IT-DRIVEN BUSINESS MODELS

Global Case Studies in Transformation

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Foreword

It’s no secret that the rules of competition are changing in pretty dramatic ways. Globalization is not just a word; it’s a dynamic, ever-changing reality in all of our business decisions at LEGO. Customer expectations have reshaped some of our core operating assumptions. And information technology is not only reshaping our internal systems but also, and more important, the ability of our customers and fans to connect, to collaborate, and to coordinate.

The LEGO group, a small but global company that I happen to know well, had been a vertically integrated enterprise like many other organizations. We are one of the best-known brands in the world, but we cannot afford a big infrastructure footprint or an organization with a large head count. In order for us to actually achieve global reach, we decided that we needed to open up our business. Inviting partners from across the business landscape gave us access to the scale and entrepreneurship that we couldn’t drive out of our own small organization.

As a result, we have invited partners into every stage of our value chain. We work with partners at retail to bring products to market through franchises and so forth. In production, we work with partners on the manufacturing side. Logistics is run by partners, including Deutsche Post —Germany’s mail carrier—and DHL. Finally, in innovation, we work with 120,000 LEGO fans across the world to innovate new products alongside our 120 or so designers. In this way, we’re capturing incredible leverage.

I think the special nature of LEGO drives us to be more focused on what we really do best, so the inclusion of more partners will only accelerate. I also think being

orchestrators of that dialogue with numerous partners will be extremely challenging on corporations, especially if you operate on a global scale. The risk to us is that we lose our global touch because managing between Dubai, China, New York, and Frankfurt is a huge challenge.

We've received a lot of attention for doing things in this community, this way of co-creation. But people should realize it was not our intent. Traditionally, we had not tracked Net Promoter Score as a measure of customer loyalty. We found out quite by accident that our affinity numbers and affection numbers were off the charts. Once we realized there was an asset right there, mobilizing that loyalty became important.

Make no mistake—that customer loyalty is a two-edged sword. IP (intellectual property) protection is a huge issue when you do co-creation. How much would you let people run with your brand? At the same time, these people don't get paid, and don't expect to be, for their contributions. They work for free and they literally work hundreds of hours for free. We found they respond best to rewards other than financial ones, typically things like recognition. So we now actually launch products where we say, This product was built by Fan So-and-So and you can go to his or her Web site and see all the things this person has done and the like. It's a model that we're still struggling to execute exactly, but it's been an exciting journey.

Our journey is not unique, as readers will see in this book. Several phenomena can be seen across the business landscape. Customers are playing new roles, both in relation to a company and in their interactions with each other on such social networks as Facebook, Twitter, and blogs. Supply chains are being reinvented, with new scales of time and space to manage. Risk, opportunity, innovation, and capital each must be understood in new ways.

Simultaneously managing inside an organization and coexisting with outside ecosystem partners requires new tools and new attitudes. Business models are being reinvented in some fascinating ways. Strategic agility has been forced on us in some ways by the state of the economy. In every one of these examples, information technology is enabling, complicating, and disrupting managers' lives. Thinking systematically about the key issues is an important first step in capturing some of the value of these technologies.

Jørgen vig Knudstorp
CEO, LEGO Group

Preface

Information Technology and Business Model Innovation

We wrote this book to inform a debate that is of critical importance: How can information technology (IT) contribute to business model innovation?

The global economy remains unsteady, despite unprecedented government intervention. Currencies and cultures, workforces and welfare systems, shopping and saving are all undergoing foundational change. Business leaders are competing in a new market—in a new *kind* of market—in which organizational assumptions, capital requirements, and tools for execution are being challenged and reinvented.

Honored brands, such as General Motors, Encyclopedia Britannica, and Sony are trying to reinvent themselves across every facet of their operations. Global economic growth is being driven by neither Europe, Japan, nor the United States, but by China, by Brazil, by South Korea. Google is at once a force in advertising and media, in computing, in software, in mapping and location-related services, and in telephony. One’s vertical industry is no longer destiny.

Given that so many elements of the business environment are in a state of uncertainty or transition, new ways of managing are proving their worth. The importance of a coherent, adaptable business model has been amply demonstrated by both the past decade’s failures and successes, particularly in the tech sector. As the dynamism of the mobile phone market is illustrating, new

technologies can reshape personal behavior, social life, and business opportunity with unprecedented speed. Finally, the availability of more data than ever before is at once providing new opportunities and imposing new requirements on managers to better use information to make decisions.

Drawing on decades of experience in academia, consulting, and executive leadership, the authors begin from a simple premise: Enterprise value relates directly to the value created for one's customers. Value for the customer, in turn, derives from knowledge of the customer's key processes. Great business models build on this foundation.

We have worked to bring a truly global perspective to the book's examples. Thus we have included Economist Intelligence Unit (EIU) case studies from Apple and ABB, Nokia and Li Ning, Endress+Hauser and Saudi Aramco. All told, companies from five continents and virtually every industry vertical are represented.

It is our hope that the reader can take two key messages from the book. First, the challenges of global business demand robust business models, well executed. Second, the pace of innovation and adoption of information technologies is creating new opportunities for margin enhancement, increased customer satisfaction, capital efficiency, and agile organizational behavior. Those companies that can combine the former with the latter will continue to prosper, regardless of the macro forces of uncertainty and volatility.

CEO Agenda

This book is intended to inform an agenda for CEOs and executive managers. It builds on an Economist Intelligence Unit study, on face-to-face interviews of several hours with

nearly 50 global CEOs and board members, and on findings from the academic world, consulting firms, the software industry, and market research companies.

The CEO agenda includes analyses of innovative business concepts as well as practical advice for realizing them. The book's chapters each illustrate an agenda item:

- Chapter 1: Enterprise Value from Customer Value
- Chapter 2: Customer Value from the Customer Process
- Chapter 3: More Customers and More for the Customer
- Chapter 4: Innovation and Personalization Trump Commoditization
- Chapter 5: Silent Commerce
- Chapter 6: Strategy-Compliant Management
- Chapter 7: Value Chain Redesign
- Chapter 8: IT's Role in Business Model Transformation

Enterprise Value from Customer Value: An Overview

This chapter explains how customer value determines enterprise value. Chapter 2 shows how the customer perceives the advantages added to its process by a particular provider. Chapters 3 to 6 introduce innovative business concepts for the core business processes and the management process. Chapter 7 looks at broadening the enterprise's view of the value chain, while Chapter 8 describes how information technologies support or hinder business model change.

Customer Value from the Customer Processes

As CEOs position their firms for both short-term profitability and long-term viability, most will find that customer value relates to a supplier's impact on a customer's process. Customers want to concentrate on the outcomes of their processes, retailers on merchandising and selling, banks on granting loans, and brand owners on positioning their label. With increasing frequency, they expect suppliers to understand and support the customer processes. In practice, this means that suppliers have to relieve customers of the factors that put a strain on their processes, while delivering services that meet customer needs, potentially at any time and any place.

The majority of the companies we surveyed want to migrate from product providers to solution providers and thus bring more value to the customer process than their competitors. In Chapter 2, case studies from COSCO, Hilti, and ABB Turbo show that IT can open new possibilities for catering to customer processes, but also that management must follow this strategic line of attack over the long term.

A company that wants to provide for key aspects of a customer process must concentrate on what it does best and look to partners to deliver any expertise it may lack itself—but it must not leave the customer to coordinate activities. Learning to manage in networks, where persuasion replaces formal lines of authority, represents an organizational challenge for most companies.[1]

> The customer process is beginning to drive an economic shake-up, as the transforming relationship between automotive OEMs and tier 1 suppliers is illustrating.

More Customers and More for the Customer

According to the Economist study, customer access is the area where managers expect to see most change. This is confirmed by our CEO interviews as well as by several surveys of IT investment.[2] The goal in this domain is to reach every important potential customer and serve his needs as fully as possible. This aspiration demands broad, in-depth knowledge of prospective and existing customers, and of their requirements. Integrated customer support structures use and improve on this information each time contact is made with a customer, whether in a search, sales, after-sales, or product development context.

The switch from product to solution sales calls for new price structures (for instance, the sale of the customer's process objective—broken rock—rather than explosives) that until recently would have generated far too much administrative outlay. More important, the entire sales process and value proposition must be rethought and restructured. In nearly every case that we have seen, merging products and services into solutions requires a change to the business model and the supporting business concepts. Case studies from Telefónica and the chemicals industry are included to demonstrate these concepts.

> The battle is on for customer ownership as companies want unprecedented access to and knowledge about customers.

Innovation and Personalization Trump Commoditization

The majority of the CEOs we surveyed cited product and service innovation as pivotal to their company's success and a major reason for remaining in high-wage countries. Case studies from Procter & Gamble, LEGO, and the Swiss precision instrumentation company Endress+Hauser

illustrate this reasoning, while Tata provides another perspective, that of disruptive innovation from the developing world.

Despite all the teething troubles with electronics in vehicles and other devices, companies are competing to provide the most functionally advanced products and services built upon the development of embedded software and electronic services. A vehicle without an antilock brake system, electronic stability program, or navigation system with up-to-the-minute traffic and weather news is virtually unsalable in some customer segments. The challenge from the Tata Nano, meanwhile, lies in exactly the opposite orientation.

The low marginal costs associated with electronic services (such as cash terminals and online social networks) have opened the way for countless new services that human staff alone would never have been able to deliver cost effectively. In every industry sector, electronic services and other IT-based business solutions are driving the personalization of products and services, from mileage-related motor insurance to customer-designed building maintenance packages.

> IT is a necessary but not sufficient condition for a differentiated customer experience that supports profitable businesses.

Silent Commerce

It is taken for granted today that an order will be processed quickly, securely, and cost efficiently to the required level of quality. Ideally, customers will be completely unaware of the fulfillment process—thus the focus on silent commerce—because the necessary products and services they require

for their processes will be available exactly when they need them. As we will see in case studies from the linen supplier CWS-boco and Li Ning, the Chinese athletic apparel firm, suppliers can fulfill this ideal quite ingeniously.

In the 1990s, the desire to fulfill orders efficiently prompted companies to restructure their internal processes; in the future, the same desire will also drive inter-enterprise collaboration. Since the IT required for closer electronic cooperation was not available or was too expensive in the past, this area still holds tremendous potential.

Capturing data automatically provides a more accurate and up-to-date picture of the flow of goods. Sensors embedded in everything from uniforms to cell phones to locomotives can trigger various business processes. Standardization, say in the way design drawings are created or in global branding, means that once captured, data can be used by anybody involved in the process. Companies can replace the physical flow of goods and manual activities with a flow of information at many stages in the fulfillment process, but synchronization across the value chain remains challenging: different trading partners have competing objectives and optimization targets.

> The best kind of fulfillment is one where the customer need not attend to anything.

Strategy-Compliant Management

IT cannot replace people. For the foreseeable future, leadership, decisiveness, and creativity will remain the preserve of human intelligence. Management methods are being challenged to respond swiftly to market changes, global management, and external transparency demands

from the fast-close concept, corporate social responsibility bodies, Basel II, and the International Financial Reporting Standards (IFRS). New regulatory requirements will undoubtedly emerge from the credit shortage and market turmoil of 2008, putting an additional premium on the intangibles of leadership and decision making.

Quality management follows through the strategy in day-to-day activities. Starting with the winning propositions in the business model, it sets targets and cascades them across all management levels and business areas down to the level of individual employees. For the first time in memory, managers can draw on an integrated data foundation as a "single source of truth" that is binding and up to date for all employees, even in widely distributed enterprises. Such a data environment thus promises the ability to keep activities aligned with the overall strategy, as we will see at such varied companies as Saudi Aramco, SAP, and Vestas, the world's largest installer of wind turbines.

> The integrated data foundation promotes strategy-compliant management.

Value Chain Redesign

ERP systems helped start a wave of business process redesign.[3] Seamless, real-time processes are already the status quo in both individual plants and entire companies. The next wave of business process redesign addresses interplant and inter-enterprise processes, known as collaborative processes. Such processes hold far more potential than the first wave because companies are only just beginning to exploit the concept's possibilities. Our case study companies—IKEA, De Beers, Nokia, Lindt & Sprüngli, Sharp, Virgin Mobile, and Amazon Web Services—provide varied examples of value chain redesign.

Although electronic collaboration actually began in 1980s with electronic data interchange (EDI) and gained momentum in the 1990s with the arrival of Internet portals, until now it has been far too expensive and too time-consuming to connect businesses to businesses and IT applications to IT applications. Steady progress in this area will come from standardization, online service providers, and business process platforms for linking IT applications flexibly across enterprises.

From management's perspective, this emerging capability will necessitate dismantling and rebuilding value chains. Globalization, specialization, aggregation, mergers and acquisitions, outsourcing and outtasking, and a new industry of electronic services and online exchanges mean that each and every company must be able to defend or strengthen its position in different value chains.

Redesigned value chains are effecting a fundamental change in the balance of power between market players. Standards such as RosettaNet for collaboration in the computer industry can create exclusive clubs. Software companies are banking on their ecosystem, on a network of partners involved in developing and marketing their software and providing support for customers. Owning customer data—such as details of the components installed in chemical plants—can help determine the partnerships an enterprise needs to cultivate.

> Standards and platforms are initiating a wave of value chain redesign.

IT's Role in Business Model Transformation

Executives are often more concerned with the costs and risks of information technology than with the benefits. This

attitude is understandable, given recent history. The 1990s saw unprecedented growth in IT investment. Companies started reorganizing their processes on the basis of integrated ERP systems, implemented new software ready for the year 2000, and pursued ambitious e-business plans to drive stock prices higher.

This period of intense investment in IT was followed by one of disenchantment, and a huge clean-up operation began. The cost-cutting programs of recent years have shown that measures such as consolidation, harmonization, and outsourcing can significantly reduce IT expenditure without compromising the quality of service delivered by the Information Services department. Leading information services organizations, including those at the British government, Intel, and Valero Energy, are discussed in detail.

At the same time, the decisive factor is not the absolute amount of IT expenditure or a percentage of revenues, but the alignment of each individual investment and business solution with the overarching strategy.[4] In short, only the business model can dictate the direction and amount of investment. Are investments in new, IT-based business concepts really a source of competitive advantage? In many cases, the answer is no, if competitors adopt the same concepts. But a company that does not stay current can fall behind. The company that implements a new solution first can set itself apart from competitors until they catch up by implementing the same solution or a better one.

Building on the idea of business concepts, many of which are driven or supported by IT, process visibility is a common precondition of business model innovation; package tracking at overnight shippers such as DHL or FedEx is a common example. Better awareness of skills, both internally and in the ecosystem, provides a further

example of IT facilitating business model change. At the same time, IT organizations are being called upon to better understand and manage the various forms of risk with which they engage.

> While certain technologies may become commoditized, good information and information processes remain distinctive and valued.

At the end of each chapter, we have included a short checklist to help CEOs and other business managers assess their own enterprise’s situation.

Acknowledgments

This book would not have been possible without the collaboration of Dr. Oliver Christ, Dr. Enrico Senger, and Oliver Wilke. Their careful research into the examples used in the book, both for their dissertations and for the book itself, is much appreciated and their studies were a valuable source of information. Together with the authors and Prof. Dr. Thomas Gutzwiller, they participated in the 26 in-depth interviews with CEOs and other executive managers. We are extremely grateful for their contribution. Our thanks go also to the interviewees for giving us an insight into their companies, challenges, solutions, and visions.

Chapter 1
Enterprise Value from Customer Value

Business executives confront numerous uncertainties as they cross into the second decade of the new century. Consider:

- “Free” is a common price point in information industries, such as newspapers or music, leaving firms to find new models for profitability.
- Apart from free, pricing pressure is intensified by the rapid rise of developing economies, which are home to a steady stream of new low-cost providers serving many markets.
- The traditional model of the firm has been joined by other organizational possibilities: quasi-governmental capitalist entities (Thales Group, General Motors, AIG), business ecosystems that link capabilities from multiple organizational “homes” (Apple’s iPhone software development network), and dispersed pools of volunteer talent with no revenue streams but category-leading products (Linux, Wikipedia).
- The attractive size of Asian markets is made problematic by cultural issues, language barriers, the wide variation in intellectual property protection, and risks—everything from influenza outbreaks to terrorism and extreme weather.

In short, what firms deliver, how much they charge, how they organize to deliver it, and the constraints under which they do so are all in transition.

Perhaps the only certainty lies in the necessity of serving customers better. As these customers have more complex needs, increased competition of their own, and more suppliers to choose among, successful businesses are returning to the ground truth of profitably delivering value across multiple geographies, in the context of rapid and unpredictable change. Accordingly, an enterprise's financial health is largely a function of the value its customers derive from the seller's products and services.

Aligning the delivery of superior customer value with increasing enterprise value derives from strategy, from operational excellence, and from the *business model,* which articulates the differentiated ways that an enterprise delivers value to its customers. While the term is widely used, we follow coauthor Kagermann's definition:

> A business model consists of four interlocking elements that, taken together, create and deliver value.
>
> ***Customer value proposition,*** including target customer, the customer's job to be done, and the offering which satisfies the problem or fulfills the need.
>
> ***Profit formula,*** including the revenue model, cost structure, margin model, and resource velocity (lead times, turns, etc.).
>
> ***Key resources*** to deliver the customer value proposition profitably, potentially including people, equipment, technologies, partnerships, brand, etc.
>
> ***Key processes*** also include rules, metrics, norms of behavior that make repeated delivery of the customer value proposition repeatable and scalable.[1]

The great business models have become familiar icons. King Gillette gave away razors to sell an annuity stream of

replacement blades. American Airlines pioneered the use of Sabre, a computerized reservations network that became so strategically important it was spun out as a separate entity; Bloomberg's financial information service followed along similar lines. IKEA combined Nordic design, expertise in flat packaging, and large retail footprints to reinvent the furniture industry.

Because it is fundamental to a firm's success, however, changing a business model can be difficult. General Motors' template for labor costs, model changeovers, and brand management dates to the 1960s and did not adapt to new dynamics of competition and consumer behavior. The music industry's bundling of songs into LP records worked for a few decades, but the model failed in the digital era, leaving the labels' economics and practices out of step with the market. Established air carriers' inattention to the low end of the market, and to their cost structures, left them vulnerable to a new wave of budget airlines such as EasyJet, Ryan Air, and Southwest.

With this history in mind, our focus in this book will be on business model innovation, specifically on the role of information technology in driving and enabling changes to the fundamental facets of the business: the offer and customer, the value chain and its players' margin structures, and the ecosystem and the business processes it performs. A particular emphasis will fall on what we call business concepts. Business concepts, which frequently utilize technology in innovative ways, can be seen as building blocks in the creation or revision of business models.

> The business model determines the value of a company by facilitating the profitable delivery of value to the firm's customers.

Customer Value and Enterprise Value

To see how customer value shapes enterprise value, let's do a thought experiment involving search. Before the World Wide Web, according to Kevin Kelly (founding editor of *Wired*), U.S. searches added up to a staggering 111 billion a year, most of them directory assistance telephone calls, but also counting librarian queries. After the advent of search engines, people appear to be asking more questions: the measurement firm comScore estimated 2 billion searches per day, worldwide, as of December 2007.

In Kelly's admittedly rough estimate, an unnamed Google employee hypothetically and unscientifically values these searches as follows. Let's assume, he says, that

> 1/4 of all searches are really easy ones (like "american airlines") that save the user maybe 30 seconds.
>
> 1/4 are a little hard and save maybe 5 minutes.
>
> 1/4 are just wasting time.
>
> 1/4 are hard ones that lead to substantial savings—like diagnosing your serious disease, or choosing the right college, or the right vacation destination.
>
> Suppose it takes 10 searches on average to get one of these "hard" answers, but when you get it, you've saved maybe 3 hours. That averages out to 6 minutes saved/search. Figure average income of $25,000/year, or $12.50/hr. So we get a value of $1.25/search by this metric.[2]

Assuming the U.S. audience as 1.2 billion searches per day at that $1.25 per search, and Google's market share of roughly 65 percent, that would mean that Google creates $1.5 billion of value for its U.S. users per day.

Now, these are unofficial numbers, and this is only a thought experiment, but even if the numbers are off by a factor of five, that still means that Google creates 25 cents of value with the average search, at a cost to serve in the range of .2 cents. That would represent a 100-fold ratio of customer well-being to cost, a stunning value proposition by any measure. Google's share price is a direct reflection of both this calculus and the advertising business model that allows it to be converted into revenue.

While stressing the role of customer value in enterprise value may sound like a truism, recent academic research suggests that theory and practice converge. The logic for moving from product or service provision into solution-centric business models is not only intuitive. In the past several decades, accounting-based value of a company's assets has reflected less and less of the stock market capitalization. In fact, as of 2003, the market value of the Fortune 500 was fully six times the book value.[3] If physical capital and similar assets fail to explain the value of a company, the reasoning went, intangibles such as brand equity, goodwill, and intellectual property must be responsible.

A landmark study published in 2004 explored one such intangible, customer satisfaction, which the authors hypothesized was related to increased "share of wallet," improved customer retention and therefore cash flows, positive word of mouth, and other benefits. The research showed that a one point gain in customer satisfaction using standard metrics correlated to a 2.75 percent gain in shareholder value.[4]

More recently, a 2008 study used customer satisfaction metrics as a guide to portfolio creation, and the customer-satisfying portfolio outperformed groups of companies with either low or decreasing customer satisfaction scores.[5] In

both cases, positive customer experiences translated both to the bottom line and to stock market performance.

> Our assertion that enterprise value derives from customer value is founded in experience, logic, and quantitative models.

Context

Because of the recent economic turmoil, business model innovation has never been more difficult—or more necessary. Six new or reconstituted macro forces will reshape the global context for business decisions in the coming years.[6]

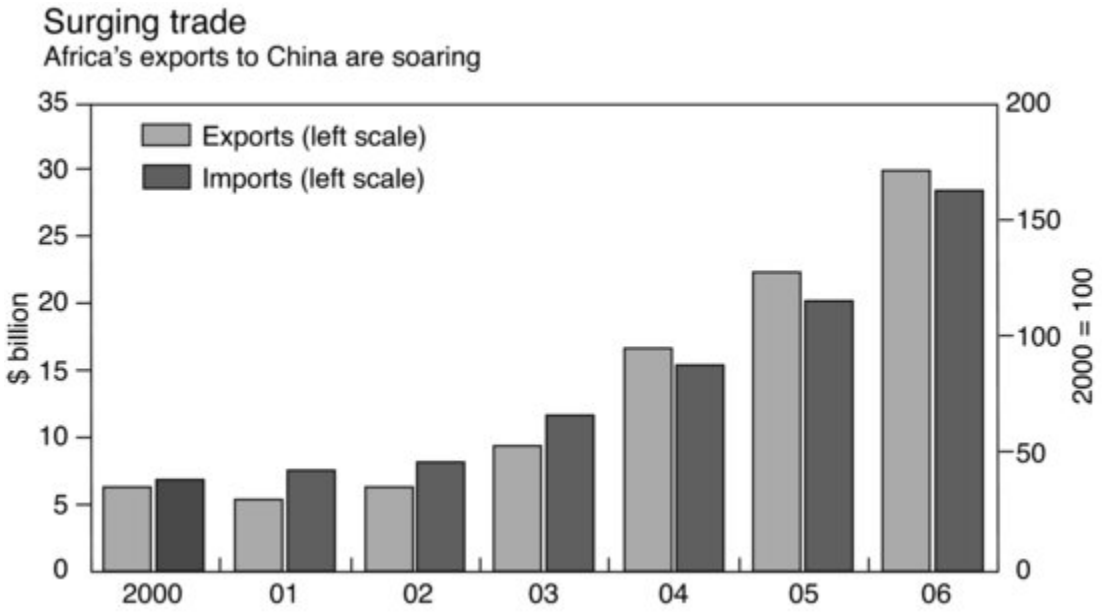

EXHIBIT 1.1 Increased Trade between Africa and China Comprises One Facet of the Changing Shape of Globalization

Sources: International Monetary Fund (IMF), *Direction of Trade Statistics*; and authors' calculations.

1. *The changing shape of globalization*. As the world enters the second decade of the millennium, the process of globalization is in flux. China's role in military and economic affairs, while not yet fully clear, will be larger and different from what most observers predicted. Exhibit 1.1 shows but one facet of this expansion: dramatic increases in Chinese trade with Africa.[7] Global problems such as climate change and capital mobility are exposing the limits of existing governance structures.[8] The shift from a bipolar world dominated by the United States and USSR and their associated spheres to a multipolar world has broad implications. Among these are the rise of nonstate actors (whether Doctors without Borders or Al Qaeda) and new trade patterns between the BRIC (Brazil, Russia, India, China) countries and the developing world.

2. *Demographics and urbanization.* The aging of industrial workforces is occurring against the backdrop of a foundational shift to a services-based economy. In addition, cities around the world are growing bigger as agriculture declines in economic impact. Both employer- and employee-managed retirement portfolios have lost substantial value, complicating the demographic picture further. Developing economies typically have much higher population growth, and thus different age pyramids, compared to OECD countries, as Exhibit 1.2 illustrates.[9] Older people consume more health care resources than do younger ones, and those resources are becoming more expensive every year. In addition, elders constitute a distinctive market, one that requires new channels to market, more support to make use of products and services, and a variety of aids to handle the growing complexity of modern life.

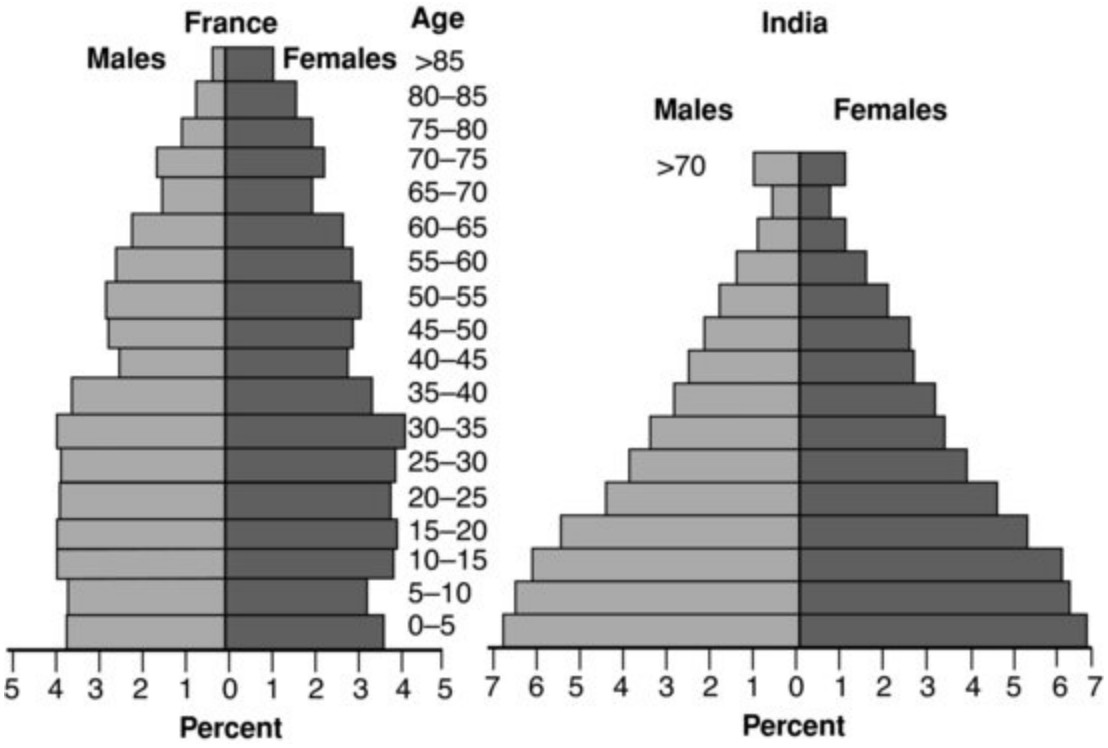

EXHIBIT 1.2 Workforce and Social Welfare Projections in France and India Vary Considerably Because of Demographic Differences, Shown Here on Age Pyramids

Source: Age pyramids available at U.S. Census Bureau, International Data Base (IDB).

3. *Environmental concerns and resource shortages*. After the Kyoto protocols were either unratified or frequently ignored, worldwide sentiment regarding the reality of climate change has shifted in light of evidence of the sort presented in Exhibit 1.3.[10] Substantial policy commitments are emerging from many countries, and the cost of these mandates will ultimately fall on business. In addition, critical resources including water and key metals can become scarce for either natural or political reasons. Meanwhile, the countless opportunities that will emerge from greater environmental awareness—whether in the areas of power generation, lighting, packaging, local farming, or

many others—could well contribute to a new era of prosperity.

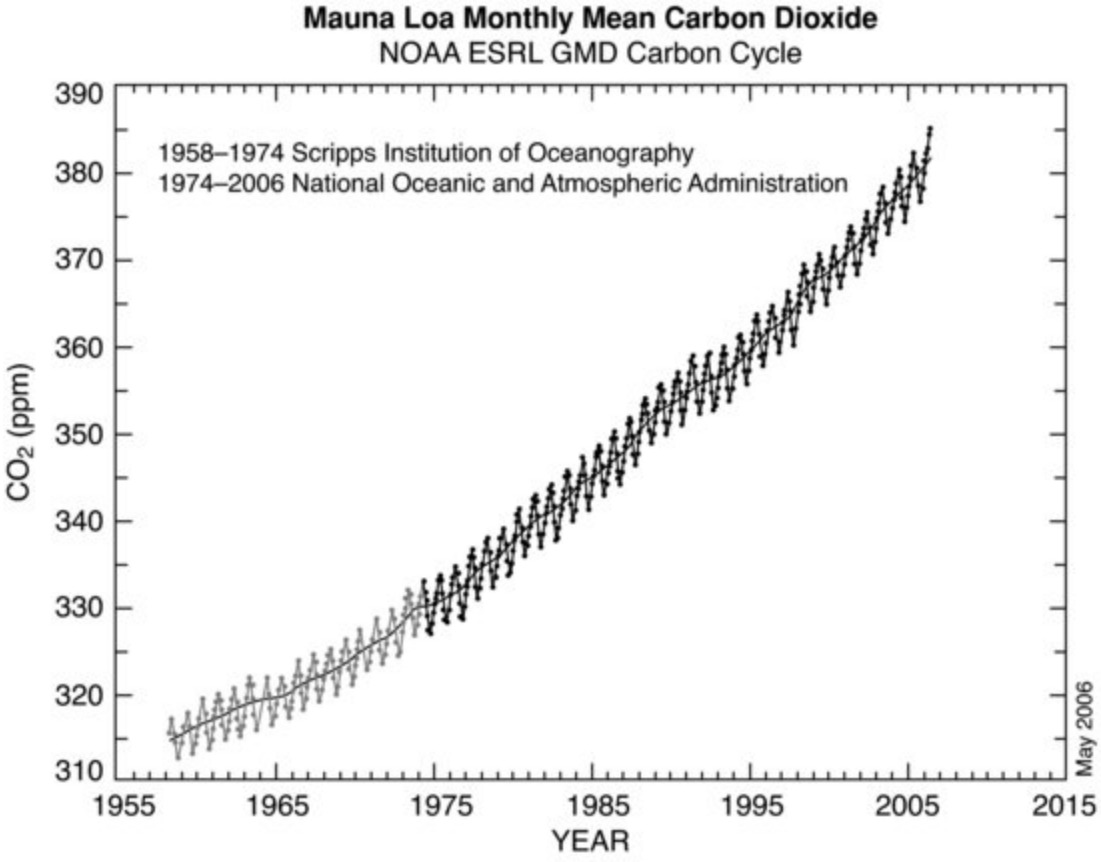

EXHIBIT 1.3 By Many Measures Including Readings at This Hawaiian Observatory, Environmental Indicators of Global Climate Change Are Driving Responses by National and International Agencies

Source: National Oceanographic and Atmospheric Administration long-term carbon dioxide readings at Mauna Loa observatory.

4. *Increased governmental presence*. Financial services scandals, new kinds of infrastructure vulnerability (as in the power grid for example), and new standards for drug and medical device approvals will ratchet up the regulatory burden. Whether in mortgage origination and packaging, end-of-life requirements for electronics, or efforts to increase financial transparency, expect to see governments increase their presence—and thus

reporting requirements—in most industries. Finally, stimulus packages in many countries (see Exhibit 1.4)[11] are partially reversing the trend toward privatization of major industries as governments purchase damaged assets. In almost every U.S. industry vertical, the government is competing with, taxing, regulating, and/or subsidizing a given company, shaping the range of strategic possibilities. Other governments play similarly critical roles.

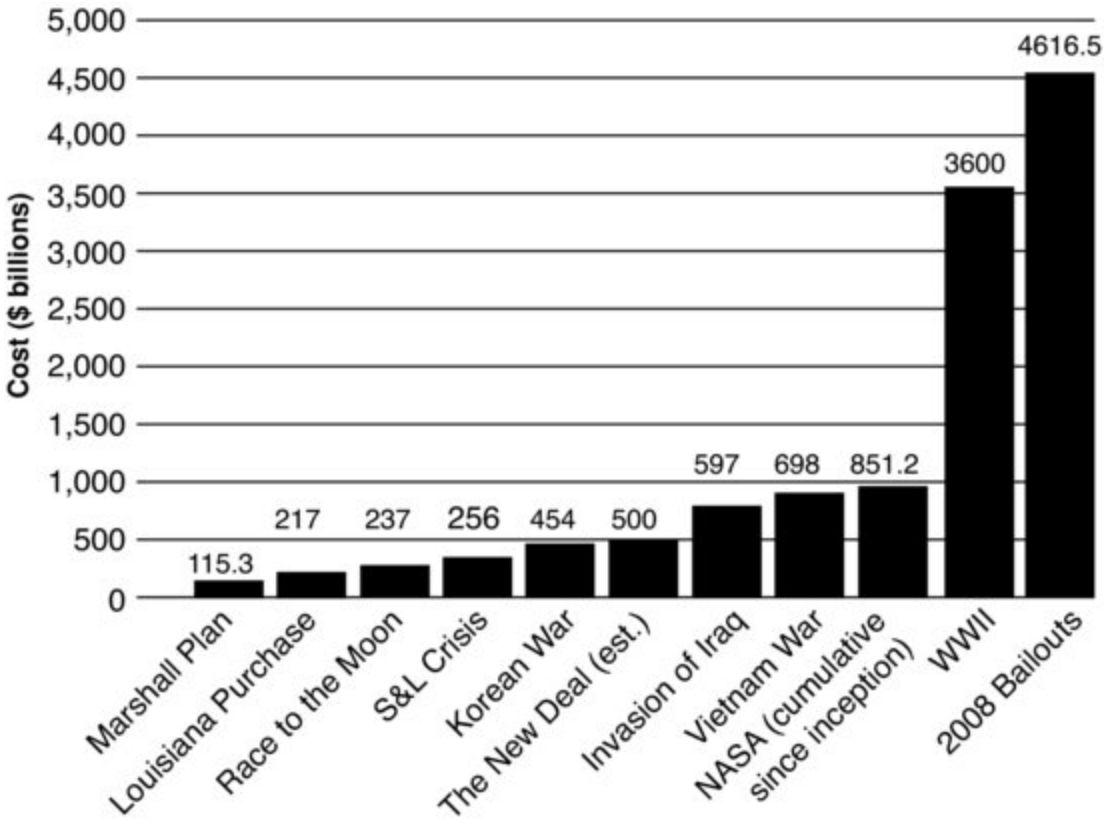

EXHIBIT 1.4 The Scale of Governmental Intervention Is Rising

Source: Exhibit based on data from Bianco Research.

5. *Digital trust.* Various digital connections have made possible new kinds of relationships and arrangements, but they have also opened the door to innovative forms of fraud, data loss (see Exhibit 1.5), and other violations

of trust such as electronic voting machine miscounting. Search technologies, which have become ubiquitous, are generally taken as objective when in fact their results reflect multiple agendas. At both the consumer and business-to-business levels, watch for new forms of trust to be required and enforced.

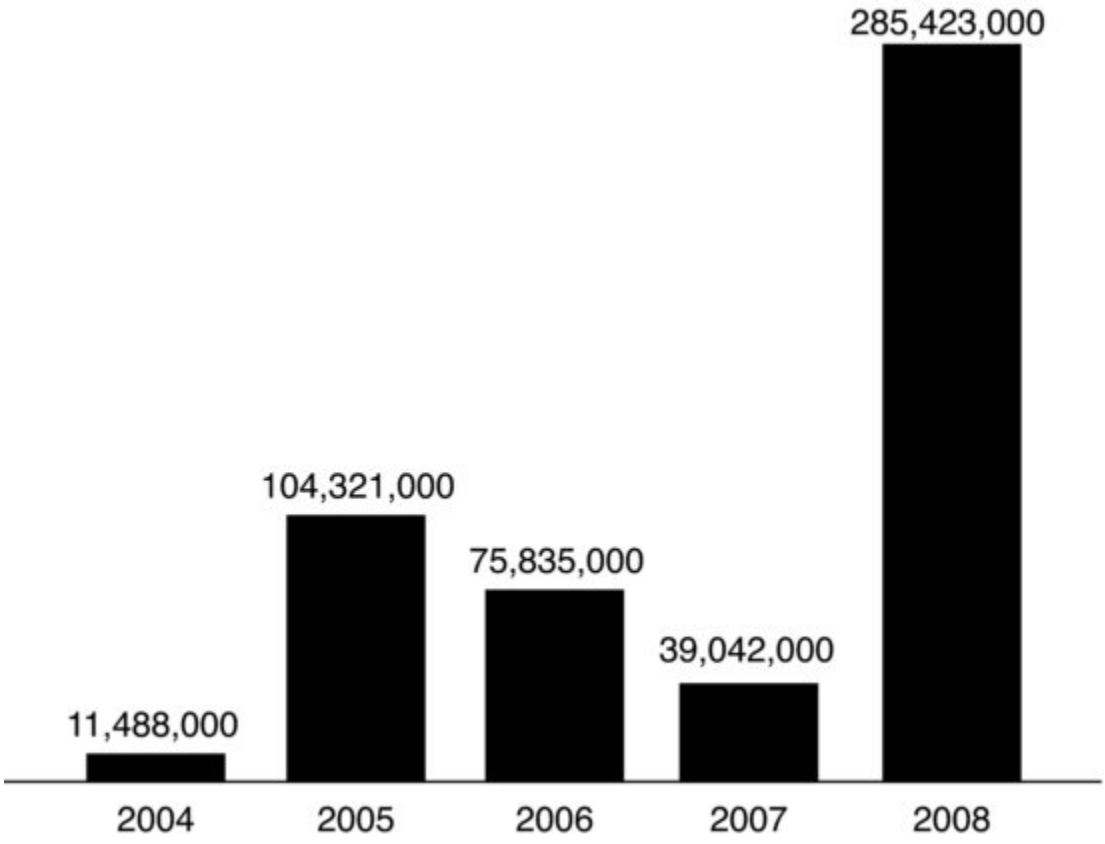

EXHIBIT 1.5 Commercial Firms Investigating Data Breaches Saw a Sudden Upturn in Compromised Data Records in 2008

Source: Verizon Business 2009 Data Breach Investigations Report, p. 32.

6. *Risk management*. Whether in the 2008 terror attacks in Mumbai, the rogue trader at Société Générale, or AIG's missteps with collateralized debt obligations, we have seen the substantial impact of insufficient attention to risk. While the pendulum may swing too far in the opposite direction, almost every business activity will

operate under increased scrutiny as the practice of risk management in its many forms is intensified.

Shaping a Response

Ample evidence suggests that the factors determining customer value (see Exhibit 1.6) are in flux. Our CEO studies,[12] numerous detailed case studies, and analyses by other authors verify that the market rules are being rewritten by many factors, including:

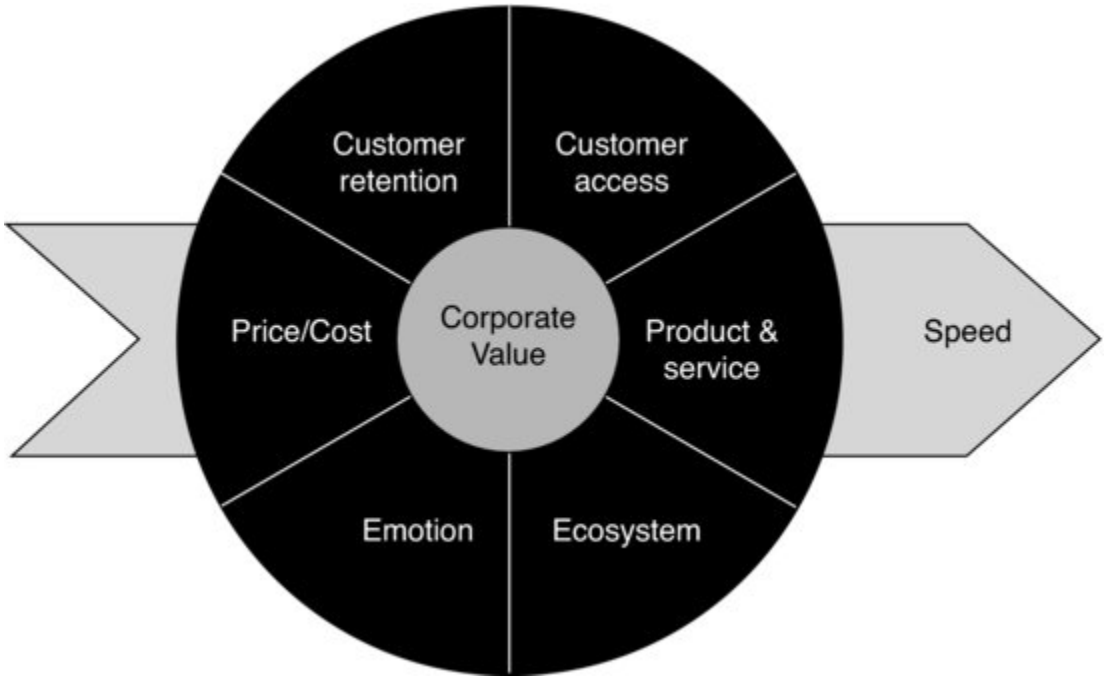

EXHIBIT 1.6 Corporate Value Derives from Both Market Relationships and Internal Processes, and Both Tangible and Intangible Factors

- Blurring enterprise boundaries
- Product commoditization
- Volatility and interconnectedness of financial markets
- Personalization of electronic services
- Intelligence in products

- Actionable knowledge about customers, markets, and products
- Transparency in the value chain

We conclude that after 2010 the following factors will be crucial for customer value and, by association, drive market success and enterprise value. At the same time, the world is moving fast and complexity is increasing, so the converse of each statement is also worth considering: opportunities continue to emerge, but each one also carries risks that cannot be overlooked.

Product and Service Integration

In selected markets, an intelligent enterprise understands the needs and problems of its customers and, when appropriate, offers them leading services at any time and in any location. It presents itself not as a company that sells products, but as a solution provider that delivers comprehensive services for its customers' unique processes.[13] Aircraft engine manufacturers, whose process is capital intensive, not only sell engines but also have started operating them for the customer as a monthly service, paid as a monthly expense.[14] The need for new pricing models presents both upside potential and operational challenges across the enterprise.

Caveat: Making the transition from product manufacturer to solution provider requires that an enterprise reinvent its business model from the foundation. Margin structure, balance sheet analysis, and financing can be problematic. Sales forces need new compensation models, and the cultural shift to solution selling can be wrenching. Finally, risk management becomes a newly required core competency as customers for product-service hybrids differ from their product-centric counterparts.

Customer Access

An intelligent enterprise finds target customers worldwide, beyond its traditional region and industry. It knows the customers, their requirements, and their decision makers. A family hotel in Denmark reaches customers via the Internet that it could not access through print advertising, tour operators, or travel agents.

Caveat: Borderless competition both increases market access and exposes formerly local concerns to global competitive pressures. Currency changes are a simple example. More critically, the hypothetical hotel in Denmark now must compete with not only other properties in its town and nation, but also vacation destinations worldwide.

Customer Retention

An intelligent enterprise strengthens its partnership with a customer by building up expertise in the customer's specific area then using IT applications to support cooperation. The customer benefits from low transaction costs and in turn accepts the higher switching costs for moving to a different supplier. A retail bank may get its customers used to convenient Internet services so that they find it difficult to move to a different provider.

Caveat: Lock-in behaves differently in the age of the Internet.[15] When proprietary solutions stop delivering added value, customers can share experiences in online forums and defect if necessary. Furthermore, competition can often come from outside the traditional domain: eBay stunned the credit card industry by acquiring PayPal and functioning much like a bank.

Ecosystem