brick-and-click operations, it needs to resolve larger technological and organizational issues. This calls for an enterprise-wide e-business effort with cross-functional involvement across the entire value chain. Such a large-scale effort will not be fruitful without formal e-business planning, and formal structural elements in place. The e-business efforts extend beyond internal processes and tend to embrace the larger network of business partners, suppliers, and consumers. The firm needs to align its technological, business process and core business capabilities in order to achieve a successful integration across its brick and click operations. This strategic alignment alone can ensure the synergies between bricks and clicks.

Convergence and Divergence

The concepts of convergence and divergence can be useful in thinking about the strategic alignment between bricks and clicks. With the recent experiences of several firms, it has become amply clear that neither a pure clicks strategy nor a traditional bricks strategy alone will suffice to succeed in the new economy. Just as the Automatic Teller Machines (ATM) did not replace the brick-and-mortar banks, but redefined the latter's role, the clicks will not supplant the bricks but will help in generating synergies. At the same time, the brick-and-mortars will not be able to survive by themselves without the synergy of the clicks. The key to success is not the replacement of clicks by bricks or vice-versa, but in the strategic alignment and convergence of the two. Thus, convergence of bricks and clicks has emerged as the key strategy of firms that have succeeded in e-business.

The convergence has to be preceded by divergence. A brick-and-mortar organization has to diverge and transition into clicks before it can converge as a bricks-and-clicks organization. Similarly, a pure click organization has to diverge into bricks before converging. This divergence-convergence sequence is part of the natural adaptive cycle observed in organisms and organizations [6].

There are two types of divergence. First, divergence can be *multi-final*. In other words, starting from the same point, an organization may attain multiple end-states by following different innovation paths. Thus a brick-and-mortar organization can

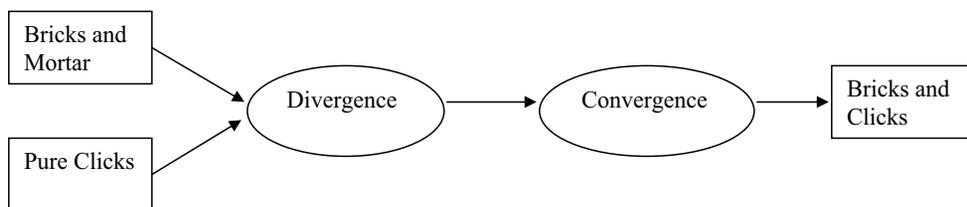


Figure 2. Convergence and divergence.

experiment with many types of click operations. Based on these experiments, it may incrementally integrate a variety of click functions into its operations. Such integration, while adding value to the brick-and-mortar organization may not transform it into a true bricks-and-clicks set-up. For such a transformation, there has to be a convergence of these innovations into a whole that is greater than the sum of the individual innovations through a strategic alignment of the bricks-and-clicks components of the organization.

Second, divergence can also be *poly-final*. In other words, it may start at multiple points and end at multiple points. Thus, divergence can be a product of innovations within the organization or from outside it. The heterogeneous sources are likely to result in innovations that are not well integrated with the core of the firm. Therefore, a convergence and integration of these multiple innovations with the core functions of the organization becomes necessary.

The choice of suitable divergence and convergence strategies together will be critical to the success of the transition to a bricks-and-clicks organization. For any divergence strategy to be effective, it needs to be complemented with an appropriate convergence strategy. Lacking a complementary convergence strategy, either form of divergence can be ineffective, as evidenced by the many pure-play dot-com collapses as well as the failures of traditional firms to transform themselves. It is this convergence that is the function of strategic alignment. Thus the radical divergence of Egghead.com from bricks to pure clicks resulted in its failure. Ironically, Amazon.com's acquisition of the Egghead name, with the former's brick infrastructure provided the complementary convergence.

Conclusion

How then can managers successfully manage their company's transition to e-business? They have to make two sets of decisions: How and when to diverge from their traditional business model to an e-business model? How and when to reintegrate the traditional business model and the e-business model, if necessary? Learning from experimentation within their company, industry, and the successful practices in other industries will be the key to the first decision. Such experimentation may be deliberately planned; they may emerge from the so-called skunk works; or they may be serendipitous. The choice of whether to move into an operationally aligned e-business or to develop a parallel business online will depend upon the overall strategy of the company and the opportunities perceived. The second set of decisions pertaining to integration of bricks and clicks is a lot murkier. A company that prefers evolutionary change is likely to prefer an operational alignment; on the other hand, one that prefers revolutionary change might develop a parallel business online. In either case—operational alignment (Q3) or parallel online business (Q2)—it is still an extension of experimentation (Q1). Based on their experiences, the company may turn back from Q3 and Q2 to Q1 for further experimentation. Several firms rolled back their dot-com ventures once they faced hurdles in their efforts. *Toys R Us* diverged into *toysrus.com*, but with little convergence with its brick operations. This led to huge fulfillment problems as well as a hefty \$350,000 fine by the FTC, making them roll back their dot-com operations. Finally they realized convergence through an alliance with Amazon.com that helped them overcome the logistical nightmares. The alliance with Amazon.com facilitated their move towards Q4.

A company could revert back from Q3 and Q2, if it does not see the prospect for strategic alignment with further innovation or further integration. For instance, General Electric (GE) revamped its "... Information Unit to Provide E-Commerce Services" in March 2000. It was described as "... one of GE's more aggressive moves into the software and e-commerce providing arena. Until [then], GE Information systems, ..., [had] been a small, nearly forgotten business in the GE portfolio, accounting for a small fraction of earnings and not even considered one of GE's major units." [4] However, in June 2002 GE sold the unit to Francisco Partners as part of a strategic realignment. [7]. On the other hand, for firms who taste success in their moves to Q3 or Q2, if the potential benefits of strategic alignment are clear, as in the cases of Hyatt and Marriott, the company may decide to move on to strategic alignment (Q4).

References

1. Barua, A., Konana, P., Whinston, A. and Yin, F. Driving e-business excellence. *Sloan Management Review* (Fall 2001), 36–44.
2. Feeny, D. Making business sense of e-opportunity. *Sloan Management Review* (Winter 2001), 41–51.
3. Gulati, R, and Garino, J. Get the right mix of bricks and clicks. *Harvard Business Review* (May/June 2000), 107–113.
4. Murray, M. GE will revamp information unit to provide e-commerce services. *Wall Street Journal* (March 6, 2000); <http://online.wsj.com/article/0,,SB952296107148479654.djm,00.html>
5. Porter, M. E. Strategy and the Internet. *Harvard Business Review* (March 2001), 63–78.
6. Ramaprasad, A., and Rai, A. Envisioning management of information. *Omega* 24, 2 (1996), 179–193.
7. Rosenberg, D. and Tate, P. GE sells e-commerce unit to buyout Fund Francisco. *Wall Street Journal* (June 24, 2002).
8. Venkatraman, N. Five steps to a dot-com strategy: How to find your footing on the Web. *Sloan Management Review* (Spring 2000), 15–28.
9. Willcocks, L. P., and Plant, R. Pathways to e-business leadership: Getting from bricks to clicks. *Sloan Management Review* (Spring 2001), 50–59.