E·I·U
The Economist Intelligence Unit

RESEARCH REPORT

The e-business value chain:

Winning strategies in seven global industries

Written in co-operation with KPMG

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The Economist Intelligence Unit

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Preface

E-business is changing nearly all that companies do, from the procurement of supplies to the delivery of finished products and services. New types of competitors, value-added services and new delivery channels are shifting the boundaries between customers, suppliers, partners and competitors, and profoundly altering industry value chains.

To explain how industry value chains are changing and understand how companies are responding, the Economist Intelligence Unit conducted a global research programme in co-operation with KPMG. We interviewed 42 senior executives at companies ranging from Ford and Hitachi to Celanese and Aventis. To provide a context for these discussions, we also surveyed 331 industry executives in North America, Europe and Asia. What has emerged is an examination of e-business best practices in seven industries: automotive, chemicals, communications, consumer markets, electronics, financial services and pharmaceuticals. The first chapter assesses the cross-industry trends, and the remainder of the report examines each industry in detail.

The hypotheses for this study were developed jointly by the Economist Intelligence Unit and KPMG. The EIU conducted the interviews and survey and wrote the report. At KPMG we would like to thank the following industry experts: Roger Amos, Peter Bassett, John Chapman, Gerd Geib, Peter Niedermayer, Brendan Nelson, Ed Rodriguez and Bernd Schmid. Thanks also to Alistair Johnston, managing partner for global markets, and Sally Pepper, marketing director for global markets, for their guidance and support.

At the EIU, Don Durfee edited the report, which was written jointly with Kathy Ford. Interviews and field research were conducted by Carol Bere, Elizabeth Fry, Ann Monroe, David Townsend and Alexandra Wyke.

We would like to express our gratitude to the many executives who completed surveys and granted interviews. Without their efforts, this report would not have been possible.

Key findings

Face-to-face interviews and the written survey have led us to the following conclusions:

• The Internet is transforming industry value chains. According to 57% of survey respondents, e-business is transforming their company's role within their industry. For example, many electronics manufacturers are moving up the value chain to offer e-business advisory services. At the same time, new web-enabled competitors are appearing at each point on the value chain, threatening companies' accustomed sources of value.

• Intermediaries are changing, not disappearing. Companies have found it difficult to bypass their traditional intermediaries—37% of survey respondents say that a reluctance to cut out intermediaries poses a major obstacle to their e-business plans. Instead, companies are searching for new ways of working with the middleman. For example, some financial services firms are attempting to turn insurance agents into customer-service agents, and many pharmaceutical firms are web-enabling relations with wholesalers rather than selling directly to pharmacies or patients.

• For online distribution, companies are developing a "portfolio of options". Rather than drive customers to a single sales channel, executives believe they must give customers several options. Many chemical companies, for example, are enabling their customers to buy through online marketplaces, corporate extranets and system-to-system connections, as well as through in-person channels.

• Online B2B exchanges will grow in importance, but must change to meet user demands. Online marketplaces such as ChemConnect and Global NetXchange are becoming an important tool for sales and procurement—19% say that industry-specific online exchanges are important for their supply chain management today, and 48% say they will be in 18 months. But executives say they are dissatisfied with current offerings, and want to see more specialised and customised products. Of survey respondents, 55% note that the ability to customise an exchange's products and services is a very important feature.

• The main obstacles to e-business are internal. The greatest barriers to e-business lie within the corporation: a need to re-engineer business processes (58% cite this as very significant), a lack of e-business skills (50%) and a lack of integration between front- and back-end systems (45%).

• Senior management involvement is too low. Our research indicates that successful e-business strategies require highly involved senior managers. Of companies surveyed, 58% say senior management is very involved in implementing e-business strategy. This means, however, that at the remaining 42% of companies, senior management involvement is inadequate.

• Companies are using e-business to expand products and services. To meet escalating customer demands and to keep products and services from becoming commodities, companies are using the Internet to provide value-added products and services. According to 74% of respondents, this is a very important objective for their e-business plans. Examples include the "virtual ISP" service offered by some communications firms—a service that allows companies to brand their own ISP service—and the efforts of carmakers to allow consumers to order customised cars online.

• Companies are using e-business to reach new groups of customers. The Internet is turning out to be an effective way of reaching new customers, particularly overseas. According to 62% of respondents, this is a very important strategic goal. In interviews, executives said that they consider online marketplaces as the most efficient way to do this.

• E-business improves internal and external collaboration. The Internet is turning out to be more than a sales and purchasing channel. According to 71% of respondents, improved collaboration with business partners is a highly important objective for their e-business strategies, and 70% say that improved knowledge management is highly important. Alliance-intensive industries, such as pharmaceuticals, are especially concerned with collaboration, with 82% citing improved collaboration as highly important.

• No consensus has emerged on where to place e-business operations. Companies are evenly split on the question of whether to form a separate e-business unit—46% believe they need to. Some argue that to compete with dotcoms, e-business operations must be independent and flexible. Others say that for the online and physical operations to truly support each other, e-business must be integrated into the lines of business. Our interviews suggest that the answer depends largely on a company's culture and competitive strengths.

• E-business investment will continue to shift to B2B. Recognising that the quickest benefits of e-business are likely to come from business-to-business initiatives, companies are increasingly devoting their investments to B2B. Currently, companies spend an average of 57% of their e-business investments on B2B activities; in 18 months this figure will increase to 62%.

Chapter 1 Cross-industry overview

The new economy is growing up. Only recently, e-business was characterised by soaring valuations for firms with no profits, an obsession with stock options and dire predictions for "bricks and mortar" incumbents. Now the dotcoms have fallen from favour. Investors have begun to look beyond the mere promise of e-business to its likely results. And they have discovered the advantages traditional firms bring to e-business—customers, brands and the physical infrastructure to complement online efforts.

For many executives, this is a welcome turn of events. After all, success online does require an ability to make money, and that is something most traditional companies know how to do. But it is increasingly apparent that this money will come from unfamiliar places. It may come from a new customer buying through an online marketplace, from the customer of an alliance partner, or perhaps from a new web-based line of business. Consider NCR, a US electronics manufacturer. The company—the original maker of the cash register—is the leading producer of automated teller machines (ATMs) and point-of-sale (POS) devices. After learning how to manage the data generated by its machines, NCR now finds itself profitably selling its data-mining expertise to the "e-plumbers", the companies that run websites, create banner ads and operate online reward systems.

Evolving value chains

Furthermore, the Internet is having a profound—and for some, alarming—effect on industry value chains. In the financial services industry, for example, a new class of online intermediaries has emerged, threatening the profits of established banks, brokers and insurers. Corporate customer relations are changing as new business-to-business (B2B) portals, such as CFOWeb (a marketplace for corporate finance products), introduce a new level of price competition to cosy business relationships. And the ease with which online consumers can switch between financial services providers is forcing firms to rope customers in with an ever-wider range of online products and services.

Such changes are occurring across industries. They threaten old ways of operating and raise the prospect of diminishing market share for companies unable to adapt. But the changes also present major new opportunities—the chance to deepen customer relationships, streamline operations, cut costs and discover new sources of revenue.

To capture these opportunities, companies need to understand several things. They need to know how the Internet is changing their industry. They need to understand what strategic decisions they must make along their own value chains—whether to procure supplies online, for example, or what sort of products to offer over the Internet. And they need a sense of how the companies before them have fared. In the coming chapters, we will address these issues for each of seven industries—automotive, chemicals, communications, consumer markets, electronics, financial services and pharmaceuticals.

This chapter is a cross-industry overview. It has two goals:

• To give a broad sense of how the industries compare with one another in terms of e-business development; and

• To draw out the cross-industry themes that emerged from our survey and interviews with industry executives.

These themes concern e-business strategy and its implementation—in particular, strategies for different parts of a company's value chain, from the procurement of supplies at one end, to the delivery of goods and services to the customer at the other. The discussion does not encompass all issues related to e-business strategy. Rather, it concentrates on those weighing most heavily on the minds of executives.

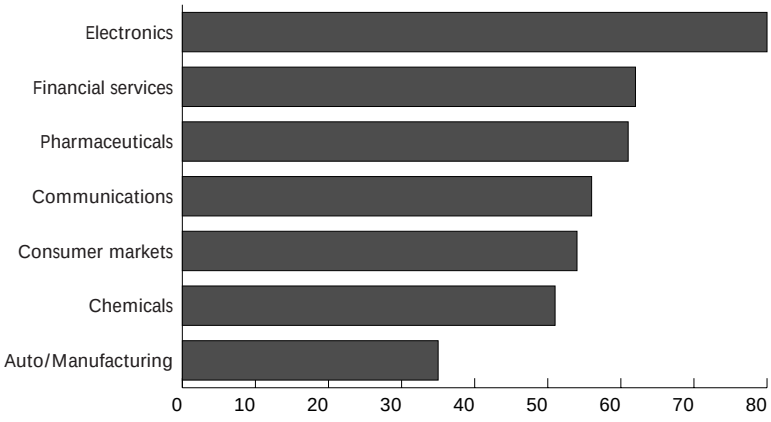
Industry comparison: Different stages of development

Each of the seven industries we examined for this study is moving towards e-business, but at different speeds. Through our written survey of 331 executives in North America, Europe and Asia, we considered the question of progress and momentum from a few angles: from the degree of senior management involvement in e-business, from the level of website development, and from the percentage of revenues earned from online sales today and those expected in 18 months.

Senior management commitment

By now, most companies have an e-business strategy. But how likely are these plans to be implemented quickly and effectively? Our research suggests that successful e-business strategies depend in part on the active involvement of senior managers. Most respondents—58%—believe that their senior management is

Figure 1.1
To what degree is your senior management actively driving the implementation of e-business strategy?
% responding "to a great degree" or "to a very great degree"



Source: EIU survey.

actively driving the implementation of e-business strategy. This means, however, that senior management commitment may be inadequate for the remaining 42% of companies.

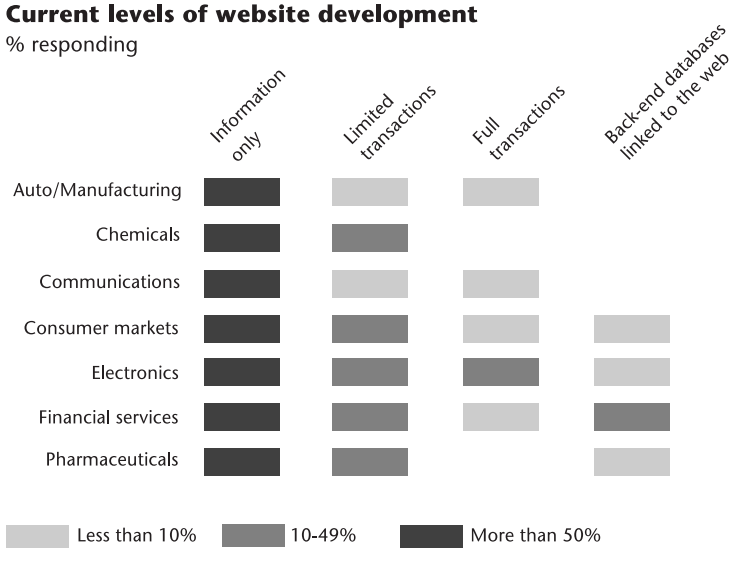
Senior managers in the electronics industry received the highest rating by far, with 80% reporting high levels of involvement (see Figure 1.1, previous page). At the other end lies automotive/manufacturing, in which only 35% say that their leadership is deeply involved. This suggests that it may take longer for these companies—which confront thorny supplier and distributor issues—to implement their e-business plans.

Advancing website capabilities

To get a sense of how advanced each industry is technologically, we asked what website features companies currently offer and what they plan to offer. At one end of the spectrum are companies whose websites offer information only—product descriptions, perhaps, or annual reports. At the other end are those with websites that offer full transactions online, from ordering to payment, and with a link to the company's back-end systems. This link is important, because it allows more of the transaction to be completed electronically and thus faster. It also enables customers to check product availability, and potentially opens the way for customers to customise their own products.

Unsurprisingly, the large majority (71%) of company websites currently offer information only. Some industries are more advanced than others (see Figure 1.2). Financial services leads overall, with nearly 25% having websites offering more than information and 11% having fully integrated websites. The electronics and consumer markets companies are close behind. At the other end of the spectrum are automotive/manufacturing, communications and chemicals. This disparity has much to do with timing. E-business first began to sweep across the financial services and electronics industry a decade ago—many of these companies have

Figure 1.2
Current levels of website development
% responding



Source: EIU survey.

been working to integrate their systems since then. By contrast, chemicals and automotive companies are relative newcomers. Although certain companies within the communications industry are among the world's most advanced in terms of e-business, most telecommunications giants are still working to update their systems.

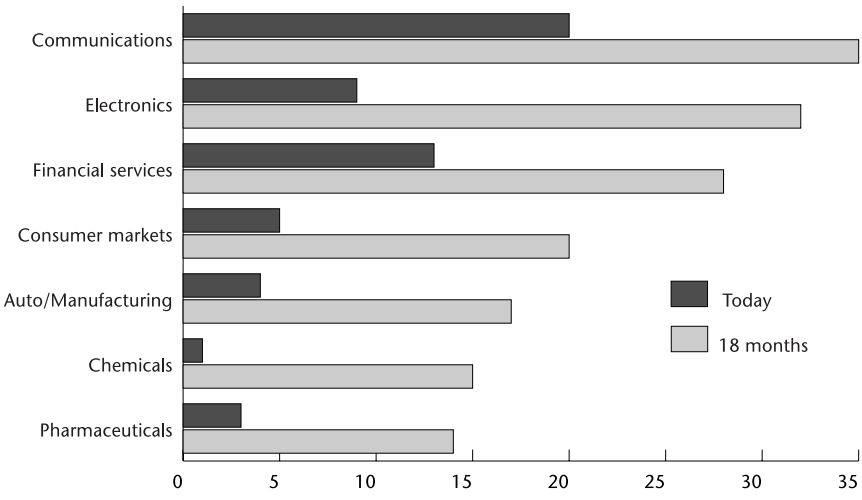
Within 18 months, however, companies expect to make dramatic progress. Financial services, electronics and consumer markets will still have the most advanced websites, with more than a third having fully integrated systems. But many companies in other industries will have caught up. Automotive/manufacturing will still trail, with only 12% offering websites linked to back-end databases, but on average, one quarter of communications, pharmaceuticals and chemicals companies will have such capabilities.

Online revenues

The Internet is finally emerging as an important sales channel. Across all industries, companies estimate that they currently earn 7% of their revenues through online sales (companies that sell mostly to retail consumers report an average of 10%, reflecting the early start of business-to-consumer e-business). This figure varies widely by industry, though (see Figure 1.3). Communications companies, which provide the backbone of the new economy, report the highest levels of online revenues, at nearly 20%. Financial services and electronics—both industries where competitive pressures are driving companies to adopt e-business rapidly—also report high levels of online sales. At the other end of the spectrum are pharmaceuticals and chemicals, industries that have just begun to adopt e-business.

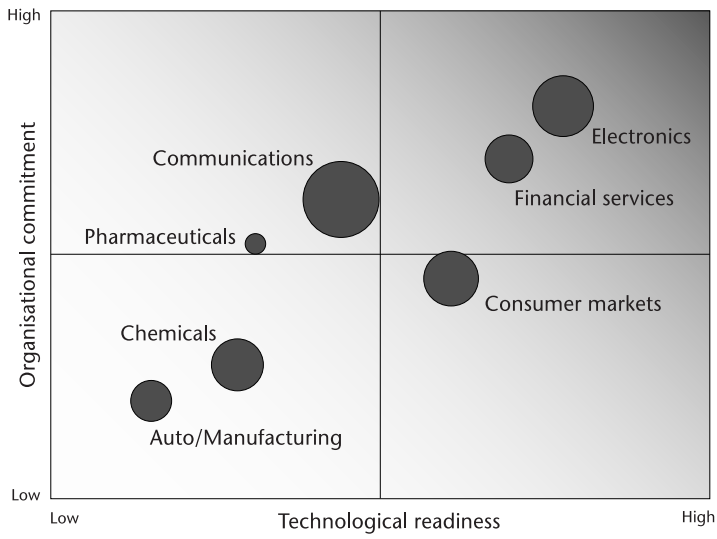
In 18 months respondents expect online revenues to rise sharply, to 22% on average. Communications will still lead, but the greatest absolute increase is expected in electronics, from 9% of revenues today to 33% in 18 months.

Figure 1.3
Estimated percentage of revenues from online sales
mean %



Source: EIU survey.

Figure 1.4
Readiness for e-business growth: Industry comparison



Source: EIU survey and interviews.
Note: Size of circle indicates relative size of potential online revenues.

Consumer markets, automotive/manufacturing, pharmaceuticals and chemicals also expect increases.

Readiness for e-business growth

Taken together, these three measures—senior management commitment, website development and online revenues—paint a picture of the industries' current stage of e-business development and suggest how they will develop in the future. Figure 1.4 shows the positions of the seven industries, with an estimate of the relative size of potential online revenues. (Bear in mind, though, that much of e-business's financial benefit will come through cost savings, which are not indicated on this graph.) The leader appears to be electronics. Although today electronics companies earn less of their revenue online than communications and financial services firms, within 18 months they will be nearly even with communications. More importantly, these companies have the infrastructure and the levels of senior management involvement necessary to advance rapidly.

Automotive/manufacturing, pharmaceuticals and chemicals industries are developing more slowly, but they too are investing heavily and expect online revenues to increase sharply.

Cross-industry themes

Regardless of their stage of development, all companies pursuing e-business face a similar set of challenges. Through our survey and in-person interviews, we found that companies will have to concentrate on the five following issues:

- Choosing the right structure for e-business;
- Selecting a customer focus;
- Choosing a product strategy;
- Managing the supply chain online; and
- Using alliances and outsourcing.

Issue 1: Choosing the right structure for e-business

One of the earliest decisions any company needs to make is how the e-business function will fit within the corporate structure. Should e-business operations be carefully woven into the corporate fabric, or should they be set apart as a separate unit, unencumbered by tradition and bureaucracy? Companies are evenly divided on the question. In our survey, we asked if executives believe they need to establish a separate e-business unit, and 46% said yes—a response that varied little by industry. Some interviewees argued that without a separate structure their companies could not get e-business projects off the ground quickly enough. Others objected that keeping e-business operations apart would only prevent their companies from becoming true e-businesses.

The case for a separate structure

The argument in favour of carving out a company's e-business operations comes down to several points. First, this arrangement allows companies to move faster at a time when speed-to-market is crucial. Put e-business within the lines of business, and a company's online efforts may be stalled by debates over channel conflict, resources and short-term priorities. "My view is that if you want any e-commerce activity to succeed, it does much better if it is organisationally isolated," says Vijay Yajnik, group CIO and director of specialty businesses for Dairy Farm, a Hong Kong retailer owned by Jardine Matheson. "An organisation that is managing stores has a different set of priorities … E-business won't get the dedicated focus and attention it needs."

Second, a separate e-business unit offers one way to address a nagging problem—attracting and keeping employees with Internet skills. A handful of companies, including US firms Donaldson, Lufkin & Jenrette and Barnes & Noble, have taken their e-business units public, allowing them to offer employees stock options. (Such plans can backfire, though—DLJ*direct*'s stock-option plan has been under water since its inception.) Other companies' e-business units are using their freedom to offer Internet employees benefits that fall outside of the parents' traditional human-resources policies.

Third, putting e-business resources in one place creates a centre of excellence, allowing the various e-business activities to learn from one another. As one interviewee put it, he would rather have those involved in e-business learn from one another's mistakes quickly, rather than allow every business unit to make the same mistake.

In addition, setting apart the e-business operations creates a place where the company can pursue strategically important—if not currently lucrative—initiatives, without dragging down the rest of the business. Fort James, the US consumer-products company being acquired by Georgia-Pacific, sees its Internet unit, Fort James eB, in such a light. According to Gary Kurlancheek, the unit's president, the company needs to court dotcoms such as Webvan and the dotcoms of major retailers, such as Walmart.com, but such customers are still too small to justify the time of the company's main sales force. Instead, the e-business unit uses its own sales team to serve these customers. The unit has its own business plan—which requires it to turn a profit, incidentally—that permits it to concentrate on these markets (see case study, page 48).

Integrating e-business operations

This approach has a downside, however. By separating e-business activities from the body of the corporation, a company may lose the opportunity to use e-business to transform every aspect of what it does, from sales and marketing to internal knowledge management. As Jacques Kemp, global head of e-business for ING Group in Amsterdam, puts it, "Of course we could do e-business as a spin-out, but then don't tell me ING is being web-enabled, because there should be 90,000 employees and 200 business units web-enabled. So Wingspan [the Internet bank owned by Bank One] might be a good structure, but the question is, who is converting Bank One?"

ING's approach is ambitious: the firm has created a small e-business centre in each of its 200 units and a centre at the corporate level to guide and co-ordinate their efforts. The teams in each unit examine the issues unique to their business and are responsible for putting those businesses online. To ensure that the teams benefit from each other's work, the corporate e-business centre maintains an information portal on the corporate intranet. The centre also assembles cross-business committees to address issues, such as online payments or security, that are relevant to many different businesses.

Another drawback of maintaining a separate e-business unit is that companies selling through retail channels may miss an opportunity to have the channels support one another. Office Depot, a US retailer with 850 outlets and a successful mail-order operation in addition to its online store, is deliberately integrating these channels. According to Monica Luechtefeld, the company's senior vice-president of electronic commerce, Office Depot believes that its customers should have a range of choices. Someone may research a product online but want to see it in the store first, or a customer might prefer to order via the website but to pick the item up at a nearby outlet. Furthermore, the store can promote the website, and the website can emphasise the flexibility of Office Depot's integrated approach—something unlikely to happen if the online channel is pursuing independent business goals (see case study, page 49).

Finally, some companies argue that certain e-business functions—especially electronic procurement—must be tightly integrated with each unit's operations. For this reason, AstraZeneca, a major UK-based pharmaceutical company, has decided on a dual structure: a corporate-level B2C function, but a B2B purchasing function divided among the business units and overseen by the finance director. Fort James recognised this need, too. Although its e-procurement function lies within the e-business unit, the company has appointed an e-procurement

director who reports both to the e-business unit and to the purchasing functions, and whose job is to ensure a careful handoff between the operations.

A question of objectives

There is no single answer to the question of structure, of course. In each case the question will turn on several company-specific factors:

- Would a separate unit support the company's distribution strategy?
- Would a separate unit be confusing to customers?
- Do the benefits of web-enabling all parts of the company evenly outweigh the advantage of flexibility?
- How great are the internal obstacles to web-enabling the entire company?
- How important is speed to market in the company's particular industry?

Issue 2: Selecting a customer focus

Where customers are concerned, the Internet changes many things: how a company communicates with consumers, the services and products it offers and the price at which it offers them, among others. It can also alter a company's customer base. This might mean reaching more customers of the same type—an insurer consolidating its position among local consumers, for instance. It could also mean reaching customers previously beyond the company's reach, such as overseas consumers. Or it could involve reaching customers that were previously uneconomical to serve directly—the retail consumers an electronics manufacturer currently serves through distributors, for example.

As they go online, companies must decide which customers they will target. Broadly, there are three options, which are not mutually exclusive:

- Sell to a broader range of customers
- Focus on a niche segment
- Skip the intermediary and sell to end-users directly

Sell to a broader range of customers

Because the Internet is unconstrained by national borders, and because it can reduce the expense of reaching new groups of consumers and corporate customers, many companies are hoping to expand their customer base through e-business. Indeed, 62% of our survey respondents said that reaching a broader range was a very important objective of their e-business strategies.

For many, the focus of the effort is overseas expansion. Perhaps the most efficient way for companies to reach new customers—especially for those whose customers are other companies—is through online exchanges. Many accept bids from customers anywhere in the world, with a surprising number coming from the developing countries. According to Michael Eckstut, senior vice president of business development for ChemConnect, an online marketplace based in San Francisco, about 20% of the World Chemical Exchange members are from China and India—customers previously difficult for most US and European companies to reach. How much e-business helps companies reach retail consumers in other countries is less certain, however. To date, there are few examples of companies that have used B2C e-business to develop a significant overseas customer base.

E-business can make it easier to establish a physical presence in other countries, however. Several companies that traditionally enter new markets by buying a local company or by building an expensive physical infrastructure are setting up local online firms instead. ING Group, for example, recently entered the Canadian securities market by setting up ING Direct, an online broker. According to Jacques Kemp, the firm can strike an agreement with a local firm to offer a broader physical presence within the country. Beyond the cost of setting up systems, ING's only major expense is in acquiring new customers. The firm plans to roll out this model in other countries as well.

There are obstacles, of course. Companies must still contend with government regulations that limit the activity of foreign firms. More importantly, although the Internet may be global, tastes and preferences are not. Recognising that they need to tailor their online approach to different regions, many firms are allowing employees in different regions to create websites that follow the corporate template but are written in the local language and contain local content.

In addition to looking overseas for new customers, companies can use Internet technologies to reach new pockets of customers within their own markets. Pharmaceutical companies, particularly in the US, have been marketing their prescription products directly to patients over the past decade. The Internet extends and refines this effort. As we will explain in Chapter 8, companies such as Glaxo Wellcome of the UK are setting up websites (as well as participating in neutral sites) that provide information and advice on diseases such as asthma. Because of the explosion in the number of people seeking medical information online, the company says its efforts have measurably encouraged people who otherwise might have ignored their symptoms to seek treatment.

Focus on a niche segment

For some companies, e-business is not just an opportunity to tap a bigger pool of customers, but a chance to target a specific group and meet its particular needs. According to 52% of respondents, using the Internet to focus on a select group of their most valuable customers is a very important goal. The Development Bank of Singapore, for example, has decided to concentrate on Southeast Asia's small and medium enterprises (SMEs)—a particularly important group of companies in Asia. To do this, they have created a variety of services, including working with alliance partners to provide information and online business services for local companies. And to help this group of customers move online, the bank has been organising seminars to educate SMEs on topics such as e-procurement, online security and fulfilment.

As we mentioned earlier, e-business has led NCR to concentrate on an entirely new set of customers—companies it calls "e-plumbers". These are the companies that provide the web's infrastructure and services, such as Internet service providers (ISPs) and the companies that offer online reward programmes. To these customers, NCR sells data warehousing services. To ensure that it is meeting the specific needs of these businesses (and its other major customers), NCR holds "customer councils" to learn what e-business services its customers think they will need, and factors the results of these meetings into its development plans.

Skip the intermediary and sell to end users directly

A third opportunity is for companies that have traditionally sold their product through intermediaries to sell directly to consumers. In the Internet's earliest days, analysts predicted that firms from Procter & Gamble to General Motors,

which previously could not economically reach their end consumers, would use the Internet to sell directly to them—in effect creating a new set of customer relationships to manage. Some, including Procter & Gamble, have tried.

But this has not been easy. US automakers have been unable to obtain the consent of their politically powerful dealer networks. Manufacturers have found that they lack the experience with customer service and the infrastructure to provide fulfilment. Other firms have found that it is simply too expensive. As one firm reported, its wholesalers' margins are already so low that it's hard to see where the firm would save money in bypassing them.

In fact, most of the firms we spoke with said that they have no plans to bypass intermediaries. But some companies—especially in financial services—feel they have no choice but to create new distribution channels that compete with traditional intermediaries, both internal and external. For these companies, it is essential that they ensure that their customer service and order fulfilment processes are capable of handling the increased volume before launching any new service. (This will be easier for companies such as banks and insurers, who don't sell physical products.) They won't be alone. Our survey found that most companies, including those that continue to sell to distributors, believe they will have to make major changes to their internal processes: 65% report that they will need faster customer-service response times, and 59% say they need more effective fulfilment processes.

And of course, companies selling directly to end consumers will have to manage channel conflict. Of our respondents, 40% said that their company's unwillingness to disintermediate traditional distribution channels poses a serious obstacle to e-business plans. The particulars of the difficulty vary by industry—we explore this issue in the coming industry chapters—but one common solution seems to be emerging. Rather than simply cut out intermediaries, companies are attempting to craft new roles for them, using insurance agents for customer support, for example. Whether such solutions are tenable remains to be seen.

Issue 3: Choosing a product strategy

Companies must also choose an online product strategy. Is the company's current line of products and services suitable for online distribution? Should the firm distribute a wider range of products, or specialise? Must the products be customised? We found that, more than anything, companies are hoping to use e-business to provide value-added products and services, with 74% reporting that this is a very important element of their online strategy. The main reason for this is the fear of commoditisation. E-business is already driving down the prices for many commodities, and executives believe that to maintain margins they must provide more than interchangeable goods. Two ways of doing this are to customise products and services—as Dell does with its personal computers—or to provide integrated bundles of services. The survey found that 57% believe that offering customised products and services will be very important, and 57% believe that providing product bundles will.

Expanding products and services

Many are using e-business to create new products or services or to add value to existing ones. In some cases, this can mean a shift into a new business. Germany's

Deutsche Telekom, for example, has created a new operation to capitalise on its expertise in online networks. Through its T-Online division—which handles the company's Internet-related businesses—the communications company offers what it calls "virtual ISPs" and "virtual marketplaces". It provides these services and allows other companies to brand them. For example, the German pharmaceutical and chemical giant Bayer has a large online procurement marketplace that is operated entirely by the communications company.

Even more conservative industries, such as chemicals, are looking for ways to provide added value with the Internet. One example is placing web-linked chips inside chemical storage tanks to monitor the amount of liquid chemicals a customer has. When the level falls to a certain point, the supplier will know and can automatically ship more product, without requiring the customer to intervene.

Some companies will find that providing a value-added service requires a trade-off: curtailing product offerings, at least temporarily. Dairy Farm has found that because of the cost of running an online home grocery delivery service, it can only offer a carefully selected subset of its full product line.

Creating product/service bundles

In the new economy, products and services are increasingly aggregated from a range of providers. Buy a personal computer and it comes bundled with software and perhaps a year's worth of online access through the phone company. A customer buying a mutual fund through Charles Schwab in the US receives access to investment research from various Wall Street firms and counselling from affiliated financial advisors.

Such bundling is one way that companies—especially in service industries such as banking and communications—can build customer loyalty, or at least raise the costs of switching to another provider. A consumer who uses American telecommunications giant AT&T's online service can easily switch to one of its competitors, such as WorldCom, with a few mouse clicks. But a customer who uses AT&T's online service in combination with local, long-distance and mobile service for a discounted rate, and on a single bill, is less likely to jump at the first competing offer.

Before deciding on a bundling strategy, companies should consider whether the Internet has made their package irrelevant. Just as the Internet makes it easier for consumers to switch providers, it also makes it possible for consumers to assemble their own bundles. Many insurers, for instance, hope to offer customers a full range of financial services products, including loans and savings accounts. But they will have to compete with neutral websites that have the added advantage of allowing customers to search for the best rates from different providers. Companies need to ensure that their own packages offer something more than convenience—a discount, perhaps.

Customisation

Another way companies hope to lure new customers and keep current ones is through personalisation. It is by now common wisdom that technology offers an unprecedented chance to understand an individual customer's needs and deliver a tailored product. But "mass customisation", as it is known, is still uncommon. Part of the problem is technology. Taking an online order and communicating an individual's wishes back to the manufacturing line and to suppliers requires integrated computer systems. And such integration is costly.

More importantly, customisation requires deep changes to manufacturing processes. A carmaker that wants to let its customers specify their cars' features has to change its manufacturing line from a sequential approach to a modular one in which the final car can be bolted together at the last minute from a number of preassembled units.

Still, we found that many companies believe they must find a way to customise their offerings if they hope to survive. Taiwan Semiconductor is one. The company, which supplies microchips to most of the major computer makers, has created an online tool to allow strategic customers to jointly design and engineer their chips. According to Quincy Lin, the company's senior vice president of corporate development, such efforts help build a closer bond with customers, and this in turn heads off commoditisation of the company's products (see case study, page 56).

Issue 4: Managing the supply chain online

At the supply end of the value chain, e-business has a number of implications. It will change relations with suppliers and alter the way companies buy supplies, from pencils and staples to chemicals and lumber. Though companies hope someday to make money through customer-focused e-business, they expect immediate savings through online procurement and supplier management.

The increasing importance of online procurement

Traditionally, managing the supply chain electronically meant relying on electronic data interchange (EDI) systems. EDI, which became popular in the 1980s, was a great improvement on paper and phone-based procurement. But it has drawbacks, most notably its cost: EDI systems are proprietary, and to work together, customer and supplier must install the same expensive technology. By contrast, systems based on the Internet require only a personal computer and access to the web.

Online, companies have a range of choices. They can communicate with suppliers individually through corporate extranets or through linked enterprise resource planning (ERP) systems, or they can procure through one of the many online exchanges.

Within the category of exchanges, there are also choices. Some are "vertical markets", serving companies within a single industry. Other markets are "horizontal", selling services and products such as office supplies that are of interest to a range of industries. Most exchanges use reverse auctions, where suppliers bid each other down to win a contract (see box, "Understanding B2B e-marketplaces").

Companies have already begun to shift their procurement to the Internet. According to 32% of respondents, corporate intranets are very important for their supply chain management, compared with 19% who said so for EDI systems (see Figure 1.5, page 14). In 18 months, intranets will become even more important, with 60% reporting that they will be very important. And the use of exchanges (both same-industry and cross-industry) will overtake EDI systems.

EDI will not disappear anytime soon, though. Several companies told us that they would continue to use EDI where they can, because the investment has already been made and because they know that the systems work. "All of our

Understanding B2B e-marketplaces

E-marketplaces promise a fundamental change in the way companies manage their value chains, from the sourcing of raw materials to delivery of finished products. At their most basic, e-marketplaces bring together companies online for buying and selling goods and, to some extent, services. They take a number of forms. Some—such as Covisint in the automotive industry—are sponsored by the major players of a particular industry that require their suppliers to bid for business. Others are supplier-operated markets where purchasers browse a massive online catalogue or bid in an auction. Still others are run by neutral third parties.

There are an estimated 600 exchanges now in operation, and new ones appear almost daily. Although many will not survive, and it is still unclear how regulators will respond, exchanges may quickly become the standard means of doing business over the Internet. Forrester Research estimates that by 2004, 53% of all B2B e-commerce will pass through online marketplaces.

By using e-marketplaces, companies may be able to:

• Improve efficiency. By automating purchasing, time and paper can be removed from the process.

• Widen the pool of suppliers. E-marketplaces facilitate bids from overseas suppliers, for example.

• Secure lower prices. Many companies estimate exchanges will save them up to 30% on their procurement costs. Some e-marketplaces also offer group buying, which is particularly beneficial for smaller companies.

• Shift supply chain management to other parties. Soon, many e-marketplaces will offer services beyond brokering purchases. For example, marketplaces may eventually link purchases to a buyer's distribution schedules or integrate purchase data with the company's financial records. E-marketplaces may also include inventory tracking and bill payment to suppliers.

• Eliminate or reduce excess inventory. The increased efficiency of online marketplaces will allow companies to keep smaller inventories. Companies can also sell off excess inventory online.

Despite the rising enthusiasm for online exchanges, not everyone is choosing to participate. There are a number of potential risks in using e-marketplaces:

• Disrupting established relationships. Widening a company's pool of supplier deals could damage relations with strategic suppliers. Companies must weigh potential cost savings and efficiency gains against the value of these relationships and established procurement practices.

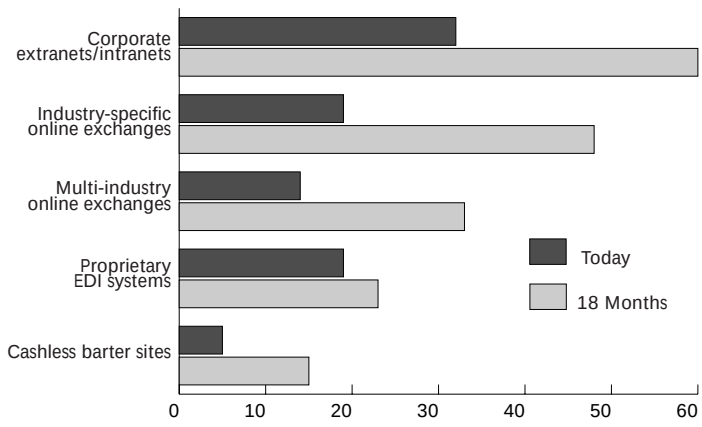
• New supplier risk. In most exchanges, buyers and sellers are anonymous. Many marketplaces certify the buyer's ability to pay, but often sellers may not be adequately rated. A purchaser of bulk chemicals may be unsure of its new supplier's ability to meet environmental and safety requirements, for example.

biggest customers are set up with EDI, and they're really quite happy with it," says one pharmaceutical executive. "They have invested quite a bit in that, and so, from a commercial point of view, we don't see a big advantage to having an Internet selling capability."

The rise of intranets

For now, corporate intranets seem to be the channel of choice. Intranets have three big advantages: they are easy to set up, they reduce transaction expenses quickly, and they don't require companies to transform their supplier networks. For their part, many suppliers prefer intranets because they give them more

Figure 1.5
Online channels for procurement
% responding "very important" or "critical"



Source: EIU survey.

control over the relationship. In an exchange, a supplier is anonymous and its products are likely to be purchased on price alone. On a supplier's corporate intranet, it can offer value-added services and potentially develop a degree of customer loyalty.

B2B exchanges

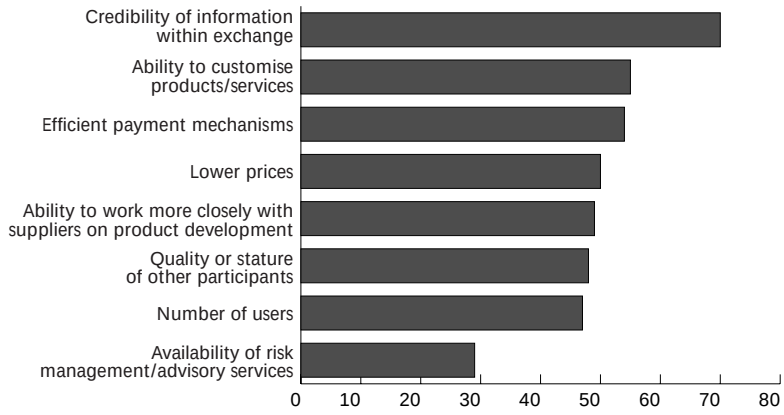
Ultimately, most corporate procurement will likely shift to online marketplaces, such as Chemdex for chemicals or GlobalNetXchange for consumer products. In theory, the model is certainly efficient. Bring together enough buyers and sellers in an auction, and prices will only be as high as the market will bear. And if enough companies use the market, every good should find a buyer—a great benefit for companies hoping to clear their inventories.

As they exist today, however, online marketplaces suffer from a number of deficiencies. First, there are too many. The consensus among the executives we spoke with is that, of the 600 or so exchanges that exist today, only one or two will survive in each industry. That will help solve the second problem: liquidity. Many of today's exchanges lack the high number of participants needed for an efficient marketplace. In addition, many of these early marketplaces are coming under regulatory scrutiny.

On our survey we asked companies what criteria they are applying to their choice of exchanges (see Figure 1.6, next page). Of the eight factors we listed, the most important was the credibility of the information available within the exchange, with 70% rating this as very important. In other words, above all, the market must be a safe place to do business. The second most important criterion was the ability to customise products and services (important especially to communications and financial services firms). This is significant, because today few exchanges allow for customisation.

This brings us to a point that several interviewees raised. Online marketplaces are ideally suited for commodities, but many items—indeed, a growing number in some industries—are highly specialised and must be made to order. In the au-

Figure 1.6
What criteria do you look for in an online exchange?
% responding "very important" or "crucial"



Source: EIU survey.

tomotive industry, parts such as brake systems and even tyres are becoming so complex that it's difficult to have a uniform set of specifications. And, as one executive at an online exchange acknowledged, the role for exchanges may be limited. "We believe that an exchange such as ours will represent somewhere on the order of 20% to 25% of total industry revenue. We recognise we're not the solution for everything."

It's hard to say what features exchanges may have in the future, however. "I think we probably know only one tenth of what the marketplaces will do," says Alice Miles, president of B2B for Ford. "We want to get [our exchange] up and running so that it can evolve, just like B2C sites like eBay are evolving." Already at least one exchange has been formed in the chemical industry that attempts to provide some of the more complex services that companies feel are missing (see case study, page 25).

For the moment, most companies appear to be adopting a dual approach to online procurement: experimenting with online exchanges while at the same time building their own intranet-based systems. According to Glenn Frommer, vice president for e-business at ICI, the UK chemical company plans to use exchanges for all its commodity purchases. But for those requiring a special contract with a supplier, the company is web-enabling the communications. Gary Kurlancheek of Fort James sees his company's strategy as one of proceeding on multiple tracks. The company is building an internal e-procurement capability and investing in a variety of exchanges. "There's probably some redundancy there," says Mr Kurlancheek, "but we decided we're better off financially building these systems now and saving money now rather than waiting until our strategies were all buttoned down."

Issue 5: Using alliances and outsourcing

In addition to deciding where the company's e-business efforts should reside, executives must also decide how much to rely on outsiders. Virtually all of the 42 executives interviewed for this report say that they need to rely on alliances to some degree. As Kevin Dean, a vice president for Cable & Wireless puts it, "There's a recognition that we don't have the resources or the scale to do it all—no one does." Some companies, like British Telecom and Glaxo Wellcome, are assembling a thick portfolio of e-business partnerships. Others are making only a handful of carefully screened investments.

Alliances take many forms, of course. At their most formal, they involve minority equity stakes. At their loosest, they are unofficial collaborations—an arrangement for two companies to cross-market each other's services online, for instance.

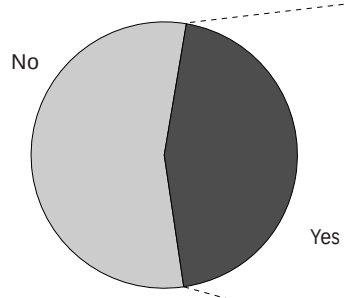
The use of equity

We first asked study participants about their use of investments. We found that nearly half of all companies are investing in dotcoms, either through equity stakes or by forming joint ventures (see Figure 1.7). This number rises to nearly three quarters for those companies most able to make large investments—those with over $10 billion in annual revenues. Of the respondents who are investing, we found a variety of motives. Most important is to gain access to another company's e-business expertise. This suggests that few are confident that they can develop the skills they need well enough or fast enough.

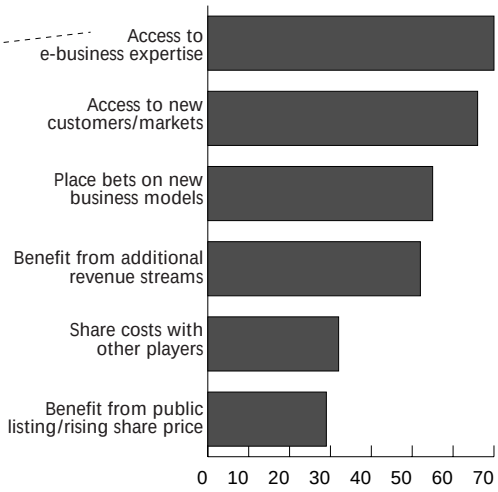
Respondents also cited access to new customers and markets as well as placing bets on new business models. This is important—companies realise that while the new economy is beginning to materialise, its final form is unclear.

Figure 1.7

Are you investing in dotcom companies?
% responding



If yes, how important are the following reasons?
% responding "very important" or "crucial"



Source: EIU survey.

Uncertain what B2B marketplace will emerge as the standard, many are placing bets on a variety of companies. Eastman Chemical Company, an American chemical maker, has a more focused investment strategy. Believing that any marketplace will only be as good as the business services it offers, the company is primarily targeting what it calls "e-service" companies—those developing online capabilities, such as a credit, patent and licence exchange, that will support online B2B (see case study, page 33).

Relatively few (29%) said that benefiting from a public listing was an important motivation for these investments. Still, some companies, including British Airways, have profited handsomely from well-timed investments in dotcoms. And ING has allocated a tranche of its excess capital for dotcom investments that meet the dual criteria of supporting the company's strategic goals and being a promising investment.

A typology of alliances

Beyond investments in dotcoms, companies are using alliances (both equity and non-equity) for a variety of purposes. Broadly, we found that companies are using five different types of e-business alliances, many of which cross industry lines:

• Technology access. Perhaps the most common motivation for e-business alliances is to gain access to new technologies. Typically, one partner will contribute the technology and the other will contribute its customer base. For example, the Development Bank of Singapore has an alliance with Singapore Telecom to offer mobile banking services. Using SingTel's technology, the bank is able to offer customers a new service; the communications company gains new customers. Before forming such partnerships, companies must conduct due diligence on their prospective partner's technology to assess how they could leverage each other's competencies.

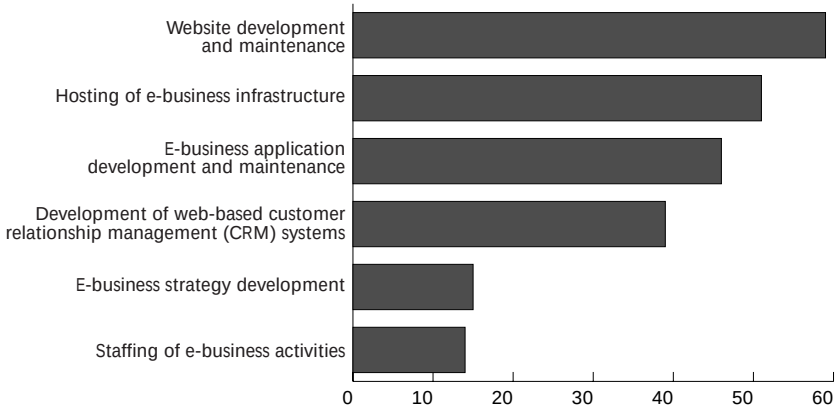
• Customer reach. These partnerships are intended to give companies access to new distribution channels. The auto companies' relationships with online retailers, such as Autobytel, are an example—Autobytel benefits from having a wide range of autos to sell its customers, and the car companies gain a new channel. Other examples include arrangements to sell through Internet portals such as Yahoo or E-Loan, which aggregate products from various competitors. Among other things, companies should consider the hidden costs of such arrangements—cannibalisation of existing channels, for instance.

• Market-entry alliances. Many companies are forming alliances to enable them to sell in overseas markets or domestic markets that have been beyond their reach. Companies can take advantage of each other's customer base, sales infrastructure and local market expertise. The Commonwealth Bank of Australia, for example, has an alliance with a UK real-estate website to offer home mortgages to that market (see case study, page 65).

• New business formation. Companies are also striking alliances to launch new businesses or services. First Data, a large American back-office processor for the financial services industry, has an alliance with several dotcoms to launch websites for small businesses—First Data supplies the transaction processing capabilities.

• Product-bundling alliances. Some alliances are formed with the purpose of offering the consumer an integrated package of services. Such alliances are common in financial services, electronics and communications. Companies must

Figure 1.8
E-business activities being outsourced or being considered for outsourcing
% responding



Source: EIU survey.

choose their partners carefully and ensure that the package is seamless from the customer's perspective and that the brands are complementary.

Alliances pose risks, of course. An alliance partner can become a direct competitor, its mistakes can damage a company's brand, or a company might learn that it has put its bet on the losing horse. Alliances in the new economy may be even harder to evaluate than traditional partnerships, but they are a necessary risk. As one executive explains, "There's no way to use ROI to evaluate these kinds of deals. If it looks good and feels good, we're going after it."

American financial services company Wells Fargo, which is forming a number of alliances to provide transaction capabilities to B2B exchanges, considers its potential partners more systematically. The company started with a list of about 60 criteria and identified eight that any potential partner would have to meet. These include an open and interoperable platform, a sound business model, the degree to which the owners understand the transactions they plan to conduct, and whether the exchange is already operating. The bank then ranks potential partners based on these criteria (see case study, page 68).

In any case, e-business may actually make certain alliances easier. Consider an alliance Abbey National is planning with a number of companies, including British Telecom. The partners will provide a bundle of services to customers who are relocating—along with a mortgage, a customer might receive moving services and a new phone service already set up. "You probably could have done that in the past, but the amount of paperwork or electronic data interchange required just wouldn't have made it cost effective," says Mac Millington, managing director of Abbey National's B2C banking operations. By connecting information-technology systems through the Internet, such arrangements are comparatively cheap.

A growing role for outsourcing

Although companies are relying on alliances for many of their strategic e-business goals, they are outsourcing many of the basic functions. Our survey found

that most companies are outsourcing some aspect of e-business (see Figure 1.8). Unsurprisingly, companies are most willing to outsource the technical work—especially website development and maintenance and hosting of e-business infrastructure. They generally prefer to keep strategic activities, such as e-business strategy development and staffing, in-house.

Executives cited several reasons for outsourcing. The most obvious is a lack of internal skills. With Internet savvy employees rare and expensive, the easiest answer is to buy such skills. Companies are also outsourcing to increase their speed to market. Even Wells Fargo, which has traditionally built its Internet capabilities internally, has begun to use outside providers —online competition has increased to the level where the company needs additional resources to move quickly enough. Outsourcing can also be a simple question of focus. As one executive told us, he wants his team to devote its energy to the business aspects of the Internet, leaving the technology to the experts.

In the following chapters we will explore these issues further in the context of seven different industries: automotive, chemicals, communications, consumer markets, electronics, financial services and pharmaceuticals.

Chapter 2 Automotive

Recently, no industry's e-business efforts have received more attention than automotive's. This has little to do with the online sophistication of individual carmakers. Indeed, our survey—which examined automotive companies along with other manufacturers—found that these companies trail other industries significantly, particularly in the area of website development (84% have websites that offer no transaction capabilities, and 10% have no website at all). Rather, it has to do with the vast gains—both in cost savings and new revenue—that analysts and industry executives expect from the industry's online B2B exchanges.

Opportunities in the supply chain

The potential benefits of putting the industry's supply transactions on the web are familiar. The owners of the Detroit-based portal Covisint, the largest exchange, claim that in moving their $300 billion in annual purchases to the web they will save as much as 30% through lower administrative expenses and through online auctions. The marketplace will also generate revenue of its own, through transaction fees and advertising. And, of course, the partners plan an IPO; one Wall Street analyst estimates that the venture will have a market capitalisation of between $30 and $40 billion within two years.

The difficulties of such efforts are becoming apparent, however. First is the sheer technical feat of making such a system operate smoothly and securely. Of our survey respondents in automotive/manufacturing industries, 43% say that a lack of back- and front-end systems integration poses a serious obstacle to their e-business plans. Second is supplier opposition. Many suppliers worry that by moving their business to the exchanges, their earnings will plummet along with prices for certain supplies. For their part, manufacturers are reluctant to disturb supplier relations—only 20% of original equipment manufacturers (OEMs) say they would be willing to disrupt supplier relationships if that was the price of a successful e-business strategy.

Then there is the question of what sorts of products lend themselves to purchase and sale over the Internet. Most tyres, for example, are simple enough that one variety fits many types of cars. Other products, ranging from suspension systems to brakes, are specialised and generally need to be purchased directly from a supplier. Finally, there are the regulatory hurdles. Covisint has already been forced to delay its launch because of an antitrust inquiry by the US's Federal Trade Commission and the European Union.

A new way to reach consumers

The opportunities at the other end of the value chain—online sales to retail consumers—have received less attention. Ultimately, the auto companies hope to be like the best of the online retailers. Like the American computer company Dell, they want to provide their product cheaply, quickly and just how the customer wants it. To do this, many are hoping to move to a modular approach to manufacturing—redesigning the car to be a small group of preassembled units that can be put together later. Selling directly to consumers presents other opportunities, too, such as the chance to sell customers a wider range of services, like financing, extended warranties and insurance.

As we will explain, the catch lies with distribution. The auto industry relies on networks of dealerships, and dealers understandably oppose any effort that circumvents them. Carmakers also face a new breed of online competitor—companies like CarsDirect.com and Autobytel that can offer cars from all makers, making comparison shopping simpler.

Despite the difficulties in both B2C and B2B e-business, executives believe the industry will inevitably move online. Although automotive/manufacturing companies derive only an average 4% of their revenues through e-business today, they expect that figure to soar to 17% 18 months from now (revenues that will initially be accounted for almost exclusively by B2B sales). Suppliers are slightly ahead of OEMs. OEMs expect online revenues to increase 15% on average, up from 3% today. Suppliers expect to derive 20% of revenues online, compared with 4% today. Through our interviews, we found that automakers are preoccupied with two major components of the e-business value chain—finding new ways to interact with customers at one end and managing their evolving supplier relationships at the other.

Customer issues

Working within the current distribution system

The Internet has the potential to change dramatically the way cars are bought and sold. The current distribution system, which relies on chains of dealers that carry one carmaker's products, is clearly expensive and inefficient. Typically, between 25% and 30% of a car's purchase price lies in the process that delivers a car from the factory to the consumer. Based on rough forecasts, the car companies produce a predetermined number of cars, which are shipped off to dealers to sit on car lots until someone buys them. Ideally, manufacturers would like to sell their cars directly to customers through the Internet—they would know just how many to make, they would save money on dealerships and could develop relationships with consumers that could translate into additional services and greater loyalty.

There are several problems with this vision, though. First, few are willing to buy a car without sitting in it and driving it first—the industry will always need showrooms. Second, the realities of auto retailing make it tricky to do away with dealers. According to Tom Eggleston, a senior vice president of e-commerce at AutoNation in Florida, 60% of the car sales AutoNation's dealerships make involve the trade-in of a used vehicle, and trade-ins require a first-hand appraisal. Given the tax benefits of trade-ins in the US—consumers are only taxed on the difference between the price of the new car and that of the car they're trading—few customers will want to give up this model. Finally, there are legal obstacles. In the US, dealers have lobbied successfully for additional state franchise laws that prohibit carmakers from selling directly to consumers. (Europe's block exemption rules make European dealers less powerful than their US counterparts.)

So for now, car companies are mostly working within the limits of their current channels. Volkswagen, for example, offers a service on its website that allows customers to search for used cars at any of its dealers and then links the user to the dealer's website. And as part of a special promotion, the company allowed customers in the US to order new Beetles online for a limited amount of time. But even those sales required final negotiation with the local dealer.

Providing value-added products and services

Despite the constraints around distribution, automakers are interested in providing value-added products and services. Our survey found that 57% say this is a very important element of their e-business strategies. One obvious way to provide value-add would be to build cars to customer specifications and deliver them more quickly. Ordinarily, customers must choose from cars on the lot, or wait for the dealer to negotiate a swap with another dealer. Under this new scenario, a customer would design the car on the OEM's website and complete the transaction online or at a dealer's office.

Several manufacturers, including General Motors and DaimlerChrysler, are hoping to provide such a service. The focus of the effort is to develop a "15-day car". Renault has made this a strategic priority. The company began its project, Projet Nouvelle Distribution, three years ago, before launching its e-business initiatives. "The main objective was customer satisfaction," says Jean-Paul Meriau, Renault's board director responsible for e-business. "We want to build the car that the customer wants, not the car the dealer wants." Now the company believes Internet-based communications will bring it closer to that goal, allowing an electronic link from the customer straight through to the company's tier-four and -five suppliers.

Needless to say, building custom cars in a couple of weeks requires enormous investment and a radically new approach to auto making. BMW, one of the few companies already producing cars to order, says that it is working to reduce its delivery time, but concedes that major changes would be needed do produce cars so quickly. "We would need to look closely at our production processes," says Robert Bauer, a general manager for technical purchasing. For the time being, "It would be pretty hard for us to promise something like a 15-day car."

For now, most companies are trying to give the appearance of customisation. Most auto company websites now offer "configurators", online tools that help customers choose their features. Instead of sending these specifications to the factory, however, the websites search the inventory of nearby dealers to find a car that comes close to what the customer wants and then refer the customer to the dealer. Ford is testing an online build-to-order system in Ontario, Canada, for a few product lines. The company plans to roll it out in the US—with dealer involvement, of course.

Carmakers are pursuing other customer initiatives in the meantime. One manufacturer plans to add a feature to its website that will allow customers to track the progress of a car order. And Renault plans to add a variety of features to its website, including used-car sales and spare-parts ordering.

Competing with the dotcoms

As they attempt to develop closer relations with customers within their current constraints, automakers will need to ask a basic question: are the dotcoms better positioned to provide these services? The online automotive portals do have one major advantage: they can sell customers cars of any make, allowing simple comparison of prices and features. Furthermore, many of these start-ups are taking the lead in developing personalised features for car shoppers. AutoNation—which recently formed an alliance with America Online to offer a version of its AutoNation.com retail website to AOL members—is creating personal web pages for customers who buy cars or use its dealerships for service. The pages will have information on, for example, the car's service history. And since online searches for car information are among the most common,

these portals are in a good position to develop close customer relationships before the automakers can.

Supply changes

Automotive executives are far more excited about the opportunities in B2B e-business. The Internet will affect the automotive supply chain in several ways. First, it will simplify communications between buyer and seller. "There are so many transactions and dealings in the automotive industry flowing back and forth every day, using a variety of formats and communication methods," says Alice Miles, president of B2B for Ford and the company's lead for Covisint. "I don't think the customer really sees the value in paying for that complexity." Standardising communications on the Internet will yield a fortune in saved money and time. Second, the reverse auctions used on the exchanges will drive down prices. And third, the Internet will help manufacturers work more closely with their suppliers on issues like product development.

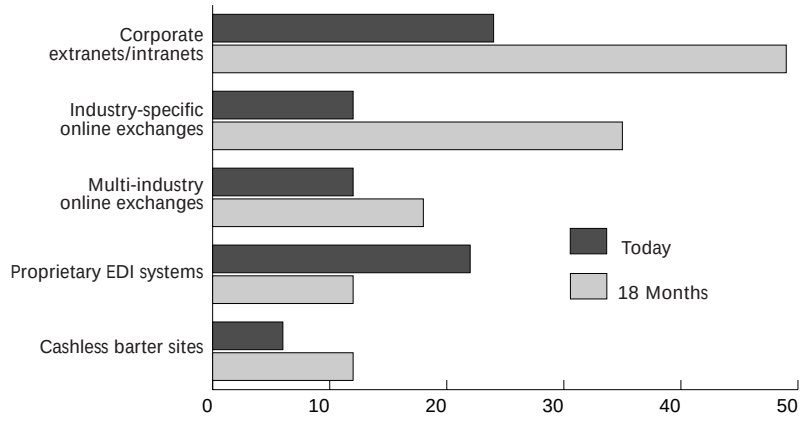
Automakers will need to make two primary decisions about e-business in the supply chain. First, they must decide how to procure supplies going forward. Second, they need to decide what sort of relationship they will have with suppliers.

Online procurement

Broadly, automotive companies have three options for online procurement. They can continue to rely on the EDI systems nearly every major car company invested in during the 1980s and 90s. They can use the Internet to communicate and negotiate with suppliers individually. Or they can participate in one of the online exchanges.

Our survey found that, today, EDI systems are roughly as important as corporate extranets, with 22% of automotive and other manufacturers saying that EDI is very important and 24% saying extranets are. Only 12% say that exchanges are highly important today (see Figure 2.1). In 18 months, this will change dramatically. Nearly 50% say they expect extranets to be highly important, and

Figure 2.1
Online channels for procurement
% automotive manufacturing respondents citing "very important" or "critical"



Source: EIU survey.
Note: Sample includes responses from automotive and other manufacturing companies.

Case Study

Ford Motor Co: Using B2B exchanges

With AutoXchange, Ford's joint venture with Oracle, Ford became one of the first automakers to look seriously at putting supplier relations online. Today, Ford has shifted its attention to Covisint, its B2B joint venture with GM, DaimlerChrysler, Renault and Nissan. The company remains convinced that B2B e-business must be a strategic focus. "Setting up the exchange is really an enabling tool for us to use, and the company that uses that tool the fastest and most efficiently will have the competitive advantage," says Alice Miles, president of B2B for Ford and the company's lead for the Covisint project.

The benefits of online B2B

Ford expects the exchange to create a number of benefits. Most obviously, it expects efficiency gains and cost savings. These will come through lower supply prices through reverse auctions, as well as from a standardised and simplified ordering process. The company also sees this as a chance to work more closely with suppliers on product development. Among Covisint's features will be a variety of online collaboration tools. A less tangible benefit is the opportunity to create an online community for the industry. The automotive industry consists of thousands of companies, but most communicate directly with only a handful of others. The exchange will allow more contact among these companies and perhaps a greater opportunity for collaboration on issues such as industry-wide standards.

In addition to its trading, supply chain management and collaboration tools, Covisint is also looking into providing additional services, such as logistics and financial services. This reflects what other industries plan to do with their exchanges. Companies have found that for the exchanges to provide their full value, they must address the full range of services—from regulatory issues to credit and logistics—that are necessary for a successful transaction.

Overcoming the challenges

Covisint does present a number of challenges for Ford. According to Ms Miles, one of the company's major efforts will be to ensure that Ford is prepared internally to use the exchange and that its suppliers are, too. The company has appointed a senior executive to oversee the company's internal preparations, making sure that all processes and operations that touch the suppliers are as efficient as possible.

On the supplier side, Ford is finding that many suppliers are uncertain about the steps they need to take—what software, hardware and internal skills are necessary. "The technology is evolving so rapidly that people are worried that they're getting left in the dust and not moving fast enough," says Ms Miles. "But as we meet with suppliers, explain the exchange and get them involved with it, I believe we're reducing quite a lot of tension." Ford has chosen a group of 40 key suppliers with whom it is working closely to develop its e-business strategies (the same 40 are working with Covisint as well).

35% say vertical exchanges will be. EDI systems fall to 12%. This jump in the use of extranets and exchanges reflects the adoption of online procurement by the biggest manufacturers—in effect, they are pulling their suppliers online.

Ford is staking its future on exchanges. Although today all of the car company's supplier communications occur over EDI systems, the company plans to shift all of its procurement to Covisint once the exchange is operational. At the moment, Ford is proceeding on dual tracks, keeping AutoXchange—its joint venture with Oracle—running while helping to launch Covisint (see case study above).

Other carmakers are more circumspect about online marketplaces. BMW, for one, has decided not to join an exchange, although it may use them to procure certain commodities from time to time (see case study, "BMW: Seeking a new approach to procurement", next page). Also, some Europeans are sceptical that an exchange that spans the Atlantic (not to mention the Pacific) is feasible, given the different emissions standards in the US and Europe. VW has decided to set up its own exchange with the help of several technology partners. Two years ago the company launched a programme to create an Internet link with more than 3,500 suppliers, and it is building the new system on this. Through the new system, VW will be able to buy parts, tools, office supplies and other items.

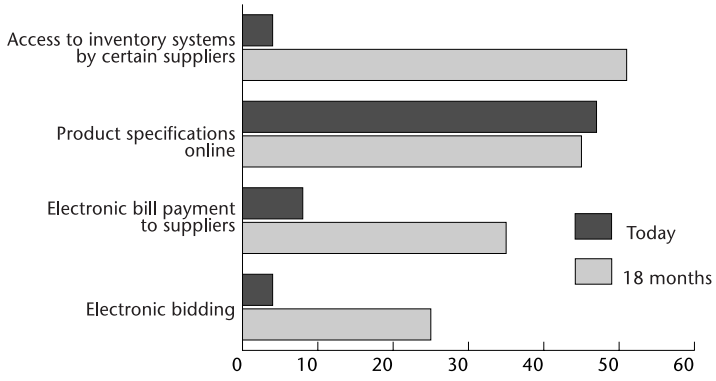
Changing supplier relations

The Internet may also change the way auto manufacturers work with their suppliers. Our survey found that manufacturers soon intend to offer their suppliers a number of web-based features (see Figure 2.2). Today online product specifications are common. In 18 months, many companies will offer certain suppliers access to their inventory systems and will provide electronic supplier bill payment.

We also found that companies consider the Internet an opportunity to work more closely with their suppliers on product development. Of automotive/manufacturing survey respondents, 71% said that improving collaboration with business partners is a highly important part of their e-business strategies. Renault, for example, hopes to use the Internet to conduct "virtual co-development" with its suppliers. And one of the goals of Covisint, beyond the well-known auction and procurement functions, is to serve as a hub for partners to collaborate. It will provide ways to exchange technical information as well as a joint product-design tool.

Because of their immense size, supplier networks in the automotive industry are highly regimented. The OEM typically deals directly with its tier-one suppliers, who communicate with their own suppliers, the tier twos, and so on. Although few expect an overturning of this structure, e-business has the potential to make

Figure 2.2
Internet-based features offered to suppliers and partners
% automotive manufacturing respondents



Source: EIU survey.
Note: Sample includes responses from automotive and other manufacturing companies.

BMW: Seeking a new approach to procurement

As most major car manufacturers rush to join the new online marketplaces, BMW is a notable holdout. Currently, BMW manages its procurement through an ERP system, sending orders to suppliers via fax. But the firm is building a new Internet platform with an outside technology provider and expects to be purchasing between 20% and 25% of its supplies online by 2001.

Robert Bauer, general manager of technical purchasing, believes that the main benefits of e-procurement will be a reduction in the man-hours required to place orders, thereby allowing the automaker to reduce head count. And because the orders will be transmitted electronically, suppliers will no longer have to enter data into their systems manually. These benefits will lead, directly and indirectly, to lower costs and lower prices.

One obstacle in the way of a truly electronic interface with suppliers is the lack of a standard classification system for parts catalogues. BMW is working to promote the use of one standard global specification system. Suppliers not prepared to adapt to these systems might lose out on business.

Considering the marketplaces

BMW spent time discussing internally whether to join or emulate a marketplace such as Covisint. It has decided not to, preferring to remain flexible so that it can buy from marketplaces on an ad hoc basis. Mr Bauer says it is not clear that such large exchanges can work. Covisint, for example, may have trouble overcoming legal challenges or convincing its competing software providers to work together effectively. Though BMW sees some advantage in using these or other marketplaces for general commodities, Mr Bauer doubts whether they are relevant for most products specific to the auto industry.

In addition, the company is cautious about using exchanges to purchase strategic supplies. For example, to source a technical item required for a new development in its automobiles—which would mean providing sensitive information—BMW would need to know that the exchange provides a high level of privacy. "We have to be careful that we have security," says Mr Bauer.

this hierarchy far more efficient. Today, EDI links rarely extend much further than to tier-one suppliers, but with the Internet, an electronic connection through the entire supply chain should be possible. This will be essential if companies are to cut production times as dramatically as they hope. Mr Meriau of Renault hopes that e-business will allow his company to work so seamlessly with suppliers that the entire network becomes an "extended company".

Conclusion

Ultimately, the greatest benefit of the Internet for the automotive industry may lie in just this area: being able gear the entire network—from the smallest supplier to the local dealer—to produce just the cars customers want, when they want them. Parts of the vision are coming together. Online exchanges and extranets are unifying the supply chain, and websites are increasingly capable of customised services. But the biggest challenge will come in the physical parts of the process—retooling the manufacturing line and finding more efficient ways of getting cars from the factory to the driver. And this will require old economy skills quickened by new economy technology.

Chapter 3 Chemicals

The chemicals industry is embracing e-business. During the past half-year, the industry's major players have announced scores of initiatives, from investments in neutral exchanges such as ChemConnect, to the creation of web-enabled services for individual companies' customers. Survey respondents expect the industry's average online revenues to leap from just over 1% of total sales today to 15% in 18 months. And Forrester Research expects accelerating growth of the industry's online transactions, from $50 billion in 2001 to $100 billion in 2002 and $300 billion the following year.

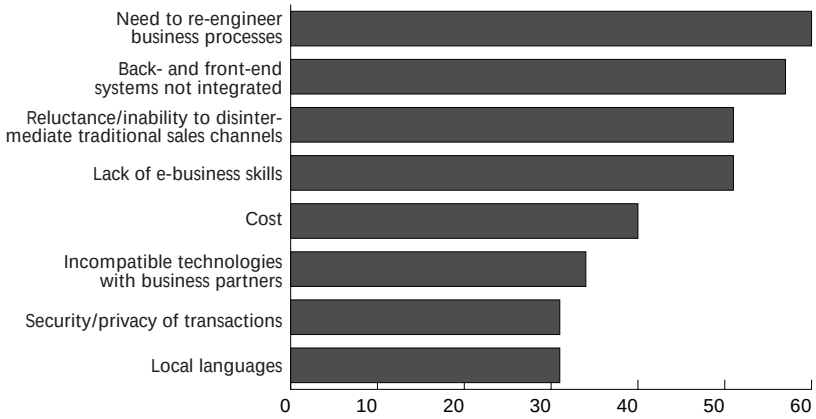
In many ways, the industry is well positioned to benefit from e-business. Chemical manufacturers do business almost exclusively with other companies, and merely shifting these many and expensive transactions online will save money and time. Much of what the industry produces and procures is in the form of commodities—chemicals such as acrylic acid and aluminum chloride that potentially can be purchased far more efficiently through an online auction than through company-to-company contracts. And the Internet helps drive the industry's globalisation, creating a remarkably efficient way for companies to reach buyers and sellers anywhere in the world.

That said, chemical companies face a number of challenges (see Figure 3.1, next page). Like most automotive and pharmaceutical companies, few chemical producers have websites capable of online transactions. Most—83%—have sites that offer information only, and 57% say that a lack of systems integration poses a serious obstacle to offering more advanced capabilities. In 18 months, however, most expect to have sites that allow some form of transaction, with 20% having websites fully integrated with back-end databases. In addition, the senior managers of many companies are lukewarm about e-business—only 51% say that their senior management is actively implementing e-business strategies.

More fundamentally, the buying and selling of bulk chemicals has little in common with, say, buying a crate of paperback books. An American manufacturer may purchase 500 tons of acrylic acid online from an overseas chemical maker, but it then confronts a range of logistics, quality, and health and safety issues. For example, will the supplier find a chemical tanker that can ship the product in time? Will the shipping company preserve the necessary quality of the chemicals? And will the quantity of impurities in the product be acceptable? Such issues are traditionally resolved offline, but companies will have to devise ways of handling them electronically.

The chemical executives we spoke with are nevertheless enthusiastic about the potential benefits of e-business. Though none believe that the Internet will profoundly alter the industry, all agree that e-business will bring a major and quantifiable improvement in efficiency.

Figure 3.1
Main obstacles to e-business strategy implementation
% chemicals respondents citing "significant" or "very significant"



Source: EIU survey.

Customer issues

New ways to reach customers

For the chemical industry, e-business creates several new channels for conducting business with customers. These fall into three general categories: machine-to-machine links with customers via the Internet, corporate extranets that offer transaction capabilities, and online marketplaces. The first is functionally similar to EDI (which many chemical companies will continue to use), but cheaper and more flexible. The industry has invested heavily in ERP systems to manage inventory and internal processeses. Now, companies are looking for ways to hook their systems together with trading partners. The result will be faster, more efficient processes—better demand forecasting and inventory management, and improved production scheduling and working capital management, to name a few. Confident that soon such machine-to-machine connections will account for half of its e-business transactions (with the other half split between extranets and marketplaces), Eastman Chemical Company in the US has invested in webMethods, a company that uses XML technology to translate between different ERP systems.

Because they take time to set up, linked ERP systems are less useful for new or occasional customers, so companies are also creating extranets: websites that customers can use with a password. Such sites—which require human intervention—are another way for customers to do business with a company, but they also serve as a storefront for new customers and a way to deliver additional value-added services. Ciba Specialty Chemicals' colours division, which is leading the chemical maker's e-business initiatives, plans this autumn to set up such a site, mybusiness@ciba, that will allow customers to conduct transactions, track orders, view material specifications and use a variety of services, such as complaints resolution.

Finally, companies are using online B2B exchanges. These exchanges, which seem to be multiplying (the chemicals industry alone has over 50) take a number of forms. All allow companies to bid for chemicals from a large number of suppliers, however. The exchanges offer several benefits: they allow buyers to obtain better prices on common products, and they give sellers a way to reach new customers and get rid of excess inventory.

The companies we spoke with emphasised the additional reach exchanges provide. Indeed, our survey found that one of the main goals chemical companies have for their e-business strategies is to reach new customers. Michael Eckstut, a senior vice president of US-based ChemConnect, one of the industry's leading marketplaces, says that he has been surprised to see how many of the World Chemical Exchange members are from emerging economies. The exchanges also make it more cost effective to reach smaller customers.

Although many companies would like to purchase chemicals through online auctions, the auctions aren't suitable for all goods. Online exchanges are ideal for commodities and certain specialty chemicals, but because most specialties are customised to an individual customer's needs, they have to be purchased on a contract basis. And for such arrangements, extranets and direct ERP connections are preferable. Online auctions can also be worrisome from a seller's point of view. Despite their advantages, they have the potential to drive prices uncomfortably low. Although companies can't avoid selling through exchanges, many have an incentive to encourage customers to use their other channels.

Most companies we spoke with plan to use all three channels—they argue that until a standard emerges, they will let their customers choose how they would like to do business. Nevertheless, companies are concerned about the effect of the Internet on their traditional distribution channels. Although the issue is not as difficult for the chemical industry as for financial services or automotive companies, several interviewees emphasised that the Internet wouldn't eliminate distributors or internal sales agents. Ciba, for example, believes that its internal e-business initiatives will help its agents keep up to date with the company's latest products and services.

Convincing customers

Once a company has set up its online channels, it must convince customers to use them. Glenn Frommer, vice president of e-business for ICI, says that though his company has already begun to conduct online transactions with many of its customers, there hasn't been a broad demand for web-enabled service."We are anticipating more pressure from customers in the future," says Mr Frommer. ICI's approach is to work closely with a handful of core customers to refine its online services and then promote the service widely among its customers.

Jean-Luc Schwitzguebel, president of Ciba's colours division, has found his customers more enthusiastic. He says that he is surprised at the level of interest, even though Ciba hasn't promoted its online service. He predicts that eventually the company will carry out nearly 100% of its business with customers electronically.

Chemical companies also see that the Internet enables them to distinguish themselves by offering value-added products and services. Our survey found that 71% of the chemical companies say that providing such products is a high priority.

Companies want to do this for two reasons: it creates a competitive advantage (at least until a competitor does the same thing), and it helps counter the Internet's commoditising effect. For example, UK-based Celanese's Ticona division is offering its strategic customers a product design module on its TiconaBuy-Direct website, as well as the usual order entry, order tracking and inventory management services.

Improving customer relations

Companies agree that the Internet will give them an additional set of tools to improve their ongoing relationships with customers. At the same time, however, it seems that e-business will effectively raise customers' expectations and force companies to improve their customer service overall. Of chemical industry respondents, 66% said that e-business would prompt them to search for ways to speed customer-service response times.

In any case, the executives we spoke with say that, for now, in-person customer service is too important to be entirely supplanted by the Internet. Certain aspects of customer service lend themselves to automation. Putting order tracking online, for instance, is more convenient for everyone. But for other aspects of the relationship, strategic customers continue to demand personal attention. "Although I think technologies will eventually support more real-time servicing, we're not there yet," says Mr Frommer. "For example, if a customer should call up on the phone at two in the morning because his machines are down, they need to know what will be done to resolve the problem there and then. They do not want to be told 'sign on to the website, explain your problem and we'll get back to you later.' That would be a very unsatisfactory response."

Supply issues

Procurement

At the other end of the value chain, chemical companies face many of the same e-business issues—one of the industry's characteristics is that two companies can at once be each other's customer, supplier and competitor. So just as companies recognise that participating in commodity exchanges as a seller could cause them to get less money for their chemicals, as buyers they are eager to cut their procurement costs. The savings could be significant. The 12 companies that recently announced the formation of a major industry-sponsored exchange expect eventually to cut their procurement costs by 30%.

Companies are eager to use the Internet in their supply chains. According to 63% of respondents, corporate extranets will be highly important for supply chain management within 18 months; 57% say that vertical industry exchanges will. But despite the obvious advantages of exchanges for procurement, companies have reservations. These range from the credibility of those participating in the market to concerns specific to the chemical industry, such as safety and environmental compliance issues.

There is broad agreement that any successful exchange will need to provide a full range of transaction services as well as the value-added services companies provide in the offline world. "It's one thing to bring trading partners together over the Internet to do a deal," says Regg Bonnevie, who manages Eastman's e-business programs, "but in our industry, there's still a lot of offline processes that have to take place—credit, logistics, health, safety, environmental compliance."

Case Study

Eastman Chemical Company: Using investments to drive e-business strategy

Most large companies are using strategic investments to further their e-business goals. Eastman Chemical Company, a $4.6 billion manufacturer of specialty and commodity chemicals, views equity investments as a major component of its online strategy. To seek out and negotiate new deals, Eastman took an unusual step for a chemical company: a year ago, it moved one of its directors from Tennessee to San Francisco to be near the dotcom firms that have sprung up to serve the chemical industry. Eastman is now investing in three types of firms:

- "E-services" companies—firms that provide the ancillary services needed to make online transactions run smoothly. These include eCredit for financing and Patent & License Exchange, a company that manages the intellectual-property issues of online trade.
- Technology companies whose products enable chemical companies to sell to each other online. For example, Eastman has taken a stake in webMethods, which writes software that allows companies to connect different ERP systems over the web.
- Online marketplaces such as ChemConnect and eChemicals.

Today, Eastman is concentrating on the e-services firms. The reason, according to Regg Bonnevie, manager of global programmes for e-business, is that no marketplace is yet providing the full range of services needed for chemicals transactions—services that currently happen offline but could be managed more efficiently through the web. The investments are meant to benefit Eastman's e-business efforts directly, but also to create an opportunity to sell services to the rest of the industry. "We're always looking for a way that an Eastman solution might be leveraged into an industry solution," says Mr Bonnevie. Another motivation is simply to make money, if and when these companies go public.

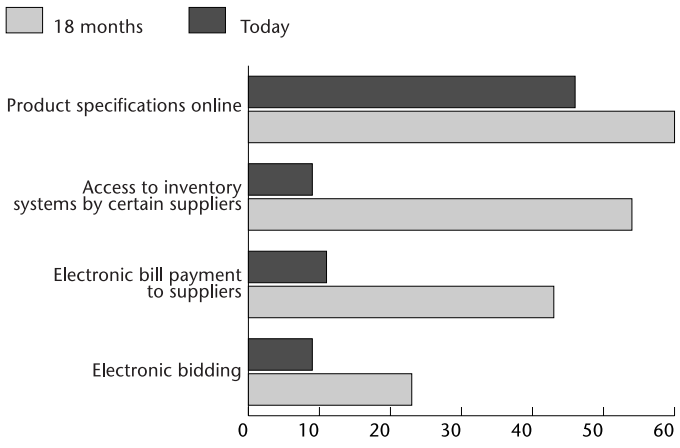
In some cases, Eastman is forming joint ventures with its new partners. One of these ventures, ShipChem.com, is a supply chain management JV with G-Log, a global logistics company. To give the new firm a head start, Eastman has folded its entire logistics operation into ShipChem.com. The company is now looking for additional investors.

Behind these investments, ultimately, is a belief that e-business is an opportunity for Eastman—a mid-sized chemical manufacturer—to pull out ahead of some of its larger competitors. "When you're on the Internet, looking at that screen, Eastman is the same size as our competitors," observes Mr Bonnevie. "[In e-business] it's really not about how big your assets are; it's about what value you bring to customers in terms of easing their pain in the supply chain and bringing in new products and services."

Many of the exchanges are attempting to add such services. ChemConnect, for example, provides credit information about buyers and has companies negotiate the terms of their deal as they would offline, including shipping terms, product quality and timing. Chemical companies are also taking the initiative, forming more specialised exchanges that provide a range of services in addition to the products themselves. One example is Omnexus in the US, an exchange for injection-moulding products that offers not only resins but also services such as consolidated account billing and regulatory compliance.

Everyone we spoke with cited the opportunity to strip costs out of the supply chain as a motivation for pursuing e-business. This raises a question: if all chemical companies are pursuing the same cost benefits, where does competitive benefit lie for any particular company? "I believe any competitive advantage out of this on the supply side is probably a zero-sum gain at the end of the day," says

Figure 3.2
Internet-based features offered to suppliers and partners
% chemicals respondents



Source: EIU survey.

Mr Frommer of ICI. But there is a short-term advantage for the company that reduces costs soonest. As Mr Frommer observes, it all depends on how you define "end of the day".

Investing in exchanges

Almost all of the industry's major players have made investments in at least one of the exchanges that have appeared in the past year. No one expects them all to survive—as one executive puts it, "there are way too many"—but companies hope that investing in the right one will prevent them being left behind. Some also hope to make money if that exchange goes public. According to our survey, 46% of chemical companies are investing in dotcoms. And of those, most are doing it to reach new customers, place bets on new business models and gain access to e-business expertise.

Eastman was an early investor in marketplaces such as ChemConnect, eChemicals and Commerx (plasticnet.com). The company is now primarily investing in companies that are developing technology and online services that will enable online B2B. In addition to direct equity investments, this has led the company to form two joint ventures with technology companies. One of those, ShipChem.com, is a logistics company Eastman has formed with a global logistics company, G-Log. Eastman has moved its own logistics function into the new company and plans to bring in other investors to make it a neutral service firm. (See case study, "Eastman Chemical Company: Using investments to drive e-business strategy", page 33.)

Reconfiguring supplier relations

How will e-business affect chemical companies' supplier networks? Most believe that by using the exchanges for commodity purchases, they will greatly expand their supplier base and be able to gain lower prices through reverse auctions. But few think that all of their supplier relationships will go the way of bare price competition. Edward Munoz, who serves on Celanese's board and runs the company's e-business steering committee, says that he believes the company will prefer to keep its strategic relationships. But because the company has other alternatives, it should be able to get better prices and service from its suppliers.

"It's no longer something where you just sign a piece of paper once a year—it puts a lot more pressure on the supplier and the customer," says Mr Munoz.

Our survey confirmed that companies plan to move towards closer integration with their suppliers and partners. In 18 months most companies plan to put product specifications online and enable online access to inventory systems (see Figure 3.2, page 34). Many also intend to offer electronic bill payment to suppliers.

Conclusion

Clearly, the Internet has the potential to alter the chemical industry's price structure and improve the operations of individual companies. But taking advantage of the transforming potential of e-business at each point in the value chain will require convincing a conservative industry to embrace radically new ways of doing business. So far, say interviewees, most employees seem to recognise that their company's future is increasingly tied to the evolution of e-business. The real challenge will be to allay the fears of employees and other stakeholders who will be affected by this change. Celanese is attempting this with the German unions, by keeping them carefully informed about the company's changing e-business strategy. "They don't quite understand where all this is going," says Mr Munoz, "but they do understand that we are committed to training our employees to face these challenges."

Chapter 4 Communications

Increasingly, the communications industry is becoming the Internet industry. Although old-fashioned telephone service is still very much in demand, newer e-business services will make up an increasing portion of telecommunications companies' revenues. Likewise, cable and satellite companies, ISPs and mobile operators hope to cash in on the Internet economy. In a sign that the Internet is fundamentally altering the nature of the industry, the great majority of the communications companies we surveyed see e-business as a springboard into new growth opportunities.

These new opportunities extend beyond providing e-business services. On the customer side, communications companies hope to gain efficiencies and greater client satisfaction by allowing customers to do as much business as possible with them over the web. Companies are enabling both their retail and commercial customers to order services, report repair needs and check the status of requests online. Many executives say that their primary e-business efforts, however, are in adapting supply chain processes to the Internet for greater efficiency and cost savings.

The mood of many of the communications executives we spoke to was articulated by Alfred Mockett, CEO of Ignite, British Telecom's data and broadband business for the corporate market: "My objective is to make sure that no matter where the value shifts in the chain, I'm there to capture my share of it."

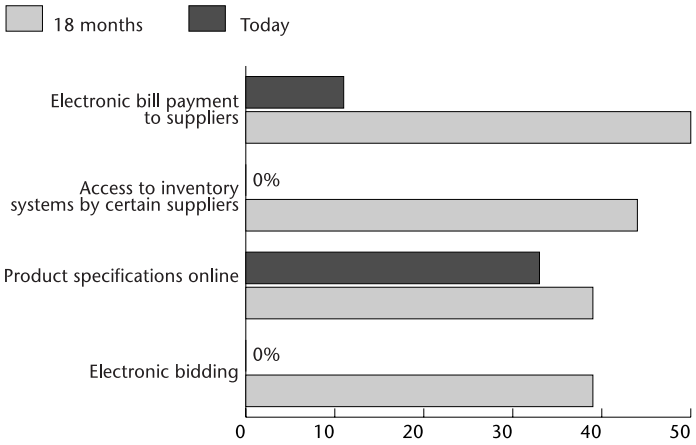
Supply chain strategies

Although customers are an important aspect of their e-business strategies, communications companies see an even greater opportunity for efficiencies and cost savings by web-enabling their supply chains. They trail other industries in offering web-based features to suppliers and partners, but expect huge advances over the next 18 months. Today, no survey respondents enable their suppliers to have access to inventory systems or to bid electronically, but nearly half expect to have these capabilities in 18 months (see Figure 4.1, next page).

Many of the communications executives we spoke to say that their companies are focusing e-business efforts on making procurement processes more efficient. They see the supply chain as an area in which they can realise early gains. British Telecom's Ignite is one example. "We've been working very hard over these years to e-enable BT," Mr Mockett says. "We started at the procurement level—e-procurement, e-requisitioning, e-ticketing—to rationalise our entire supply chain, getting it online and making sure our procurement cycle is in a paperless environment."

Alex Arena, group managing director of Pacific Century CyberWorks (PCCW) in Hong Kong, says, "Telstra and HK Telecom—like most big telcos—buy a lot

Figure 4.1
Internet-based features offered to suppliers and partners
% communications respondents



Source: EIU survey.
Note: Based on 18 respondents.

[of components and other supplies]. There is a lot of scope for using the Internet to put those procurement systems together and manage them electronically." (PCCW is acquiring Cable & Wireless HKT, Hong Kong's largest telecoms firm, and has a joint venture with Telstra in Australia.) He believes that B2B will be the driving force behind e-business efficiencies for the next few years, given that there are a greater number of transactions with fewer people, compared to the consumer side. "It takes a lot of consumers to amalgamate buying power to get the same numbers," he says.

Some companies are looking for efficiencies by consolidating their vendor relationships so that standard purchases, such as MRO (maintenance, repairs and operations) supplies, come from one source. Using a wide variety of vendors can be inefficient and costly to manage. Mr Mockett says that using fewer suppliers enables Ignite to form more comprehensive, strategic partnerships with them.

Klaus Marz, executive vice president of e-business at Deutsche Telekom, adds that, "The main issue of the Internet is to optimise and organise processes between companies." He says that in the past, Deutsche Telekom concentrated on improving its own internal processes. But with the help of the Internet, the company is now automating processes all along its value chain, from customers to suppliers. For example, he says, "If a customer orders something with us, then we automatically inform our supplier that they have to start to build a box, or we send information to Cisco that they have to deliver a router."

Aside from creating closer and more efficient relationships, deploying the Internet internally has another advantage. Many of the communications companies we spoke to are using their own technology to support transactions with customers and suppliers—which allows them to test and improve their products and services. It is also a way for the company to spread experience with its services

to partners and customers. “We want to make sure that we are using the technology ourselves,” says Kevin Dean, a vice president at Cable & Wireless in the UK. “We will be our own reference customers. As we begin to use more of the technology, people begin to understand and use it, and it becomes easier to sell.”

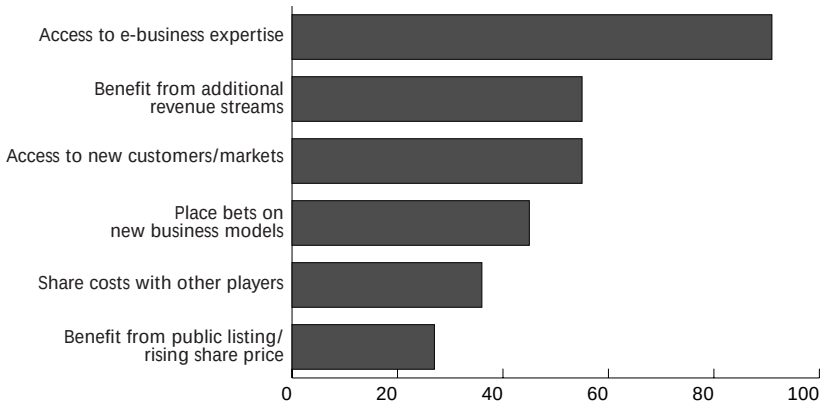
Providing value-added services

In addition to improving their supply chains, communications executives are using e-business to provide value-added services. This is a competitive necessity: almost half of the respondents say competitive pressure from new entrants is a primary factor driving them to adopt an e-business strategy. Liberalisation in the US, Europe and Asia is opening the door to a slew of competitors, which are attacking from all sides—from basic local and long-distance services to broadband and Internet access. They are putting strong downward pressure on prices for local, long-distance and Internet access, just as many established operators are making huge investments in infrastructure upgrades to offer more advanced services. This increased competition has also commoditised basic communications services, causing companies to turn to higher-margin services for growth.

In this evolving communications landscape, local and long-distance carriers, cellular operators, cable and satellite companies, and ISPs are treading in each other's core territories. All wish to provide a complete package that spans fixed and cellular voice, data, Internet and other e-business-related services. Many carriers plan to compete on the basis of price, but many more are providing value-added services to attract customers. Though just over a third of respondents in the communications industry consider providing lower-cost goods and services important, most say an important goal is providing value-added products and services. As one interviewee put it, “We have gone beyond being a traditional phone company with voice products. Now we clearly want to be regarded as a provider of data and Internet products.”

One of the most lucrative opportunities is to provide e-business services for corporate customers all along their value chains, such as hosting e-business software applications for front- and back-end operations and providing the underpinnings of e-marketplaces. For example, Deutsche Telekom’s applications service unit leverages its Internet infrastructure to deliver standard software packages for supply chain and customer relationship management. These new types of services bring new revenue and enable communications companies to tap into an ongoing stream of fee income. “From an industry standpoint, it’s a question of replacing what could be lumpy, one-off revenues with annuity revenue streams,” says Mr Mockett. Transaction fees were built into the commercial model of a system developed for the London Stock Exchange and managed by Ignite’s systems integration business, Syntegra.

Figure 4.2
Goals of investing in dotcoms
% communications respondents citing "very important" or "crucial"



Source: EIU survey.
Note: Based on 18 respondents.

Forming partnerships

To build the capabilities they need to meet customer demand and provide e-business services, industry executives we spoke to are pursuing a combination of partnerships and acquisitions. For instance, traditional telecoms operators are building and acquiring wireless and ISP businesses, and cable operators are offering Internet access and telephone service. At the same time, the major players are establishing partnership networks within and outside the industry to extend their market reach and widen their stable of offerings. In addition to these benefits, over half of the respondents say that a very significant goal of their e-business strategy is improved collaboration with business partners.

Many are also looking to dotcoms to provide e-business capabilities. The majority of communications companies we surveyed are investing in dotcoms, either through an equity stake or joint venture. This proportion is high relative to other industries; it is second only to financial services. Of those who are making these investments, almost all of the communications companies surveyed say gaining access to e-business expertise is a very important benefit (see Figure 4.2). SBC, largely for this reason, recently bought a majority stake in InQuent Technologies, the parent of WebHosting.com, which serves corporate customers.

Access to e-business expertise is not the only reason that communications companies are investing in dotcoms. Roughly half of industry executives say that gaining access to new markets and benefiting from new revenue streams are also very important. Take the case of British Telecom, which has developed joint ventures throughout Europe and Asia to reach new overseas markets and to build market share. James Graf, president of BT North America, says the company realised long ago that the communications market is too large and complex to operate in alone. He says the company has partnered with new challengers, rather than incumbent telecoms providers, because they believe the new entrants stand to gain a large market share quickly as telecoms markets are liberalised. BT is

pooling transport and network assets with partners in Europe to provide pan-European broadband service. One such alliance is with Telfort, a web-hosting business in Amsterdam.

PCCW is opting to become a one-stop shop by making acquisitions and investments to build its e-business capabilities. The company has invested in cable companies, has bought a web-page design company called Spike and has a stake in SecureNet, which provides decoding and encryption services. Through NetCel360, a joint venture with Hong Kong's NetCel Holdings, PCCW provides back-end logistics, bill payment, call centres and web consulting for smaller companies who could not afford such services on a global platform.

The company has also formed a co-branding partnership with Legend, a large computer maker in China. PCCW has an arrangement to produce a Legend-branded PC, called Legend NOW. The computer is embedded with a cable modem that automatically connects to PCCW's NOW (Network of the World) broadband service in Asia. "It's a way of speeding up the connection and reducing the barriers to entry for the consumer, who buys a trusted product," says Mr Arena.

Specialising

A corollary to these webs of alliances is that some companies are choosing to specialise on a particular piece of the value chain. Rather than provide a diverse range of services to a broad customer base, some communications companies are focusing on one or two areas as core competencies.

Consider Cable & Wireless, which decided to sell its consumer cable and voice businesses. "We had a number of different companies geographically, and there was a real need to bring things together into a single entity with a scale, scope and focus and be successful in a particular area," says Mr Dean. The company is now almost exclusively focused on the business Internet and data market. Cash raised from selling the company's other businesses provides the resources the company needs to invest in networks and products.

Adapting to a new reality

Increased competition, alliances, acquisitions, new services and quickly changing technology require new ways of thinking and a constant upgrading of skills. Industry executives tell us that a significant challenge in expanding into new areas is adapting the organisation. As Mr Dean says, "We are looking to become an Internet company, and that involves taking a whole organisation that's been going in a different direction and transforming it."

This transformation encompasses a wide range of factors. For one, communications companies face the difficulty of getting customers to think of them as a provider of services beyond their traditional mainstays. Incumbent telecoms operators want to be associated with, for example, high-speed broadband services, rather than being perceived as a stodgy telephone company.

Restructuring

One answer is to restructure. Both British Telecom and Deutsche Telekom reorganised along market segments, to enable customers as well as analysts to see how the company is positioning itself in the market. BT created four new segments that encompass specific services: Ignite, a data and broadband business focusing on the corporate market; BTopenworld, offering broadband to the mass market; BT Wireless, for international mobile services; and Yell, an international directory and e-commerce business (see case study below). The company was previously vertically integrated based on region, which Mr Graf says "just did not fit with the new world of Internet and data, where customers want communications solutions that transcend regions." He adds, "We thought that we could create more value—and be perceived to create more value—if we allowed for greater transparency in the way we structured our business."

Similarly, Deutsche Telekom rebuilt itself around what it calls a "four-column" strategy. The columns are each of its major business divisions: T-Mobile,

British Telecom: Reorganising to compete

Recognising that the Internet is reshaping the industry, British Telecom earlier this year determined that it needed to radically reorganise itself to capture greater market share and respond to its customers' need for global solutions. BT's reorganisation is intended to allow it to participate in the industry's major growth areas.

The restructuring involved separating BT's UK business into retail and wholesale sectors. It also led to the creation of four new international growth businesses: BT Ignite, a data-centric, broadband IP (Internet protocol) business targeted to corporate markets; BTopenworld, a mass-market Internet business focused on broadband services; BT Wireless, focused on mobile operations; and Yell, an international directory and e-commerce service, which the company plans to float in the near future. BT's reorganisation was also accompanied by a commitment to invest heavily in infrastructure, global partnerships and joint ventures: "We made a decision that the markets were too large for us to tackle alone, that we needed good partners and that we could gain market share more quickly if we went with new challengers, for the most part, rather than incumbents," says James Graf, president, British Telecom North America. Recently, for example, Ignite announced completion of VerticalNet Europe, a joint venture with VerticalNet, an online network of B2B trading communities, and the Internet Capital Group.

As part of BT's overall e-business strategy, its Ignite unit plans to invest four billion pounds over the next three years to expand its backbone network and develop additional local-access and web-hosting capabilities. Ignite is also building data centres and developing ASP (applications service provider) products and services that will allow the company to offer customised services to large multinationals, as well as a "complete business in a box" package for small and medium-sized enterprises. E-business has also led Ignite to concentrate on a part of the communications value chain that was traditionally outside BT's scope: systems integration and outsourcing management. The company has two businesses pursuing opportunities in this area. One is Syntegra, Ignite's systems-integration business, and the other is Syncordia, its outsourcing management services unit.

With its new structure in place, BT—like other communications companies—still faces challenges, particularly the difficulty of reengineering business processes to support e-business. "From a customer perspective, it's no use building a flashy website, with a sexy front end," says Alfred Mockett, Ignite's CEO. "It's a question of e-enabling all of the business processes at the front end. Inevitably, in providing B2B solutions, it's not just profits reengineering but whole company reengineering that has to take place behind the website."

T-Online, T-System (systems integration) and T-One, which houses the company's traditional fixed-line services. This structure allows the company to organise its branding campaign around distinct services that fall under the T-umbrella brand. The re-organisation also enables the company to react more quickly to new challenges in each market segment, according to Mr Marz.

Attracting e-business-skilled employees

Like their peers in other industries, communications companies are having trouble finding staff skilled in e-business. A majority of respondents in this industry say that a lack of people with e-business skills in their company is a significant barrier to their strategy implementation.

Many companies we spoke to are opting to re-deploy existing employees. Deutsche Telekom, for example, is using the large training centres that it inherited as a former state-owned monopoly to re-train its large staff. PCCW also emphasises building on existing assets. The company's purchase of Cable & Wireless HKT brought in legacy staff and technology that the company is remodelling around the Internet. "For e-commerce, you need to have a lot of call centres," Mr Arena of PCCW says. "So take telephonists who give directory services and have them take customer orders and billing inquiries."

Where existing assets are not enough, communications companies are using acquisitions to collect skilled staff. To support Cable & Wireless's strategy for becoming an Internet company, it has acquired 11 ISPs in Europe. Mr Dean says that these acquisitions are "not just about cable and wires. We recognise the need to acquire new skills and bring them into the organisation."

Conclusion

Communications companies are making headway in web-enabling their supply chains and customer services. E-business also brings huge opportunities to provide the infrastructure that supports much of the e-business economy. But there is much work ahead.

Going forward, partnership skills and managing alliances will be crucial. For each new service that communications companies may provide—cable, Internet access, data services, mobile services, web hosting and even content—there are often other players in these markets with more experience and established customers.

Communications companies must also communicate their strategies effectively to customers, analysts and potential employees, so that they will reap the full benefits of their e-business efforts.

Chapter 5 Consumer markets

Consumer-markets companies are poised to take advantage of the best of both the online and offline worlds. Retailers are combining online storefronts with an established infrastructure of stores, warehouses and fulfilment systems. Consumer-products manufacturers are finding new markets, serving both their traditional customers as well as dotcom retailers. Both are leveraging established relationships with customers and suppliers and well-known offline brands.

Fort James, the US-based consumer products company being acquired by Georgia-Pacific, is one company that sees the value in maintaining close ties between its e-business and traditional operations. Even though its e-business unit is administratively separate, the company has decided to keep the unit physically close to the rest of the company. "We decided, being a brick-and-mortar business, that if we located apart spatially we'd lose our connection back to our manufacturing process and back to the root of our customers," says Gary Kurlancheek, president of the e-business unit. Separating out the e-business activities is a temporary measure, however. He foresees that e-business will eventually pervade the entire company, blurring the separation between online and offline operations.

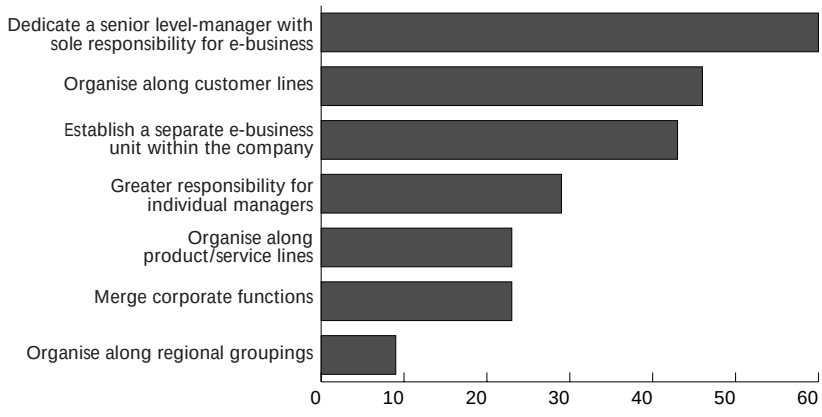
Fort James also expects its e-business initiatives to perform up to the standards of the rest of the company. Mr Kurlancheek says this is because the strategies they're following are essentially no different from their regular business strategies. Therefore, the e-business unit is required to create sales volume, reduce costs and lead to better service. All three of these goals support the company's ultimate goal, which is to make a profit.

This approach reflects the thinking at many consumer-markets companies. Companies hope to use e-business to increase efficiency, cut costs, expand their value proposition and offer customers more ways to do business with them. But increasingly, they hope to do this by carefully integrating online and offline operations. Companies are optimistic that they will succeed. Currently, consumer-markets companies earn on average only 5% of revenues from online sales, but they expect this proportion to reach 20% within 18 months.

Serving customers

Customer service is a high priority for consumer-markets companies. Of respondents in this industry, 77% say that their customer-service responses need to be faster. One way they plan to improve responsiveness to customers is to organise according to customer needs rather than internal functions or divisions. Almost half of the companies surveyed say they need to organise along customer lines for their e-business strategy to succeed. Only 23% believe that they need to organise along product/service lines (see Figure 5.1, next page).

Figure 5.1
Organisational changes needed for a successful e-business strategy
% consumer markets respondents



Source: EIU survey.

The challenges to re-organising around customers are considerable, however. According to Barna Barath, e-business development director for Diageo in the UK, this means "restructuring the whole organisation around audiences, not functions." According to the executives we spoke with, companies attempting such major changes can face a political minefield, as business units strive to preserve cherished territories and familiar ways of doing things. It may also be a challenge if a large number of the decision-makers in the organisation are not web-savvy, or if planning structures are ill-suited for a launch-and-learn, experimental e-business environment.

To meet these challenges, companies are working on several fronts. Our research indicates that consumer-markets companies are taking the following goals into account for their e-business customer strategies:

• Scale e-business strategy to customer capabilities

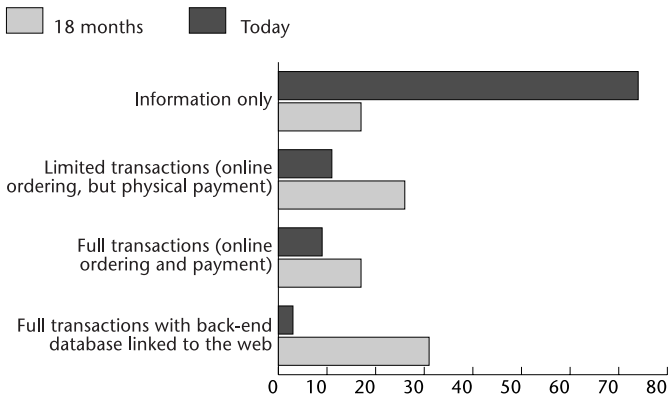
• Integrate online and offline customer service and sales channels in order to provide consistent service

• Use the web to enhance the offline brand, particularly in cases where selling online is not a strategic priority

Scaling e-business strategy to customer capabilities

Many companies are trying to match their e-business offerings to their customers' needs. Consider the US-based retailer Office Depot, which has a different e-business strategy for its large and small business customers. The company enabled online purchasing for its small business customers three years after doing so for large corporate customers. According to Monica Luechtefeld, senior vice president for e-commerce, the reason is that small businesses have had less incentive to invest the time to do their purchasing online. Many of Office Depot's larger business customers, by contrast, were early adopters of e-business and demanded online service.

Figure 5.2
Website capabilities
% consumer markets respondents



Source: EIU survey.

Office Depot's lesson is an important one. Companies need to account for customers' current web capabilities and priorities and to know how long it will take them to adjust to doing business online. "The most interesting thing for us is how long it takes for a company that signs up [for online ordering] to actually get it launched within their company," says Ms Luechtefeld. She anticipates that it may take up to two years before the majority of business customers are ready to take full advantage of the company's online offerings. In the meantime, Office Depot is prepared to serve them through other channels.

Managing different channels

Given that customers have different preferences and abilities to conduct business online, an important consideration for consumer-markets companies is how they will manage various channels.

A current trend in the retail industry is "multi-channel retailing"—enabling customers to buy from any channel, whether on the Internet, in the store, by kiosk, mobile phone, web TV or personal digital assistant. The challenge is to integrate all these channels, so that prices and the level of customer service are consistent. With so many options, companies run the risk of both confusing customers with mixed messages and (temporarily at least) decreasing the level of customer service by splitting resources and having to retrain staff.

IT systems supporting each of these channels are also often separate. Integrating them is complex, say executives, but generally worth the effort. "You can't be in e-business unless you have full process integration and technology integration," says Vijay Yajnik, group CIO and director of specialty businesses for Dairy Farm, a Hong Kong retailer owned by Jardine Matheson. If a company's website is incorporated into its mainframe and order processing systems, for example, then information from the back-end systems is automatically integrated with the website. This integration enables a company to offer customers a real-time view of such information as inventory and order history. Currently, only 3% of companies have fully integrated websites. In 18 months this number will increase to 31% (see Figure 5.2).

Case Study

Fort James Corp: Choosing a new corporate structure

Traditional companies going online must make a decision: should the firm's e-business efforts be embedded in the existing corporate structure, or should they be pushed out into a separate entity? Fort James, a $6.8bn manufacturer of paper products (which is being acquired by Georgia-Pacific), has made its decision. In May of this year, the company created a new business unit, Fort James eB, to oversee all of the firm's e-business activities.

According to Gary Kurlancheek, the unit's president, the move is designed to create an engine to push the company online. "We used to be good at pursuing the fast-follower strategy," says Mr Kurlancheek, "but we found that the changes were so rapid that we seemed to be a step or two behind." The unit reports directly to the chairman, has its own profit targets and a range of dedicated resources, including sales, marketing, finance, human resources and communications.

This arrangement has several advantages, according to Mr Kurlancheek. First, it allows the company to sell to online retailers who are strategically important but are otherwise too small for the firm's sales force. These include the online grocers, such as Webvan and Peapod, as well as the online units of major retailers, such as Walmart.com. Second, gathering e-business activities in one place allows employees working on various web initiatives to learn from each other's successes and mistakes. And the structure gives the company a bit more flexibility in compensation. With its own HR department and business plan, the e-business unit can offer bonuses and other compensation to retain its Internet-savvy employees.

One criticism of such arrangements is that separating the e-business function ignores the reality of the new economy: to survive in the new economy, e-business needs to permeate the company. Carving out the Internet activities merely delays this. This may not be the case for Fort James, however. To ensure that the unit doesn't become too removed from the company's brick-and-mortar operations, the e-business unit is housed in each of the company's two headquarters. And for online procurement, which requires the close involvement of the manufacturing function, the company has created a director of e-procurement, who reports both to manufacturing and the e-business unit.

The company hopes that in five years the distinction between the e-business unit and the rest of the company will vanish. "What I've told people is that in five years e-business will have taken over the company," says Mr Kurlancheek. "And if we're any good, they won't even know it."

Managing multiple channels is also a challenge for consumer-products manufacturers. These companies, whose customers include retailers and distributors, are incorporating their customers' new channels into their e-business strategy. Fort James, for instance, has dedicated a sales force within its e-business unit to e-enabled retailers. The company's strategy is to work with both the online divisions of established customers, such as Wal-Mart, as well as with the pure-play dotcoms, in a way that is both profitable and parallel to its pre-existing relationships with established retailers (see case study above).

Enhancing service offerings

For 70% of the consumer-markets companies surveyed, providing value-added products and services is vital to their e-business strategy. For some companies, this involves a fundamental change in their business model.

Office Depot, for example, intends to provide value-added services to its small business customers. Many of these customers are attempting to run their business over the web and are interested in more than simply purchasing office products online. In response, the company is planning to offer—with the newest release of its site—core business services, such as bookkeeping, marketing, office administration and a service exchange. This strategy involves both leveraging Office Depot's existing retail stores and partnering with software providers to fill out its service offering (see case study below). "We think the real benefit of the web is when the services themselves are more integrated," says Ms Luechtefeld.

Providing value-added services is also a way to head off commoditisation. Diageo is planning to move away from a strict product focus, putting emphasis instead on customer experience, customisation and brand. The company might carry this out by, for example, building a web experience around its whisky product. The customer might be able to book a trip to a distillery or buy a cask to age his own whisky. Through these types of personalised online services, the

Office Depot: Serving the small business customer

Five years ago, Office Depot partnered with the Massachusetts Institute of Technology to create one of the first offerings in the B2B space. Today, almost 30% of the company's large business customers order online, a number that should rise to 40% by the end of 2000.

But the company's most innovative thinking is going into what it calls the "B-to-small-B" space—the offerings it sells to home offices and small business. "I think the most fundamental model switch is for the small business customer," says Monica Luechtefeld, SVP for e-commerce. "I think they are not just going to buy things online, but actually run their businesses online. We're going to provide not just products, but the core business services they're going to need."

Among the products Office Depot imagines are an Internet-based service that allows the simple act of hiring a new employee to automatically trigger a host of communications: to the bank, to open a 401k; to the insurance carrier; to the payroll department. It would also allow outside service providers, like accountants, to remotely access files they need on the company's server.

In introducing this kind of service, Ms Luechtefeld believes the company's retail network will give it a big advantage. "I think it will be hard for people to just read about these services on the web and say 'sure, plug me in'," she says. "Most people will research it online, go into the store to see how it works and get an assisted sale." As a result, making this a reality means not just developing new web offerings, but also reshaping the retail stores to provide business services as well as office supplies.

This initiative depends heavily on partners, and not just to carry it out. The company is partnering with various portals as a way of reaching new customers. Choosing the right partners is a challenge, Ms Luechtefeld says. "Many of these folks are so early in their business cycle that all you have is a PowerPoint presentation, a board of directors and a pro forma. You don't have a lot to go on in terms of business longevity and a stable track record of sales and service." As a result, she says, Office Depot is learning to gauge harder to measure characteristics, such as the company's position in the industry, its business model, the strength of its value proposition, and its board and executives.

In addition, she notes, the speed at which many potential partners are growing can make them difficult to work with. "It can be a challenge to get their developers to understand what we need to do together in a co-branded environment."

company hopes to build a closer relationship with consumers and, ultimately, to increase revenues. "As a company, we never had a valuable relationship with the consumer [before e-business]," says Mr Barath. "It was always distributors, wholesalers and retailers."

Rethinking distribution

Many dotcoms are beginning to realise that they need the physical infrastructure of their more established rivals. Yet surprisingly, only 17% of established consumer-markets companies surveyed see their "bricks and mortar" as an important competitive advantage over dotcoms. For some, this may be because they are outsourcing much of their warehousing and fulfilment. But many consumer-markets companies may also not yet realise the full value of their physical assets, especially in terms of leveraging them for e-business. Whether a company outsources its distribution requirements or manages fulfilment in-house, it is essential to consider how online sales strategy affects distribution. Of consumer-markets companies surveyed, 69% believe that their fulfilment processes must be improved in order for their e-business strategies to succeed.

One reason many companies are not benefiting from their existing infrastructure is that their stores, warehouses and fulfilment centres are not oriented to support online sales strategies. As we noted earlier, many consumer-markets companies are organising around customer needs rather than internal requirements. For some, this approach extends to distribution processes.

But reengineering established distribution processes around individual customers is a major challenge. Reports of dotcoms unable to fill customer orders fast enough are by now familiar. Unlike many online startups, consumer-products makers have established processes, but they are geared towards bulk shipments to retailers or distributors, not small orders. Most retailers, likewise, are not equipped to deliver goods to the doorsteps of individual customers.

Mr Yajnik of Dairy Farm highlights three areas the company is re-orienting around individual customers: packaging, handling and managing the delivery fleet. "We know how to handle all of these things in large quantities," he says. "The difficulty lies in managing the delivery fleet dynamically, to accommodate packages and multiple end points that differ day-to-day." Dairy Farm decided to set up a dedicated fulfilment centre for those products sold online. Because of the cost of stocking a full range of products for delivery, the goods sold online are a representative subset of the company's inventory.

Harvey Norman takes a slightly different approach. Instead of having one centralised fulfilment centre, the Australian retailer uses its existing, local stores to fill online orders. The online store, in a sense, is an extension of its offline operations. The same products available in the stores are available online, says John Slack-Smith, head of e-commerce. He adds that the company is prepared to deliver to individual customers. Harvey Norman has had delivery mechanisms—such as after-hours delivery drivers—in place for years, he says. "So the e-commerce strategy is not changing the dynamics of the model, it is just tapping into a model that is already in place."

E-procurement

To attract customers, many consumer-markets companies plan to compete on the basis of price. Indeed, nearly 40% of respondents in this industry say that a goal of their e-business strategy is to provide lower-cost goods and services. Some of these savings might come from using e-marketplaces to secure lower prices. Nearly 70% of consumer-markets companies surveyed say that this is a very important criterion in deciding whether or not to participate in an online exchange.

Almost one-third of companies surveyed in this sector are already using e-marketplaces geared towards their industry, and almost half plan to do so in 18 months. Producers of consumer products, for example, are large consumers of chemicals and other inputs that can be bought online. And retailers are particularly concerned with cost. As Ms Luechtefeld of Office Depot says, "We are determined to continue to be the low-cost provider of office products. To do this, we need to pay attention to the total purchase cost of an item." She points out that Office Depot also worries about the customer's purchase cost, which requires both the customer and Office Depot to take people and steps out of the repetitive transactions of ordering office supplies, in order to cut expenses.

B2B e-marketplaces are a likely area of strategic growth for consumer markets firms. However, not all executives believe that securing lower prices through e-marketplaces will yield a strategic advantage. "The value is going to go down the chain," says Mr Barath. "If you squeeze your suppliers, [then] your customer is going to squeeze you."

Mr Slack-Smith says Harvey Norman prefers to work with suppliers on a one-to-one basis. The company is looking to achieve cost savings by limiting the number of suppliers to a "vital few" and forming deeper relationships with them. According to Mr Slack-Smith, much of Harvey Norman's B2B strategy has been formulated in conjunction with its suppliers. "One of the main objectives we have with our suppliers is to take costs out of our respective models by improvements in information flows." Since the company's information systems are continually evolving, the company looks for input, direction and advice from key suppliers to ensure that their systems are seamlessly integrated. "Every company has something different to offer, different strengths and weaknesses, and you can best exploit those aspects if you work with a supplier on an individual basis," he adds.

Fort James, on the other hand, is placing bets on a wide variety of vehicles for e-procurement. Mr Kurlancheek says the company is both planning to procure through extranets and to use online exchanges for major purchases, such as fibre, chemicals and MRO supplies.

Conclusion

Although consumer-markets companies have some reason to celebrate—dotcoms and e-business have not driven them out of business—they cannot be complacent. The pace change created by e-business will only quicken in coming years. Some of the major challenges facing consumer-markets companies include:

• Creating a structure that serves customers, not internal business lines or product divisions.

• Offering a range of channels that customers demand—including traditional stores, telephone, the Internet and other web-access devices—and managing and integrating them.

• Deciding to what extent using the Internet really benefits the company. In some cases, it does not make sense to try to sell online and distribute directly to corporate or retail customers. And some customers may not yet be ready, willing or able to make a switch from offline to online interaction.

• Adjusting distribution and procurement processes to accommodate both offline and online strategies.

All require decisive action—today's leaders can easily become tomorrow's laggards. Consider this warning from one executive: "We were very advanced a year ago. We knew, we understood, we got it. We [foresaw] the things that are happening now. The problem is that we failed to act upon it."

Chapter 6 Electronics

The Internet is transforming the electronics industry. Sped along by intranets, extranets and online exchanges, product development cycles have shortened almost to the point where current products are swapped for new ones every few months. Drawn to the higher margins of Internet-related services, most manufacturers are expanding into new sorts of businesses. The very nature of the electronics corporation is changing, too. As manufacturers integrate their systems with suppliers and open their back-end systems to online customers, it is becoming more difficult to speak of companies as discrete entities.

E-business creates a range of new opportunities for electronics companies. The Internet and wireless technology open prospects for new and expanded products and services. As companies in every industry increasingly opt to outsource IT services and support—particularly corporate data warehouses, website development and hosting, and software applications for e-business—many electronics companies are rushing to provide it. Companies are also integrating the web into their existing products and services, to exploit new technology and remain competitive.

E-business also enables electronics companies to target new kinds of customers. NCR, for instance, is going after companies that have sprung up to provide Internet infrastructure, such as web access, hosting and online advertising. Hitachi plans to use e-business to expand beyond its traditionally large customers to reach small and medium-sized businesses. The company expects to make up for the smaller size of such deals through greater volumes.

The challenge of e-business

Electronics companies must overcome a number of challenges before they can fully take advantage of such opportunities. Although the industry is further ahead than most, many companies have yet to fully integrate their front- and back-end systems—our survey found that 47% consider this a major obstacle. Electronics companies also face some resistance from distributors. According to 40%, reluctance to disintermediate traditional distribution channels is a significant barrier to their e-business plans. Most important are the internal barriers. Fully 70% of electronics respondents reported a need to reengineer internal processes for e-business. Such changes are not easy, but companies may not have a choice. As Akio Yajima, deputy general manager at Hitachi, puts it: “If we don’t use e-business, we would have to drop out of the market.”

Through our conversations with electronics executives, we found that companies are concentrating their efforts on a number of spots on the e-business value chain. In particular, they are focusing on online customer management, developing new e-business services, online procurement and aligning internal processes with e-business strategy.

Customer management

Deepening relationships with customers

The electronics companies we spoke to do not plan to use the Internet as a mere sales outlet. Rather, they say the Internet is a tool for deepening relationships with customers and providing a higher level of service. For complex technical products and services for businesses, the Internet will not replace large sales staffs of many companies.

Industry executives emphasise the importance of first establishing a relationship with a customer offline. At Singapore Technologies Aerospace, for example, company representatives on the ground make personal contact with customers to build a level of confidence in the quality of service, then use the Internet to manage the relationship. Wee Siew Kim, president, says that although the Internet does change the company's relationship with the customer by automating transactions and allowing self-service, personal contact remains essential. "The customers feel closer to us when they have [online] access," says Mr Wee. "But we are also very aware that physical interaction should never be neglected."

Alexander Homann, an executive director at Infineon Technologies, stresses that relationship management and customer service has become much more important with e-business. The company can no longer view the large business customer as a single entity with uniform demands, he says. "Now we deal with every single employee of the customer through the web, so all of a sudden we really have a one-to-one relationship." Infineon's primary e-business focus is instituting an e-CRM (customer relationship management) initiative. Part of this project will be to establish an extranet connection with customers to facilitate a more personal online relationship.

Co-ordinating strategy with customers

Our research confirms an unrelenting focus on customers in electronics companies' e-business strategies. Another aspect of this direct interaction with customers is involving them in planning and measuring the success of e-business activities.

Take the case of NCR, whose customers directly influence the company's e-business strategy planning. The company has organised industry-specific customer councils, which tell the company what they need in terms of e-business. NCR factors these needs into its priorities for development. "We have a major interest group that we call NCR Partners User Group, which we use to solicit a lot of input on solutions directions," says Marty Seyer, vice president and general manager of e-business. Similarly, Infineon involves a small group of what it calls "pilot customers" to help design and give their views on the company's e-business strategies. "They really like giving us feedback, because they can influence our Internet strategy," Mr Homann says.

Taiwan Semiconductor also involves customers in shaping its e-business strategy, and in measuring its success. The company does this by soliciting customer feedback through independent consultants and its own IT staff members, who visit customers frequently. The consultants ask customers about what the company is good at and in what areas it needs to improve. These questions inquire about satisfaction with the website's content and functions, and how they compare with competitors' online offerings. "We often use independent consultants to talk to

our customers," says Quincy Lin, senior vice president of corporate development. "Customers may tell them what they will not tell us." In effect, customer satisfaction has become the gauge by which the company measures the success of its e-business initiatives.

Providing value-added services

Once a closer relationship with customers is established, the Internet enables electronics companies to provide them with additional, faster and more accurate services. For example, customers of Singapore Technologies Aerospace can go online to check work in progress and give permission electronically for the company to perform additional work. This is important: even basic services in the company's aircraft maintenance operations typically require customer approval before the company can proceed. Mr Wee adds that the 24x7 nature of the Internet also enables the company to deal more efficiently with its customers in far-flung parts of the world, speeding co-ordination and shortening production time.

Our survey found that 70% of electronics companies believe it is highly important to use the Internet to provide value-added products and services. There are two main ways electronics companies are trying to do this. One is by web-enabling products and services. Another is by shifting their focus from making products to providing services, an existing trend that e-business is accelerating.

Integrating the web into products and services

Taiwan Semiconductors adds value to its chips-production business by giving customers online access to information about work-in-process. This information enables customers to better manage their supply chains. In essence, customers get the benefit of an in-house fabrication plant without the associated expenses or organisational complexities (see case study, "Taiwan Semiconductor: Adding value to the customer relationship"). Mr Lin says providing information on the web—such as how the wafer looks when it is coming off the manufacturing line—gives customers an early alert and helps them to manage their operations and fulfil their own customer commitments: "We help our customers keep their promises to their customers." He adds that using the Internet to improve customer service helps to prevent his company's products from becoming low-priced commodities.

NCR is another example. It is building on its traditional business of providing ATMs and point-of-sale (POS) devices by web-enabling these products and offering online customer data management services. According to Mr Seyer, "Each of our offerings will definitely add the web and wireless as additional touch points." Before web-enabling these products, the company's ATMs and POS devices communicated solely through proprietary financial networks. Now the company's strategy is to blend the offline transactions that occur in the store with those that happen online. Ensuring the privacy of this online information has been a focus of this effort. "Our challenge was to make sure that our solution incorporated the appropriate technology [so that] privacy wasn't an issue but actually a feature," says Mr Seyer.

Case Study

Taiwan Semiconductor: Adding value to the customer relationship

E-business is enabling the Taiwan Semiconductor Manufacturing Company (TSMC) to realise its ambition of becoming a "virtual fab" for its customers—in short, providing customers with the benefits of an in-house fabrication plant without actually having to own one. As part of this strategy, the NT$73 ($2.4bn) manufacturer is attempting to make its service as transparent as possible, so that customers can download and review technical documents, place orders and review work in progress online. A design portal provides customers with the computer tools necessary to do the design work on TSMC processes.

"Our focus has changed from being a manufacturer to being a service centre, which places more emphasis on information and collaboration," says Quincy Lin, SVP of corporate development. "The cost of building a fab is the same worldwide, so most of the value comes from the knowledge of running fabs and creating a strong bond with our customers."

Avoiding commoditisation

Driving these efforts is a desire to prevent semiconductors from becoming mere commodities. This prospect is so fearsome that TSMC refrains from buying or selling materials through electronic marketplaces, which the company believes take away its ability to differentiate itself. The solution, according to Mr Lin, is building closer customer relationships. E-business can help the company do this, but it is only a tool—it is still up to the company to create and support services that will set it apart.

TSMC's main customers are semiconductor design houses that require continually updated information, in order to make promises to their own customers on a daily basis. "If customers feel that we are easy to do business with, that we facilitate their business [by providing frequent, accurate information], that trust eventually turns into revenue," explains Mr Lin.

Moving towards closer integration

Working one-on-one with customers so closely has also led the company to integrate its ERP system with its customers'. And that is changing TSMC's business model, since manufacturer and customer now function essentially as a single company. Customers spend less management time communicating with TSMC, and integrating systems means that customers reap the benefits of TSMC's improved forecasting and planning.

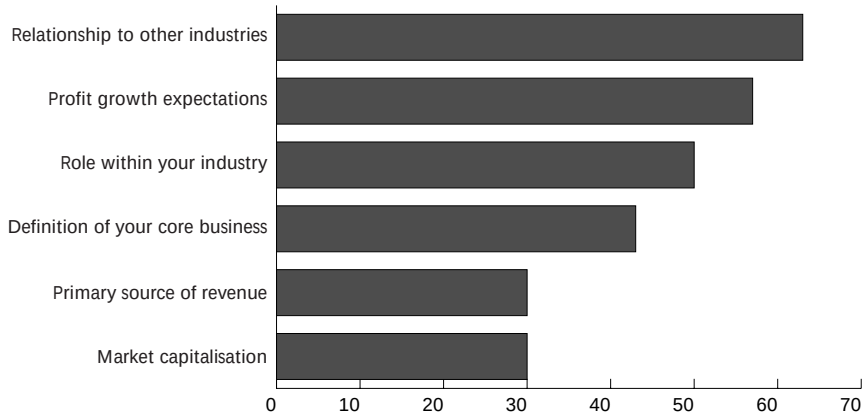
Furthermore, the reduction of inventory reduces costs, cycle times and lead times. And increased visibility allows TSMC to plan production more efficiently. Optimising resources—both within and between companies—has huge implications for inventory and working capital. "A more efficient industry, with lower costs, must result

Changing focus

As we mentioned earlier, electronics companies are moving away from a primary focus on making products towards providing services. Indeed, 43% of companies in this industry say that e-business will change the definition of their core business (see Figure 6.1, next page). Many in the industry (57%) also expect their e-business activities to generate higher profit growth. They are primarily looking to web-based services, such as hosting software applications and supporting online exchanges, as a driving force for growth.

Application service provision is one area of interest for NCR. Applications service providers deliver web-based business software applications and development services for a fee, rather than as a one-time sale. "Prior to e-business, we had not offered a service-oriented data warehouse capability," says Mr Seyer. "E-business

Figure 6.1
Is e-business transforming any of the following for your company?
% electronics respondents



Source: EIU survey.

has allowed us to offer that." Beyond simply changing how products are delivered, the ASP model creates a different financial relationship with customers by producing an ongoing stream of revenues.

E-business is enabling Hitachi to expand its products and services as well. Hitachi has created a new division, netBusiness, to provide e-business support systems, such as middleware and Internet data centres. The company expects Internet-related revenues to increase from ¥180bn to ¥900bn ($8.3m) by 2003.

Although Hitachi developed expertise in providing e-business services by operating Japan's largest electronic marketplace, TWX-21, getting customers to think of Hitachi as an e-business services company has required heavy investments in branding. Hitachi launched a new branding campaign to change its image in Japan. "To the Japanese customer, Hitachi belongs to heavy industry, and we wanted to separate it," says Dr Yajima. "People do not think of Hitachi as a network company."

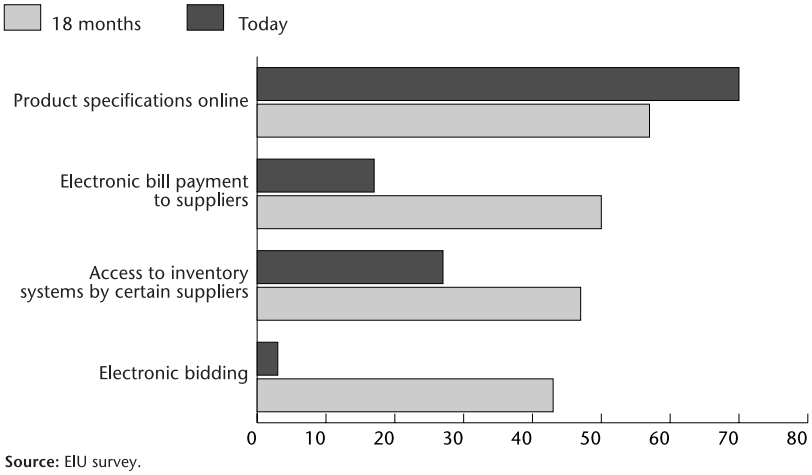
Rationalising procurement

Electronics companies are hoping e-business will produce cost savings and faster delivery times in their supply chains. To achieve these goals, they see the need to co-operate more closely with suppliers and other partners. Of respondents, 70% believe that better co-operation with partners is a very important benefit of e-business. The survey indicates that there will be a large increase in the number of electronics companies offering suppliers web-based bill payment and access to their inventory systems. The largest increase, though, is in web-enabled electronic bidding. Only 3% offer this capability to their suppliers today, but 43% plan to add this service over the next 18 months (see Figure 6.2, next page).

Closer co-ordination in the supply chain

For many of the executives we spoke to, closer co-ordination involves working with a smaller group of suppliers. NCR, for example, is reducing costs by limiting

Figure 6.2
Internet-based features offered to suppliers and partners
% electronics respondents



Source: EIU survey.

the number of suppliers. Not only is it expensive to add new suppliers, but purchasing from a smaller pool of suppliers also enables the company to gain leverage through volume increases. Similarly, Singapore Technologies Engineering (the parent company of Singapore Technologies Aerospace) plans to centralise the purchasing of all of its business units through an e-marketplace. Because the units will be buying as a group, the corporation overall will end up buying from suppliers at lower prices. The company also expects planning and inventory management to become more efficient.

Relying on fewer suppliers, of course, means putting higher demands on the ones that remain. This raises another risk of relying on a limited group of suppliers—over-dependence. If suppliers miss a shipment or face unforeseen shortages from their own suppliers, a company may be in a bad spot. Component shortages, for example, will delay products reaching the market, hurting revenues and reputations.

Electronics companies are also discovering other benefits of online supplier relations. Taiwan Semiconductors finds that using web-based, vendor-managed inventory to send more than 10,000 orders a year to major suppliers over the Internet keeps down costs and speeds the production cycle. Only when the company withdraws inventory does it enter the company's books. "We are online with the vendors, and we both know exactly how many wafers Taiwan Semiconductor withdraws every day," says Mr Lin. "We can do this only through e-commerce." He adds that since the company pays for only what it uses each day, the total amount of inventory is reduced. Another advantage for Taiwan Semiconductor is shorter lead-time. The old way of ordering required three days—today it is almost immediate. Closer co-ordination also enables the company's suppliers to plan their production more efficiently.

Tighter collaboration in the electronics supply chain is not problem-free, of course. A major issue for most companies is integrating their partners' disparate

computer systems. Hitachi, for example, says that a major challenge is enabling legacy procurement systems to communicate with vendors on a single standard, allowing them a view of the company's internal information. And such initiatives as setting up an online catalogue to standardise worldwide procurement can be sidelined when some of a company's suppliers are unprepared to web-enable their catalogues and communicate in a common format.

E-marketplaces

Electronics companies will rely increasingly on e-marketplaces, although corporate extranets and intranets will remain the most important means of managing their supply chains. Of electronics respondents, 57% plan to use corporate extranets or intranets within 18 months, compared with 40% today. In 18 months, 49% of electronics companies plan to use industry-specific marketplaces, and 23% plan to use multi-industry exchanges, in which companies can buy products such as basic office supplies.

Some of the major players in the electronics industry have recently formed e-marketplaces to aggregate demand and create a platform for deeper collaboration. Two major exchanges are e2open—in which IBM, Nortel, Hitachi, LG Electronics, Matsushita and others are participating—and ehitex, which includes Compaq, Hewlett-Packard, AMD and Canon. Danny Murdock, vice president of e-business solutions at Nortel Networks, says that the real value the exchanges will offer is in providing B2B services. Such services might include product design, marketing services, logistics or selling excess equipment. "If e-marketplaces focus solely on demand aggregation, they are going to be missing a much greater window of opportunity," he says.

Switching supply chain activities to an e-marketplace requires careful consideration however. At one company we interviewed, many of its current distribution partners offer the same types of services, although all are not available on the web. The executive says, "Should we stay with our distribution partners and wait until they offer the same functionalities through the web?" The answer may depend on whether speed to web-enable the supply chain takes precedence over maintaining established and valuable relationships.

Some electronics suppliers may also be reluctant to participate in an online exchange if it would separate them from direct contact with customers. For some, selling through an e-marketplace runs counter to their strategy to create deeper relationships with customers. One executive says that selling through an exchange would prevent his company from incorporating customer suggestions into products and online customer-service features. "When we do it ourselves, we can directly implement the customer's wishes."

Aligning e-business strategy

None of these customer and supplier services are possible unless companies align e-business strategies with internal capabilities. Web-enabled customer service, for example, must be accompanied by improved billing and new order handling. And a website should not supply an e-mail address for customer service unless there are enough employees to read and respond to enquiries. "You can't be very e-savvy with your customers unless you have an in-house system that matches the service you are offering your customers," says Mr Wee of Singapore Technologies Aerospace.

NCR is working to ensure that its technology can support all of the various channels it uses to reach customers. The company is developing a data warehouse for internal use that tracks customer activity in all of NCR's multiple touch points with customers, including its sales organisation, telemarketers, banner ads, service support calls and field-dispatched technicians. The database has evolved from a mainframe to a client-server model and is now being web-enabled. Initially, this information will be viewable only to internal staff, since the primary purpose of the project is to enable staff to better serve customers. "We prioritise our [e-business] investments on producing technology that benefits the customer," says Mr Seyer.

Implementing e-business strategy requires a co-ordinated effort across the enterprise. Many electronics companies are changing internal business processes and online services at the same time, citing the need to integrate internal and external e-business activities. Singapore Technologies Aerospace has organised two teams—one to focus on customer needs and the other to focus on the needs of e-commerce business processes. Mr Wee leads the teams' strategies and monitors their implementation plans. He remarks, "Our e-business initiatives focus on customers' needs; but because we have ample resources and people who are sufficiently knowledgeable about business processes and the Internet, we are able to bring the Internet to bear on the [entire] business."

Perhaps the biggest challenge of adapting processes and technology to support e-business initiatives is changing the mindset of the organisation. Though installing new website capabilities is relatively easy, it takes people far longer to adapt to new ways of working. As Mr Homann of Infineon says, "We have to develop and adapt our processes as fast as the Internet is developing."

Conclusion

Electronics companies are accelerating their move towards services and are linking themselves even more closely with customers and suppliers. Many organisations are struggling to adjust. The biggest challenges ahead for electronics companies are integrating front- and back-end information systems and aligning internal processes with online capabilities. Nevertheless, optimism in the industry is very high, and some prefer to take a long-term view of e-business. As one executive commented: "We believe that we are heading in the right direction. We believe that initiatives that we put up will bear fruit—not immediately, but later on."

Chapter 7 Financial services

Of the seven industries we examined for this study, none seems better suited for e-business than financial services. After all, banking, insurance and brokerage are essentially information businesses. These companies produce no physical products (although many have very costly physical assets) and have been buying, selling and storing money electronically for decades. In principle, insurance policies, bank loans and securities can all be purchased and delivered online. Customers can manage their checking and brokerage accounts through the Internet and, when digital cash catches on, they will be able to download money, as well.

E-business is advancing rapidly in this industry. Our survey found that, on average, financial services firms derive 13% of their revenues from online sales—more than any industry other than communications. In 18 months, this figure is expected to grow to 28%. This forecast may be somewhat optimistic, but it is a sign that, increasingly, firms expect their revenues to be driven by e-business. Similarly, we found that financial services firms are more advanced in their website development than any other industry.

Looming disintermediation

For many, however, the growth of e-business presents a threat. The danger takes many forms, but at the root is disintermediation. Though all financial institutions are intermediaries, and potentially vulnerable to disintermediation, the problem is greatest for brokers—particularly those that deal in securities and insurance products. As Charles Schwab and E*Trade have demonstrated, the Internet is a cheap and convenient way for customers to manage their investments without involving a highly paid stockbroker. And in insurance, the Internet encourages consumers to compare product features and prices across a broad range of providers and purchase options.

Nor are banks immune. A range of online services have emerged to allow consumers to manage all of their finances online, without ever having to visit their bank's website or branch—potentially cutting banks off from their customers. And a new group of Internet banks, including Security First Network Bank, are offering traditional bank products and services at lower prices. So far, such banks are struggling—the ten pure-play Internet banks active in the US have fewer than half a million active customers. But we found that financial services companies are more concerned about disintermediation than other industries, with 44% saying they are very concerned about the issue.

Financial services firms have responded in various ways. Virtually every bank and many brokers are attempting to offer online products and services through their own websites. Some, like Bank One in the US and Abbey National in the UK, have created separately branded online entities to compete with dotcoms on equal terms. And most are signing up to offer their products through the online aggregators that sell products—ranging from mortgages to auto insurance—from competing providers.

The opportunities of e-business

Business-to-consumer

E-business is not merely a danger, however. The Internet presents three major opportunities for banks, brokers and insurers, particularly in B2C e-business. First, the Internet allows companies to market more precisely than ever before. For example, by tracking a customer's activity on a bank's website, a bank can infer what sorts of products the customer is interested in and offer them through a phone call or an e-mail message. And when data from the online channel are blended with consumer information gathered from call centres and branches, a financial institution can develop a complex picture of the customer's current situation and likely future needs.

Second, e-business allows companies to offer a greater level of convenience—a benefit that firms hope will translate into customer loyalty. Consumers can now pay bills online, trade securities directly, monitor their various accounts in one place and view a wide range of investment research and personal finance advice. Many firms are finding, however, that such services are less useful for attracting new customers than for merely hanging on to current ones. As Jacques Kemp, ING Group's global head of e-business, puts it, "Since every bank in town is doing this, it's potentially a zero-sum game. But if we don't do it, it will clearly be negative for us."

Ultimately, say industry executives, e-business must either increase revenues or cut costs. All believe that the Internet will eventually contribute to revenues, like any other channel. Cost savings will come, too, but not immediately. The common wisdom in the industry is that online transactions yield large marginal savings—an Internet transaction costs only a few pennies, versus a few dollars through another channel. But achieving these savings requires a massive upfront investment. Citigroup has reportedly spent $500 million integrating its website with its legacy systems. Because such investments are needed, any savings will necessarily come in the long-term, as the Internet reduces dependence on branches and call centres.

Business to business

E-business is also creating opportunities at the other end of the value chain. One opportunity is to offer corporate customers the same level of convenience as retail customers. To this end, a number of companies are placing their corporate products and services online. The Development Bank of Singapore, for example, besides offering cash management to large corporations, has recently begun to offer web-based cash management for its small and medium-sized enterprise customers. It will soon allow online foreign-exchange transactions. Similarly, the Commonwealth Bank of Australia is offering corporate bonds online, among other services.

Another area of opportunity lies with the B2B exchanges—not necessarily as buyers or sellers (although many have begun to procure their supplies through such exchanges) but rather as providers of the financial machinery behind the transactions. Wells Fargo is betting that this will be a profitable business. The bank is forming agreements with various exchanges to provide payment, credit and other services to the companies participating on the exchange. The opportunities to provide the financial services that lie behind online business transactions are extensive; today no firm can claim to cover the full range.

Global opportunities

E-business is also turning out to be a useful vehicle for banks, insurers and brokers expanding abroad. Traditionally, entering a new market meant an enormous capital investment, either to build a physical presence or to acquire a local firm. The Internet obviates this need. Where regulations allow it, firms can offer their services to a new market remotely, with a localised website. Where some physical presence is desired, the online model is faster and cheaper to set up. ING's strategy to globalise its brokerage operations is to set up a version of its online and call centre-based brokerage, ING Direct, in each market.

Whether customers will willingly put their money in an unfamiliar foreign bank remains to be seen. Abbey National's strategy is to use the Internet to reach British expatriates. The bank plans to offer banking services for UK citizens living overseas through its Abbey National Offshore website.

Obstacles to overcome

There are several hurdles the industry must pass. One is technology. Although the industry is further ahead than most in its systems integration, nearly 50% believe that a lack of back- and front-end systems integration presents a very significant barrier to their e-business plans. A related challenge is security—financial services are an attractive target for online thieves. Online security is improving, but problems remain, and convincing customers to manage their finances online largely means convincing them it's safe. Regulations continue to make it difficult to offer truly integrated packages of financial services, or to operate globally. Many companies are saddled with product-line organisational structures that work against efforts to offer all products and services through the website. Companies must also consider what the possible tax effects will be once governments determine how to tax online sales of financial services. Most significantly, financial services firms must grapple with channel conflict.

Our research suggests that to implement a successful e-business strategy, financial-services executives will need to concentrate on a number of issues:

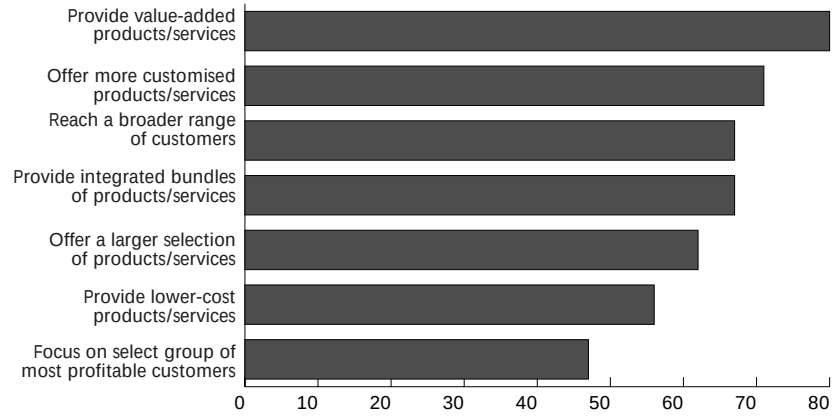
- Product integration
- Managing online distribution
- Online privacy and security
- Using alliances and outsourcing

Product integration

New product offerings

The executives we spoke with agree that success online will require a fresh look at products and services, and how companies offer them. Many are adding new services such as direct trading or online risk-management services (see case study, "Commonwealth Bank of Australia: Pursuing new opportunities online", page 65). And according to our survey, companies will continue to. Of financial-services respondents, 80% reported that providing new value-added products and services is a very important element of their online strategy (see Figure 7.1, next page). Credit Suisse has gone so far as to create a unit dedicated to creating e-business opportunities not directly tied to the bank's core business. One result is an online marketplace for real-estate companies that will provide information about properties for sale.

Figure 7.1
Importance of goals for e-business customer strategy
% financial services respondents citing "important" or "very important"



Source: EIU survey.

Integrated bundles

Others are looking for ways to integrate their various offerings. Companies are finding that customers are demanding a higher level of convenience. One way to provide this is by offering bundles of products and services that can be managed in one place. For example, many firms offer checking accounts with a linked brokerage account and credit card. We found that 67% of financial-services firms believe providing such bundles to be very important. This approach has another, less advertised benefit: the more accounts a customer has with one institution, and the more tightly integrated the accounts are, the harder it is for a customer to switch providers. And online, where churn rates (the annual percentage of customers who switch providers) for financial accounts can be as high as 35%, anything that binds customer to institution is a welcome tool.

Such bundles are not always offered by the same institution, however. Some firms have agreements with other companies to fill out their product lines—an insurer allying with a bank that can offer loans, for instance. And increasingly, such bundling is being offered by independent third parties, such as Quicken.com, who let customers choose products from a list of providers.

Managing online distribution

This raises an important question: how willing should financial services firms be to participate in online channels that lump their products together with someone else's? And how willing should they be to distribute another's products through their own channel?

On the one hand, online portals that aggregate the products of various providers are a threat for banks and insurers. They place a new intermediary between the firm and its customer, removing any opportunity for relationship building. And, by encouraging consumers to shop based on price, they turn financial products into low-priced commodities. Yet on the other hand, such services are

Case Study

Commonwealth Bank of Australia: Pursuing new opportunities online

The first Australian bank to launch internet banking, the Commonwealth Bank of Australia, sells a full range of banking, insurance, equities and derivatives products online—even corporate bond issues. Commonwealth is not only the largest bank in Australia—more than 40% of the population have a relationship with it in one way or another—but it owns the country's second most trafficked website. This has enabled Commonwealth to move quickly into new markets by partnering with other top brands. Revenue growth through partnerships is an important part of Commonwealth's strategy to retain its large customer base by moving beyond banking to diversify its income stream and generate value offshore.

Alliances lead to new revenues

An example of this strategy is Commonwealth's alliance with Australia's leading website, ninemsn. This is a joint venture between Microsoft and Publishing and Broadcasting Limited, which operates the Nine Network in Australia. Since 70% of Australian Internet users log on to this site each month, the relationship gives the two market leaders both reach and frequency, as Commonwealth users spend more time, more often on the bank's site.

Commonwealth also has alliances with Telecom New Zealand, Microsoft, Woolworth's, Vodafone, Australia Post and EDS. According to Stephen Coulter, Commonwealth's head of global e-commerce, "We now see ourselves as being in the information industry rather than the financial services industry, and there is a potential to charge for the information. We don't think these revenue streams will be significant in the medium term, compared to our financial services, but some of our e-commerce initiatives will produce new income streams and help retain and grow traditional ones."

Commonwealth plans to provide a range of non-banking services to small and medium-sized companies, including business management, payroll, online payments and supply chain solutions. The bank has also launched a B2B procurement search engine that allows businesses to find suppliers. The plan is to add logistics and settlement capabilities to provide an end-to-end e-procurement solution.

The bank also sees opportunities in helping businesses with e-commerce business functions, such as through a web-based payroll service that allows for self-administration. "With over 10% of the Australian workforce already getting paid through Commonwealth software, this will potentially give us another relationship touch point," says Mr Coulter.

Expanding internationally

Participating in an online business is an efficient way of entering offshore markets in which Commonwealth has no customer base, established brand or distribution network. The bank recently bought into a leading UK online real-estate business, 08004homes, in order to duplicate its online Australian real-estate and mortgage services in that market.

Being early to market, Commonwealth has taken market share not only from slower banks but also from brokerage houses and insurers. Comsec, Commonwealth's online brokerage, is now Australia's leading broker, based on the number of trades executed. Starting with equities, Comsec has diversified into managed funds, setting up Funds Direct, an online broker with 280 mutual funds, and InsureDirect, offering auto insurance brokerage from leading insurers. "Brokerage is a core competency, so if customers want to deal online … they want to do it across a range of services, not just shares," says Mr Coulter. "And as online customers become more entangled opera-

attractive to consumers, who want the convenience of multiple products in one place along with choice and lower prices. As a result, most companies feel that participating in marketplaces is not optional. For this reason, ING has chosen to participate in CFOWeb, a new marketplace for corporate finance products. "The big corporates will more likely go to a marketplace with a lot of banks than they will to a marketplace where they only see ING or Bank of America," says Mr Kemp.

In the same way, many have decided that providing links to third-party products on their own sites is the price of online business. Keeping customers happy means giving them as much choice as possible, even if that choice includes someone else's product. If you link a customer to another firm, though, how do you lure that customer back? Abbey National's solution is to share its referral commission with the customer. For example, if a customer follows a link from Abbey National's website to E-loan's and buys a loan there, the bank deposits part of its commission into the customer's account.

Branding the online channel

A closely related issue for banks, insurers and brokers is managing the relationship between distribution channels. First, companies must decide whether their online channel will sit apart or within the company's other operations. As we discussed in chapter 1, companies are split on the issue, with some arguing that e-business must be organisationally separate to allow the necessary flexibility and speed. Others contend that e-business must be carefully integrated into traditional operations, both to spread e-business skills throughout the company and to ease channel integration.

There is also the question of brand. Many companies, including Bank One, Prudential of the UK and Abbey National, have chosen to create independent, separately branded online operations. These companies argue that the separate brand is desirable for two reasons. First, their online customers are, by and large, a new and younger group. And with a separate brand the new unit is freer to make controversial decisions, such as slashing fees and offering above-market rates for savings accounts. Their point is that brand will only get you so far —success online requires ruthless competition, and that requires the flexibility of a new identity.

Brand building online is turning out to be difficult, however. Wingspan has failed to attract many retail customers, and its parent, Bank One, is considering putting the unit up for sale. And despite the princely sums dotcoms have devoted to marketing, comparatively few customers seem convinced. This may be due partly to inertia: most customers are reluctant to switch accounts unless they are extremely dissatisfied with their current institution. It may have more to do with the nature of financial services, though. Many customers are leery about turning their money over an unfamiliar firm just for the benefit of better rates and greater convenience.

Channel integration

For several years now, "channel conflict" has been used to explain why many financial services companies have been sluggish in adopting e-business. The argument was that sales over the Internet would come at the expense of business through the branches and call centres, and that because organisations were organised along channel lines, different parts of the business would never co-operate. And for some, this remains a problem—some executives admitted that overcoming internal rivalries remains a major challenge.

Several of the firms we spoke with have overcome this, however. The solution for most has been to reorganise around customer segments rather than products or channels. This approach, which requires IT systems around the firm to be integrated, allows companies to provide a consistent level of service across the company and to use the channels to support one another.

Companies are also trying to create new roles for the channels—both internal channels and external intermediaries—that might be harmed by the shift to the Internet. ING, for example, expects the number of insurance policies it sells online to increase. But the firm plans to retain its agents, transforming them from salesmen to relationship managers. To speed this transition, it is giving agents access to various online tools, including customer-account information and the ability to conduct trades online.

Online privacy and security

Financial services executives are considerably more concerned than their peers in other industries about online security. Our survey found that respondents from the financial services industry were the most likely to cite privacy and security as a very serious concern, with 62% selecting this. The reason is obvious enough: the industry is almost completely dependent on information technology, and a customer's trust can only be as strong as his or her belief that personal information (not to mention money) is safe in these systems. And with the rise of online marketplaces, there has been a corresponding rise in uneasiness about the security of the often large transactions that occur on them. As Steve Ellis, who runs Wells Fargo's B2B initiatives, puts it, "Most exchanges do not have the level of upfront authentication that would make me comfortable if I were wiring one million dollars."

To its credit, the financial services industry has a better record of managing consumer information than many industries. Recognising this, several firms are lending their credibility to other online firms by providing the online payments mechanisms for certain websites. "There is a perception that there are real security issues out there," says Stephen Coulter of Commonwealth, "so if trusted brands like Commonwealth put our logo next to an online payment mechanism, that gives buyers and sellers a lot more confidence."

Similarly, the Development Bank of Singapore has created new services to protect online merchants from credit-card fraud. One service creates a separate credit card number for consumers to use online, and then limits the amount of exposure that both merchant and consumer would face in the event of fraud.

Using alliances and outsourcing

A growing role for alliances

E-business alliances have become nearly ubiquitous in the financial services industry. Nearly every financial services executive we spoke with said that alliances would be an integral part of their online strategy. Taking the form of joint ventures, equity stakes and non-equity alliances, companies are using alliances for a variety of purposes. Some give companies access to new groups of customers,

Wells Fargo: B2B strategies in banking

Wells Fargo started its B2B internet group in mid-1999, but already the unit has changed the way the bank works with its business customers, says Steve Ellis, manager of wholesale solutions. One of the bank's first steps was to set up a single, customisable portal, so that instead of going to 12 different web sites, customers could go to one. "One-off products address certain pieces of the relationship," says Mr Ellis, "but our goal is to have a comprehensive suite that addresses the customer's needs." The site is "dynamically rendered", meaning that it shows each visitor only the services for which he's been approved.

To sell these services, Wells Fargo relies on its relationship managers, which means selling the idea internally first. The company is giving all its relationship managers passwords so they can use the site, and Mr Ellis and his staff conduct regular product training seminars.

Serving the online marketplaces

But the portal is just the beginning. Wells Fargo is moving aggressively to participate in B2B marketplaces. The bank is talking to approximately 70, and is already providing letter-of-credit services and payment functionality to several. It is also working with other banks to provide multi-bank platforms to give customers a choice of banks.

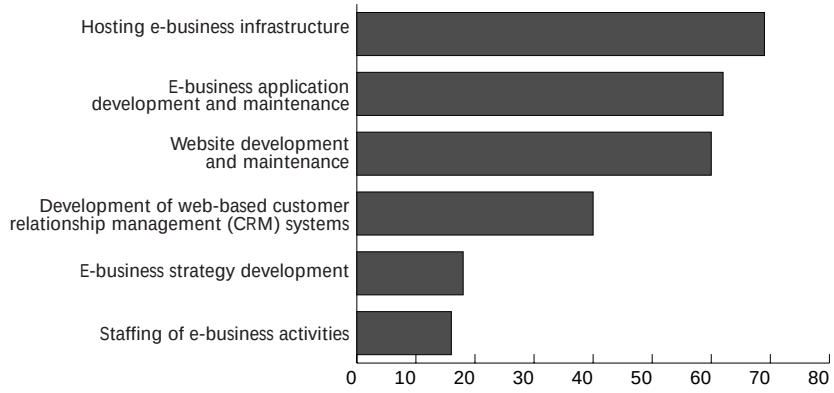
To decide which exchanges to join, the bank has devised a list of 60 criteria—such as market potential, strategic fit, business model and personnel—against which to gauge each exchange. Not many pass muster. "A lot of people come to us with great ideas," says Mr Ellis. "But when we ask how many customers they have, they tell us the pilot goes live next month."

The two issues Wells Fargo focuses on most are security and partnering. "You've got to be able to know that people are who they say they are and that they are authorised to do what they want to do," says Mr Ellis. Partnering can make companies nervous, he points out, because it means working with companies that until recently were cut-throat competitors. Again, he says, the answer is education. "When people see that the value they can bring, coupled with the value somebody else brings, enhances their own value, then you win. You've got to be able to paint that picture."

both domestically and overseas. Many have formed alliances with grocery stores and communications companies, for example. Other alliances allow firms to offer new products or services. Commonwealth has an alliance with a payments technology company to provide online payment technology to other companies (see case study, "Commonwealth Bank of Australia: Pursuing new opportunities online"). And others help supplement online services. Abbey National's online bank, Cahoot, recognising that its customers may want to physically deposit or withdraw money in places where there are no Abbey National ATMs, has an alliance with the UK post office so that customers can deposit or withdraw at any post-office branch.

Multipartner consortia are becoming common as well. Examples include CFOWeb, mentioned previously, and a large multicompany banking platform Wells Fargo has joined to provide online corporate banking services. Like the need to sell products through the online portals, many banks view these alliances as a necessary evil, but one that will benefit them in the end. "[If we were the sole provider] I'm not sure we could drive the liquidity to the marketplace, since companies have other existing banking relationships," says Mr Ellis of Wells Fargo. "But in any case, if we're hooked into these exchanges, that gives us an opportunity to acquire new customer relationships." (See case study above.)

Figure 7.2
E-business activities being outsourced or being considered for outsourcing
% financial services respondents



Source: EIU survey.

The reliance on outsourcing

Outsourcing will also play a major role in the industry's e-business strategies. We found that most financial services firms are at least considering outsourcing the hosting of their e-business infrastructure, website development and maintenance, and application development and maintenance. Like most industries, they are far less likely to outsource more sensitive functions, like e-business strategy development or staffing (see Figure 7.2).

The companies we spoke with cited several reasons to outsource. First was the standard "core competency" argument: if you are not a specialist in something, hire someone who is. Second was the opportunity to take advantage of the global reach of a major IT provider. Most important, however, was the need to increase speed to market. Wells Fargo, which has historically built its systems in-house, recently broke with that tradition—delivering a new online service ahead of competitors requires a level of speed that is just too difficult to provide internally.

Conclusion

E-business has already altered the financial-services landscape. Brokers of all sorts are reconsidering their business models. Banks are finding themselves entering new businesses. Insurers are changing, too, by reconsidering decades-old ways of distributing their products. Yet the transformation is only partly complete. As financial institutions from Wells Fargo to Commonwealth have found, there is an opportunity beyond simply putting current products and services online. That opportunity is to use their expertise, systems and brands to provide the financial infrastructure of e-business, enabling everything from individual transactions to complex online marketplaces.

As we discussed, however, taking advantage of the opportunities of e-business requires firms to address a variety of issues. Banks, insurers and brokers will all need to address the challenge of integrating new and traditional distribution

channels. They will need to develop internal skills for managing alliances—alliances that will increasingly span industries. They will need to address consumer concerns about privacy and security issues. And, of course, many will have to invest in systems integration. For financial-services firms, the hardest part of e-business still lies ahead.

Chapter 8 Pharmaceuticals

Until recently, the pharmaceutical industry was the laggard of the new economy. With no retail customers to speak of and with procurement of supplies a relatively minor expense, executives saw few obvious benefits from e-business. And some remain sceptical of the Internet's significance. As one pharma executive told us, "We see the need to be engaged in this area, but we don't see it as something that's going to yield enormous dividends."

New pressures driving e-business

This will change. Most of the executives we spoke with say they are committed to new e-business strategies. As an indicator of the attention companies are devoting to the Internet, we found that within 18 months, 82% of pharmaceutical companies expect to offer at least limited transactions through their websites, up from only 21% today. The pharma industry faces several long-term pressures that are forcing a more aggressive stance. First, because many major drugs will soon lose patent protection, companies are searching for ways to bring new drugs to market faster. They hope to shorten development cycles of from nine to 12 years down to six to nine years. Second, as drugs become more expensive and governments and patients less able and willing to pay for them, pharma companies need ways to trim costs. And third, with rising competition, manufacturers are searching for ways to market their products more precisely and more cheaply.

E-business may help in each of these areas. Putting much of the clinical trial process online, for example, will save time and expense. Companies can also save money by using the Internet to procure supplies and sell to distributors. And by setting up disease-management websites or sponsoring healthcare portals, pharmaceutical companies will be able to learn far more about their customers—information that can be used to refine marketing efforts.

But the industry may have less time than it thinks. The rise of healthcare dotcoms—such as online pharmacies and advice websites—has created a new and largely unrecognised risk. These start-ups may already be capturing the same patient and doctor relationships pharmaceutical firms covet. Healtheon/WebMD, one of the sites providing health information services, already claims electronic links to some 85% of practising doctors.

Obstacles to overcome

Putting the industry online won't be simple. Pharmaceuticals are highly regulated, and each government's rules are somewhat different. In Europe, for example, companies are prohibited from marketing drugs directly to consumers (the DTC market, as it is called), but in the US, they may. Even in the US, the rules are ambiguous—the FDA has announced that it will rule on the appropriateness of web-marketing efforts on an individual basis, leaving companies unsure of what is allowed.

Companies also face internal resistance. Many executives continue to doubt that e-business will amount to more than a new marketing channel and are reluctant to invest much money in it. This seems to be changing, however. Of pharmaceutical survey respondents, 61% said that their senior management is very actively driving e-business strategy—only financial services and electronics reported a higher level of senior management commitment. But finding employees with e-business skills will still be a difficulty (see box, "Pharma's human-resources quandary", page 73). Over half of the pharmaceutical firms we surveyed reported that a lack of e-business skills poses a very significant barrier.

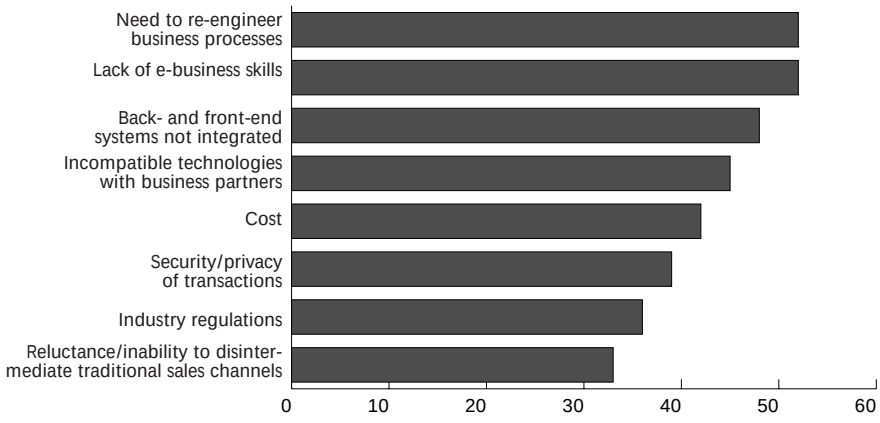
Technology is another difficulty. When we asked what obstacles pharmaceutical firms face, nearly half reported that a lack of front- and back-end systems integration is a very significant problem (see Figure 8.1). Such integration is expensive, but without it, conducting online transactions with customers and suppliers is slow and awkward. Online privacy and security is also a growing concern. Although only 39% of pharma companies ranked this as very important, the industry will have to address this if it is to convince patients to divulge personal medical information.

Despite these hurdles, pharmaceutical companies have begun to take action. We found that companies are approaching the issue as two major areas of opportunity: the demand side of the value chain (marketing and distribution) and the supply side (procurement, research and development).

Strategies for customers

Although they don't expect to generate much in the way of revenues through online sales, most pharmaceutical firms believe that e-business's greatest—and most attainable—benefits lie in improving relations with customers. In this area, companies are pursuing three types of initiatives: those focused on doctors, patients and distributors.

Figure 8.1
Main obstacles to e-business strategy implementation
% pharmaceuticals respondents citing "significant" or "very significant"



Source: EIU survey.

New services for practitioners

Today, doctors are the focus of attention. This is natural: pharmaceutical companies make most of their money from prescription drugs. Companies hope that shifting their marketing efforts online will have two benefits. First, they can provide more than a sales call, deepening their relations with doctors and increasing sales. Some of the firms we spoke with hope to use CRM (customer relationship management) technology to identify high-value practitioners; for instance, those likely to adopt new drugs early.

Pharma's human-resources quandary

Since at least the early part of 1999, pharmaceutical companies have begun to accept the view that digital technologies are pivotal to growth. But despite the perceived importance of e-commerce, the drug industry has been heavily reliant on outsiders for Internet expertise. However, many drug companies are unwilling to continue outsourcing e-skills. In keeping with the industry's traditional suspicion of outsiders, businesses now prefer to gather their e-business in-house to protect intellectual property.

The industry is now assembling strong teams of e-savvy insiders. These new virtuosos are being made responsible for most aspects of the industry's e-business, from building websites to developing programmes for the latest communications portals, such as wireless telephones. As well as training present employees in electronic literacy, pharmaceutical firms are searching for individuals adept at the collection and handling of electronic clinical data. Staffs are also required to educate clinicians and physicians in the use of e-data and e-services. Although firms are willing to throw money at the recruitment drive, the human-resources challenges remain daunting.

Where to look?

Hunting forays for staff typically begin on home turf, with identifying potential entrepreneurs from within company ranks. Glaxo Wellcome, for instance, instituted an e-business programme in 1999. The aim was to rope in a global network of Glaxo Wellcome people possessing "interest and passion" in new e-ventures. AstraZeneca and Pfizer have also trawled their own ranks for e-friendly staff. Aventis hopes the Internet will support its external recruiting efforts. The efforts are considerable, but shortages linger. Another source for drug companies is the burgeoning corps of healthcare dotcoms—which now offer real possibilities, since the March 2000 crash in dotcom values has forced many to downsize. Other scouting sites are the campuses of management schools and the offices of head hunters. But as late entrants into the market, drug companies are discovering that people with the necessary Internet skills are few—and that workers also possessing knowledge of the global pharmaceutical industry are rarer still.

The right bait

On the whole, drug companies tend not to be desirable places for e-skilled individuals. Those with entrepreneurial leanings tend to sit uncomfortably within the disciplined ranks of big business, no area of which is more conservative than the drug industry. The occasional candidate who in every way fits the industry's bill can command a high salary—sometimes at a level that stretches even what the wealthy drug industry is willing to pay. And even then, would-be recruits are more tempted by the prospect of an equity stake in a pre-IPO start-up company. In the absence of massive financial rewards for staff, the only effective inducements available to an employing corporation appear to be a high level of employee autonomy and the absence of bureaucracy in the decision-making process—attributes notoriously scarce in the pharmaceutical industry.

They also hope to save money. The cost of marketing has been rising—currently, the industry spends $11.5 billion annually marketing to doctors. Some companies claim to have already saved money on expensive in-person representative's visits to physicians.

Some of these efforts are basic, such as providing detailed drug information on the corporate website and having sales agents refer doctors to the website for more information. Increasingly, though, companies are pursuing more sophisticated means. A favourite approach is to create or invest in information portals for physicians. Glaxo Wellcome believes that doctors will rely heavily on the Internet for their continuing education, particularly as the complexity of medications increases. Among other initiatives, the company has taken a 20% stake in a portal for physicians in Spain, which helps doctors assess diseases and treatment options. "I think this will help us move to a higher level of micro marketing and a better understanding of physicians' behaviour and needs," says Nick Hagger, Glaxo Wellcome's European marketing director for e-business.

Companies are also exploring new technologies. Pfizer, for instance, is experimenting with providing web-enabled palm pilots to doctors—the handheld devices would allow physicians to view information about a range of drugs. Aventis is also exploring ways of delivering new services via wireless devices.

Reaching out to patients

Pharmaceutical companies are also directing their online efforts towards patients themselves. This takes a few different forms. Some companies are establishing websites to promote individual drugs. A well-known example is Pfizer's site for Viagra. In addition to its clear promotional intent—the website's messages and imagery are co-ordinated with the drug maker's television and print advertisements—the site is meant to serve as an information source for patients and doctors.

Companies are also sponsoring neutral websites about specific medical conditions. This has been especially popular in Europe, where pharmaceutical companies aren't permitted to target their advertising to patients. The ultimate intent of these efforts, of course, is to encourage patients to ask their physicians to prescribe the medicines. Through some pilot projects, Glaxo Wellcome has found that when patients not on medication visit such sites for advice about their symptoms, they learn about the treatment options and often begin using the drugs that are available. Companies also hope that by exchanging information with patients about their conditions and their reactions to treatments, they can refine their marketing efforts and possibly feed this information back into the R&D process (see case study, "AstraZeneca: Talking to patients in Europe", next page).

Online relations with wholesalers and hospitals

There is less agreement on the benefits of using e-business to improve drug distribution. In principle, drug companies could remove pharmaceutical wholesalers from the industry value chain, selling directly to pharmacies and hospitals over the Internet. This is happening in other industries—some insurance companies are dispensing with brokers in their retail and corporate sales, for example. In the pharmaceutical industry, two things constrain such efforts. First, regulations in many countries make it difficult to alter the distribution chain. More importantly, perhaps, the wholesalers are filling a role that most pharmaceutical firms are unwilling to fill themselves. To distribute directly, a pharmaceutical company would need an expensive back office to take orders, oversee fulfilment and manage customer service. "The structure of margins is such that cost savings wouldn't

Case Study

AstraZeneca: Talking to patients in Europe

Although the pharmaceutical industry has scarcely got e-initiatives off the ground, company strategies already differ. AstraZeneca, for instance, is banking on growth in the B2C market in Europe. For AstraZeneca, the C refers to patients, as well as doctors. Competitors view such a strategy as high risk. So why is AstraZeneca taking the gamble?

In Europe, the relationships between patients and drug firms are constrained by regulatory and ethical considerations. National and EU laws prohibit drug companies from advertising or talking about their products to patients. Additionally, European doctors take a dim view of pharmaceutical firms that attempt to intervene in the doctor-patient relationship. For both of these reasons, most European pharmaceutical firms have shied away from patient-focused Internet initiatives.

Were it permitted, however, direct-to-consumer (DTC) tie-ups could prove a boon. In the more liberal US market, B2C initiatives include product and corporate sites, DTC advertising and disease-oriented web pages. Aside from the obvious financial advantages derived from promoting their brands, B2C enables drug firms to understand the needs of their ultimate customers, the patients. Such information is then fed back to improve marketing processes and, it is hoped, to facilitate more efficient R&D. Consumer data also positions drug companies to supply extra services to patients, such as follow-up on the success or failure of a treatment after it has been prescribed—a practice still followed by few doctors. AstraZeneca believes that to sustain market leadership, major drug companies will eventually have to supply tailored services to patients as a complement to any prescription.

AstraZeneca reckons that the European market will be deregulated within two to four years, in favour of DTC relationships. The company arrived at this conclusion after canvassing the views of opinion leaders, dotcoms and general practitioners. The latter now routinely face patients armed with medical data pulled from the Internet. The slow erosion of the physicians' power, and the ease with which Europeans can view US websites, suggests that Europe's legal position on DTC advertising is untenable in the long run.

AstraZeneca has taken the first tentative steps toward building a B2C business by moving into markets that are most amenable to DTC. In Denmark, along with other investors, AstraZeneca is financing an electronic physician/patient hub for sufferers of asthma, a medical condition for which the company has several leading products. The point of this hub is to encourage patients to keep an electronic diary of their symptoms. If a participating patient's condition then falls below a certain threshold, a physician is automatically alerted. The company is building other sites, too, designed to increase its intimacy with consumers. The key to B2C success, apparently, is to avoid being overtly promotional. Operating the AstraZeneca way does

be a major driver for us to take over the job of the wholesalers," says Robert Thomas, Pfizer's head of tax and treasury.

Although some firms are exploring the possibility of direct distribution, in general, today's approach is to find ways to work more efficiently within the current framework. To this end, drugmakers are hoping to use the Internet to communicate with distributors. This could bring benefits such as more accurate and timely information about wholesaler stock levels, which would help pharma companies improve their own production planning. "We do believe that there is the opportunity to streamline the process, reducing some of the inventory requirements and maintaining a high customer-service level," says Kirk Schueler, a senior vice president at Aventis. "To what extent the wholesaler or

retailer ends up being disintermediated is still a big question mark."

The Internet in R&D and procurement

Clinical trials

At the other end of the value chain, pharmaceutical companies have been less active in their e-business initiatives. But the executives we spoke with recognise that the benefits of putting their research and supply chain activities online could be considerable.

The most immediate benefits may come in the area of clinical trials. The industry currently spends $30 billion a year on them, and much of that expense is administrative: paper-based data collection and co-ordination of the process. With the number of drugs in trial constantly rising, moving the process to the web should save money and time. Peter Knezevich, the CEO of OmniComm Systems, a company that provides technology for online clinical trials, estimates that this can cut the time required by at least 30%. This is especially likely in the US, where trial data can be submitted electronically. Furthermore, because trials are increasingly conducted at multiple centres in multiple countries, communicating via the Internet is clearly beneficial.

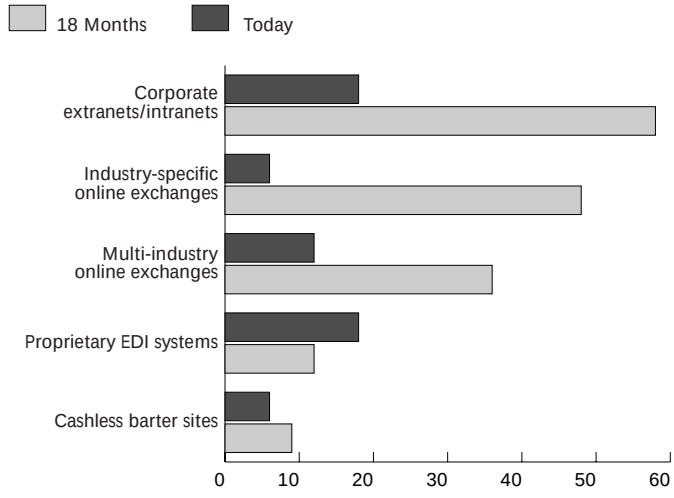
The web will also help with the recruitment of patients for trials. Some web-based intermediaries have already appeared. One such company, the CentreWatch Clinical Trials Listing Service, is an online network of patients and doctors that helps identify candidates for participation in upcoming trials. Nick Haggar of Glaxo Wellcome believes that, if nothing else, providing better and more accessible information about trials will speed the process. "The important point is allowing patients to identify the clinical trials that are running ... and allowing them to actually volunteer themselves," he says. "I think this will reduce the time needed to get enough patients into a clinical trial."

Finally, putting much of the trial process online allows for greater control over the process itself. Kirk Schueler of Aventis believes that since trial data is entered via the Internet on an ongoing basis, the tests may achieve a statistically significant result sooner than expected. The data monitoring board can then stop the trial and submit the data. Likewise, the sponsor will know sooner if safety issues come up—adverse reactions in patients, for example. "As a result of these capabilities, at the end of the trial you can have the data report much more rapidly and be able to submit it to the regulatory authorities for review," says Mr Schueler. "We believe [the Internet] increases the speed, quality, efficiency and effectiveness of trials."

Benefits in the supply chain

For the moment, pharmaceutical companies are doing little in the way of web-enabled supply chain management. Part of the reason is that procurement is a smaller expense in the pharmaceutical industry than for heavy manufacturers. As one interviewee observed, procuring supplies online may only reduce their costs by 1%. Even so, as Figure 8.2 on the next page shows, they expect to move quickly in this area, relying especially on corporate intranets and vertical industry exchanges, such as Chemdex and Sciquest.com.

Figure 8.2
Online channels for procurement
% pharmaceuticals respondents citing "very important" or "critical"



Source: EIU survey.

Companies also expect to use the Internet to improve co-ordination with research partners. On our survey, we asked about the expected employee and stakeholder benefits of e-business. The top benefit is improved collaboration with business partners, with 82% rating this as highly important. The executives we spoke with believe that online collaboration will be especially prevalent with the coming genomics revolution—human genome data is being placed online, and the effort will rely heavily on information technology.

Conclusion

After several years on the sidelines of the new economy, the pharmaceutical industry is set to embrace e-business. Clearly, the industry confronts more obstacles than most. But many of these, such as lack of technology, will disappear as today's investments in IT yield an infrastructure capable of handling e-commerce. And others, such as uneven regulation, will likely ease as governments begin to realise that the Internet makes the industry far more global.

The dotcom competitors may be more of a threat, particularly on the distribution side. As one executive observed, however, though the dotcoms may have an early lead in B2C e-business, the major pharmaceutical companies have the money, the sales channels and the global reach. The question is whether someone else will develop the trust and loyalty of patients and physicians before the industry does.

Appendix A Survey demographics

The quantitative survey for this study consisted of 331 completed mail questionnaires. The following charts describe the characteristics of the sample population.

Figure A.1
Survey respondents by title
%

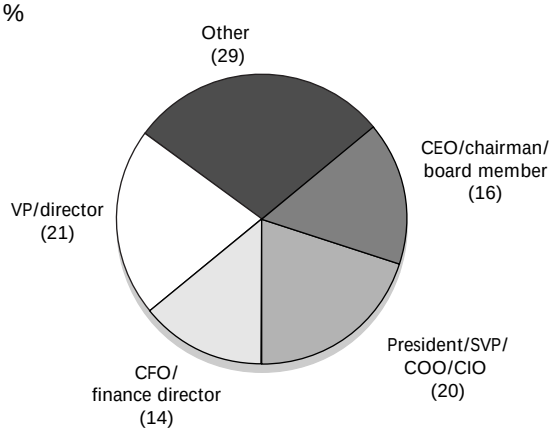


Figure A.2
Locale of respondents
%

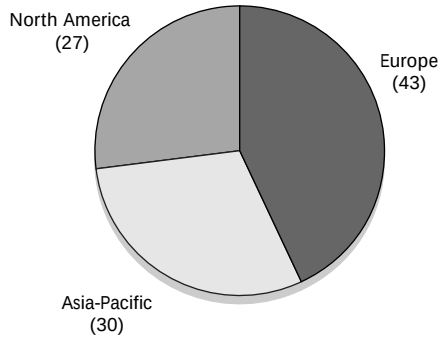


Figure A.3
Company sizes: Fiscal year 1999 worldwide revenues
%

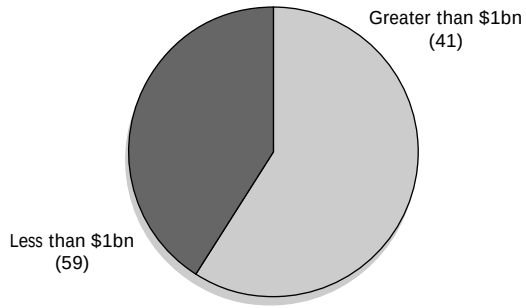
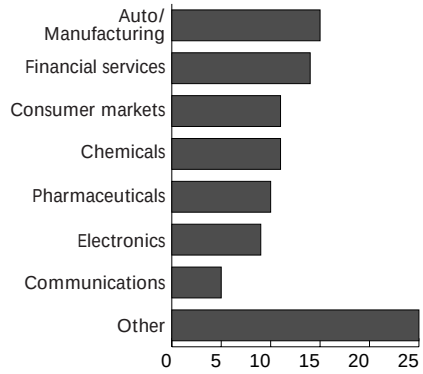


Figure A.4
Industry breakdown
%



Appendix B Companies interviewed

Automotive

Autobytel
AutoNation
BMW
Ford
Renault
Volkswagen

Chemicals

Celanese
Ciba Specialty Chemicals
ChemConnect
Eastman Chemical Company
Imperial Chemical Industries

Communications

British Telecommunications
Cable & Wireless
Deutsche Telekom
Ericsson
Ignite (BT)
Pacific Century CyberWorks
SBC Communications

Consumer markets

Dairy Farm (Jardines)
Diageo
Fort James
Harvey Norman
IGA
Office Depot

Electronics

Hitachi
Infineon Technologies (Siemens)
NCR
Nortel Networks
Singapore Technologies Aerospace
Taiwan Semiconductor Manufacturing Company

Financial services

Abbey National
Commonwealth Bank of Australia
Credit Suisse
Development Bank of Singapore
ING Group
Wells Fargo

Pharmaceuticals

AstraZeneca
Aventis
European Medical Network
Glaxo Wellcome
OmniComm
Pfizer