

Internet Business Practices Across the Globe: Lessons from
Emerging Economies

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Abstract

Firms in emerging economies are rapidly becoming formidable competitors to long-established industry leaders from developed economies. In some cases, emerging-economy firms are acquiring developed-economy firms, such as the recent acquisitions of Jaguar by Tata Motors and Gateway by Acer. Aside from anecdotal reports of high-level corporate strategies adopted by certain emerging-economy firms, there is little scholarly evidence concerning the operational details of how emerging-economy firms are becoming competitive with developed-economy firms. A common explanation is labor cost or currency advantages in emerging economies. As emerging-economy firms also compete effectively in developed economies using developed-economy resources, this cannot be the entire explanation. We propose another explanation, based on dissimilar adaptation of the Internet to enable and reinforce business practices related to customer relationships and supply chain integration.

This paper draws on original survey data from over 450 firms across 10 countries as well as case examples to illuminate three key ways that Internet business practices differ between developed- and emerging-economy firms. First, compared with developed-economy firms, emerging-economy firms place a relatively higher priority on using the Internet to achieve strong customer relationships via service and support. Second, emerging-economy firms place a relatively higher priority on using the Internet to integrate processes with suppliers than do developed-economy firms. Finally, emerging-economy firms are relatively more driven to adopt Internet business practices to expand existing markets and enter new markets, and accordingly report a relatively greater impact to international sales growth compared with developed-economy firms. Our findings suggest that managers in developed-economy firms would be wise to re-assess and re-evaluate their use of Internet business practices – in particular, in the areas of customer relationships and supply chain integration – to retain competitiveness in the dynamic global economy.

1. INTRODUCTION

Firms from emerging economies are rapidly becoming formidable competitors to long-established industry leaders from developed economies.¹ For example, Embraer (Brazil) is now the world's fourth largest aircraft manufacturer and Haier (China) is the world's fourth largest home appliance manufacturer. In some cases, emerging-economy firms are expanding and strengthening their market positions by acquiring developed-economy firms, including the recent acquisition of Jaguar (UK) by Tata Motors (India). Aside from anecdotal reports of high-level corporate strategies adopted by certain emerging-economy firms,² there is little scholarly evidence concerning the operational details of how emerging-economy firms are becoming competitive with developed-economy firms.

One potential explanation is that emerging-economy firms are becoming competitive because of cost and currency considerations in the home country, such as lower labor costs, lower pension obligations or favorable exchange rates.³ While these considerations play a role, they cannot be the complete explanation because emerging-economy firms also compete effectively in developed economies using developed-economy resources. For example, Cemex (Mexico) is the world's third-largest cement producer. While Cemex has substantial operations in its home country, Cemex also has significant operations in several developed economies including Spain, the UK and Australia.⁴

This paper leverages an extensive survey of hundreds of firms in emerging and developed economies to identify another potential reason: the heterogeneous adaptation of Internet business practices. Information technology and the Internet have accelerated the capability of firms to coordinate processes and personnel across organizational and geographic boundaries.⁵ This, in turn, has facilitated a dramatic increase in the pace of economic globalization. Unlike previous models of internationalization, which primarily involved firms from developed economies expanding their sales and manufacturing operations into emerging economies, this current round of globalization features the development of "a pack of fast-moving, sharp-toothed new multinationals that is emerging from the poor world."⁶ For example, Acer (Taiwan) developed a foundation in the personal computer industry by using the Internet to create a global production and marketing network. This enabled Acer to share marketing information

with customers and suppliers, synchronize order fulfillment, and increase the efficiency and effectiveness of its production and sales operations.⁷ Acer built on this foundation to become the fastest-growing PC vendor over the past several years. Acer recently announced the acquisition of rival Gateway (USA), making the combined company the third-largest global PC vendor.

In response to the challenge from emerging-economy firms, firms in both developed and emerging economies have begun to reexamine their competitive strategies. While in the past firms could adopt a single strategy focused on either revenue growth or cost reduction to win and defend their market,⁸ they must now simultaneously achieve both revenue growth and cost reduction to be successful in the global marketplace.⁹ Information technology and the Internet enable revenue growth through improved customer relationships and cost reduction through supply chain integration. This paper examines these issues and illustrates their implications for managers. We base our analysis on a 10-country organizational-level survey spanning North and South America, Europe and Asia, conducted by the Center for Research on Information Technology and Organizations (CRITO) at the University of California, Irvine. We reinforce the survey data with case examples drawn primarily from Fortune Global 500 firms (Appendix 1).¹⁰

Prior literature suggests that there may be differences between developed-economy firms and emerging-economy firms based on cultural and infrastructure considerations.¹¹ Because emerging-economy firms are generally smaller and have fewer resources than developed-economy firms, emerging-economy firms might be expected to have a relatively lower level of adoption of Internet business practices.¹² In terms of drivers for and benefits from Internet business practices, while there is no reason to expect similar drivers and benefits, there has been a lack of previous research that might identify specific differences. Interestingly, our findings run counter to these two expectations. While the overall level of adoption for emerging-economy firms may be somewhat similar to developed-economy firms (see Appendix 2), our study identifies some key differences in relative drivers and benefits. We find that, compared with developed-economy firms, leading emerging-economy firms place a relatively higher priority on using the Internet for customer service and support and for integrating business processes with

suppliers. Emerging-economy firms are also relatively more driven to adopt Internet business practices to expand existing markets and enter new markets, and as a result report a relatively greater impact to international sales growth compared with developed-economy firms. These findings suggest that the Internet has been a key resource enabling emerging-economy firms to position themselves as credible competitors to long-established incumbents from developed economies.

2. COMPETITIVE ADVANTAGE AND INTERNET BUSINESS PRACTICES

Prior literature has introduced frameworks to help firms understand how to strategize and organize their operations to achieve competitive advantage in the global marketplace. Porter and Millar describe the firm as a value chain of primary and support activities within a value system that includes suppliers and buyers.¹³ Firms can achieve competitive advantage through superior coordination of primary and support activities internally within the firm and externally with suppliers and buyers, and by reducing the cost and enhancing the differentiation of their products and services. Grant uses the resource-based view of the firm to identify specific resources that can lead to cost and differentiation advantage, and ultimately to competitive advantage and market leadership.¹⁴ Treacy and Wiersema identify three paths to market leadership – operational excellence, customer intimacy and product leadership.¹⁵ Hagel and Singer describe three similar core processes as infrastructure management, customer relationship management and product innovation, and state that firms must properly structure their organizations to achieve the economies of scale, scope and speed required by each core process.¹⁶ While each framework contains different elements (and some elements have played a more prominent role than others in subsequent theory-building), the elements fall into four general categories as shown in Table 1.

Table 1. Dimensions for Competitive Advantage

	Porter and Millar	Grant	Treacy and Wiersema	Hagel and Singer
Customer	<ul style="list-style-type: none"> • Marketing and sales • Service • Outbound logistics 	<ul style="list-style-type: none"> • Marketing, distribution and service capabilities • Brands 	<ul style="list-style-type: none"> • Customer intimacy 	<ul style="list-style-type: none"> • Customer relationship
Supply Chain	<ul style="list-style-type: none"> • Procurement • Inbound logistics 	<ul style="list-style-type: none"> • Access to low-cost inputs 		
Operations	<ul style="list-style-type: none"> • Operations • Firm infrastructure • HR management 	<ul style="list-style-type: none"> • Process technology • Size of plants 	<ul style="list-style-type: none"> • Operational excellence 	<ul style="list-style-type: none"> • Infrastructure
Product	<ul style="list-style-type: none"> • Technology development 	<ul style="list-style-type: none"> • Product technology 	<ul style="list-style-type: none"> • Product leadership 	<ul style="list-style-type: none"> • Product innovation
	<ul style="list-style-type: none"> • Porter and Millar (1985), 151 	<ul style="list-style-type: none"> • Grant (1991), 118 	<ul style="list-style-type: none"> • Treacy and Wiersema (1993), 85, 87, 89 	<ul style="list-style-type: none"> • Hagel and Singer (1999), 135

These researchers also address the role of information technology in competitive advantage. For example, Porter and Millar state that information technology permeates the value chain and can be used to coordinate primary and support activities. During the early stages of Internet deployment among large firms, Hagel and Singer note the potential for the Internet to redefine firms' structure and processes. Since its deployment, the Internet has continued to transform the customer, supply chain and operations dimensions of competitive advantage.¹⁷ In our data and analysis, we focus on and investigate these three dimensions to understand how emerging-economy firms are using Internet business practices to achieve customer relationships, supply chain integration and operational efficiency to compete effectively with developed-economy firms.

The Globalization and Electronic Commerce (GEC) Project was led by the Center for Research on Information Technology and Organizations (CRITO) at the University of California, Irvine, and involved collaboration with a team of researchers from around the world. A centerpiece of the GEC project was a 2002 survey of 2,139 firms across 10 countries (Brazil, China, Denmark, France, Germany, Japan, Mexico, Singapore, Taiwan, United States) to study their electronic-commerce drivers, use, barriers and outcomes. Because the objective of this paper is to better understand Internet business practices of large firms, we focus on respondent firms with over 250 employees. Of these, 476 provided

complete responses to the questions of interest for this study.¹⁸ Four-hundred fourteen are developed-economy firms and 62 are emerging-economy firms with a higher proportion of sales outside their home country.¹⁹ These 62 emerging-economy firms most closely resemble the emerging multinational firms of interest for this study. As such, we are not making comparisons about emerging-country and developed-country firms in general, but about two groups of firms that are more likely to compete with each other in global markets.

While previous research has addressed specific Internet business practices such as online sales and online purchases, most existing papers focus on a specific business practice, a specific company, a specific industry or a specific country.²⁰ This paper takes a broader perspective, capturing a range of Internet business practices across a large set of firms in developed and emerging economies. We complement the survey data with case examples that illustrate the use of Internet business practices to compete in the global economy.

We seek to address three sets of questions:

1. How do firms use the Internet, and how does Internet usage differ between firms in developed and emerging economies?
2. What motivates firms to adopt Internet business practices? Are the main adoption drivers different in developed and emerging economies?
3. What do firms in developed and emerging economies see as the main business value arising from adoption of Internet business practices?

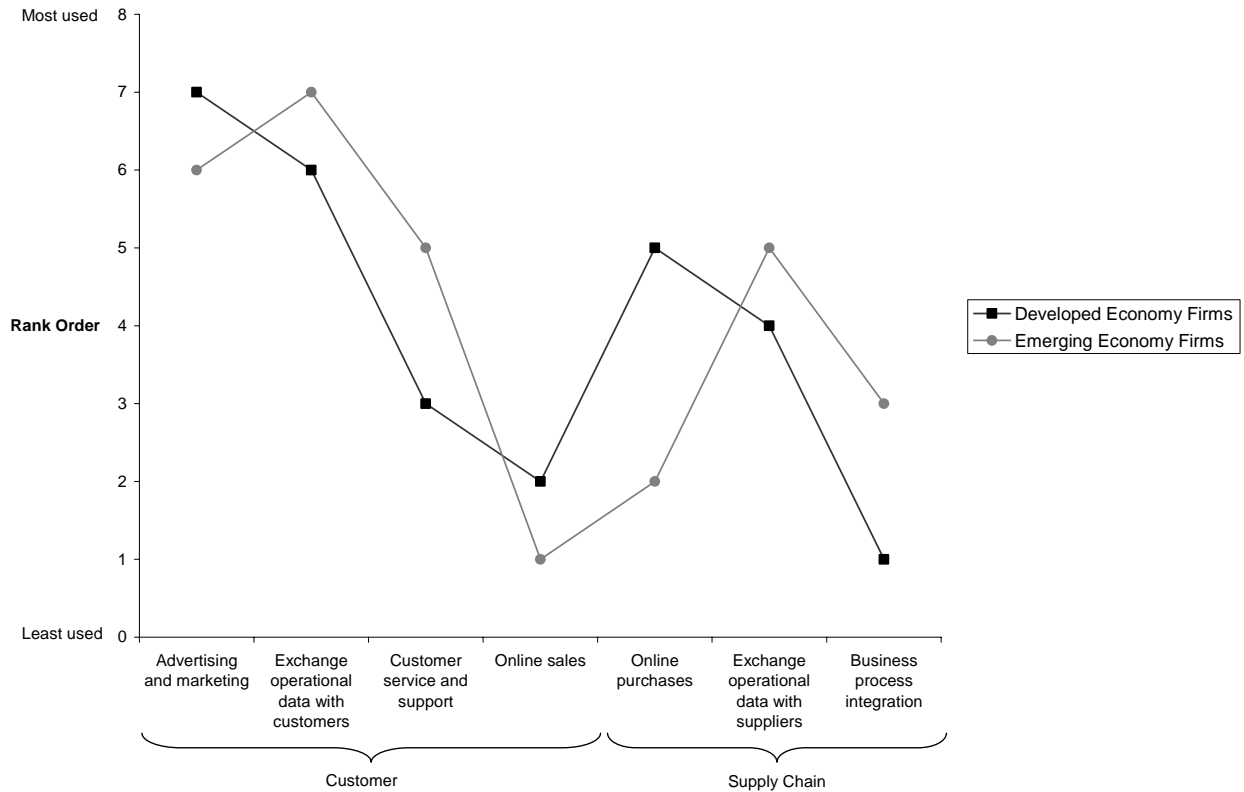
3. DIFFERENCES IN INTERNET BUSINESS PRACTICES

3.1 How do firms use the Internet?

Figure 1 summarizes the survey results for items measuring the use of Internet business practices by developed-economy firms and emerging-economy firms in our study. The seven Internet business practices are grouped into categories for the competitive advantage dimensions discussed above: four practices that relate to customers and three practices that relate to the supply chain. The darker line shows the rank order for use of Internet business practices by developed-economy firms, and the lighter line

shows the rank order for use of Internet business practices by emerging-economy firms. Gaps between the two lines show differences in the relative rank order of Internet business practice use in developed and emerging economies. We focus our analysis based on differences in rank order, rather than differences in underlying detail scores. Detailed scores for the survey questions are provided in Appendix 2.

Figure 1. Use of Internet Business Practices



Note:

1. For emerging-economy firms, the detailed score for two responses was equal (“After sales customer service and support” and “Exchanging operational data with suppliers”). Therefore, we assigned an equal ranking to these two responses for emerging-economy firms.
2. This survey question did not include Operations-related responses. Accordingly, we do not have an Operations category in this Figure.

Developed-economy firms and emerging-economy firms assign a similar ranking to three of the four customer-facing practices in our survey. For both groups of firms, online advertising and data interchange with customers are the highest-ranked business practices. The use of the Internet for

advertising and marketing to current and potential customers is driving the booming market for Internet-based advertising (which Google in particular has captured very profitably), and takes advantage of the Internet's potential to broadcast simultaneously to a larger and more-targeted audience than can be reached through alternative media.

Although use of the Internet for business-to-consumer (B2C) and business-to-business (B2B) sales was a common preoccupation during the dot-com boom of the 1990s, our survey shows that the customer-facing application of online sales is among the lowest-ranked Internet applications in both developed and emerging economies. One reason is that firms have struggled to find the right formula for incorporating online sales into their operations. Carrefour (France) provides an example of how online sales are not always successful, even in the retail industry, and that retailers can face channel-conflict challenges when online sales compete with their existing brick-and-mortar store operations. Carrefour is the world's second-largest retailer, with nearly half of its sales coming in its home country. Carrefour has made multiple attempts at online sales, and is still working to find a successful formula. In late 2001, Carrefour closed a beauty website after only nine months of operation, and also closed several other non-food websites around the same time.²¹ Carrefour then opened another website to sell groceries and other products in France and Spain, but has accumulated losses of \$13.0 million on modest sales of \$38.5 million and has considered selling the website. Carrefour's latest online venture, online.carrefour.fr, offers 125,000 non-food products served by two dedicated warehouses. Channel conflict may explain why firms place a low ranking on the use of online sales.

Of the three supplier-facing practices in our survey, both developed- and emerging-economy firms place a high ranking on data exchange with suppliers. Quanta Computer (Taiwan) is an example of an emerging-economy firm that uses the Internet to exchange operational data with suppliers and customers. In its role as a leading designer and manufacturer of notebook computers for customers such as Hewlett-Packard (USA) and Dell (USA), Quanta must coordinate its operations with the production and delivery operations of its suppliers. Based on forecasts from customers and in-house estimates, Quanta publishes a 13-week schedule for suppliers and updates this schedule daily on its extranet.²²

Quanta's suppliers are able to access the schedule, and make necessary production schedule adjustments that will result in timely delivery to Quanta. Customers place orders using EDI or web-based tools and go into Quanta's order management system, known as Shanghai Direct Ship (SDS). Purchase orders for components are generated by the ERP system and put on a secure web site for suppliers to download. According to Quanta, IT and the Internet provide a competitive advantage by enabling the firm to offer build-to-order production to its customers.²³

While developed- and emerging-economy firms assign similar rankings to four of the Internet business practices, there are differences in rankings for the other three Internet business practices reported in Figure 1. Developed-economy firms place a higher ranking on the use of online purchases compared with emerging-economy firms. This difference is not too surprising. Developed-economy firms have extended their supply chains worldwide, and it is now common for them to purchase inputs from distant suppliers using online purchasing capabilities.

The other two differences may reveal more about how emerging-economy firms are beginning to leverage the Internet to compete on a more-equal footing with their developed-economy rivals. Developed-economy firms are leaders in many industries, due in part to skilled labor, infrastructure and domestic rivalries that strengthen their competitive capabilities.²⁴ While it might be generally assumed that developed-economy firms should be better at exploiting the most sophisticated technology and business practices for relationships with customers and suppliers, our survey actually shows that emerging-economy firms place a relatively higher ranking on using Internet business practices that support customer service. For example, Cemex uses the Internet as part of its customer-service strategy. The pre-mixed cement market is characterized by very short time windows during which the product must either be delivered to customers or spoil. To make matters even more complex, Cemex has extensive operations in emerging economies that are frequently characterized by poor roads, high traffic and irregular construction schedules. To address these challenges, Cemex equips its delivery trucks with Internet-enabled Global Positioning System (GPS) technology.²⁵ Customers can use the Internet to check the status of their orders and monitor shipments and deliveries to ensure that their construction projects

remain on schedule. This is an example of how emerging-economy firms can use the Internet to overcome some of the disadvantages of a poor transportation and communications infrastructure to deliver world-class customer service.

Emerging-economy firms also place a relatively higher ranking on using the Internet to integrate business processes with suppliers. The significance of this can be better understood if we first consider how process integration is changing the way businesses organize and compete, using an example from a developed-economy firm. Boeing (USA) demonstrates the value of seeking out the best capabilities to apply to each step of a business process, and to acquire that capability from wherever it resides – whether inside or outside the boundaries of the firm. Boeing's latest entry into the commercial airplane market, the 787, is nominally a Boeing product because the system level design, integration and marketing are done by Boeing. However, no one firm has the capability within its own corporate boundaries to design or manufacture the entire 787 aircraft. Boeing's partner firms build components and subassemblies to their own specifications – not to Boeing's. The information infrastructure that allows such a partnership to function as if it were a single, cohesive enterprise represents an example of the use of IT and the Internet to form a complete business process by combining services and capabilities from various organizations.²⁶ Unfortunately for Boeing, there have been costly delays at the final integration stage, suggesting that progress is still required to achieve success with such a modular approach.²⁷

Our survey results suggest that emerging-economy firms recognize the potential for using the Internet to form similar opportunistic business partnerships, and to leverage these partnerships to compete with long-established industry leaders from developed economies. Haier is considered by some observers to be China's first global brand. The firm uses its external business-to-business network iHaier to find the best suppliers and establish close partner relationships.²⁸ Functionality present in iHaier includes ordering, automated stock replenishment, payment processing and production-related control processes. Suppliers can use iHaier to present their service offerings, inquire about forecast demand, check accounts receivable, receive payment information for goods, and send or receive suggestions on how to improve operations. Haier coordinated its Internet implementation as part of a broader set of organizational and

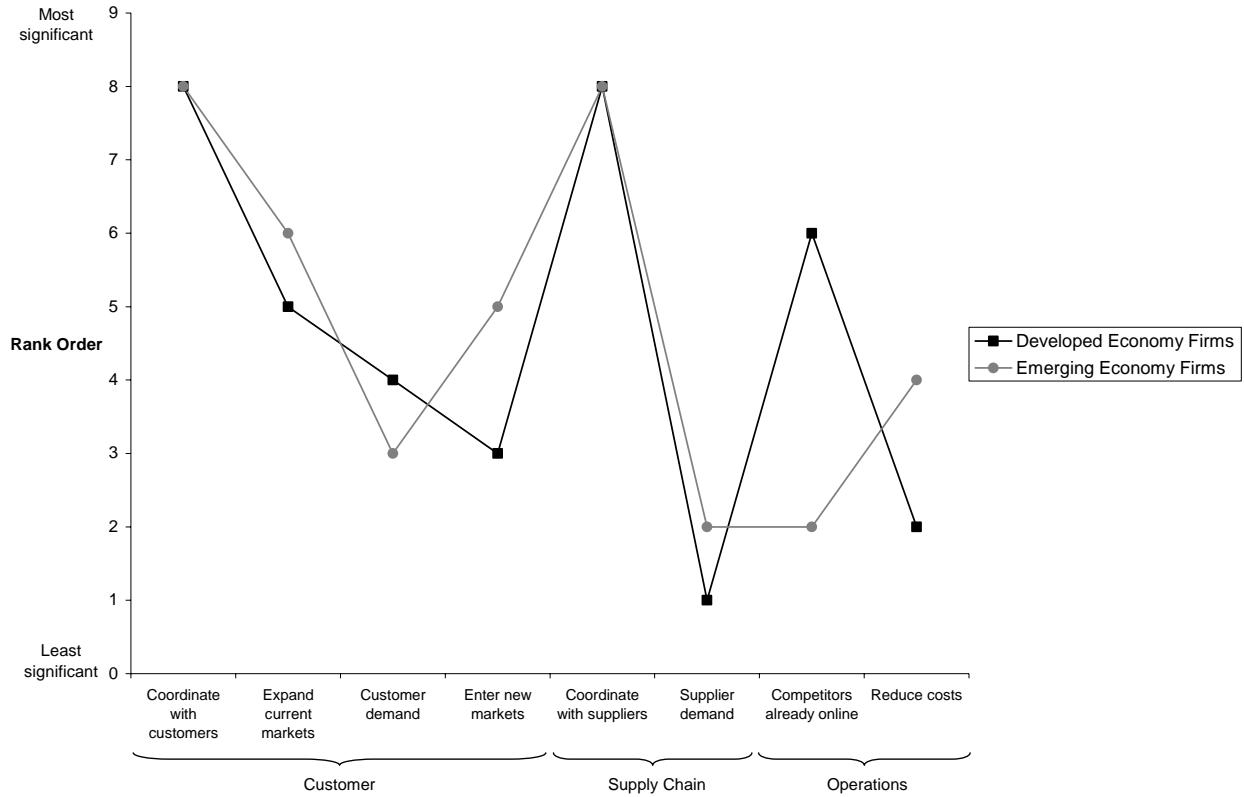
strategic initiatives. Prior to deploying its iHaier B2B network, Haier reengineered its business processes and organizational structure to facilitate Internet-based supply chain management and integration.²⁹

While Boeing is an example of a developed-economy firm that uses the Internet to integrate business processes with its partners, our survey results indicate that this is the lowest ranked Internet business practice for developed-economy firms. Emerging-economy firms may place a relatively higher ranking on Internet-based process integration because these firms see the Internet as a strategic opportunity. In some cases, they are using the Internet to participate in collaborative business processes on an equal footing with developed-economy rivals.

3.2 What drives firms to adopt Internet business practices?

In Figure 2, we shift our focus to the motivations of Internet adoption by firms in our global survey. The eight drivers included in our survey can be categorized according to the three dimensions for competitive advantage that are the focus of this paper: customer, supply chain and operational considerations. Figure 2 summarizes the eight Internet adoption drivers for the developed-economy firms and emerging-economy firms in our study. We again focus our analysis on differences in rank order between developed- and emerging-economy firms. Detailed scores are provided in Appendix 2.

Figure 2. Drivers for Adoption of Internet Business Practices



Notes:

1. Because the GEC survey included a combined response for “suppliers and customers,” we placed this combined response in both the Customer and Supply Chain categories.
2. For emerging-economy firms, the detailed score for two responses was equal (“Suppliers required it” and “Major competitors were online”). Therefore, we assigned an equal ranking to these two responses for emerging-economy firms.
3. The GEC survey also included two government-related responses that are not addressed in this paper “Required for government procurement” and “Government provided incentives.” These responses are not included in this analysis.

Firms in both developed and emerging economies rank coordination with customers and suppliers as the most significant driver for adoption of Internet business practices. For example, Flextronics (Singapore) adopted Internet business practices to coordinate directly with its customers. Flextronics designs, manufactures and assembles electronic equipment for customers such as Cisco (USA), Hewlett-Packard, Microsoft (USA) and Siemens (Germany). As part of a contract with the telecommunications company Extreme Networks (USA), Flextronics was responsible for manufacturing and shipping network

switches directly to Extreme Networks' downstream customers. Extreme Networks wanted to have visibility into Flextronics' manufacturing processes, including yield, defects, repairs and components. However, such visibility was not possible with the processes that Flextronics had previously used to collect and analyze production data. Therefore, Flextronics invested in an online collaborative manufacturing solution that could provide the monitoring, issue tracking and reporting capabilities desired by international customers. This online solution helped Flextronics increase throughput yield for new products by 40% and reduce inventory by 30% in the relationship with Extreme Networks.³⁰

While the ranking of five Internet adoption drivers shown in Figure 2 is similar for developed- and emerging-economy firms, there are important differences among the other three drivers. Emerging-economy firms place a relatively higher ranking on the motivation to use the Internet to enter new businesses and markets (and a slightly higher ranking to expand the market for existing products and services). This suggests that emerging-economy firms believe that Internet applications will give them enhanced capabilities to connect with their current and potential customers. Banco Bradesco (Brazil) is one emerging-economy firm that uses the Internet to expand and enter new markets for its products and services. Only 30% of Brazilian consumers have bank accounts, which leaves significant room for growth in that banking market. At the same time, Brazilians who use the Internet spend considerable time online – in June 2005 Brazil led all countries in the Ibope/NetRatings rankings of user time spent online with 17 hours per month. To tap into this growth potential, Banco Bradesco now offers over 250 types of transactions for individual and corporate customers online, and has significantly increased the proportion of its customers that use online banking from 0.5% in 1996 to 9.5% in 1999 to 38% in late 2005, with about 10% of customer transactions now conducted over the Internet.³¹ During this growth phase, Banco Bradesco estimated that about half of its new customers chose the bank because of its Internet banking capabilities.³²

Cost reduction also plays a more significant role in adoption of Internet business practices for emerging-economy firms than for developed-economy firms. For example, Haier has achieved a lower cost structure than peer firms using its iHaier B2B portal. In 2001, Haier's cost of finished products was

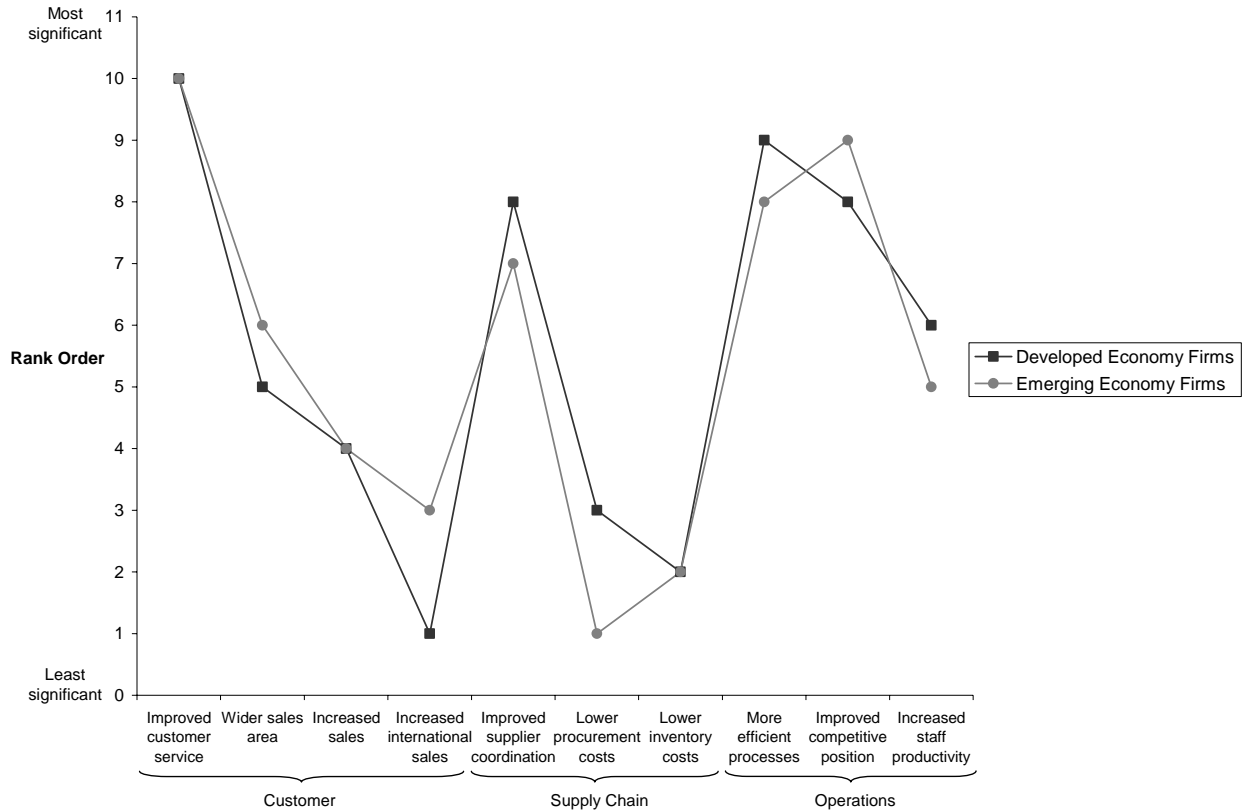
8% of sales, compared with 30% for all other China domestic firms. The same year, logistics accounted for 7% of commodity costs, compared with the China national average of 15%.³³ Samsung (Korea) has also used Internet business practices to achieve a reduction in costs. Samsung Electronics America's Digital IT Division (DITD) launched a partner portal to provide catalog information and marketing tools to 13,000 resellers. This portal helped Samsung to achieve a 25% reduction in marketing costs related to improved service and better ability to segment resellers.³⁴

While emerging-economy firms place a relatively higher ranking on adopting Internet business practices to enter new markets and reduce costs, our survey results suggest that developed-economy firms are more driven by external considerations such as whether major competitors are already online. These findings support the view that emerging-economy firms may be more motivated than developed-economy firms to proactively exploit the strategic potential of online applications.

3.3 What is the perceived business value of adoption?

In Figure 3, we report survey results that shed light on an important question from a managerial perspective – what business-value benefits have firms received from their Internet applications? For the developed- and emerging-economy firms in our study, Figure 3 categorizes the Internet business benefits using the customer, supply chain and operations categories discussed earlier. We continue to focus our analysis on the differences in rankings between developed- and emerging-economy firms. Detailed scores are provided in Appendix 2.

Figure 3. Business Value of Internet Business Practices



Note:

1. For developed-economy firms, the detailed score for two categories was equal (“Suppliers required it” and “Major competitors were online”). Therefore, we assigned an equal ranking to these two categories for emerging-economy firms.

Just as customer considerations are a key dimension of competitive advantage and a driver for the adoption of Internet business practices, both developed- and emerging-economy firms rank customer-service improvement as the greatest benefit from adoption. In general, online applications can provide customer-service benefits through quicker and more-accurate transmission of orders, more-frequent reporting of order and delivery status, and the ability to customize products and services via the Internet. For example, the Internet enables Quanta Computer to receive orders on a continuous basis and gives its customers greater flexibility to customize their orders. “We used to have one purchase order for 1,500 computers, now we have one purchase order for each machine,” said a Quanta deputy director.³⁵ While

Quanta manufactures computers for original equipment manufacturers (OEMs) such as Hewlett-Packard and Dell, Quanta now has the capability to do a degree of build-to-order and direct ship to end customers who place their orders with the OEMs.

Another highly-ranked benefit for developed-economy firms and emerging-economy firms is internal process efficiency. Danske Bank (Denmark) illustrates that the implementation of Internet applications sometimes motivates additional organizational initiatives aimed at improving internal processes. Danske embarked on an effort to deploy a services-oriented architecture (SOA) to improve business process management and integration.³⁶ After making over 1,000 services available, Danske realized that it could not efficiently locate the services it needed. So the bank reexamined its business process and application functions and developed a more manageable collection of 140 services. Danske established a repository of the services and the relationships between the business process and functional models, and established a governance process to define and enforce best practices. As a result, Danske is now able to more effectively match business processes with the SOA framework that it exposes to the Internet.

Interestingly, neither developed-economy nor emerging-economy firms rank procurement- and inventory-cost reduction as a key benefit of Internet business practices. One possible explanation is that firms are not yet using the Internet to its highest potential for data and process integration (see Figure 1), and therefore may not yet be realizing full supply-chain efficiencies from their Internet operations. Another possible explanation is that firms (particularly in developed economies) are deriving data-flow integration benefits from previous technologies such as EDI, and may not be pursuing these benefits through Internet use. A different explanation that aligns with our interpretation of the adoption drivers is that the Internet can enable firms to compete more effectively in existing and new markets. When firms view the Internet in this way, they will not rank its potential for wringing cost savings out of existing supply chains as highly as the potential for the Internet to position firms as more nimble and competitive in the global marketplace.

Consistent with this interpretation, emerging-economy firms rank the benefits of increased international sales (and wider sales areas) more highly compared with developed-economy firms. For example, the Samsung partner portal discussed earlier also enabled Samsung DITD to report a 30% increase in commercial sales in the Americas. Samsung's products and business processes have enabled the firm to build a global brand value of \$16.8 billion,³⁷ placing Samsung ahead of developed-economy firms such as Sony (Japan), Dell, Apple (USA) and Canon (Japan). This suggests the possibility that emerging-economy firms may be more motivated than developed-economy firms to deploy Internet applications to enable such competitive strategies as customer relationships and supply chain integration (see Table 1). We recognize that there are other possible explanations for this finding. For example, emerging-economy firms may be unencumbered by legacy systems and turn by default to Internet applications for all new IT deployments. It is also possible that the rapid growth of their home economies may afford a greater payoff from technology investments in general, or that the competition level within emerging economies may be lower so that the IT payoff accrues mainly to the more competitive arena of international sales. There may also be other explanations that future research could help clarify.

While emerging-economy firms rank the impact of international sales growth more highly compared with developed-economy firms, neither group of firms rank high overall sales as a key benefit of Internet business practices. There may be a question of whether electronic commerce on its own is a true competitive differentiator for revenue growth, or whether the revenue advantages of electronic commerce may decline as other firms also adopt.³⁸ Previous research suggests that ultimately the competitive advantage of a technology is attributable to the firm's management skills and processes that surround the technology.³⁹ This leads to the question of whether emerging-economy firms, which appear more motivated to adopt Internet business practices related to customer relationships and supply chain integration, can leverage these practices to compete more effectively with developed-economy firms.

With respect to customer relationships, a big issue for emerging-economy supplier firms is whether they can effectively use the Internet to directly reach end consumers, bypassing the developed-economy brand name suppliers and large retailers that currently act as intermediaries. ASUSTeK

(Taiwan) is one emerging-economy firm that is successfully making this transition. While ASUSTeK may be better known as a contract manufacturer for Apple iPods, ASUSTeK now sells branded notebooks in several markets, including the highly successful eeePC notebook. In 2008, ASUSTeK spun off its contract manufacturing businesses and retained its branded product lines. While the question of whether other emerging-economy firms can also make this transition relate to overall management practices including marketing and logistics, the Internet business practices and IT skills that emerging-economy firms develop as a supplier to developed-economy firms can serve as a valuable enabler of these strategies.

4. CONCLUSION AND MANAGERIAL IMPLICATIONS

The survey results and case studies, when considered in a strategic framework, provide important information for managers who are evaluating the strategic value of investments in Internet business applications. Managers should consider such investments with a view to revenue growth through customer relationships, and cost reduction and business process improvement through supply chain integration.

Our survey results suggest that emerging-economy firms place a relatively higher ranking on using the Internet to achieve customer relationships and supply chain integration, and to establish their firms in the global marketplace. Internet business practices for developed-economy firms appear to be relatively more driven by external pressures such as whether competitors are online, and developed-economy firms are relatively more likely to use the Internet to automate purchase transactions. Given that many OEMs and end customers are located in developed economies, the onus may be on emerging-economy firms to connect and integrate with their customers using the Internet. Nevertheless, emerging-economy firms are responding proactively to this opportunity, and our case examples provide added insights on how emerging-economy firms are incorporating the Internet into their business strategies and using the Internet to develop a virtual global presence through partnerships that can compete with developed-economy firms.

While previous IT innovations offered benefits primarily in terms of cost reduction and operational efficiency, the Internet has the potential to drive both revenue growth and cost reduction. Further, the Internet has the capability not only to automate existing transactions, but also to integrate processes between business partners. The survey results in our 10-country study identify key differences between emerging-economy firms and developed-economy firms in their motivation, use and benefits of Internet business practices. This leads us to believe that the Internet is a key enabler of the business strategies that are allowing emerging-economy firms to arise as credible multinational competitors in their industries.

This paper presents at least three important implications for managers of global firms (see Table 2). First, if they have not already done so, managers in developed-economy firms must recognize the growing competitive potential of emerging-economy firms. There is a tendency for managers to consider only traditional competitors and immediate peers when evaluating the competitive landscape, and industry leaders have historically been more likely to come from developed economies. However, a new group of competitors is emerging, and our research shows that these emerging-economy competitors appear to have an aggressive agenda for leveraging the Internet to strengthen customer relationships and integrate their supply chains. To the extent that these initiatives are successful, emerging-economy firms may be able to present themselves online as fully capable of competing for business with their more established and experienced rivals from developed economies.

Table 2. Managerial Implications

Implication	Description
Broaden perceived competitive landscape.	Managers must move beyond the mindset of considering only traditional competitors and immediate peers from other developed economies. Instead, they need to account for and respond to the competitive threat posed by fast-rising competitors from emerging economies.
Leverage Internet for integration.	Different from previous technologies, the Internet has the potential to establish collaboration and virtual partnerships across firms. Managers must move their Internet initiatives beyond transaction automation, to integrate data and processes with their business partners.
Leverage Internet for revenue growth and cost reduction.	Revenue growth and cost reduction are no longer mutually exclusive, firms must now pursue both objectives simultaneously to compete in the global marketplace. Managers must ensure that their Internet initiatives are designed and implemented to achieve both revenue growth through customer relationships and cost reduction supply chain integration.

Second, as global firms move further into using the Internet to integrate data and processes across geographic locations and firm boundaries, they will create virtual organizations that can compete in industries that have to date been dominated by developed-economy firms with a more traditional, hierarchical and formal organizational structure. We see a clear example of this phenomenon in the IT service industry. Infosys (India) has grown into a billion-dollar firm by providing outsourcing IT solutions to North American and European clients, where solutions were traditionally provided by developed-economy vendors such as IBM (USA) and Electronic Data Systems (USA). Low-cost programming talent in India enables Infosys to compete effectively on price, but Infosys must then coordinate its offshore teams with onsite teams and client staff. Infosys achieves this coordination using IT and Internet applications such as project management and integrated development tools, combined with various process and organizational mechanisms such as the Capability Maturity Model (CMMI).⁴⁰ Competition from emerging-economy firms such as Infosys, TCS (India) and Wipro (India) is one factor that has forced developed-economy IT firms to expand their Indian operations and develop their own IT-enabled methods for managing their global operations. IBM now has over 70,000 employees in India, more than in any other country outside the U.S.

Once successful virtual organizations are formed they may be difficult for others to emulate, because they can lock up the world's best combinations of capabilities into long-term partnerships involving high levels of relationship-specific investment. For this reason, it is possible that investments in Internet applications linking partners to form virtual organizations could become a source of sustainable competitive advantage, unlike investments in transactional applications that are relatively easy for others to replicate. Managers must carefully evaluate the Internet initiatives in their own firms, and ensure that these initiatives are progressing beyond advertising and marketing and beyond online transactions to include customer relationships and supply chain integration that can infuse the firm with new capabilities.

Third, managers must review their firms' Internet investment decisions and implementation practices to create favorable conditions for revenue growth. We find that customer considerations are a primary motivation for firms to adopt Internet business practices and customer service is a primary benefit of Internet business practices, yet firms do not rank overall revenue growth as a primary benefit. Instead, we find that a number of highly-ranked benefits of Internet business practices relate to operational efficiency, which is similar to the outcomes of other technology implementations. Because Internet business practices have the potential to contribute to both revenue growth through customer relationships and cost reduction through supply chain integration, firms must focus on their Internet business practice implementations to ensure that they achieve both the revenue growth and the cost reduction necessary to compete effectively in the global marketplace.

Internet business practices constitute a disruptive technology because they offer greater potential than traditional technology implementations for firms to combine partner capabilities to innovate with new products and services. The Internet is an enabler of forces that have been widely discussed as leading to a flatter and more fluid global competitive landscape.⁴¹ Our survey results extend the idea of global flattening beyond the labor market and supply chain effects. The Internet is now giving emerging-economy firms the tools they need to challenge the developed world's strategic advantage in key industries, because it allows them to form partnerships that can conduct product development, marketing,

logistics and customer service activities as effectively and efficiently as their more mature rivals. We believe that this will lead to distinctions between developed and emerging economies becoming increasingly blurred at the strategic level, and that incumbent industry leaders will in some cases be surprised at the speed with which their current dominance is challenged. Using online tools effectively as a principle enabler of business strategy will be a prerequisite for success as firms compete in the global marketplace.

Appendix 1. Fortune Global 500 Firms in Case Examples

2008 Fortune Global 500 Ranking (if applicable)	Firm Name	2007 Sales (US Billion \$)	Industry	HQ Country	Developed / Emerging Economy
1	Wal-Mart	378.8	Retail	USA	Developed
33	Carrefour	115.6	Retail	France	Developed
37	Siemens	106.4	Electronics	Germany	Developed
38	Samsung	106.0	Electronics	Korea	Emerging
41	Hewlett-Packard	104.3	Electronics	USA	Developed
46	IBM	98.8	Services	USA	Developed
75	Sony	77.7	Electronics	Japan	Developed
93	Boeing	66.4	Aircraft	USA	Developed
106	Dell	61.1	Electronics	USA	Developed
136	Microsoft	51.1	Software	USA	Developed
189	Canon	38.1	Electronics	Japan	Developed
204	Banco Bradesco	36.1	Banking	Brazil	Emerging
218	Cisco	34.9	Electronics	USA	Developed
238	Danske Bank	32.0	Banking	Denmark	Developed
292	Flextronics	27.6	Electronics	Singapore	Developed
315	Tata	25.7	Various	India	Emerging
337	Apple	24.0	Electronics	USA	Developed
344	Quanta Computer	23.7	Electronics	Taiwan	Emerging
363	ASUSTek	23.0	Electronics	Taiwan	Emerging
384	Electronic Data Systems	22.1	Services	USA	Developed
389	Cemex	21.7	Materials	Mexico	Emerging
-	Haier	14.2 *	Appliances	China	Emerging
-	Embraer	5.2	Aircraft	Brazil	Emerging
-	Wipro	3.4	Services	India	Emerging
-	Infosys	3.1	Services	India	Emerging
-	Extreme Networks	0.3	Electronics	USA	Developed

* 2006 revenue

Appendix 2. Detailed Scores for Survey Questions

Relative ranking outside parentheses, detailed percentage or score in parentheses

Competitive Advantage Dimensions	Survey Question and Response Items	Developed Economy Firms (n=414)	Emerging Economy Firms (n=62)
Customer Supply Chain	Does your establishment use the Internet for.. - Advertising and marketing purposes - Exchanging operational data with business customers - After sales customer service and support - Making sales online - Making purchases online - Exchanging operational data with suppliers - Formally integrating processes with suppliers or business partners	1 (69%) 2 (57%) 5 (50%) 6 (37%) 3 (55%) 4 (54%) 7 (36%)	2 (58%) 1 (61%) 3t (47%) 7 (34%) 6 (37%) 3t (47%) 5 (45%)
Customer Supply Chain Operations	Please rate how significant each of the following (factors) was to your organization's decision to begin using the Internet for business. Scale 1 (low) – 5 (high) - To improve coordination with customers (and suppliers) - To expand market for existing product/services - Customers demanded it - To enter new businesses or markets - To improve coordination with (customers and) suppliers - Suppliers required it - Major competitors were online - To reduce costs	1t (3.36) 4 (3.18) 5 (3.13) 6 (2.95) 1t (3.36) 8 (2.33) 3 (3.19) 7 (2.92)	1t (3.87) 3 (3.77) 6 (3.47) 4 (3.71) 1t (3.87) 7t (2.98) 7t (2.98) 5 (3.48)
Customer Supply Chain Operations	Please rate the degree to which your establishment has experienced the following impacts since it began using the Internet for business. Scale 1 (low) – 5 (high) - Customer service improved - Sales area widened - Sales increased - International sales increased - Coordination with suppliers improved - Procurement costs decreased - Inventory costs decreased - Internal processes more efficient - Our competitive position improved - Staff productivity increased	1 (2.96) 6 (2.48) 7 (2.34) 10 (1.85) 3t (2.77) 8 (2.23) 9 (2.02) 2 (2.89) 3t (2.77) 5 (2.70)	1 (3.63) 5 (3.21) 7 (3.08) 8 (3.05) 4 (3.31) 10 (2.69) 9 (2.81) 3 (3.50) 2 (3.52) 6 (3.15)

Notes:

1. As noted in section 3, we focus this analysis on 476 large firms (> 250 employees) that provided complete responses to the questions of interest. Of these firms, 414 are developed-economy firms and 62 are emerging-economy firms with a higher proportion of sales outside the home country. These firms most closely represent the emerging multinational firms of interest in our study.
2. t = tie in the detailed score between two responses.

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