IT and the East

HOW CHINA AND INDIA ARE ALTERING THE FUTURE OF TECHNOLOGY AND INNOVATION

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INTRODUCTION

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As industry analysts, we continually seek to uncover major, far-reaching trends that will affect both our clients and the IT industry. We look for the inexorable patterns, seminal events, and startling decisions whose global reach defines eras.

The hottest topic in the high-tech industry today is the prominence of China and India.[1] If you are a strategist or a decision maker in almost any enterprise, anywhere in the world, you see the impact of India and China in new waves of technology products and services, events, decisions, and strategies featured on corporate Web sites, and in international news coverage.

As analysts, we have been fortunate to travel extensively in China, India, and virtually everywhere else in the world where the impact of these two rising economic giants is felt. Wherever we have gone over the last three years, we have been consumed with answering our clients' questions about China and India. These experiences inspired us to speculate about what lies ahead for each country and to seriously consider the idea of "Chindia"—a combined China and India competing globally in several industries—as a subject for research and analysis. The Chindia framework is offered as a means to explain how these two

great countries might soon reassert their combined influence on the international stage.

The growing impact of China and India in the IT industry is clear to anyone following the money of global trade. It would be hard to match nine days in the spring of 2006 for emphatic statements from chief executives of global corporate giants about the future appeal of these fast-growing economies.

General Electric's Jeffrey Immelt, marking the one hundredth anniversary of GE's first step into China, said in Beijing that GE's $5 billion revenues in China "could double" in the next four or five years.[2] "I think we're still in the early days of being able to grow this market," he added.[3] The next day, in India's Mumbai financial district, Immelt told a business audience that GE had sharply increased revenue targets in India to $8 billion by 2010.[4] "India is a market set to realize its potential," he said. "The next 10 years are critically important" for its infrastructure and economic growth.[5]

A week later, IBM's Samuel Palmisano stood in Bangalore before more than ten thousand company employees and guests, including India's president A. P. J. Abdul Kalam, and announced with flair that IBM would triple its investment in India to $6 billion through 2009. "If you are not here in India, making the right investments and finding and developing the best employees and business partners," he said, "then you won't be able to combine the skills and expertise here with skills and expertise from around the world in ways that can help . . . clients be successful. I'm here today to say IBM is not going to miss this opportunity."[6]

We have not missed the opportunity to share our thoughts and insights with you. This book is written specifically to help CIOs and other IT decision makers of global enterprises and leaders and strategists of companies in the global IT industry to examine in a disciplined way how best to pursue their future in China and India. Whether customers or creators of IT products and services, these enterprises are building a global IT industry in which the economies and talents of China and India loom ever large.

We do not specifically address the priorities and perspectives of executives leading businesses based in China or in India—many of whom

are our clients and friends—yet we are confident that they will find valuable insights here as well. We believe this will also be the case for government officials and investors around the world. We know from our research and consulting activity that they are deeply interested in the themes of this book.

IT Innovation Moves Westward

The center of the technology world has been moving steadily west for two hundred years. The innovation that drove the industrial revolution was based in England. For decades the British crown maintained strict export controls on technology and people to prevent the movement of physical and intellectual capital out of the United Kingdom. As always, however, restrictions failed, and eventually the knowledge and experts escaped, moving the center of innovation to the United States, with its large local market and freedom to pursue new opportunities.

With strong investment in education, a high degree of economic freedom, and strong intellectual property protection, the United States remained the world capital of innovation and technology. The next great wave of technology advances began just a few miles away from where the first industrialized factories in the United States were built. The computer age began in and around Boston, Massachusetts, specifically, along the corridor defined by Route 128, where Digital Equipment, Data General, Lotus Development, and dozens of other world-class innovators thrived. As the personal computer overtook large machines, the center of innovation moved west again, primarily to Silicon Valley in California. Here, Intel, Hewlett-Packard, and Oracle grew to rule the day.

Another westward shift has been underway since the mid-1990s. But the new center will not be in the Western world at all. Today China and India are producing some of the world's best-trained computer science and electrical engineering graduates. Far from being simply a source of cheap labor, both countries soon will be able to compete favorably for global business—as India's IT services firms have done—not

on price, but on competence and capability. Even more crucial to their increasing global predominance is the rapid growth of domestic markets for technology and consumers in China and India. Soon both countries will have spending power equal to the United States and Western Europe.

Much of the West's mainstream attention on China and India thus far has focused on the West's outsourcing of manufacturing and low-end service jobs. Optimistic observers believe the current flow of jobs across the Pacific is immaterial in the long run because innovation remains strong in Western countries, and innovation produces new jobs and economic growth. This view is absolutely correct on the surface, but it hides the underlying truth of what is happening in India and China today: both countries are getting better at driving technological innovation. More and more, traditional Western high-tech firms are sourcing not just the assembly of their products from India and China but also the innovation that drives these products.

These are game-changing developments for global players in the IT industry. Many enterprises are deciding to act today, and the choices they make vary widely. IBM has sold its PC business to the Chinese company Lenovo and declared a major expansion in India. Every major IT outsourcing firm (including Accenture, CSC, EDS, and IBM) and most major IT software companies (CA, IBM, Oracle, SAP) and hardware vendors (IBM, Intel, Motorola, Sun, Texas Instruments) have opened operations in India.

Apple Computer uses outsourced manufacturing in China, sources much of its technology innovation from India, but it is careful to note on all of its products that they are "Designed by Apple in California." Apple also investigated, but rejected, establishing a technical support center in Bangalore.[7] Microsoft, Google, and Yahoo! have "voluntarily" censored their Chinese Internet portals, disallowing such words and phrases as *freedom*, *democracy*, *demonstration*, and *human rights* to comply with Chinese government policy—steps that subsequently incurred the wrath of the U.S. Congress.[8] Meanwhile, both Google and Yahoo! have taken major stakes in Chinese search and e-commerce companies. Dell—no stranger to putting its brand on products designed and manu-

factured far from its headquarters in Round Rock, Texas—increasingly turns to Indian and Chinese companies for innovative products.

If you are in a business, you need a China strategy and you need an India strategy. You need to monitor how China and India create alliances in specific markets, alliances under what is coming to be known as the "Chindia bloc." The first signs are already clear in IT services, in automotive components, and in a few other sectors.

China and India increasingly will be the dominant economic stories on the world stage, a trend that may well extend through most of the twenty-first century. Despite mounting stakes, however, the quality of information, research, and advice on how to make key decisions related to China and India is uneven. Executives and managers need a comprehensive view not only for understanding China and India, separately as well as together, but also for gauging future threats to and opportunities for enterprise.

For effective decision making, business leaders need

- accurate information on the current state of global IT competitiveness in India and China and their internal markets;
- a set of realistic scenarios that explores not only the possibility of continued rapid economic growth in India and China but also potential social, political, or other disruptions to these economies;
- a series of milestones that define pivotal issues in each scenario and of signposts that over time point to milestone outcomes to help determine when and where to invest, cooperate, compete, analyze, or ignore these countries.

As the world's largest research and advisory firm in the IT industry, with more than one thousand analysts and consultants, Gartner, Inc. understands the vital role of the IT technology industry in generating and sustaining national economies, and we frequently apply multidimensional research analysis on clients' behalf. In addition, we generate thousands of reports each year rooted in this strategy. Gartner has more than a hundred analysts in India, China, and neighboring countries who

cover dozens of vertical IT markets and broader IT industry trends. This global research network is in regular contact with business leaders and government officials in the West and the East and has been a rich and reliable source for much of the information and analysis in this book.

The book is organized to deliver on the above three requirements for effective decision making. The first section focuses exclusively on China; the second, exclusively on India. The third section examines the significant possibilities of China and India combining their complementary economic strengths to compete for world dominance in many industries, including IT.

In our work at Gartner, we use our own methodology and analytical frameworks in combination with a scenario generation framework developed by the consulting firm GBN and featured in Peter Schwartz's book *The Art of the Long View*.[9] The purpose of building these scenarios is to help our clients plan for an uncertain future. These scenarios are not simple predictions; rather, they recognize that some significant market dynamics in each country are genuinely uncertain.

The scenarios for each country identify these critical uncertainties and define several alternative futures. They provide the ability for readers to create useful strategic plans that effectively take into account current reality, future possibility, and risk. The critical uncertainties are presented as a range of possibilities on a continuum, depicted on the two axes of a two-dimensional chart.

For each country we present three scenarios for future developments that are based on the likely outcomes of critical yet uncertain country-specific market dynamics. The three scenarios present the implications for the high-tech industry and are ranked according to our current assessment of the most likely outcomes. Gartner uses a nonmathematical probability metric to compare scenarios and to express our relative confidence in each. This three-scenario approach, we believe, is critical, considering the huge numbers of variables that may affect these countries in the coming years. Leaders must make plans according to the most likely scenarios, but they must also, given the uncertainties, have realistic contingency plans in place.

Our scenario analysis for China is presented in chapter 3; our analysis for India is in chapter 6. A third analysis, projecting various Chindia scenarios, is presented in chapter 8. In these chapters, we identify key milestones that we believe will shape the alternative scenarios, respectively, for China, India, and Chindia during the next several years. For each milestone we identify signposts that indicate whether the most likely outcomes might be changing, and, if so, which of the less likely scenarios appears to be on the rise.

For example, we see the Beijing Olympics, federal budget priorities set in Beijing and New Delhi, and outcomes of the Indian national elections in 2009 as major milestones shaping how the Chindia story unfolds. We conclude that in another ten years a strategic exchange of complementary skills and resources could begin to create unassailable positions for China-India alliances in many global markets. These include several sectors in manufacturing, IT services, textiles, pharmaceuticals, and other industries.

Chapter 9 presents eight high-priority steps to take now to prepare your enterprise for the most likely scenarios. We also specify action steps and competencies you can develop to take advantage of the many opportunities for building IT business in these countries. Organizations that are willing to invest in expert local resources to navigate government policy formulation and rural development programs can influence these areas for their own interests. Recruitment managers should understand how to hire and train local talent, especially in management, and how to weave them into their workforce. And Westerners pursuing IT business in the East must embrace important cultural distinctions that can make or break relationships.

If you have not had to do so already, you will very soon be required to choose how to engage with China and India. As GE's Immelt says, "The new competitors, China and India, are unlike any competitors we have seen in our lifetime."[10] The first chapter begins our story of how the unprecedented dynamics of these new competitors—separate and together—have come to be and where they might be heading.