

CONTINUOUS "MORPHING": COMPETING THROUGH DYNAMIC CAPABILITIES, FORM, AND FUNCTION

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In hypercompetitive environments, the established paradigms of sustainability of competitive advantage and stability of organizational form may have limited applicability. Using an in-depth case analysis of the firms Yahoo! and Excite, this study examines how the organizational form, function, and competitive advantage of these firms dynamically coevolved. The study introduces the concept of continuous morphing to describe the comprehensive ongoing transformations through which the focal firms sought to regenerate their transient competitive advantage on the Internet.

The study of organizational form is at the core of organization science. Organizational scholars use the term "form" to describe structural features or patterns of organizations (McKelvey, 1982); economists use it to contrast two alternative coordinating mechanisms, markets and hierarchies (Williamson, 1975); and ecologists, to describe organizational characteristics that identify an organization as a member of a group of similar organizations (Romanelli, 1991). Population ecologists, in particular, have advanced the view that stability and standardization of a form positively affect an organization's access to resources (Hannan & Freeman, 1984). According to this view, stability leads to consistent actions and outcomes, which resource holders value and reward (Delacroix & Rao, 1993; Hannan & Freeman, 1989), and standardization enhances the legitimacy of a form (Hannan & Carroll, 1992). However, when environmental or resource conditions change, the organizational inertia associated with a particular organizational form impedes adaptive change and survival (Hannan & Freeman, 1984).

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Strategy researchers have also emphasized stability in a firm's pattern of resource commitments (Ghemawat, 1991). Through resource commitments, firms erect entry barriers (Bain, 1956), mobility barriers (Caves & Porter, 1977), and isolating mechanisms (Lippmann & Rumelt, 1982) that protect their competitive advantages. Although such patterns of resource commitments provide a firm with competitive advantage (Dierickx & Cool, 1989), they can also become impediments to strategic reorientations (Grimm & Smith, 1997).

Recently, however, scholars have argued that many industries are experiencing "a fundamental shift in the rules of competition and the way the game of competition is played" (Ilinitich, D'Aveni, & Lewin, 1996: 211). Teece, Pisano, and Shuen (1997) argued that organizations rely on dynamic capabilities to build competitive advantage in regimes of rapid change, and Sanchez (1995) and Garud and Kotha (1994) suggested that strategic flexibility enables firms to compete successfully under such conditions. McGrath, MacMillan, and Venkatraman (1995) showed that firms in dynamic environments seek to continuously renew their competitive advantage through competence-generating strategic processes of comprehension and deftness. Thomas (1996) documented that the ability to take action and manage change was a primary determinant of performance in a broad cross-section of industries. In a related vein, scholars who study competition on the Internet have suggested that pervasive interconnectivity and network externalities, conditions that characterize the Internet, also require that firms adopt inherently dynamic strategies, including "product version-

ing," rapid product development, direct relationships with users, and frequent "partnering" (Shapiro & Varian, 1999).

Thus, with increasing recognition that firms operate in hypercompetitive (D'Aveni, 1994), high-velocity (Eisenhardt, 1989), or rapidly changing (Teece et al., 1997) environments, the question of how firms organize to achieve dynamic fit with these environments merits further research attention. Eisenhardt and Martin (2000) argued that because of the challenge of maintaining an optimal amount of structure, in high-velocity environments the threat to competitive advantage is not only external but also internal. And Ilinitch, D'Aveni, and Lewin pointed out that "the dominant paradigms in organizational theory are based on stability seeking and uncertainty avoidance through organizational structure and processes. . . . We believe that those paradigms are inadequate for global hyper-competitive environments, although their replacements are not clear yet" (1996: 217).

In this article, we seek to contribute to the emerging body of research on new organizational forms and on organizational forms in the new competitive environment by examining how organizational form, function, and competitive advantage co-evolve in the rapidly changing environment of the Internet. Through an inductive case study of the evolution of Yahoo! and Excite, we extend conventional thinking about organizational form as relatively fixed and inertial, toward a view of form as a strategic tool employed in the pursuit of competitive advantage. In our study, we observed that in the short period since their emergence as Internet firms in 1994, Yahoo! and Excite had undergone several transformations—a process we label "continuous morphing." Whereas the traditional perspective on change in organizational form typically refers to changes in structural attributes, such as adding or removing a unit or a level of the organizational hierarchy, the changes we describe as continuous morphing are profound transformations. They include significant changes in the ranges of products and services offered, along with reconfigurations of the resources, capabilities, and structures employed to deliver the extended range of products and services. Therefore, we argue that understanding how firms pursue competitive advantage in dynamic environments requires simultaneous understanding of changes in function (that is, product strategy) and changes in form (that is, organizational arrangements, including structures, routines, resources and capabilities). Our framework suggests that organizational form is related to the dynamic capabilities and the strategic flexibility of a firm and can be used as a strategic tool to

support the rapid changes in strategy required to compete in dynamic environments.

To capture the comprehensive nature of these transformations, we adopted Romanelli's definition of organizational form as "those characteristics of an organization that identify it as a distinct entity and at the same time, classify it as a member of a group of similar organizations" (1991: 81). This definition, which encompasses the configuration of products, services, resources, and structures that define an organization as a distinct entity and a provider of a particular type of product or service, is broader than the more traditional definitions of organizational form as structure that are prevalent in classical organizational theory (Child, 1984). The broader definition emerges from evolutionary treatments of organizational form (Romanelli, 1991) and the hypercompetitive view, which emphasizes the convergence of strategic and structural change (Volberda, 1996).

The article is organized as follows: First, we discuss the case-based research methodology that we employed to study Yahoo! and Excite. Next, we present the evidence regarding the evolution of the focal organizations from being providers of navigational tools (search engines and directories) into providers of content (destination sites) and broad-based on-line services (which are somewhat inaccurately labeled "portals"). We then discuss the theoretical insights regarding the process of continuous morphing and its links to the concepts of dynamic capabilities, strategic flexibility, and the pursuit of transient competitive advantage. Finally, we conclude with implications for research and practice.

METHODS

This article employs the logic of inductive inquiry suitable for investigating phenomena that are relatively poorly understood (Glaser & Strauss, 1967). The goal of inductive inquiry is to allow new theoretical insights to emerge from rigorous examination of relevant data collected from multiple sources, analyzed through constant comparison, and validated both by extant theories and ongoing reexamination of the data (Eisenhardt, 1989a; Yin, 1994).

To study the coevolution of form, function, and competitive advantage, we chose a setting in which changes in these variables were pervasive and could be readily observed. The emergence of Internet search engines as a new organizational form provided an excellent setting for this study. Internet search engines emerged during 1993–94, offering a search function to Internet users free of

charge. Between 1994 and 1998, they evolved into broad-based providers of the interactive services that are (somewhat inaccurately) labeled Web portals. Whereas the first search engines—Yahoo!, Excite (then Architext), Lycos, and Infoseek—entered the industry almost simultaneously in 1994–95, by the end of 1998 Yahoo! emerged as the only stand-alone organization and as the second-most-visited Web site on the Internet.

We focused our research efforts on Yahoo! and Excite because they were closely matched as to starting conditions and milestones of new venture development (Block & McMillan, 1985). As Table 1 illustrates, the two firms were founded at approximately the same time, enjoyed similar venture capitalist backing from top-tier venture capital firms in Silicon Valley, and went public in April 1996. Thus, the design provided natural controls for differences in (1) timing of entry, (2) availability of resources, and (3) new venture development as fac-

tors associated with competitive advantage (Lieberman & Montgomery, 1988) and entrepreneurial growth (Aldrich, 1999; Naman & Slevin, 1993). The research design also allowed emerging conceptual insights from one case to be confirmed or disconfirmed by the comparative evidence from the other case (Yin, 1994).

Table 1 shows that, whereas both organizations were relatively successful in gaining resources, Yahoo! was the more effective of the two. The cases together enabled us to look at similarities and differences between more and less successful representatives of the search engine form.

Data Sources and Analysis

Data sources. Our primary sources of data were accounts of the actions of the two competitors provided by the firms themselves, the media, and financial analysts, in the forms of press releases,

TABLE 1
Milestones in the Development of Yahoo! and Excite

| Event | Yahoo! | Excite |
|--------------------------------------|---|---|
| Conception of service/idea | April 1994 | End of 1993 |
| Company founding date | March 1995 | June 1994 |
| Development of the service | April 1994: Two Stanford students develop a personal Web site listing their favorite Web sites—Jerry Yang's "Guide to the World Wide Web." April–December 1994: User attention encourages founders to expand their effort and to visit and categorize 1,000 Web pages a day; site renamed "Yet Another Hierarchic Official Oracle," a name that parodied the language of computer programming and became part of the "cool" identity of Yahoo! Netscape selects Yahoo! as its search engine because it is "cool." | 1994–95: A team of Stanford University students develops a series of computer programs for automated search of text, including sophisticated search functions, such as concept-based queries, and automatic "hypertext" linking. October 1995: Formal site launch. |
| First round of financing | Approached by Netscape and America Online (AOL) with acquisition proposals; Jerry Yang and David Filo, the founders of Yahoo!, choose to remain independent in order to provide an unbiased information service to Web users. April 1995: Financed by Sequoia, a premier Silicon Valley venture capital firm. | December 1994: Financed by Kleiner Perkins, Clafield & Byer, a premier Silicon Valley venture capital firm. |
| Professionalization of management | August 1995: Hires CEO Tim Koogle (from Motorola) | November 1995: Hires George Bell (from Time Inc.). |
| Initial public offering | April 12, 1996: Offering price, \$13 a share; closing price on first day of trading, \$33; total capital raised, \$85 million. | April 4, 1996: Offering price, \$17 a share; closing price on first day of trading, \$20; total capital raised, \$31 million. |
| Total employees, first quarter, 1998 | 386 | 434 |
| Industry position in 1998 | | |
| Revenues: | 203.3 million | 154.1 million |
| Earnings: | 49.9 million | 27.7 million |
| Pages viewed/day | 167 million | 70 million |
| Registered users | 35 million | 20 million |

magazine and newspaper articles, and investment and industry reports, respectively. We also consulted several books (e.g., Kaplan, 1999; Reid, 1997) and used e-mail exchanges with Jerry Yang, one of the founders of Yahoo!, to validate our emergent insights.

Our selection of the data sources followed Glaser and Strauss's (1967) recommendation to use diverse sources of data to obtain multiple vantage points into the phenomenon of interest. Using multiple data sources also allowed us to "triangulate" facts and inferences. For example, press releases provide detailed information on organizational actions, often including top managers' discussions of the expected consequences of these actions. However, press releases tend to focus on positive aspects of actions, so we supplemented them with media reports of the same actions. Media reports often provide more objective and contextual information about industry dynamics and competitor actions. Finally, reports by financial analysts enabled us to validate our emergent ideas about the pattern of changes.

Analysis. As is typically done in inductive research, we first analyzed the data by building individual case histories (cf. Brown & Eisenhardt, 1997). From approximately 40 feature articles in various publications, we constructed a case history for each firm that documented its evolution chronologically. Additionally, two research assistants prepared independent case reports on each of the firms. To establish the validity of the reconstruction process, we compared these case histories with the ones we had constructed. We used the case histories to identify common issues and to refine the unique aspects of each case. We also created tables to facilitate further detailed comparisons between the two firms' actions. This analysis indicated that each firm underwent two transformations during the period of our study.

Our next goal was to identify the similarities and differences in the transformations over time periods and between firms. Drawing on Mintzberg and Waters's (1985) definition of strategy as a pattern of investments and actions, we first examined the case histories we constructed, then systematically coded 353 actions reported in press releases by Yahoo! (171 actions) and Excite (182 actions) between 1995 and 1998. To do so, we used "open coding," a procedure that breaks data down into instances for observation and comparison and then reassembles the data in new ways (Strauss & Corbin, 1992).

We reassembled the data by identifying the strategic thrusts that characterized each transformation for each firm. In determining the strategic thrusts of

the focal companies for each transformation period, we followed two main decision rules: A strategic thrust was indicated by the data if we identified: (1) a number of specific actions with a common goal and/or (2) statements by top management regarding what their firm was, what its direction was, and what they perceived as drivers of its success. For example, a series of actions (that included hiring of a boutique Internet advertising agency, investing 5 million dollars in a TV campaign, hiring a vice president of brand development, and launching the first TV campaign advertising an Internet firm), along with a statement by Yahoo!'s cofounder Jerry Yang, "We are trying to promote the brand . . .," indicated a strategic thrust to build a brand.

Whereas we viewed each thrust as the primary focus of a focal firm during a particular period in its evolution, the demarcation lines between one thrust's end and another's beginning were somewhat ambiguous. To some extent this ambiguity may be an artifact of our use of external sources of data in the analysis. However, we believe that this observation also reflects the ongoing nature of change in the focal firms. We chose the term "continuous morphing" to capture this ongoing quality of change.

Having identified the strategic thrusts associated with each transformation, we used axial coding, a procedure for building connections among categories (Strauss & Corbin, 1992), to systematically examine the degree to which each transformation was associated with changes in the services provided, the resources deployed, and the organization of activities. Our observations about the changes in strategic thrusts and the concurrent changes in organizational form suggested the concept of continuous morphing and its links to the dynamic capabilities and strategic flexibility of a firm. In Table 2, we summarize the process of theory development through the different stages of analyzing the data.

As is, again, typically done in qualitative research (Brown & Eisenhardt, 1997), we checked the validity of our insights in discussions with colleagues, the research assistants who wrote the independent case histories, and other experts (for instance, financial analysts). Additionally, we validated our key ideas in our e-mail exchanges with Jerry Yang, the cofounder of Yahoo! This iterative process, which included feedback from these discussions, the suggestions of the anonymous reviewers for this journal, and ongoing reexamination of the data, resulted in numerous revisions and refinements of the constructs discussed below.

TABLE 2
Stages in Theory Development Using the Grounded Theory Method

| Analytical Goal for Stage | Raw Data Used | Analytical Procedure Used | Analytical Outcome | Development of Theory |
|---|--|--|---|--|
| Identifying patterns of transformation in the focal companies. | Feature articles, industry reports, and company press releases. | Thematic analysis. | A time line of the evolution of the firms. | Rapid yet comprehensive transformations; a degree of change in form and function not predicted by current theories. |
| Specifying the strategic characteristics associated with each transformation. | Case histories, 353 company press releases (1995-98). | Open coding undertaken to break down and reconceptualize the data. | Strategic thrusts and organizational changes. | The change process alters not only the function but the very definition of what the firm is and does, leading to the concept of continuous morphing. |
| Uncovering mechanisms for continuous morphing. | Data broken down into strategic thrusts and organizational changes. Additional evidence regarding changes in structures, resources, and activities examined. | Axial coding undertaken to compare similarities and differences over time periods and between firms. | Organizational properties associated with continuous morphing flexibility, learning, and layering of resources. | Continuous morphing associated with dynamic capabilities and strategic flexibility. |
| Developing an overall theoretical framework. | Case histories and data linked to new constructs. | Selective coding to connect new constructs to overall context. | Theoretical framework. | Continuous morphing and the cycle of transient competitive advantage. |

FROM SEARCH ENGINES TO PORTALS

In this section, we describe the process by which Yahoo! and Excite continuously adapted form and function in search of competitive advantage. Our analysis suggested that the focal organizations underwent two transformations. First, they morphed from search engines (that is, providing navigational tools) into destination sites (providing content). Second, they morphed into Web portals (providing broad-based interactive services). Each transformation entailed (1) a strategic thrust to generate or regenerate competitive advantage and (2) evolution of the orga-

nization to respond to shifting competitive conditions. Table 3 summarizes the strategic thrusts and characteristics of the organizational forms of the two focal firms during the three stages of their evolution: search engines, destination sites, and Web portals.

Moving Internet Traffic: The Emergence of Search Engines

Strategic thrust to compete through superior search capability. The Internet search engines emerged during 1993–94 as a new organizational

TABLE 3
Transformations in Function, Form, and Competitive Advantage of the Focal Firms, 1994–98^a

| | Internet Search Engine, 1994–Early 1996 | Internet Destination Site, 1996–97 | Internet Portal, 1998–Early 1999 |
|--------------------------------|--|---|--|
| Function | Information search. | Providing content. | Providing a variety of interactive services. |
| Strategic thrusts | Offer superior search capabilities. Y: Creates a directory of Web sites classified into categories. E: Introduces computerized “spider” search. | Differentiate through image and content. Y & E: Launch branding campaigns. Y & E: Develop differentiated content through alliances. Y: Manages to accumulate more differentiated content. E: Also seeks distribution alliances (AOL, Netscape, Netcom). | Add interactive services. Y & E: Personalize Web sites; offer full Web-based functionality, including communication, content, and commerce. |
| Organizational form | Y: Employs a “surfer model” and a community of users; adds technological capabilities through licensing. E: Employs a software-based model; adds technological capabilities through acquisitions and hires expert editorial staff to match Y’s directory. | Y: Adds marketing staff; deploys surfers to discover content; reorganizes to a “producer team model” consistent with a media company form. E: Facing a cash flow crunch, lays off editorial staff; adds business development personnel to manage partnerships. | Y: Completes a series of acquisitions to acquire logistics capabilities; becomes a media network. E: Merges with “broad-bandwidth” provider @Home; ceases to exist independently. |
| Access to key resources | Allocate traffic to Web sites. High access to advertising revenues owing to high concentration of traffic; access jeopardized by short duration of visits. | Retain traffic through information content. Y: Ranked fourth among Top 10 Internet Properties, behind AOL, Webcrawler, and Netscape. ^b E: Not included in the Top 10 Internet Properties. | Entertain and service the traffic directly. Y: Ranked second among Top 10 Internet Properties. E: Ranked seventh among Top 10 Internet Properties. ^b |
| Bases of competitive advantage | Search capability. | Search capability (increasingly insufficient). Brand and reputation. Content creation. | Search capability. Brand and reputation leveraged. Interactive services (personalization, services, and communities). |

^a Y = Yahoo! and E = Excite.

^b Source of rankings was Media Matrix, which tracks the volume of Internet traffic.

form intended to solve the problem of locating information on the World Wide Web. Search engines helped the growing number of Internet users find their way around an expanding universe of Web sites.

Yahoo! stumbled on the opportunity by chance. Its founders, Jerry Yang and David Filo, maintained a list on a Web site of other, favorite Internet Web sites organized in a hierarchical directory of categories. Growing attention from Web users encouraged the two founders to visit and categorize 1,000 Web sites daily, creating the first hierarchical directory of sites. As the site evolved, they named it Yahoo!

At about the same time, a team of Stanford students formed a company called Architext with the goal of developing software technology that could search and index Web sites. Their technology included some very advanced features, such as concept extraction, which searched for whole families of words rather than for specific words. According to Vinod Khoshla, the venture capitalist who eventually sponsored their venture:

The guys at Architext [later renamed Excite] have solved some very difficult math problems. These math problems were part of the breakthrough software development work. . . . The end product appears to be a next generation search-and-retrieval text engine, which is uniquely suited for the burgeoning online service market. (*Red Herring*, 1995a)

Thus, having developed two different but comparably valuable approaches to finding relevant information on the Web—Yahoo! by organizing sites into categories, and Excite by using a computerized search—both firms received funding from premier Silicon Valley venture capital firms in 1994–95. In April 1996, about a year after they had incorporated, both firms went public.

Organizational evolution. Yahoo!'s directory was maintained by a staff of "surfers" who surfed the Web, looked for "new and cool" sites ("new" and "cool" were two main navigational buttons on the company Web page), and classified them for input into a database accessed through Yahoo!'s directory (Iansiti & MacCormack, 1997). These surfers formed the backbone of the organization: In mid 1996, Yahoo! employed a staff of 80, around 50 percent of whom were surfers. This organizational form replicated the experience of the founders by creating routines that converted the founders' experience into organizational knowledge (cf. Reed, 1997). In addition to the input from the surfers, the firm's service benefited from suggestions and nominations provided by its users. Together, the surfer-based organizational model and the close user con-

tact fostered a community of surfers—some employed by the firm, and many more served by it.

Excite's service, in contrast, was software-driven—it used a search technology known as "spiders" that scans the Web and develops an index of Web sites. As a result, Excite geared its investments toward technological assets, which were described by Stross as "rows of expensive servers and muscular workstations that quickly deliver loads of results and scour the Web" (1998: 42). In contrast, Yahoo!'s servers were "PCs run by a third party" (Stross, 1998: 42).

Excite's computerized search generated results faster and in larger quantity than did Yahoo!'s. However, Yahoo!'s directory provided results deemed more relevant by users. Soon, however, the two competitors matched each other's performance of the search function. Yahoo! licensed spider search technology from outside providers, and Excite hired an in-house expert editorial staff to review and categorize Web sites. Excite explained its strategy as follows:

The new personality-driven reviews service is led by Excite's management team of over 30 professional journalists, each an expert in individual areas. For example, Tim Robinson, Politics and Law Editor, covered the Watergate trials during his tenure as an editor with the *Washington Post*. He also currently serves as the Editor-in-Chief for the country's leading legal publications. (*Newswire*, July, 1996)

Shifting bases of competitive advantage. The increasing similarities in search capabilities, along with the entries of new search sites (Webcrawler, HotBot, and Google, to name a few), led to perceptions that the search function per se had become a commodity. This perception resulted in declining market valuations for both firms. An article in *Fortune* captured the predominant market sentiments at that time:

In the short time since the search companies went public, their business plans have become obsolete. Search has become a commodity—there are now more than 200 ways to find and retrieve information in cyberspace. . . . The search companies are generating paltry revenues and losing money. (Maloney, 1996: 174)

The poor performance results and declining market capitalization were signs that the focal firms were losing their competitive advantage. Search capability had become a necessary, but not sufficient, source of competitive advantage. The focal firms had to find new sources of competitive advantage by reexamining their services.

Attracting Traffic: Morphing into Destination Sites

Jerry Yang of Yahoo! articulated the two strategic thrusts behind the firm's intended transformation:

The fundamental bet we are making is that we are a media company, not a tools company. . . . If we are a tools company, we are not going to survive. Microsoft will just take over our space. If we are a publication, like a *Fortune* or a *Time* and we create brand loyalty, then we have a sustainable business. (Maloney, 1996: 180)

Strategic thrust to compete through image-based differentiation. As the Internet moved from scientific and technology labs to the homes of regular consumers, both firms recognized the need to build well-known brands. According to Jerry Yang, "We're trying to promote the brand and build the product so that it has reliability, pizzazz, and credibility. . . . The success of this company is built on our brand recognition" (*Red Herring*, 1995b).

In building its brand, Yahoo! magnified its existing organizational attributes, especially the cool image based on its playful culture and somewhat iconoclastic stance toward the technical community that had dominated the Web in its early years (Reid, 1997). For example, the firm's name, supposedly an acronym for "Yet Another Hierarchical Official Oracle," parodied the language of computer programming. To the degree that this identity was attractive to others, it was proved to be a valuable resource—for example, in 1995, Netscape made Yahoo! its default search engine for its browser because it was "cool" (Reid, 1997). Yet, prior to 1996, Yahoo! had not created mechanisms to deploy this resource as an asset.

In 1996, Yahoo! initiated a series of actions (what we describe as a strategic thrust) to build its brand. This strategic thrust entailed launching a \$5 million TV ad campaign—the biggest investment the firm had yet made at the time—and the first TV advertising campaign for an Internet company. The campaign projected the firm's playful identity with the tag line "Do you Yahoo!?" and established Yahoo! as "a consumer brand, not a technology company" (*Fortune*, 1998). The firm also appointed a vice president of branding, who generated several public relations initiatives involving event sponsorship and employee participation. The thrust represented an effort to extend the community built around the surfer model to an expanding group of target users.

The focal firms were again closely matched in their competitive thrusts. Excite also began to pursue a brand-building strategy. But lacking Yahoo!'s cool image and employee advocacy, it had to start

from scratch. It launched an \$8 million television campaign built around Jimi Hendrix's 1967 rock classic, "Are You Experienced?" The effectiveness of the campaign was questioned; *Fortune* magazine characterized the campaign as "as risky as it is attention-getting" (Maloney, 1996: 82).

Overall, Yahoo! was the more effective of the two in differentiating itself through branding. A poll conducted by *BusinessWeek* in 1998 indicated that Yahoo!'s name was recognized by 44 percent of Internet users and about 2 percent of non-Internet users; in contrast, Excite was recognized by 11 and 0 percent, respectively (Himelstein, Green, Siklos, & Yang, 1998).

Strategic thrust for competing through differentiated content. In the form of search engines, the function of the focal companies was limited to redirecting Internet "traffic." For example, in 1995 Jerry Yang told a reporter that "the goal, which is fairly modest, is to make the Internet intuitive for the user and to act as a starting point, not an end" (*Red Herring*, 1995b). However, as traffic emerged as the most valuable resource for Web businesses relying on advertising revenues, the focal companies faced the challenge of attracting the traffic to their site as a destination in its own right. To achieve this objective, the focal firms added content—information and entertainment—akin to that provided by traditional broadcasting companies. Providing content increased the amount of time users spent on the site and, therefore, improved the site's effectiveness in delivering advertising information. However, it was a significant shift in the function of Excite and Yahoo!.

Having embarked on a new strategic thrust, in late 1996 Yahoo! offered content that included stock quotes, maps, "chat rooms," news, weather reports, sports, yellow pages, and classifieds. Additionally, it differentiated its content by creating separate "branded properties" by topic (such as Yahoo! Finance) and by location (Yahoo! San Francisco; Yahoo! Italy). Between the third quarter of 1996 and the second quarter of 1997, Yahoo! built ten regional Web sites and seven international Web sites.

Excite also added content through similar information packages: Excite City.Net, Excite Live!, ExciteSeeing Tours, and Excite NewsTracker. In April 1997 it launched a format that resembled TV programming for its content in an effort to "provide consumers with an interface that reflected the way they navigated through other forms of media" (Porter & Bradley, 1998: 4).

The focal companies accomplished this significant transformation of their services by initiating numerous partnerships. Yahoo! drew on its exist-

ing relationships with Reuters (which had expressed interest in using Yahoo! as a "news feed" very early in Yahoo!'s history) and the Japanese media conglomerate Softbank (which held a significant stake in Yahoo! and had controlling interests in several computer-oriented publishing concerns, such as Ziff-Davis).

Lacking the brand awareness and the reputation of Yahoo!, Excite relied on distribution agreements both to add content (under those agreements, Excite provided distribution for various content producers) and to expand its Web presence, primarily through Internet service providers such as AOL, MSN-Europe, Prodigy, and a three-way deal with Dell and AT&T, which delivered Excite's Web site to users (Porter & Bradley, 1998).

Organizational evolution. Yahoo! and Excite once again "morphed" in a similar direction, providing similar solutions to the new problem of attracting and keeping traffic. However, Yahoo! approached the problem by reconfiguring and leveraging its capabilities. First, it evolved its organizational structure to better support its increasing emphasis on branding and marketing. At the end of 1997, Yahoo! had 386 full-time employees, of whom 199 were in sales and marketing and 80 were surfers who classified sites. The surfers had been 50 percent of total staff in 1996 and dropped to 21 percent in 1997. Marketing and sales employees now represented 51 percent of the total. But although Yahoo! reduced its emphasis on its surfing capability, it did not undermine the capability's strength: the percentage of surfers on the staff declined from 1996 to 1997, but their absolute number increased.

Second, Yahoo! deployed its surfing capability to discover desirable content and potential partners. To redeploy its capability, Yahoo! introduced simple principles of partnering, such as "put the customer first" and "make no deal which limits Yahoo!'s evolvability" (Giroto & Rivkin, 2000: 8) and implemented a structural change: It reorganized internally around "producer teams" similar to those used by media networks and film makers. In the new structure, for example, the producer of Yahoo! Weather designed Yahoo!'s weather services and tracked competing weather-related sites on the Web. The surfing department, however, also was responsible for monitoring competitors and complementors and for alerting the producers about relevant sites (Giroto & Rivkin, 2000).

Excite's organizational evolution took a different turn. Its investments in branding, content development, and distribution partnerships had depleted its cash position, and the firm was expected to run out of cash by the end of 1997 (Thomas, 1997). To

address this cash problem, Excite laid off half the editorial staff it had added a year ago. The *Red Herring* reported:

Excite's spokesperson claimed that Excite's 15 remaining researchers and writers were "the largest and the best editorial staff in the business." While this staff is still large compared to competitors or Lycos, it's dwarfed by the more than 50 surfers at chief competitor Yahoo. . . . One ex-staffer suggests that Excite's direction is clear, if unoriginal: "They are very much trying to duplicate Yahoo!. Except that Yahoo actually has a staff." (Thomas, 1997)

Thus, Excite also responded to the shifting competitive conditions by reassembling the bundle of value-creating resources needed. However, instead of leveraging its organizational strengths, Excite sought to acquire assets, capabilities, and partners in the marketplace. As a result, it could not benefit from using the organizational form as a coordinating mechanism that enables firms to achieve precisely the results they cannot achieve through market mechanisms—results such as learning (Teece et al., 1997).

Shifting bases of competitive advantage. Although Yahoo! was declared the winner of the war among the search engines (Desmond, 1997; Stross, 1998), the evolution of the search engines into destination sites moved them into a new competitive space. By becoming destination sites offering various content areas, they began to look and feel like AOL, MSN, Netscape, and other on-line service providers (Green, Himelstein, & Judge, 1998). Facing these competitors, which had better-established user bases, pushed the search engines/destination sites to redefine their services and bases of competitive advantage once again.

Servicing and Entertaining Traffic: Morphing into Portals

Strategic thrust for competing through interactive services. In their next transformation, Yahoo! and Excite became Internet portals, a term reflecting their original function as search engines that were "gates" to the Web. By the time the term "portals" became widely used, however, the search engines had actually evolved into conglomerations of sites offering a full range of Web-based functions—search, content, commerce, and communication (e-mail)—all in one place (Green et al., 1998; Swartz, 1999). This transformation reflects a further evolution in their function, an effort to attract, retain, and service traffic on their Web sites.

To achieve the task, Yahoo! and Excite added new interactive services. Table 4 compares the content and interactive services provided by the focal

TABLE 4
Content and Interactive Services Provided by
Focal Firms in February 1999

| Portal Services | Yahoo! | Excite |
|--|--------|--------|
| Finance | X | X |
| Insurance | X | |
| Stock quotes | X | |
| Tax information | X | |
| Loans | X | |
| Real estate | X | X |
| Health | X | X |
| Search | X | X |
| News | X | X |
| National Public Radio | X | |
| "Personalization" | X | X |
| Travel | X | X |
| Comparisons | X | |
| In-depth editorials | X | |
| Shopping | X | X |
| Comparisons | X | |
| Gourmet food and kitchenware | X | |
| E-mail | X | X |
| Live broadcasts | X | |
| Sports | X | X |
| National Collegiate Athletic Association | X | |
| National Hockey League | X | |
| Major League Soccer | X | |
| Fantasy Football | X | |
| Sports merchandise | X | |
| Weather | X | X |
| Classifieds | X | X |
| Video purchasing | X | |
| Movies | X | X |
| TV listings | X | X |
| Music | X | X |
| Books | X | X |
| On-line greeting cards | X | |
| Games | X | |
| Comics | X | |
| Chat | X | X |
| Pager | X | |
| Yellow/white pages | X | X |
| Communities | X | |
| Job search | X | X |
| Maps/directions | X | |
| Auto buying | X | X |
| Horoscope | X | X |
| Auction | X | |
| Polling service | | X |
| Personal access list | | X |
| Brand store or gear | X | |
| Search for missing children | | |
| Lottery | | |
| Create a Web page | X | X |
| Educational service | X | |
| Ticket purchasing | X | |
| Address book | X | X |
| Calendar | X | X |
| Synchronize address book, calendar | X | |
| Ski reports | X | |
| Restaurants | X | |
| Local brand | X | |
| Local lodging and events | X | |
| Small business assistance | X | |
| Suggest a site | X | |
| International brand sites | X | X |
| Women's information | X | |
| Senior information | X | |

firms as of February 1999. The evidence presented in Table 4 indicates that Yahoo! and Excite morphed in similar directions by adding more interactive services. However, Yahoo! was able to add more services than Excite.

Organizational evolution. Performing interactive services, such as e-mail, "e-chat," and, especially, "e-commerce," required new technological and logistics capabilities. Yahoo!, which until this point had shied away from acquisitions,¹ acquired a communications directory, a firm that rented server-based software and storefronts to "e-tailers," and an interactive direct marketer. Most of these acquisitions were intended to enhance Yahoo!'s ability to provide interactive services. The company also took steps to integrate the acquisitions, as its top management reported in the 1998 annual report: "Over the past year and a half, we have also successfully developed a process of acquiring and integrating other companies. . . . Developing this expertise has been a key internal goal and one that should serve us well in aggressively growing our business in the future."

Excite (along with other firms that were members of the original search engine category) sought to address the increased complexities of providing on-line services by looking for a merger with a better-established player. It was acquired by @Home, a provider of high-speed on-line access. In this transformation, Excite not only ceased to exist as a stand-alone organization, but also lost its position in the Web's navigation space, moved from profitability to loss, and lost almost every member of its original top management team. According to its former CEO, who became the CEO of @HomeExcite, "From a point of view of reach, Excite is no longer a strong portal" (Eads, 2000). Thus, the result of the third transformation of the search engines was that Yahoo! was the only one of the original set of competitors that remained a stand-alone organization, and it became the second-most-visited site on the World Wide Web.

In sum, the evidence presented so far demonstrates that Yahoo! and Excite repeatedly changed their function and form to respond to shifting market and competitive conditions. They continuously redefined what they were and what they offered, thus engaging in a process we label "continuous morphing." The following section explains the con-

¹ Unlike Yahoo!, Excite relied on acquisitions throughout its history to get access to technology (HotBot and Webcrawler, in February–March 1997), traffic (The McKinley Group, in August 1996), and marketing capabilities (MatchLogic, in February 1998).

struct and suggests its links to competitive advantage, dynamic capabilities, and strategic flexibility.

DISCUSSION

The purpose of this study was to examine the coevolution of form, function, and competitive advantage in the dynamic, hypercompetitive context of the Internet. We employed a broad definition of form as the configuration of products, services, resources, and structures that define an organization as a distinct entity and as a provider of a particular type of product or service (Romanelli, 1991). We examined the evolution of two Internet firms, Yahoo! and Excite, both of which originated as providers of search functions to users of the World Wide Web and, over a relatively short period, between 1995 and 1998, morphed first into providers of content, and then into providers of interactive services. Using the methods of grounded theory building, we have developed a framework within which such comprehensive, continuous change can be understood and managed (Strauss & Corbin, 1992).

Continuous Morphing and Competitive Advantage

In our framework, we propose that firms rely on continuous morphing to regenerate competitive advantage under conditions of rapid change. Dynamic capabilities (Teece et al., 1997) and strategic flexibility (Garud & Kotha, 1994; Sanchez, 1995) are two organizational mechanisms that facilitate continuous morphing. As firms change what they are and what they offer through the continuous morphing process, they migrate into new strategic and competitive domains. As a result of this migration, they need to regenerate competitive advantage relative to the new competitors they encounter in these domains. This change fuels the continuous morphing process again.

Our analysis suggests that our focal firms changed their functions often to ensure continuing access to resources—primarily, Web traffic and the resulting advertising revenues. As search engines, these firms had access to traffic, a valuable resource on the Web, but their function was to redirect it rather than to retain it. To retain traffic better, the search engines became destination sites and began providing content. This functional change led to their morphing into a different organizational form—the media company. It also made their offerings more similar to those of other content providers and on-line service providers, such as AOL and MSN. To respond to this new competition, the focal

organizations morphed once again—into broad-based on-line service providers, or portals. Thus, shifting competitive and resource conditions required them to continuously alter their form and function.

On the basis of above analysis, we propose that continuous morphing regenerates competitive advantage through comprehensive and continuous redefinition of the products and services a firm provides, changes in the resources and capabilities deployed, and a mode of organizing that facilitates creating and using new resources and capabilities. The process is employed in response to rapidly changing market and competitive conditions. Therefore, we propose:

Proposition 1. The more rapidly market and competitive conditions change, the more likely it is that a firm will rely on continuous morphing to regenerate its competitive advantage.

Although continuous morphing can be strategically beneficial in responding to rapid environmental change, it may be difficult to execute for a number of reasons. First, firms are believed to lack the organizational capacity to develop new competences rapidly (Dierickx & Cool, 1989; Teece et al., 1997). Second, the required resources may be unavailable in the “factor markets” (Dierickx & Cool, 1989) or, if they are available, may trade at prices that already incorporate the potential “rents” to be generated from their use (Barney, 1986). The evidence in our study validates these concerns. Excite, for example, on several occasions depleted its cash reserves (approaching bankruptcy) by seeking to acquire needed resources in factor markets, rather than by developing some of them internally. This observation lends support to Eisenhardt and Martin's (2000) warning that in high-velocity markets, the threat to competitive advantage is not only external but is also internal.

How can firms effectively engage in the process of continuous morphing? Our observations of Yahoo! and Excite suggest that dynamic capabilities and strategic flexibility enhance firms' ability to morph continuously. We examine each of these factors in turn.

Continuous morphing and dynamic capabilities. Teece and his colleagues defined dynamic capabilities as a firm's ability to “achieve new forms of competitive advantage” (1997: 513) and noted that decentralized structure and local autonomy help develop such capabilities. To a large extent, our observations of Yahoo! support these arguments: Yahoo! operates with a decentralized structure emphasizing the autonomous action of individuals (Giroto & Rivkin, 2000).

However, our analysis also suggests the need to move beyond traditional notions of hierarchy and centralization as attributes of organizational form that explain the development of dynamic capabilities. For example, the evolution of Yahoo!'s organizational form exhibited a progression in the development of learning routines from (1) simple replication (of the founders' experience into the routines of the surfer model) to (2) purposeful recombination (that is, incorporating elements of a media network, which was the prevalent organizational form in Yahoo!'s new competitive domain) and, finally, to (3) proactive development of organizational competences to manage the form, as evidenced in Yahoo!'s approach to integrating newly acquired companies during its most recent transformation. This observation is consistent with a more recent definition of a dynamic capability offered by Zollo and Winter: "a learned pattern of collective activity through which the organization systematically generates and modifies its operational routines" (1999: 10). Therefore, continuous morphing of form can be seen as one of the antecedents to developing dynamic capabilities.

Interestingly, Zollo and Winter (1999) stressed the terms "learned pattern" and "systematically" to suggest that dynamic capabilities are structured and persistent in a given organization. In contrast, our analysis indicates that Yahoo!'s dynamic capabilities are emergent and evolving, resting on open-ended organizing principles. For example, the senior vice president of business development at Yahoo! described the simple principles guiding the formation of partnerships at this firm as follows: "Put the product first. Do a deal only if it enhances the customer experience. And enter no joint venture that limits Yahoo!'s evolvability" (Giroto & Rivkin, 2000: 8).

This observation calls to mind Brown and Eisenhardt's (1997) finding that successful new product development in high-velocity environments is based on limited routines. Further, it confirms Eisenhardt and Martin's (2000: 1116) analysis that "in high-velocity markets routines are purposefully simple . . . although not completely unstructured." Such simple principles and limited routines enable firms to self-organize, which in turn enables them to respond to rapid change (Garud & Kotha, 1994). Therefore, continuous morphing may further enhance the development of dynamic capabilities to the degree to which it promotes self-organizing through reliance on simple organizational principles.

Our analysis also suggests that the concept of an evolving organization was a part of the belief structures of Yahoo!'s top management team. To the

degree that extant research has examined the role of managerial cognition in driving the dynamics of capabilities, it has focused on managers' beliefs about the nature of change in their competitive space (Tripsas & Gavetti, 2000), rather than on managers' beliefs about organizational evolution. However, in our study we found examples of the firm's leaders referring to "having a scalable organization," to an "organization that clones itself," and to "Yahoo!'s evolvability" (Giroto & Rivkin, 2000: 6-8). This evidence, together with Jerry Yang's statement, in our e-mail exchange, that "while there are many factors that have enabled us to be in our current leadership position, I would say the biggest reason is our ability to have put together a management team that's stuck together for a long time," indicates that the top management team and its beliefs about organizational evolution may play an important role in developing dynamic capabilities and deploying them in continuous morphing. Indeed, a top management team may serve as a bridge "between the organizational actors who learn, and the organizational structures and routines which both impact upon and are modified by the learning process" (Child, 1997: 66).

Examining the evolution of the form at Excite reveals a different pattern and pacing from that observed at Yahoo! Excite frequently acquired companies and hired and fired personnel in an effort to reconfigure its resources. Such frequency may impair a firm's ability to transform experience into meaningful learning (Eisenhardt & Martin, 2000) and to align newly acquired resources with the coordination mechanisms needed to use them effectively. Thus, it appears that Yahoo! managed the coevolution of its form and function at every stage of the continuous morphing process more closely than Excite did. Further, Yahoo! relied on elements of the form, such as emergent learning routines, open-ended principles of organizing, and evolution-minded, stable strategic leadership, to develop dynamic capabilities. Drawing on the above discussion, we propose:

Proposition 2. Dynamic capabilities depend on emergent learning processes and simple organizing principles spawned in the evolution of a firm's organizational form and supported by its top management team.

Proposition 3. The greater the dynamic capabilities of a firm, the more effectively it can engage in continuous morphing.

Continuous morphing and strategic flexibility. Strategy researchers have used the term "strategic flexibility" to refer to a firm's ability to respond to

the demands of dynamic competitive environments (Garud & Kotha, 1994; Sanchez, 1995). Sanchez argued that strategic flexibility depends on two factors: the inherent flexibility of the resources available to a firm and its flexibility in applying those resources.

Consistent with this perspective, we found that the technological and people-based assets developed by Excite and Yahoo! afforded them different degrees of flexibility in pursuing their strategic options under rapidly changing industry conditions. For example, Excite's technology-based indexing software had few applications other than its original search function. In contrast, Yahoo! used its human assets—the surfers—both to create the inputs for the basic search service and to gather market and competitive intelligence. Moreover, the organizing principles it employed (such as joint responsibility for content production between the producer teams and the surfers) further enhanced these resource flexibilities. Thus, whereas Sanchez (1995) emphasized that strategic flexibility depends on flexible technologies, such as flexible manufacturing systems and point-of-purchase information systems, our data suggest that human and organizational assets are central in developing strategic flexibility. Our view echoes the idea that technology can be helpful but not sufficient for achieving the flexibility needed to respond to rapidly changing environments (Garud & Kotha, 1994).

Additionally, our data indicate that dynamic capabilities may generate strategic flexibility. For example, Yahoo! was perceived as having a cool identity early on (Reid, 1997). The company built on this initial perception by allocating financial resources to popularize the brand and by increasing its marketing and sales personnel. In other words, the firm converted its initial cool identity into a strategic asset when it needed such an asset (that is, when it embarked on the strategy of becoming a destination site). Similarly, its existing strength in identifying and classifying content on the Web was deployed in selecting differentiated content to develop Yahoo!'s branded destinations (such as Yahoo! Finance and Yahoo! Weather). Yahoo! again relied on changes in the organizational form as a strategic tool to facilitate continuous morphing. Thus, Yahoo! converted its extant strengths into strategic assets by making additional financial and organizational investments in those strengths—a process we label “layering of resources.”

The layering of resources can be viewed as a type of dynamic capability that ensured that Yahoo!'s resource profile matched the strategic thrusts of each transformation on a timely basis. The process increases the strategic flexibility of a firm by in-

creasing the flexibility of its overall asset stock as well as the match between the assets of the firm and its shifting strategic needs. The above discussion suggests:

Proposition 4. The strategic flexibility of a firm increases with the evolution of its form if the evolution of the form leads to (a) new uses of existing resources and/or (b) layering of resources, which makes its overall asset stock more flexible.

Proposition 5. The greater the strategic flexibility of a firm, the more effectively it can engage in continuous morphing.

Continuous morphing enabled the focal firms to regenerate competitive advantage when their competitive conditions shifted. At the same time, the process moved the firms into new domains, where they became part of a different competitive set.

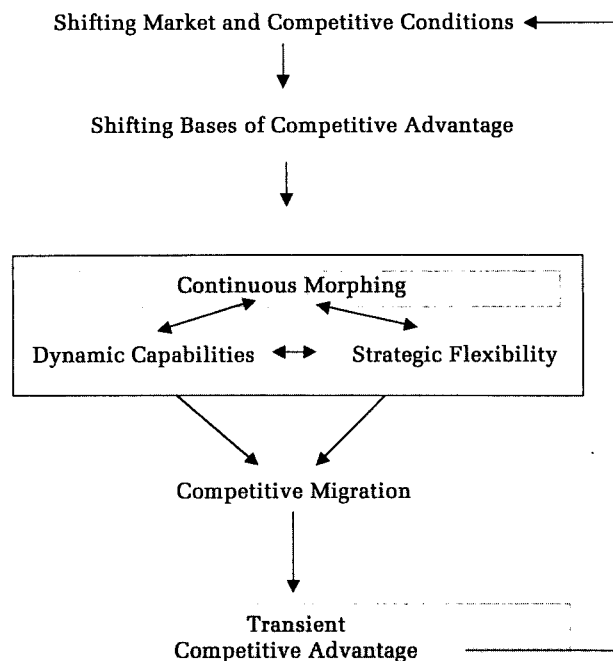
Whereas the initial set of competitors for Yahoo! and Excite included other search engines (for instance, Infoseek and Lycos), the competitive set for Internet portals includes complex media properties (“broad” portals) that have evolved from entertainment conglomerates (Disney/ABC), software producers (Microsoft), and Internet content/access providers (AOL). Such a change in competitive set can erode competitive advantage. Thus, although Yahoo! and Excite regained advantage over their original competitors, they were at a disadvantage relative to the players in the new domain. As a result, they had to continue to morph. Therefore, although continuous morphing is necessary to regenerate competitive advantage, it also contributes to transience, shortening the duration over which competitive superiority is enjoyed.

A number of researchers have suggested that in hypercompetitive environments competitive advantage is transient rather than sustainable (D'Aveni, 1994; Ilinitich et al., 1996; Kotha, 1998; Nault & Vandenbosch, 1996). Therefore, the focus of firms competing in such environments should be on renewing rather than protecting their sources of competitive advantage. Yahoo!'s apparent recognition of this competitive dynamic is evidenced by Jerry Yang's statement, “We are in the business of obsoleting Yahoo!” (Hemelstein et al., 1998: 66). Thus, we offer:

Proposition 6. Continuous morphing leads to competitive migration, which contributes to the transience of competitive advantage and to a hypercompetitive environment.

Figure 1 summarizes the process described here, emphasizing that the continuous morphing of firms

FIGURE 1
A Model of the Relationship between Continuous Morphing and Competitive Advantage



creates changes in competitive conditions that shift the bases of competitive advantage. This feedback effect reflects a coevolutionary dynamic between the firms and their environments (Lewin & Volberda, 1999). It suggests that hypercompetitive environments themselves can be understood as the active creations of firms relentlessly pursuing transient competitive advantages. The self-reinforcing competitive loop also contributes to the continuousness of the morphing.

Contributions and Implications for Future Research

Organization scholars have begun to recognize that firms compete in increasingly dynamic environments in which models of advantage based on protection of assets and uncertainty avoidance through stability may be of limited value (Ilinitch et al., 1996). In this article, we contribute to a growing body of research intended to illuminate the determinants of organizations' ability to adapt and gain competitive advantage in hypercompetitive, high-velocity environments by proposing the construct of continuous morphing and its links to dynamic capabilities, strategic flexibility, and competitive advantage. Continuous morphing refers to the comprehensive, continuous changes in products, services, resources, capabilities, and modes of organizing through which firms seek to regenerate

competitive advantage under conditions of hypercompetition.

Contributions. One important implication of our framework is the idea that competitive advantage is associated with a process, ongoing renewal (Rindova & Fombrun, 1999), rather than with a favorable position in an attractive industry (Porter, 1980) or with a bundle of heterogeneous resources (Barney, 1991). Whereas the debate between strategy content and strategy process is not new to the strategy literature (Chakravarthy & Doz, 1992; Montgomery, 1988), in the context of the Internet and other such hypercompetitive environments, the distinction between strategy content and process becomes less meaningful. In hypercompetitive environments, the content of strategy, which is selecting market positions and resources, changes so frequently that the long-term performance of a firm is more likely to reflect the effectiveness of the selection process rather than the firm's ability to achieve and protect specific industry positions.

To improve understanding of strategic processes, researchers need to study organizational action, as has been proposed in research on dynamic strategy (Child, 1997; Grimm & Smith, 1997). Strategic actions research today has made important contributions to understanding the relationship between market actions and firm and industry performance (Ferrier, Smith, & Grimm, 1999; Young, Smith, & Grimm, 1996). Our study extends this research by suggesting that the effectiveness of market actions closely depends on internal actions, through which resources are layered and capabilities are continuously defined and redefined. Therefore, future research should focus on the combined effects of external (market) and internal (organizational) actions on the competitive advantage and performance of firms.

This study also contributes to research on organizational form. Most research on the emergence of new organizational forms has focused on their origin in entrepreneurial entry and technological discontinuity (Aldrich, 1999; Romanelli, 1991). In contrast, research on the mutation of old organizational forms into new ones has been noted as lacking (Lewin & Volberda, 1999). In particular, the processes that affect the evolution of new entities from old ones have remained largely unexplored (Baum & Singh, 1994). Our study suggests the process of continuous morphing as one such process, one that encompasses both organizational and environmental factors. For example, although retaining elements of its original surfer model, Yahoo! also absorbed elements of the media network, the prevalent form in the strategic domain that the firm migrated into. Whereas previous case studies of

mutations in large organizations (Child & Smith, 1987) have found evidence that managerial and organizational inertia impede the process, our study indicates that a managerial idea of "evolvability," an idea Yahoo!'s leadership seemed to value, and its influence on strategic decision making may be one of the key internal determinants of continuous morphing and other mutation processes. Therefore, understanding organizational mutation may require that future research incorporate more directly the cognitive processes of top management teams.

Additionally, our study suggests that a broader and more dynamic understanding of form, in which it is viewed as a flexible arrangement of resources and structures configured to generate a stream of value-creating products and services, may be more appropriate for understanding form in hypercompetitive environments (Volberda, 1996). Such a view links the notion of form more directly to competitive advantage by highlighting how organizational arrangements enable profitable exploitation and change of resources and positions. Slywotzky (1996), for example, argued that, in most industries, value migration from less competitive to more competitive firms occurs not so much as a result of new products and technologies, but as a result of developing new business designs, which combine product-market strategies with internal organization of resources and generation of competences.

Our study also links the concept of organizational form to the concepts of dynamic capabilities and strategic flexibility—two key constructs associated with dynamic competition (Teece et al., 1997; Sanchez, 1995). The theoretical foundations of these areas are currently being laid out (Eisenhardt & Martin, 2000; Helfat, 2000; Wright & Snell, 1998; Zollo & Winter, 1999) incorporating organizational form as a key factor. Several authors have suggested that organic or decentralized organizational forms support flexibility and dynamic capabilities (Garud & Kotha, 1994; Teece et al., 1997; Wright & Snell, 1998), and our study is one of the first to explore the relationship directly and to suggest propositions for future research.

Limitations. Our theoretical ideas were induced from in-depth case study using the methods of grounded theory building (Glaser & Strauss, 1967). Although this methodological approach offers rich data and opportunities for discovery, it imposes some limitations on findings. First, the study focused on the coevolution of form and function in one type of form: search engines. Therefore, the generalizability may be limited to the nature and dynamics of competition in this industry. For ex-

ample, the study examines a time period when the Internet was just beginning to develop as a medium for commercial exchange. Our focal firms were among the first firms to invent (and reinvent) Internet-based business models. As the Internet evolves, prevalent organizational forms may become institutionalized, affording less flexibility for morphing (Lewin & Volberda, 1999; Volberda, 1996).

In a related vein, we note that both Yahoo! and Excite were entrepreneurial ventures with relatively short histories. As the Internet evolves, firms operating in that environment will accumulate histories, and future research can address the question of the degree to which the continuous morphing process is applicable to older firms or to large, established firms that enter the Internet.

Although we were able to gain some access to the founders of Yahoo!, our observations remain grounded in secondary sources of data. Further development of the concept of continuous morphing depends on researchers obtaining more direct access to the ongoing stream of decisions through which the process unfolds.

Finally, our approach also addresses the question of the relationship between continuous morphing and performance only indirectly. Future research will benefit more closely from mapping transformation points to performance results. Despite these limitations, our study develops key constructs that can advance understanding and stimulate research on the coevolution of form, function, and competitive advantage in hypercompetitive contexts. Additionally, it offers a set of propositions that could guide future research on the relationship among form, function, and competitive advantage.

Conclusion

The purpose of this study was to explore the coevolution of organizational form, function, and advantage on the Internet. Through in-depth case studies of Yahoo! and Excite, we found that these firms "morphed" as a means to pursue competitive advantage in the face of frequently shifting competitive conditions. We propose continuous morphing as an important mechanism for renewing competitive advantage in environments in which competitive advantage appears to be inherently transient. The process rests on the dynamic capabilities and strategic flexibility of a firm.

The ideas presented in this article are consistent with the emergent paradigm of hypercompetition, which emphasizes environmental dynamism and flexibility. Our work suggests that dynamic competition may be better understood as an unfolding strategic process, comprising a series of external

and internal actions. One of the key strategic challenges in this context appears to be creation of some degree of continuity and coherence in actions so that firms can capitalize on existing strength and capabilities. Relying on continuous morphing to simultaneously attain change and continuity may require significant changes in managerial thinking, a shift in focus from control (over resources, through structures) and toward opportunistic evolution and experimentation.

The Internet is filled with entrepreneurial firms experimenting with different business models, organizational forms, and processes. Ironically, much of this change is happening without much guidance from organizational or strategy researchers (Ilnitich et al., 1996). The challenge for future research is both to identify the processes through which firms compete in these new domains and to empirically test the generalizability of such processes across domains. Overall, our research suggests that understanding new organizational forms operating in dynamic environments, such as the Internet, will require blending existing theories with theoretical insights developed inductively from the new settings in which these firms compete. This study was a step in that direction.

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