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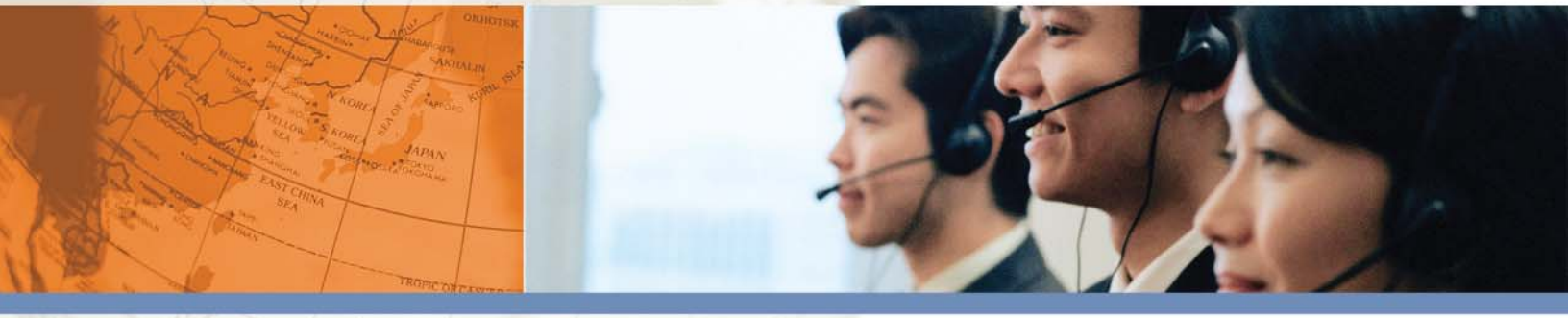

Addressing China's Looming Talent Shortage

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Preface

"Addressing China's Looming Talent Shortage" is a joint effort between the McKinsey Global Institute (MGI) and McKinsey & Company's China office. It is based on a year long research project, The Emerging Global Labor Market, McKinsey Global Institute's ongoing research on the impact of offshoring, and conducted as part of a broader effort to understand the process of global economic integration and its implications.

This perspective is part of the fulfillment of MGI's mission to help global leaders understand the forces transforming the global economy, improve company performance, and work for better national and international policies.

MGI combines McKinsey's business experience with the rigor of academic discipline. This document reflects active dialogue with policy makers, industry experts, researchers from leading institutions, and joint work from MGI, our China office, as well as our worldwide business process outsourcing and offshoring practice.

We would particularly like to thank Gordon Orr, Jonathan Woetzel, Jaeson Rosenfeld, Martha Laboissière, Susan Lund, Sascha Stürze, and Fusayo Umezawa for their contributions to this work.

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McKinsey Global Institute

The McKinsey Global Institute (MGI) was established in 1990 as an independent economics think tank within McKinsey & Company to conduct original research on important global issues. Its primary purpose is to provide insights into the workings of the global economy and a fact base for decision-making for the benefit of business leaders and policymakers.

MGI's staff members are drawn primarily from McKinsey's consultants. They serve 6- to 12-month assignments and then return to client work. MGI also commissions leading academics to participate in its research. MGI's director is Diana Farrell, a McKinsey director.

Addressing China's Looming Talent Shortage

With a huge supply of low-cost workers, China has fast become the world's manufacturing workshop, supplying everything from textiles to toys to computer chips. Given the country's millions of university graduates, is it set to become a giant in offshore IT and business process services as well?

New research from the McKinsey Global Institute (MGI) suggests this is unlikely. The reason: few of its vast number of university graduates are capable of working successfully in the services-export sector, and the fast-growing domestic economy absorbs most of those who could.[1]

Indeed, far from presaging a thriving offshore services sector, our research points to a looming shortage of home-grown talent, with serious implications for the multinationals now in China and for the growing number of Chinese companies with global ambitions.

To avoid this talent crunch and to sustain its economic ascent, China must produce more graduates fit for employment in world-class companies, whether they are local or foreign ones. Raising the quality of its graduates will allow the country's economy to evolve from its present domination by manufacturing and toward a future in which services play the leading role—as they eventually must when any economy develops and matures. The conditions for a flourishing offshore service sector will then surely follow.

THE SUPPLY PARADOX

China's pool of university graduates is enormous. The country will produce 3.1 million college graduates this year, the United States only 1.3 million. Meanwhile, China's engineering graduates will number over 600,000, those of the United States only about 70,000. These armies of new Chinese graduates reinforce an already impressive pool of labor: in 2003 China had roughly 9.6 million young professional graduates with up to seven years' work experience.

Despite this apparently vast supply, however, multinational companies are finding few graduates have the necessary skills for service occupations. According to interviews with 83 human-resources professionals involved with hiring local graduates in low-wage countries, less than 10 percent of Chinese

[1] The full research report, The Emerging Global Labor Market, is available free of charge at www.mckinsey.com/mgi.

job candidates, on average, would be suitable for work in a foreign company in the nine occupations we studied: engineers, finance workers, accountants, quantitative analysts, generalists, life science researchers, doctors, nurses, and support staff.

Consider engineers. China has 1.6 million young professionals, more than any other country we examined.[2] Indeed, 33 percent of the university students in China study engineering,[3] compared with 20 percent in Germany and just 4 percent in India. But the main drawback of Chinese applicants for engineering jobs, our interviewees said, is the educational system's bias toward theory. Chinese students get little practical experience in projects or teamwork compared with engineering graduates in Europe or North America, who work in teams to achieve practical solutions. The result of these differences is that China's pool of young engineers considered suitable for work in multinationals is just 160,000—no larger than the United Kingdom's. Hence the paradox of shortages amid plenty.

For jobs in the eight other occupations we studied, poor English was the main reason our interviewees gave for rejecting Chinese applicants. Only 3 percent of them can be considered for generalist service positions (those that don't require a degree in any particular subject. Overall communication style and cultural fit are also difficult hurdles.) One Chinese HR professional points out, for example, that Chinese software engineers would find it hard to draw up an information flow chart for an international five-star hotel, not because they don't understand flow charts, but because state-run hotels in China—the only ones they know—are so very different.[4] Some people argue that a willingness to work long hours will compensate for any gaps in the productivity of China's talent. Although this may hold true to some extent in manufacturing, it is likely to make only a marginal difference in services, because of the specific skill deficiencies that come into play.

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2 The low-wage countries we studied were Argentina, Brazil, Bulgaria, Chile, China, Colombia, Croatia, the Czech Republic, Estonia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, the Philippines, Poland, Romania, Russia, Slovakia, Slovenia, South Africa, Thailand, Turkey, Ukraine, Venezuela, and Vietnam. The mid- to high-wage countries we studied in-depth were Canada, Germany, Ireland, Japan, the United Kingdom, and the United States. Australia and South Korea were studied by way of extrapolation.

3 All branches except civil and agricultural engineering.

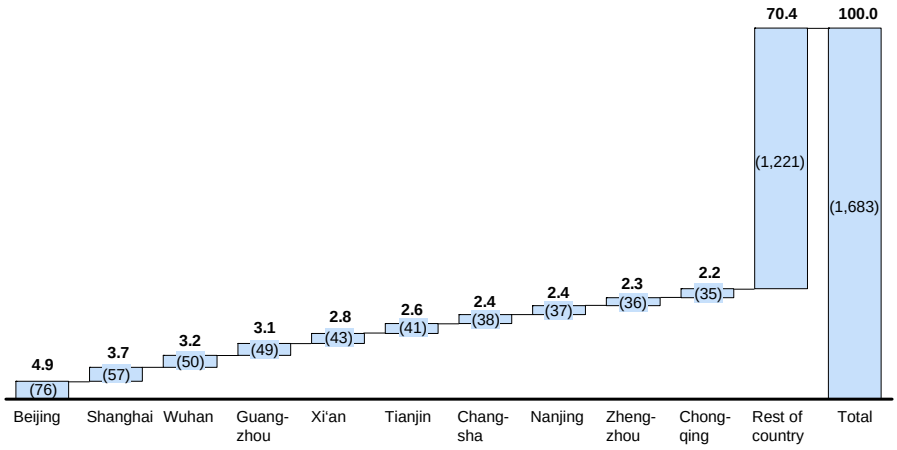
4 Juhi Bhambal, "China is behind India" (interview with Alan Choi, regional managing director, Greater China, for Korn/Ferry), *Global Outsourcing*, online edition, February 1, 2005.

On top of the generally low suitability of Chinese graduates, they are also widely dispersed. Well over 1,500 colleges and universities produced the 1.7 million students who graduated in 2003, and less than one-third of them had studied in any of the top ten university cities (Exhibit 1). Just one-quarter of all Chinese graduates live in a city or region close to a major international airport—a requirement for most multinationals setting up offshore facilities. Compounding that problem is a lack of mobility: only one-third of all Chinese graduates move to other provinces for work. (By contrast, almost half of all Indian students graduate close to a major international hub, such as Bangalore, Delhi, Hyderabad, and Mumbai, and the Indians are quite willing to move.) As a result of these two factors, world-class companies that want to hire service labor in China have difficulty reaching as much as half of the total pool of graduates.

Exhibit 1

PROFESSIONAL TALENT SUPPLY IN CHINA IS FRAGMENTED ACROSS 1,683 UNIVERSITIES AND COLLEGES

Share of graduates by city* / (number of universities and colleges);
2003



* Share of graduates by city was approximated based on city's population and its share of colleges

Source: China Ministry of Education

Finally, companies that wish to set up service-offshoring operations in China face more competition for talent than they would in other low-wage locations. In India and the Philippines, for example, the local economy is growing less briskly, and working for a company that provides offshore services is therefore

a good option. In China, domestic companies and multinationals serving the fast-growing domestic market already provide attractive opportunities for suitable graduates, and there are also many more jobs in the manufacturing export sector. As a result, it's wrong to assume, as many do, that every suitable young professional in China is available for hire by the service offshoring sector.

THE LOOMING WAR FOR TALENT

More crucially, our research shows that companies already in China and serving its fast-growing domestic market will also have difficulty finding enough suitable employees in key service and managerial occupations.

The demand for labor just from the large foreign-owned companies and joint ventures that now do business in China highlights the problem.[5] From 1998 to 2002, employment in these two categories rose by 12 and 23 percent a year, respectively, to about 2.7 million workers. Assuming that 30 percent of these workers must have at least a college degree[6] and that the labor demands of such companies continue to grow at the same rates, they will have to employ an additional 750,000 graduates from 2003 through 2008. China, we estimate, will produce 1,100,000 graduates suitable for employment in world-class service companies during that period. So large foreign multinationals and joint ventures alone will take up almost 70 percent of China's suitable graduates before demand from smaller multinationals or Chinese companies even enters the picture (Exhibit 2).

If these numbers suggest fierce competition for China's best graduates, unemployment statistics confirm that impression. In 2003, just 1 percent of the country's university graduates were unemployed—an almost negligible rate. Unemployment among the graduates of China's second-tier colleges is a bit higher, at about 6 percent, reflecting the fact that they generally don't rank in the top bracket of educational institutions.

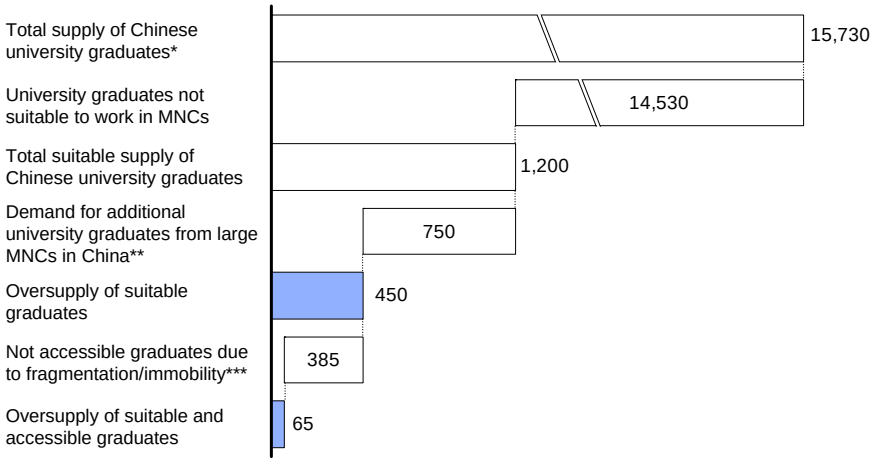
5 We considered only companies with more than 1,000 employees. Foreign-owned companies in Hong Kong, Macao, and Taiwan were excluded.

6 This estimate is based on MGI's study of the global automotive industry, where 48 percent of all jobs require a college education. Since the estimate includes headquarters functions, we reduced it to 30 percent.

Exhibit 2

SUITABLE SUPPLY OF UNIVERSITY GRADUATES WILL BE BARELY ENOUGH TO MEET DEMAND OF LARGE MNCs IN CHINA

Thousands; 2003-08



* All university courses except doctors
** Enterprises with revenue over $604,000 in 2002 and employment of >1,000 FTEs; excluding employment in Hongkong/ Macao/Taiwan owned enterprises
*** Assuming strong growth of accessibility from currently 51% to 83% in 2008 (India's current level)
Source: McKinsey Global Institute labor supply database

Effective managers are in short supply as well. We estimate that given the global aspirations of many Chinese companies, over the next 10 to 15 years they will need 75,000 leaders who can work effectively in global environments; today they have only 3,000 to 5,000.[7] Management talent generally comes from several sources—lower-level workers trained in offshoring enterprises, industries that produce managers with relevant skills, and expatriates who have worked or studied in developed economies.

But people from all of these sources are scarce in China. Although multinational companies now there do train and promote managers from entry-level positions, the process is time-consuming and costly. Moreover, with levels of foreign direct investment so high, multinationals often resort to poaching from each other. Compounding the problem is that not many middle managers can be hired from Chinese companies; only people employed by very high-performing ones (such as the consumer electronics companies

7 Andrew Grant and George Desvaux, "Narrowing China's corporate-leadership gap," *China Daily*, May 18, 2005.

Lenovo and TCL) have the skills and cultural attributes needed to work for the multinationals. A more plentiful source of middle-management talent is the large number of ethnic Chinese who fill management roles for companies in Hong Kong, Singapore, and Taiwan. These people can be recruited to mainland China but often require "local-plus" packages: wages and benefits above what the locals earn, though less than the full expatriate package.

WHY FIX THE PROBLEM?

A shortage of world-class university graduates in key occupations such as finance, accounting, engineering, and business represents a major problem for multinationals in China, for Chinese companies, and for the country's policy makers. Companies need these graduates to improve their marketing and product-development efforts, to understand consumer tastes, to develop customer service and after-sales-service operations, and to raise their local financial and accounting standards. In the longer term, China's economy as a whole needs more such graduates if it is to compete in the world beyond the simpler, labor-intensive manufacturing areas in which it is now the global leader.

As economies develop, they shift from labor-intensive manufacturing into higher-value areas, notably marketing, product design, and the manufacture of sophisticated intermediate inputs. Northern Italy's textile and apparel industry, for example, has moved most garment production to lower-cost locations, but employment remains stable because companies have put more resources into tasks such as designing clothes and coordinating global production networks. Similarly, in the U.S. automotive industry, imports of finished cars from Mexico increased rapidly after the North American Free Trade Agreement took effect, but exports of U.S. auto parts to Mexico have quadrupled, allowing much of the more capital-intensive work—and many of the higher-paid jobs—to remain in the United States.[8]

With an estimated 150 million surplus rural workers,[9] China is decades away from developing a consumer-oriented service economy. But that must be the

8 Diana Farrell, Antonio Puron, and Jaana K. Remes, "Beyond cheap labor: Lessons for developing economies," The McKinsey Quarterly, 2005 Number 1, (www.mckinseyquarterly.com).

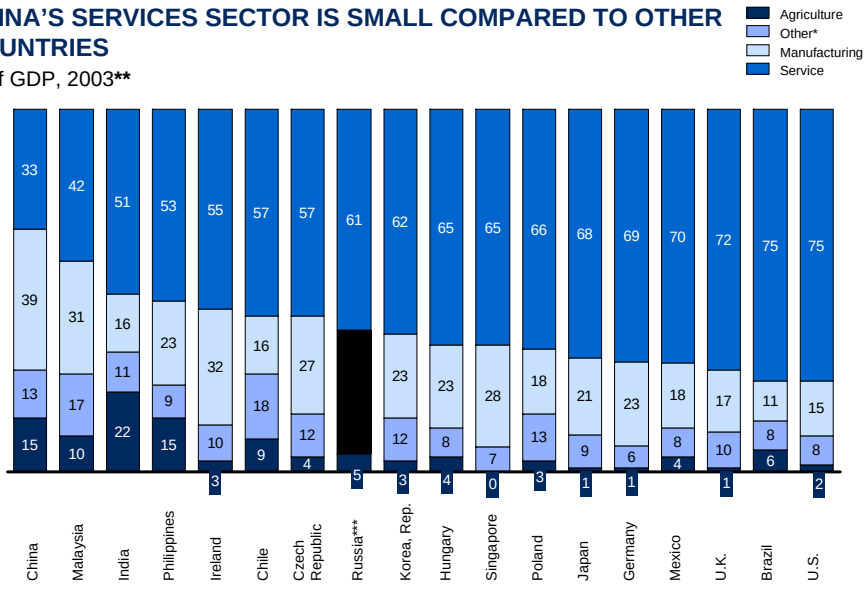
9 Xinhua News Agency, April 8, 2004.

policy makers' ultimate aspiration. No nation will remain the world's low-cost manufacturer forever, and if it did its living standards would stagnate at today's levels—or even decline. Today, China's economy is heavily tilted toward manufacturing, and the services sector is notably underdeveloped (Exhibit 3). But in China, as in all economies, services will be the future engine of job growth. According to Alliance Capital Management, the country's manufacturing sector shed 15 million jobs from 1995 to 2002 when large state-owned factories restructured their operations. As manufacturing productivity rises, still more jobs will be lost.

Exhibit 3

CHINA'S SERVICES SECTOR IS SMALL COMPARED TO OTHER COUNTRIES

% of GDP, 2003**



* Mining, construction, electricity, water, and gas
** Numbers may not add up to 100 due to rounding
*** Breakout of manufacturing and other N/A
Source: World Bank 2005 World Development Indicators; McKinsey analysis

Creating the conditions that will attract offshore service operations will help China move up the ladder. The country does have some strong advantages in this arena, notably low labor costs, an enormous domestic market, and a relatively high-quality infrastructure. Offshore service activities are often developed from existing operations, so China's offshoring service sector is most likely to arise as an offshoot of the activities of companies already there.

Pharmaceutical and software companies will probably take the lead, for in these industries some multinationals have already set up Chinese R&D operations to customize products for local needs. Several players now use incremental capacity in their Chinese R&D facilities to serve overseas markets too. Pharma companies can also run bigger, and therefore faster clinical trials in China more cheaply, thereby cutting overall product-development costs as well as approval and release times. In addition, China could emerge as a base for business process offshoring by multinationals that serve Chinese-speaking populations elsewhere, such as Hong Kong, Singapore, and Taiwan—if the country solves its looming shortage of qualified labor.

ADDRESSING THE SHORTAGE

Raising the quality of China's graduates will be a long-term effort, but even modest improvements would make a huge difference. If the proportion of Chinese engineering graduates who could work at global companies increased to 25 percent (as it is in India) from today's 10 percent, China's pool of qualified young engineers would be among the world's largest by 2008.

How can the country raise the quality of its graduates? First, it must resolve issues in the funding of universities. Expenditures for tertiary education are growing quite rapidly—from 2000 to 2002, by more than 50 percent. The number of students increased even more, however, so expenditures per student fell by 5 percent. Funding is also spread unevenly throughout the country: in Beijing average spending per student is more than 30 percent higher than it is in second-place Shanghai and more than twice its level in 25 of the 31 provinces. Money should be focused on raising quality more than on quantity, and funds for institutions in places other than Beijing and Shanghai should rise dramatically.

In addition, China must continue to improve its English-language instruction. Since 2001, the Ministry of Education has required all students to start learning English in grade three. This is a step in the right direction that will pay dividends in the long run, but English classes are still very large, even at universities, because teachers are in short supply.[10] Furthermore,

[10] Yuan-Yuan Huang and Hua-Li Xu, "Trends in English-language education in China," *ESL Magazine*, November/December 1999.

conversational skills receive too little attention. To resolve both of these issues, China must train many more English teachers and do more to recruit them from abroad.

For the foreseeable future, companies themselves will have to invest more in training and developing the talent they need. When Microsoft, for instance, outsourced part of its Web-based technical support to Wicresoft, a 400-employee joint venture with the Shanghai municipal government, it hired ten native U.S.-English speakers to teach their Chinese co-workers about U.S. e-mail protocol and writing style. These instructors hold language classes and meet one-on-one with Chinese employees to assess their progress, an effort that raises the joint venture's personnel costs by about 15 percent[11] but brings their language skills up to speed. Other foreign companies are developing management training courses, sometimes in collaboration with local business schools, to upgrade the skills of existing middle and top management.[12]

Companies can also work with policy makers and university leaders to bring curricula, not only at the top universities but also throughout the university system, more into line with the needs of industry. Software projects are team efforts that require less theoretical knowledge than application skills, which Chinese graduates lack, according to managers at multinational companies. In response, Microsoft has formed partnerships with four universities in China to establish software labs where student interns learn practical software-development skills. Other companies should adopt similar policies. Such public-private education programs make students more suitable for good jobs with world-class companies and ease the transition to middle-management roles later on.

Finally, China's policy makers must ensure that its many students who study abroad return home, since a relatively high proportion of them have the skills needed for employment by multinationals. In 2003, some 120,000 Chinese students were studying abroad—the highest number of any of the 28 countries whose supply of graduates MGI has investigated. Moreover, half of these

11 Li Yuan, "Chinese companies vie for a role in US IT outsourcing," *Wall Street Journal*, April 5 2005.

12 McKinsey & Company will pilot such a program in early 2006.

Chinese students were in the United States, the largest overseas market linked to China. India's diaspora, including people who have returned to their homeland, has played an important role in the growth of the Indian IT and business-process-services sector and has helped alleviate the country's management shortage. China too needs its expats.

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China faces a looming labor shortage that could stall not only its economic growth but also its migration up the value chain. Reforms in the educational system—including greater emphasis on practical and language skills—will help the country fill its skilled-labor gap.