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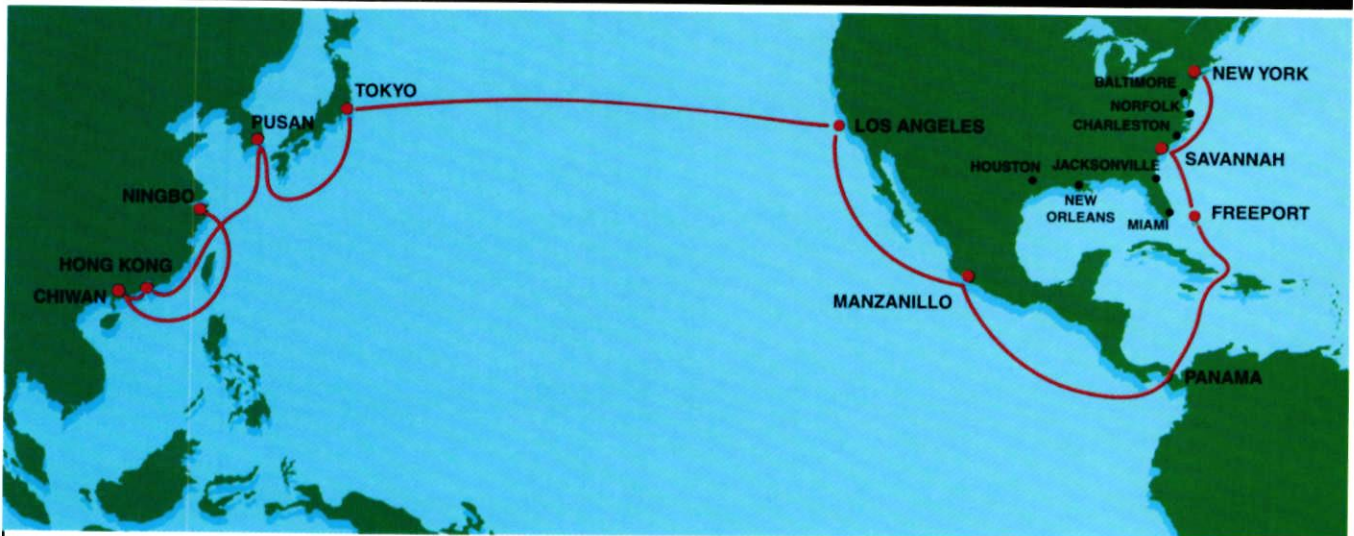
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THE US-CHINA BUSINESS COUNCIL

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**In SARS,
the new
Chinese
leadership
confronts
its first
great test**

Out of Nowhere

The sudden arrival of Severe Acute Respiratory Syndrome (SARS) on the world's radar screen brings home a central fact. In an information-drenched world filled with information-accustomed people, the failure to provide information conveys its own message. And the failure to deliver information can have major consequences, both for the withholder and for those from whom the information is withheld.

The evolving SARS crisis crosses paths with the international business environment at many points and already touches US-China relations in many ways. There is no need to dwell on the implications of disrupted business travel, effects on the airline and hospitality sectors, or estimates of GDP impacts; the media can take care of those.

Let me choose one theme in particular: the underground river of fear of foreign contamination that many societies, including the United States and China, normally keep within a narrow channel, but which periodically threatens to breach its banks.

One of the grittier subthemes that sometimes runs between nations is this theme of contagion, of noxious emanations seeping from one country and one people to another, endangering the most treasured foundations of the threatened land.

One thinks, for example, of the uneasiness with which many countries around the world have viewed the arrival of American cultural influence, particularly since World War II; the attempts to defend home-country language against imported new vocabularies from the United States; the attempts to guard home-country moral values against the perceived creeping degeneracy or amoral materialism associated with American commercial and economic power; the desire to preserve native faiths from the depredations of a value system perceived to be motivated by religio-political conversion; and most recently, the growing anxiety of many nations over the ultimate motives and intentions of the US superpower.

The United States, for its part, has long been uneasy over foreign "invasions" or contamina-

tions. Generally speaking, the visceral American phobias of an earlier era have receded as the world has shrunk and as America's vision of itself has become more cosmopolitan. But vestiges remain, in the anxieties of many Americans about floods of foreign products into the US market, floods of illegal immigrants into American society, the dangers of "Asian" influenza or of contaminated farm products from south of the border, or the specter of terrifying plagues from Africa, or foot and mouth disease from Britain.

China, too, presents examples. Sometimes these latent American fixations, in the hands of political opportunists, have manifested themselves in ugly demonstrations of nationalism, racial prejudice, or crude economic discrimination. Some contemporary examples are just silly, at least superficially.

Last year, I found amusing, for example:

One that got away/Chinese walking fish turns up in Maryland....(Houston Chronicle, 07/05/02)

A panel of scientists recommended poisoning a pond that has become home to a breed of carnivorous Chinese fish to make sure the fish don't escape and spread through Maryland's waterways....(AP, 07/20/02)

Or, take the mitten crab:

What has furry claws, tears up fishing nets and brings nearly \$40 a pound in Queens? The answer—and the subject of an unusual federal complaint—is the Chinese mitten crab. ... a native of waterways near East Asia's Yellow Sea. The crabs spawn in salt water and can migrate

hundreds of miles up freshwater rivers, bypassing dams by walking on land. (AP, 07/31/02)

Then there is the familiar litany over defective products. This clipping happens to be from England:

Poison warning over China's billions of bootleg cigarettes. A quarter of all the cigarettes smoked in Britain are thought to be counterfeits produced in illegal factories in China using the sweepings of workshop floors. (Sunday Telegraph, 04/14/02)

And finally, in this brief review of the flamboyant, sometimes scurrilous evocations of China's menace, with a long, long pedigree in the annals of American prejudice, illegal immigration:

Ten Chinese men who waded ashore naked on a southern California beach were being questioned by immigration officials on Friday after failing in an attempt to blend in with locals by changing swiftly into dry designer jeans and baseball caps. In one of the more bizarre attempts to gain illegal entry into the United States, the men were rounded up on or near beaches around the town of Newport Beach after being spotted emerging from the chilly ocean around dawn by Coast Guard officials and partying teenagers. (Reuters, 05/24/02)

Americans—and citizens of all nations—have a lot to be vigilant about, in terms of our susceptibility to casual acceptance of the imagery of contamination, whether it stems from the purposeful efforts of entrenched domestic economic interest groups or from the pandering purveyors of paranoia on a thousand websites, whether it attaches to products or to people.

That is why the early days of the SARS outbreak have been so troubling. In a matter of weeks, as of the time of writing in mid-April, the world has come face to face with a disease previously unknown to science, of uncertain cause, uncertain transmission vector, and unknown treatment. The world is suddenly awash in news report and rumors, all infused with the fear of an unknown danger originating, it seems, in the southern part of China.

What was fascinating, and worrisome, about the bursting of SARS onto the public stage was the absence of information about the disease from within China until long after the crisis was unmistakable to the world, and China's lurching commitment to greater frankness thereafter. Whether or not the early reports last fall of an outbreak of "atypical pneumonia" in South China, and the disease's subsequent disappearance from view, told the whole story of what was happening in Guangdong is not yet known. What is known is that until early April China was silent about SARS, even as the trails of contagion apparently connected the rising number of sufferers outside of China with those "affected

centers," as the World Health Organization refers to them, within the PRC.

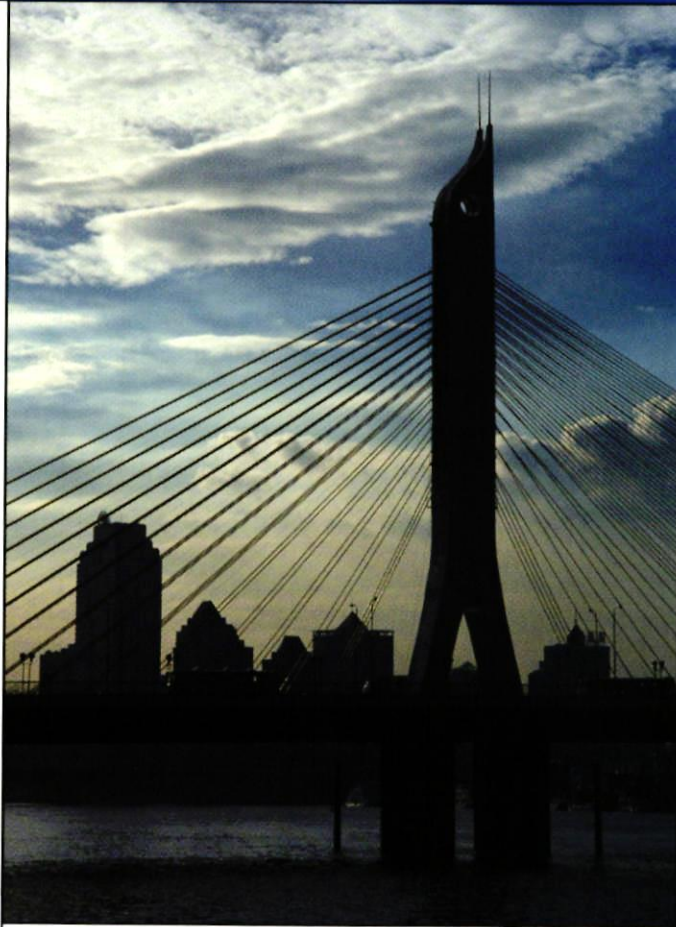
One of the unfortunate coincidences of the SARS outbreak is that it has come at the very moment when new leaders have taken the stage in Beijing and throughout China. As China and the world wait and watch for indicators of what kind of leadership this will be, the real indicators will come not from academic analyses of leaders' educational backgrounds or industrial and administrative careers; they will come from the leadership's response to the sudden and inevitable adversities that greet every new government, in every country. SARS is that first great adversity.

In its inescapable challenge to entrenched patterns of information management—after all, whether China publicly confronts the disease or not, the business travelers aren't traveling, business conferences aren't convening, shoppers aren't shopping—this biological occurrence presents China with both "danger," and "opportunity," as the Chinese word for "crisis" (*weiji*) implies. The danger is that China's silence in the face of what is obvious to the rest of the world compromises more broadly China's external credibility and in fact will contribute to that sense of ominous threat discussed above—a fear that is at once visceral and unthinking, unjust and immoral.

The opportunity is that China, in the face of an unfamiliar and thus far undeterred medical emergency, by sharing once-restricted medical information with the global health community and its domestic audience, can take its next great step on the path to global citizenship, rebuild international confidence in its official information, and take a leading role in the battle to defeat a global lethal menace. Many who have worked with China over the years hope that the cloud that has formed around the SARS emergency in the PRC will have that silver lining.

Lest this essay be taken as an affront to China's dignity, let me hasten to add: no country, and especially no government, is free of the taint of information control, and precious little information is completely neutral. Companies pay astronomical fees for public relations services, remembering the disasters of past mishandlings of sensitive information. Interest groups and advocacy organizations package the facts for their own needs and goals. Political figures do likewise. Governments everywhere are loath to air their dirty laundry or contribute to social unease. Americans have seen this behavior up close on many occasions.

The effects of biological emergencies on established institutions of governance are not completely predictable in any society. But an informed populace clearly is crucial to the struggle to combat such challenges. Silence is no longer an option. That was the lesson of the late twentieth century. Let it not be the hard-learned lesson of the SARS outbreak in China, Asia, and the world at the start of the twenty-first. 完



**The region anchored
by Guangzhou,
Shenzhen, and Hong
Kong faces
competition from
Shanghai**

Can the Pearl River Delta Region Still Compete?

Edward Leman

For more than two decades, the Pearl River delta (PRD) has been a crucial driver of China's economic growth, a key destination for foreign investment, and a platform for the country's growing integration into the global economy. With the return of Hong Kong to PRC sovereignty in 1997 as a special administrative region (SAR), there was widespread hope that the PRD would assume an even more important role in China's economic development. So far this is not happening. Competition from other parts of China and emerging structural issues within the delta are threatening to gradually erode the PRD's legacy

Edward Leman

is president of Chreod Ltd. (www.Chreod.com), a management and research consultancy based in Ottawa and Shanghai.

This article draws from the findings of an 18-month consulting project that Chreod Ltd. recently completed for the Guangdong provincial government that reviewed development trends in the Pearl River delta over the last decade and projected scenarios for the delta to 2020. The project assessed three counties and 25 administratively defined cities in Guangdong, as well as the Hong Kong and Macao special administrative regions. This article solely reflects the views of the author and does not contain any proprietary government information.

as an economic powerhouse. Maintaining and improving this region's competitiveness will require central, provincial, SAR, and municipal governments across the PRD to make some hard decisions about economic restructuring and to take concrete, incremental actions to create and maintain a truly integrated regional economy.

Region basics

The PRD's role in China's economy is pivotal. Home to less than 3 percent of China's population, it contributes almost 7 percent of its GDP. The PRD economy, measured in purchasing power parity (PPP) terms and excluding Hong Kong and Macao, is larger than the national economies of Malaysia, Portugal, and Greece, two-thirds the size of the Philippine economy, and just under half the GDP of Australia. Including Hong Kong and Macao, the delta's economy (also in PPP terms) is the size of Thailand's, half that of Spain, and just over 45 percent of Canada's. Per capita GDP in the PRD (excluding the two SARs) is triple that of Vietnam and 1.5 times that of the Philippines.

The PRD's economic importance in China stems from early economic reforms, started experimentally in the Shenzhen and Zhuhai special economic zone (SEZs), that quickly spilled over to adjacent cities and towns. Foreign direct investment (FDI), initially from Hong Kong (which shifted 70 percent of its industrial capacity to the PRD in less than a decade) and then from Taiwan, fueled massive manufacturing growth and exports. Since the mid-1990s, large influxes of FDI have originated from Japan, the United States, and other countries. Most investment, particularly from Hong Kong and Taiwan, has been in low value-added manufacturing, creating jobs for huge pools of low-cost, largely female migrant labor from inland provinces.

As other parts of China became more competitive during the 1990s—particularly the Yangzi River delta anchored on Shanghai—the PRD's attractiveness to foreign investors began to wane. Though the PRD accounted for more than 40 percent of actual FDI in 1990, its share of the national total declined to just over 25 percent by the end of the decade; in comparison, the Yangzi delta's share grew from 10 percent in 1990 to 25 percent in 2000 and is continuing to rise.

Many foreign observers see the PRD as a large, uniform economic "dragon" that pumps out container after container of "Made in China" toys, apparel, accessories, and other products to global consumer markets. But enormous differences in the purchasing power and production capacities of discrete urban markets exist throughout the core PRD. These markets are developing in markedly different ways and at varying speeds. Companies seeking to enter the

China market through the PRD, to expand existing operations from other parts of the country, or to expand businesses already in parts of the PRD, need to understand these differences.

The PRD megalopolis

Unlike previous studies of the PRD, the Chreod Ltd. project reviewed 534 towns, townships, sub-districts, and neighborhoods using data from China's 2000 National Census. For the first time in China's recent statistical history, this census enumerated migrants regardless of where they held their household registration. Given that the PRD holds one of the largest concentrations of migrants in the country—almost 40 percent of the PRD's total population enumerated in the 2000 Census are migrants—the filling of this statistical gap was long overdue.

Analysis of town and street committee data from the 2000 National Census has clearly confirmed the existence of a concentrated megalopolis stretching from Hong Kong through Shenzhen, Dongguan, Guangzhou, Foshan, and Shunde to Jiangmen. The megalopolis does not yet extend to Zhongshan, Zhuhai, and Macao, but likely will by 2020.

It is important to recognize that a megalopolis is not a "mega-city" such as Bangkok, Manila,

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What makes a megalopolis unique and important is that it is usually the principal economic powerhouse of a country or region.

or Jakarta. A megalopolis is a linear band of cities and towns of varying sizes, structured along a rapidly urbanizing and industrializing corridor at least 150 km long. Two large metropolitan poles typically anchor either side of a megalopolis, linked by strong transportation and communications networks such as expressways and railways. Experience in other countries (including the United States, whose Eastern Seaboard megalopolis stretches from Boston through New York to Washington, and Japan, with the Tokyo-Osaka megalopolis) shows that productive and efficient megalopolises exist when flows of labor, goods, information, and capital are unimpeded between the metropolitan poles and between smaller settlements within the urban system.

What makes a megalopolis unique and important is that it is usually the principal economic powerhouse of a country or region—a concentration of consumers, purchasing power, and production that incubates new and higher forms of economic development and growth. As transportation and communications linkages improve among multiple centers, “urban-rural” boundaries disappear in a rapidly changing web of economic activity. People live and work in different cities; manufacturers are able to source competitive inputs from multiple suppliers over a broad area; cities and towns develop specializations; and higher-level services concentrate within areas that best support regional, national, and international market transactions.

Regional analysis of population densities, traffic flows, and travel times along existing and planned road and light rail networks led to the identification of seven large metropolitan and urban regions in the PRD megalopolis (see p.12):

- **The Guangzhou metropolitan region (MR)** encompassing Guangzhou (including Huadu and Panyu districts, recently annexed by the municipality), Foshan, Nanhai, Shunde, and surrounding towns;
- **The Zhongshan-Jiangmen urban region (UR)** made up of two cities and surrounding towns and villages;
- **The Zhuhai-Macao urban region;**
- **The Dongjiang urban region** encompassing the Dongguan urban area (city proper) and a dense network of towns east of Dongguan city;

- **The East-central delta urban region** stretching from Humen Town through Houjie Town and Chang'an Town in Dongguan Municipality, and crossing into Songgang Town and northern Bao'an District in Shenzhen Municipality;
- **The Shenzhen metropolitan region**, which includes the Shenzhen urban area, a cluster of towns to the north (including some in Dongguan Municipality), and a cluster of towns in the eastern portion of Shenzhen Municipality; and
- **The Hong Kong metropolitan region.**

Prospects for the PRD's market regions

In a previous *CBR* article (see “Choosing Locations to Build Profits,” September-October 2002, p.6), Chreod suggested that foreign investors should differentiate urban regions in China according to eight distinct roles in the supply chain: domestic production centers of intermediate outputs; producers of finished outputs for domestic markets; producers of finished outputs for export markets; domestic distribution centers; offshore distribution centers; consumer markets for domestic products and services; consumer markets for imported products and services; and centers for supporting services in finance, management, innovation, logistics, and other services. Clearly, these roles are not mutually exclusive. Some cities, usually large metropolitan regions, perform a complex combination of roles in the supply chain. Others, including many large inland cities, are much more focused on one or two roles. The challenge for foreign investors is to identify in which role(s) an urban region is likely to maintain and improve its competitive advantage, and how this advantage can mesh with the company's China business strategy.

This framework helps describe the principal roles of the five market regions that comprise the PRD megalopolis and their prospects for maintaining and improving competitiveness over the next 20 years.

● **The Guangzhou metropolitan region**

The Guangzhou MR's population of 14.4 million makes it the largest market in the PRD and China's second-largest metropolitan market after Shanghai. It is about 50 percent larger than Beijing and Tianjin, and more than three times larger than Chongqing. Guangzhou's regional economy is a major production center for intermediate and finished inputs for the domestic chemical, textile, plastics, electrical machinery, transportation equipment, telecommunications equipment, leather, and food processing sectors. It is also a growing center for medium and high value-added manufacturing exports, particularly in the automotive and related sectors.

Both in numbers and output value, contributions of foreign (including Hong Kong,

Taiwan, and Macao) firms to the Guangzhou MR economy are among the lowest in the PRD megalopolis. But the average value of industrial outputs from foreign-invested enterprises (FIEs) in Guangzhou and Foshan cities (the two principal municipalities in the MR) are higher than in most other market regions in the PRD, except for Shenzhen. This suggests that FIEs that have chosen to locate in the Guangzhou MR are engaged in higher value-added industrial production that benefits from the region's more developed consumption markets, the presence of related industries, Guangzhou's superior pool of trained human resources, and its important distribution functions. The value of the output of domestic enterprises, however, is similar to the rest of the PRD megalopolis, with the exception of Shenzhen. This suggests that spillover benefits of foreign involvement in the region are not yet occurring, most likely because the state- and collectively owned enterprises are insular and focus on lower value-added, traditional industries (see Figure 1).

Aside from its production role, the Guangzhou MR is the PRD's major domestic distribution center with strong and improving rail and highway links to the rest of the country. The Guangzhou and Foshan governments are promoting the logistics sector to improve the reach and efficiency of the region's distribution role, particularly as a hub for imports and exports. This goal will be aided by the new Guangzhou airport in Baiyun, which should be completed by the end of this year and which will include an international air cargo function, and the proposed construction of a major container terminal in Nansha at the mouth of the Pearl River. Though Hong Kong terminal operators oppose the Nansha project, construction is expected to start this year.

The Guangzhou MR is also a key domestic market for both domestic and imported goods. Purchasing power in the region is growing rapidly, and a significant middle class with high levels of savings has emerged both within dense urban areas and in suburban areas, including supposedly rural towns. Demand for better housing and higher-quality consumer goods is strong and growing.

Not surprisingly, the MR is rapidly assuming regional importance in financial, management, technical, logistics, and information services. Though Shenzhen and Hong Kong both aspire to become the "services capital" of the PRD, Guangzhou is assuming growing importance in the provision of services to much of the region. Services are likely to become more important in the Guangzhou economy during this decade—and foreign service providers should also begin to play a larger role.

In short, economic prospects in all supply chain roles for the Guangzhou MR are generally positive. But the region faces three principal chal-

Though Shenzhen and Hong Kong both aspire to become the "services capital" of the PRD, Guangzhou is assuming growing importance in the provision of services to much of the region.

lenges that will affect its competitiveness over the next decade. The first is a growing public concern over the environment, particularly surface water and air quality. The entire delta is heavily polluted, but water pollution levels appear to be particularly high in the Guangzhou MR. Both the provincial and municipal governments started a major multi-year campaign late last year to treat 70 percent of domestic wastewater discharges by the end of 2005. Though this effort will help, a more intractable problem is surface run-off from urban areas and, more important, run-off from intensely fertilized suburban agricultural land and poultry and pig farms. Concerns over air quality are also rising. Coal-fired power plant emissions have received much attention in recent years and rapid increases in private vehicle ownership are raising the specter of ground-level pollution.

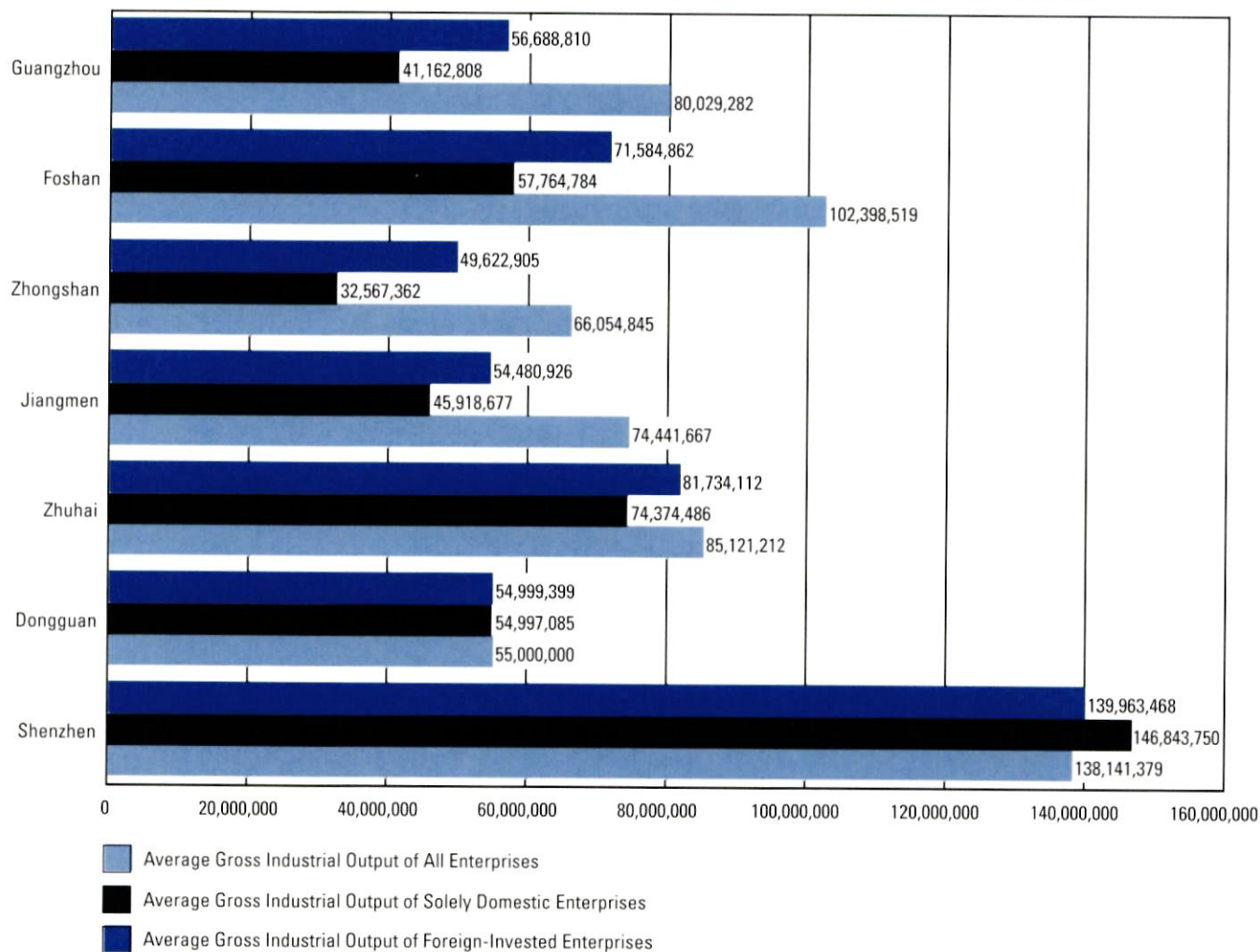
The second major challenge is to control suburban sprawl. Many towns compete intensely for industrial and real estate development with little concern for the environmental impact and the consumption of agricultural land. Collective land ownership in the suburbs means that controls over development by municipal governments are ineffective. Local governments need to set up institutional mechanisms to manage growth.

The third and perhaps most important challenge is for the municipal governments of Guangzhou and Foshan, which now operate in virtual isolation, to coordinate the planning, development, and operation of regional transport and infrastructure. Current duplications of infrastructure and services are failing to take advantage of economies of scale and are creating huge inefficiencies.

● The Dongjiang urban region

The Dongjiang UR is very different from the Guangzhou MR. Much smaller, with a population of just under 4 million, it loosely surrounds Dongguan City, which has a total population of around 850,000. Over the last 15 years, the small, medium, and large towns throughout the Dongjiang UR have been competing intensely

Figure 1
Average Industrial Output in the Pearl River Delta by Type of Enterprise, 2000 (RMB)



SOURCE: Chreod Ltd.

among themselves, first to attract the low value-added manufacturing that was relocating out of Hong Kong, and then to attract similar investment from Taiwan. Land development and environmental controls in these towns are lax. Unlike in the more-regulated cities of the region, much of the town land is collectively owned. Though collectives are forbidden to sell or lease use rights to collectively owned land, many have circumvented this ban through "informal" arrangements and by building collectively owned factories and workshops that are then leased out to small and medium-sized manufacturers. The result has been an 86 percent increase in urban land area in the Dongjiang UR from 1990 to 2000 (compared to 46 percent growth in the Guangzhou MR).

The vast majority of manufacturing in the region has been low value added and for export. The region has become one of the strongest

magnets in the country for un- and semi-skilled migrant labor from the periphery of Guangdong and from poorer, inland provinces. The 2000 Census data indicate that 77 percent of the Dongjiang UR's population is made up of migrants (compared to 35 percent in the Guangzhou MR). Most of these migrants are young women. Though early foreign investment was in low value-added manufacturing facilities, in recent years several medium and higher value-added firms have located in Dongguan City itself or in its immediate suburbs; these include Nokia AB, Samsung, Nestle SA, and Minolta Co. Ltd. However, the average output values of both domestic and foreign-invested firms in the Dongjiang UR are still below average for the PRD megalopolis as a whole.

Dongjiang is essentially a production center. It does not play a major role in southern China in either domestic or offshore distribution, and

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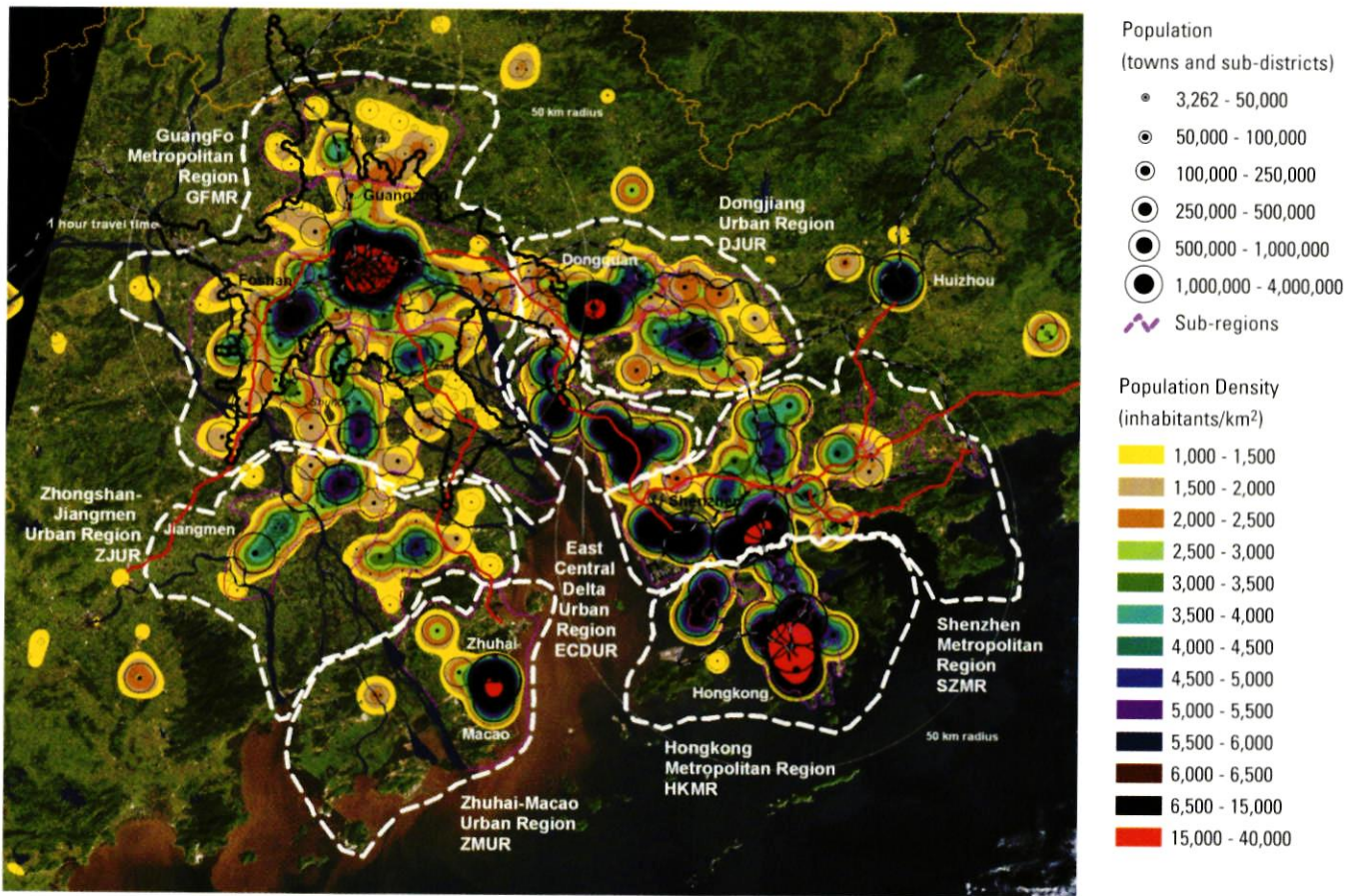
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Figure 2
The Pearl River Delta Megalopolis, Population Densities, 2000



SOURCE: Chreod Ltd.

the large proportion of migrants with limited purchasing power makes for a comparatively small consumer market. Both the provincial and municipal governments recognize that a major restructuring of the Dongjiang economy is required if it is to attract higher value-added manufacturing and supporting services.

The governments face two major challenges, both of which will require incremental and sustained actions. The first is the comparative weakness in human capital. Original residents have among the lowest levels of educational attainment in the PRD, and there are few institutions of higher learning in the region. Migrant workers are semi-skilled; those with higher skills gained from work-related training can easily shift to other parts of the PRD if better employment opportunities arise. Migrant workers are still regarded as outsiders and have no way of transferring their household registrations to Dongguan. Therefore, the skills and energy of migrant workers are not long-term assets that can be tapped to foster entrepreneurial development, as is the case elsewhere in China.

The second major challenge is more intractable. Though the institutional capacities of the Dongguan municipal government are improving, nearby town governments remain weak in planning, management, and control. These towns need to be brought under the purview of the municipal government.

● **The East-central delta urban region**

The East-central delta UR encompasses a cluster of towns and villages in a 40 km by 15 km corridor holding 4 million residents. Sandwiched between the Dongjiang UR and the Shenzhen MR, there is no administratively defined city in the East-central delta; the northern half falls under the Dongguan Prefecture and the southern half in Shenzhen.

This region is similar to the Dongjiang area in terms of economic and institutional characteristics but has experienced even greater sprawl and more piecemeal growth. This situation has, in turn, led to far higher population densities and massive conversion of agricultural land over the last decade: urban built-up land skyrocketed 146 percent from 1990 to 2000, resulting in a

loss of 25 percent of the region's agricultural land area.

Chang'an Town, located in the middle of the corridor, is typical. It has a registered population of just over 35,000 residents and is therefore officially designated a small statutory town; under senior government regulations on public staff allotments for towns of this size, it is therefore allowed, for example, to hire two traffic police. In reality, the 2000 National Census registered a total population of 565,000, including migrant workers. This "town" has a population the size of Haikou, capital of Hainan Province, but it provides public services to less than 10 percent of its residents.

● The Shenzhen metropolitan region

Shenzhen was established as an SEZ in 1980. At that time a village of less than 25,000 inhabitants, Shenzhen became the platform on which the central government experimented with a wide range of financial, economic, and institutional reforms. Located directly across the border from Hong Kong, the SEZ has sought to catch up and compete directly with the SAR. In reality, there are two Shenzhens. The SEZ itself is a 5 km-wide strip of land stretching 40 km along the Hong Kong border. Residency and employment rights in this core area are rigidly controlled—a barbed-wire fence separates the SEZ from the rest of the much-larger municipality. Entry from the mainland to the SEZ is strictly controlled. The SEZ is therefore ringed on the south with the still heavily guarded border with Hong Kong and on the north with a similar security perimeter.

Beyond the northern SEZ border, Shenzhen Municipality—the second Shenzhen—extends another 20 km to the boundaries of Dongguan and Huizhou cities. This suburban Shenzhen is made up of a dense corridor of towns along the eastern shore of Lingding Bay that joins up with the East-central delta UR, a cluster of towns farther inland to the north of the SEZ, and a cluster of towns in the east near Huizhou. This Shenzhen exhibits many of the same town-based characteristics of the Dongjiang UR.

The SEZ was not conceived as a literal extension of Hong Kong but, rather, as a parallel metropolis that would, over time, benefit from proximity to Hong Kong's technological, intellectual, and financial capital. This strategy has worked very well. In the 1980s, Shenzhen was the first destination for manufacturers as they relocated from higher-priced Hong Kong. As land and labor costs rose in the SEZ, these lower value-added manufacturers headed north to the second Shenzhen and Dongguan, to be replaced by central-government-controlled and foreign higher value-added manufacturers, including some of China's top high-technology companies. Not surprisingly, the municipal government has concentrated public investment within

the boundaries of the SEZ to build a completely new city. Over a 20-year period, the SEZ has changed from a rather rough and wild boomtown into a sophisticated, well-managed metropolis attracting global investment in high-end manufacturing and advanced services, including innovative research and development.

From the supply chain perspective, the SEZ has become an important producer of high-end outputs for the domestic and export markets in information technology equipment and software, telecommunications equipment, new materials, biotechnology and pharmaceuticals, electronics, and some traditional industries,



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including food processing, plastics, and nonferrous metal products. Interestingly, though the participation of foreign firms in Shenzhen is the same as in Dongguan, the average output values of both domestic and foreign industrial companies are more than twice as high in Shenzhen. Indeed, the average output value of domestically invested firms is slightly higher than that of FIEs, indicating that Shenzhen is home to some of the most productive and advanced domestically owned companies in China.

The SEZ has also become a key offshore distribution center through bulk cargo and limited container ports in Shekou on Lingding Bay, and through a major container port in Yantian on Dapeng Bay in the east, owned jointly with Hong Kong's Hutchison Port Holdings. The SEZ is striving to build logistics capacities to global standards.

The SEZ is also an important and growing market for both domestically produced goods of all kinds (similar to Guangzhou) and imports. Rapid growth, a highly educated populace, and strong household purchasing power have created a large middle class in the SEZ that is approaching income levels across the border in Hong Kong. The SEZ is also becoming a center for support services in finance, management, trade, innovation, and education. It is not yet at the level of Hong Kong, but is catching up, particularly in services related to technological innovation.

Though the SEZ's prospects are good, major challenges face the second Shenzhen where the suburban and peri-urban areas share the same problems as the Dongjiang and East-central delta regions. In recognition of these challenges, the Shenzhen Municipal Government has recently embarked on an ambitious program of suburban upgrading that will last most of this decade, including the consolidation of several scattered towns into Hong Kong-style "new towns." In the medium term, this will likely improve the attractiveness of the second Shenzhen to high value-added manufacturing and services firms.

● The Hong Kong metropolitan region

Hong Kong's geography and political history make it a unique city. An enclave for virtually all of its history, its development was always based on ensuring a high degree of economic self-sufficiency. When geographic limits to urban development were reached on Hong Kong Island and Kowloon, the government started in the 1970s to build, and integrate through transportation links, large new towns in the New Territories.

With the establishment of Shenzhen and the gradual opening up of China, Hong Kong's firms quickly moved industry across the border. This freed up valuable land for commercial redevelopment into offices for the growing service sector, retail complexes to serve growing consumer demand, and housing. The metropoli-

The SARS Outbreak and the Pearl River Delta

The Pearl River delta (PRD) megalopolis has been in the press in recent weeks as the likely epicenter of a new, and in some cases deadly, illness that has spread around the world from its apparent source in Foshan, Guangdong. The new illness, Severe Acute Respiratory Syndrome (SARS), may have originated in Guangdong in part because of a combination of economic and political circumstances in the PRD.

Though the source of the illness is unknown as *The CBR* goes to press, initial investigations focused on the possibility that the illness jumped from livestock to humans (as occurred in the avian flu outbreaks in Hong Kong several years ago). Farming practices in suburban areas in the PRD—particularly the generation of large quantities of agricultural run-off—and the lack of town and township government oversight of these practices, may have contributed to the public health problem.

Chreed Ltd.'s research has shown that agricultural run-off is, in some areas, a bigger contributor to pollution than urban domestic

wastewater. (This is a problem shared by other metropolitan areas, including Shanghai.) The problem is huge: treating agricultural wastewater is outrageously expensive. Yet the diets of the PRD's growing middle class have moved away from grains to fish and livestock (pigs and chicken in particular), and town and township governments lack the human resources and institutional capacities within their environmental protection bureaus to monitor and control agricultural development. In the PRD, agricultural output is concentrated on the western side of the delta, including metropolitan Guangzhou (which includes Foshan). The east side is much more industrialized and does not have the rich deltaic soil and water resources to sustain intensive agriculture. In sum, these public health issues may in part be institutional.

The other important dimension of the SARS issue—crisis management—has run headlong into the PRD's political circumstances. The World Health Organization was highly critical of the China's failure to respond to global calls for information at the start of

the SARS outbreak and of its tardiness since. This behavior may have been due, in part, to the change in governments at city, provincial, and central government levels over the past six months and the fact that health officials probably had not yet worked out how to deliver bad news through the new hierarchy. The recent weaknesses in crisis management may, therefore, be temporary, and there is reason to believe that provincial and municipal governments may bend over backward to step up public health monitoring and regulatory enforcement.

What may be more worrisome from a public-health standpoint is the capacity of local governments to respond to other environmental disasters—particularly related to water pollution—such as large-scale chemical and fertilizer spills. These could directly affect the water supply of thousands and have much wider, more immediate, and more devastating effects than SARS.

—Edward Leman

tan economy—including its stock market and banking sector—rapidly became dependent on trade in scarce real estate.

During the early and mid-1990s, Hong Kong's service economy boomed as the city became foreign investors' principal gateway into China. Demand for commercial space and high-end housing propelled the real estate market into a speculative bubble that burst after the Asian financial crisis forced many foreign firms to either downsize, quickly exit the Asian market, or relocate to the mainland. The subsequent collapse of the nascent high-tech sector exacerbated problems in Hong Kong's real estate-driven economy.








Hong Kong has developed specialized supply chain roles. Neither a major production center

nor a major domestic distribution center, it is the largest offshore distribution center in China and the largest container port in the world. But its container terminals already face competition from lower-cost facilities in Shenzhen and will soon have to compete with Nansha in Guangzhou and deepwater ports in the Yangzi delta. Geographic constraints to further port development in Hong Kong make it likely that the SAR's offshore distribution role will gradually stabilize and then decline over the next 10-20 years relative to China's other coastal ports.

Without a significant manufacturing capacity, Hong Kong has become one of the world's most productive and innovative providers of support services in finance, law, business man-

Figure 3
Market Regions in the Pearl River Delta: Functions and Prospects

Region's importance in Southern China:

	High		Growing
	Medium		No major Change
	Low		Declining
			Uncertain

	PRODUCTION CENTER			DISTRIBUTION CENTER		DOMESTIC MARKET		CENTER FOR SUPPORTING SERVICES
	Production of Intermediate Inputs	Production of Finished Outputs for Domestic Markets	Production of Finished Outputs for Export Markets	Domestic Distribution Center	Offshore Distribution Center	Market for Domestic Products and Services	Market for Offshore Products and Services	
Guangzhou Metropolitan Region	↑	↑	↑	↑	↑	↑	↑	↑
Jiangmen-Zhongshan Urban Region	→	↑	↑	→	→	↑	↑	→
Zhuhai-Macao Urban Region	↓	→	→	↓	↓	→	→	→
Dongjiang Urban Region	→	→	?	→	→	→	→	→
East Central Delta Urban Region	→	→	?	→	→	→	→	→
Shenzhen Metropolitan Region	→	↑	↑	↑	↑	↑	↑	↑
Hong Kong Metropolitan Region	↓	↓	↓	↓	?	→	→	↑

SOURCE: Chreod Ltd.

Governments and businesses must address four major structural issues if the megalopolis is to sustain and improve its global competitiveness as a provider of goods and services, and as a major distribution center for China.

agement, and trade. Despite major advances in Shenzhen and Guangzhou, no other city in southern China can approach Hong Kong's comparative advantages in advanced business services (in the same way that Boston, Philadelphia, and Washington cannot compete with New York in global financial services).

Hong Kong's comparative advantage as a center for support services will continue as long as it strengthens its human capital through improvements to secondary and tertiary education. Advanced business services are not enough to sustain a MR of more than 6 million people, however. Hong Kong's competitiveness rests on improving productivity—doing more with fewer employees. New production, distribution, and less-advanced tertiary services will be necessary to provide jobs for the territory's people. This will require a bigger metropolitan market, one approaching the size of metropolitan Shanghai or Guangzhou.

The single biggest constraint to Hong Kong's development is the barrier to the free flow of people, goods, information, and capital at the border with Shenzhen. Hong Kong and Shenzhen need to become closely integrated into a true metropolitan economy without artificial barriers that undermine efficiencies. Clearly, New York's metropolitan economy would not have developed the way it did if businesspeople and residents had had to spend an hour or more at checkpoints to enter Connecticut or New Jersey. Integration of the Hong Kong and Shenzhen metropolitan economies would create a regional market of more than 14 million consumers and workers, the same as metropolitan Guangzhou. Closer integration would reduce Hong Kong's reliance on the volatile real estate market and would provide Shenzhen's advanced industries with much more efficient access to

superior business services in Hong Kong, allowing for the emergence of globally competitive industry clusters. Closer integration would also eliminate duplicative infrastructure, such as the offshore distribution functions in the ports of Shekou, Yantian, and Hong Kong.

Senior SAR officials and business leaders have clearly recognized over the last two years that the "one country, two systems" model does not preclude closer economic integration with the Pearl River delta megalopolis. Border crossing hours have recently been extended, and construction is expected shortly on a new highway link across Shenzhen Bay. Cross-border integration issues are now being reviewed and managed at the central-government level by the State Development and Reform Commission and the SAR government. Though these are important steps, they must be followed by much bolder measures that integrate markets on a wider metropolitan scale.

Closer integration of the Hong Kong and Shenzhen economies will not only help develop the MRs but also improve the functioning of the PRD megalopolis as a whole. As mentioned earlier, efficient megalopolises exist when there are at least two large metropolitan poles having strong economic flows between them. This is currently not the case in the PRD megalopolis: though the Guangzhou MR is gradually developing into an integrated metropolitan economy, integration is not occurring quickly enough in Hong Kong and Shenzhen. In the long term, weak integration will undermine the PRD's competitiveness compared with China's other megalopolis. In the Yangzi River delta to the north, economic flows among Shanghai; Hangzhou, Zhejiang; and Suzhou, Wuxi, and Nanjing in Jiangsu are far less constrained.

Improving the PRD's global competitiveness

Figure 3 summarizes Chreod's assessment of the roles and prospects of the PRD's seven market regions over the next 20 years. It shows that the megalopolis is not a uniform economic powerhouse but rather a system of discrete regions with distinct comparative advantages—and disadvantages. Governments and businesses must address four major structural issues if the megalopolis is to sustain and improve its global competitiveness as a provider of goods and services, and as a major distribution center for China.

The first challenge is to accelerate the integration of Guangzhou and Foshan into a truly metropolitan regional economy. Integration will require much closer collaboration in removing intercity barriers to the free flow of labor, goods, and services. It will also require creative collaboration in improving the domestic and global

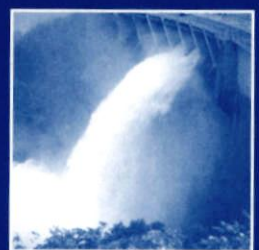
branding of the metropolitan economy as the “Guangzhou metropolitan region” of more than 14 million residents.

The second challenge is to strengthen the economic capacities of the southern pole of the PRD megalopolis by integrating Shenzhen and Hong Kong. Both municipal governments must exhibit far greater commitment to developing innovative, world-class institutional mechanisms to achieve economic integration while respecting the political, social, and cultural differences of the two jurisdictions. The third challenge is to re-engineer the disaggregated sprawl and economies of the corridor of industrialized towns and villages stretching between Shenzhen and Guangzhou. This economic re-engineering will require deep and wide institutional change to local governance, urban management processes, land use rights, fiscal entitlements, and intergovernmental relationships in this sprawling corridor. Given the structure of governance in China, these far-reaching changes will require strong and sustained leadership at the provincial level.

The fourth challenge is to improve transport linkages. The main existing link—the Hong Kong-Guangzhou expressway, built in the early 1990s under a concession arrangement with a Hong Kong developer—is substandard and cannot handle the volume of flows that a truly integrated megalopolitan economy will generate. The delta’s governments and entrepreneurs should concentrate on improving the efficiencies of transport linkages in the eastern delta, home to the most productive entities in the megalopolis. These linkages need to be much better coordinated with the more rational development of the delta’s bulk and container ports. The uncoordinated development of ports in the delta to date is leading to inefficiencies that could eventually undermine the competitiveness of the megalopolis as a major offshore distribution center for China.

No country has ever planned a megalopolis. They are far too complex, dynamic, and rapidly changing for planning to have much value. What governments can and should do is minimize impediments to flows within the megalopolis so that market forces can fully benefit from the diverse comparative advantages of cities and towns within this dynamic economic region. The PRD’s global competitiveness during the next 20 years will depend on how well governments at all levels—and domestic and foreign companies—manage important structural changes, particularly in relation to how similar challenges are met in the Yangzi delta megalopolis, China’s other economic powerhouse and the PRD’s principal competitor. 完





FOCUS: ENERGY

China Powers Up

China plugs away at power sector reform

Songbin Zhu and Xiaolin Li

After 20 years of electricity shortages, China enjoyed adequate supply and even oversupply in certain areas from late 1997 to early 2001. But serious power shortages have been plaguing China since the summer of 2002. Civilized blackouts—those with advance notification—have affected industrial users, particularly state-owned enterprises (SOEs), in 19 provinces and cities in the country. At 1,162.7 kilowatt-hours (KWh, see Power Glossary p.21), China's annual per capita power consumption is only half of the world's 2,216 KWh average. According to World Bank statistics, in 1998 electricity use per capita was 11,832 KWh in the United States, 746 KWh in China, and 2,085 KWh for the world as a whole. China needs \$350 billion to build new power generation capacity over the next 20 years. All this is good news for foreign power producers.

Songbin Zhu and Xiaolin Li,

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Despite the fact that some foreign independent power producers that entered China's power market in the mid-1990s, such as Mirant Corp., Sithe Energies, Inc., and Enron Corp., have sold their power generation assets and pulled out of China, other companies, such as CLP Holdings Ltd., EDF Group, and Peak Pacific Co. Ltd., remain and now make high returns. According to current Chinese policies, 20 percent of total future investment, or \$57 billion, will take the form of equity funds. Because the government

will not fund new power plants, mergers and acquisitions (M&A) will play a major role in the development of generation capacity in China. But before these options can make much headway, the government will have to persevere in its latest round of reform and restructuring.

Current conditions

By the end of 2002, China's total installed capacity reached 350 gigawatts (GW). In comparison, the United States has a generating capacity of 811.63 GW, according to the US Department of Energy. In 2002, China generated a total of 1,640 terawatt-hours (TWh), up 10.5 percent from 2001. A lack of capacity during peak periods and backward transmission networks nevertheless continue to hinder the power sector's growth.

Seventy-three percent of China's power is generated thermally, 25 percent is hydropower, and 2 percent is generated from nuclear and other sources of fuel. Two-thirds of coal and hydropower resources are located in western China, but two-thirds of electricity demand comes from the eastern coastal areas. Thirty-five percent of generating units have a capacity of 300 MW and above. Of these, less than 4 percent can transmit 500 kilovolts.

Table 1: The Five National Independent Power Producers

Newly Formed National Generators	Controlled Capacity (MW)	Owned Capacity (MW)
China Datang Group	32,250	20,970
China Guodian Group	30,430	20,350
China Huadian Group	31,090	20,920
China Huaneng Group	37,970	19,380
China Power Investment	29,890	21,960
Total	161,630	103,580

SOURCE: Former State Power Corp.

Table 2: Publicly Listed Companies that Were Transferred to the Five National Independent Power Producers (IPPs)

Newly Formed National IPPs	Listed Companies (type of share)
China Datang Group	Beijing Datang Power Generation Co., Ltd. (H) Guangxi Guiguan Power Co., Ltd. (A) * Hunan Huayin Power Co., Ltd. (A) *
China Guodian Group	State Power Co., Ltd. (A) * Hubei Changyuan Power Development Co., Ltd. (A) *
China Huadian Group	Shandong International Power Development Co., Ltd. (H) Heilongjiang Power Co., Ltd. (A) *
China Huaneng Group	Huaneng Power International Co., Ltd. (A, H, N) Zhejiang Southeast Power Generation Co., Ltd. (A) *
China Power Investment	Shanxi Zhangze Power Co., Ltd. (A) * Chongqing Jiulong Power Co., Ltd. (A) *

SOURCE: Former State Power Corp.

NOTES: A shares are listed in Shanghai or Shenzhen; H shares are listed in Hong Kong; N shares are listed in New York; * Indicates listed power companies controlled by former State Power Corp.

Table 3: Other Companies Resulting from the Break-up of State Power Corp.

Two Power Transmission Companies	Geographic Scope
Southern Power Grid Co.	Guangdong, Hainan, Guangxi, Yunnan, and Guizhou
State Power Corp Grid Co.	All other provinces and provincial-level entities

Four Consulting and Construction Companies Related to Power

China Gezhouba Group
China Hydropower Engineering Consulting Group Co.
China Power Engineering Consulting Group Co.
China Water Resources and Hydropower Construction Group

SOURCE: US-China Business Council

Electric power enterprise reform

Between 1952 and 1978, China's administrative structures and economic systems were based on a mix of Chinese traditional administration, which emphasized central control over its vast territory through a prefecture/county system, and the Soviet Union's planned economic system. Since 1978, reforms have been incremental, piecemeal, and occasionally contradictory.

During the 1980s, the power sector adopted a contract responsibility system under which power companies had to sell a certain amount of power to the state at a fixed price. In addition, the government encouraged enterprises to use their own funds for power development or raise funds from outside sources such as local governments, other SOEs, collectively owned entities, and foreign investors. The government established Huaneng Electric Power Development Corp. in 1985 as a new SOE with a more modern corporate governance structure. Huaneng listed on the New York Stock Exchange in 1994, the Hong Kong Stock Exchange in 1998, and the Shanghai Stock Exchange in 2001. The government formed the five regional grid companies in December 1991 as a major step toward building regional power markets.

Also in 1991, the government overhauled the contract responsibility system in the power sector, moving power companies another step closer

er to international standards of enterprise management. China also began to experiment with the establishment of limited stock companies and employee buy-outs in the power sector. In the 1990s, more power enterprises began to list on the stock markets. So far, more than 40 power companies have listed on the Shanghai and Shenzhen stock exchanges.

It was not until February 1998 that Manwan Power Plant in Yunnan, the first pilot power plant reorganized as a limited liability company with clearly defined property rights for state-owned assets, was set up. The central and local governments owned 56 and 44 percent, respectively, of Manwan, based on the amount each party originally had invested. The success of this pilot project has led to plans to turn all of China's existing power plants into limited liability companies.

Institutional reform

Before March 1998, the ministry responsible for China's power sector was restructured several times. During the 1998 restructuring, the former Ministry of Power's functions were assigned to three new entities.

The Electric Power Administrative Department under the recently disbanded State Economic and Trade Commission (SETC) has functioned as a typical governmental agency, taking the role of a regulator. The China Electricity Council (CEC) has functioned as an industrial association and acted as an industrial coordinator. The State Power Corp. has invested in state-owned assets in the power sector and has invested and managed these state-owned assets.

The latest round of reform

China is simultaneously breaking up state monopolies and separating regulators from the industries they oversee. The country is trying to establish regulatory agencies with clear mandates to guarantee the sustainable development of public utilities and fair competition.

To that end, China initiated yet another round of restructuring in 2002. When it is complete, China will have two regional grid operators, five national generators, four peripheral group companies, and a new regulator (see Tables).

● Two transmission companies

China's current five regional grid operators (northeast, northern, central, northwest, and eastern) have become independent subsidiaries of a new State Power Grid Co. (State Grid). State Grid will keep full control of the Three Gorges hydropower station and its transmission lines and will also be responsible for the interconnection of the regional grids. State Grid will sell its 6,470 MW power generation assets within the next two years.

Power Glossary

Ampere: The unit of measurement of electric current produced in a circuit by 1 volt acting through a resistance of 1 ohm.

Gigawatt: 1,000 megawatts

Joule: The standard unit of energy in electronics and general scientific applications. One joule is defined as the amount of energy exerted when a force of one newton is applied over a displacement of one meter. One joule is the equivalent of one watt of power radiated or dissipated for one second.

Kilowatt: 1,000 watts

Kilovolt: 1,000 volts

Megawatt: 1,000 kilowatts

Ohm: The unit of measurement of electrical resistance. It is the resistance of a circuit in which a potential difference of 1 volt produces a current of 1 ampere.

Terawatt: 1,000 gigawatts

Volt: The practical unit of electric pressure. The pressure that will produce a current of one ampere against a resistance of one ohm.

Watt: A unit of electrical power produced by a current of one ampere across a potential difference of one volt, or a unit of power equal to one joule per second.

Watt-hour: An electric energy unit of measure equal to 1 watt of power supplied to (or taken from) an electric circuit steadily for 1 hour.

SOURCES: www.whatis.techtarget.com,
www.computeruser.com, www.eia.doe.gov,
www.outlawnet.com

—Virginia Hulme

Southern Power Grid Co. includes the power networks of Yunnan, Guizhou, Guangxi, Guangdong, and Hainan. Guangdong Grid Co., which was separated from Guangdong Generation Co. in August 2001, has been fighting for majority control of the grid operator. Yuan Maozhen, the head of Southern Grid Corp., was formerly with State Power Corp.

There will be no further separation of transmission and distribution during the 10th Five-Year Plan (FYP, 2001-05). Southern Grid will keep Guangdong Pump Storage Station (2,400 MW) and Lubuge Hydropower in Yunnan (600 MW). Songbin predicts that some power professionals will continue their efforts to promote a national grid operator when the national network, to be created between 2010 and 2020, is physically and technically ready for a single operator.

● Five generators

State Power Corp.'s power generation assets are being restructured into five national genera-

The goal of power tariff reform is to optimize resources to produce as much electricity as possible at the lowest cost.

tors, each of which will not have more than 40 GW installation. China Huaneng Group, China Datang Group, China Huadian Group, Guodian Power Group, and China Power Investment Group will hold generation assets that come from power plants either wholly owned or majority-controlled by State Power Corp.

● Four service companies

State Power Corp. generation assets of 9,200 MW are being allocated to four peripheral group companies. These companies will focus on construction, engineering, design, and consulting.

● One regulator

As *The CBR* goes to press, China is in the process of establishing the State Electricity Regulatory Commission (SERC) to monitor the market and maintain fair competition. Scholars and government officials have all emphasized the importance of an independent regulator, though so far China does not have a successful example to follow.

China has split up its oil and telecommunications monopolies in recent years, but regulators are still deeply involved in the industries they oversee. Chinese regulators will need to learn quickly.

Power tariff reform

The reform of power tariffs remains a major component of overall reforms because it is crucial for the sustainable development of China's electric power industry. In the old planned economy, the central government allocated funds to state-owned power companies to build power facilities. Urban and rural utilities collected low, subsidized power fees from endusers, never making a profit. Investment mainly went to build generation facilities, while transmission facilities languished. Low-voltage power distribution has been handled by municipal-, county-, and village-level governments. Line loss, backward distribution networks, and corruption at those levels have caused Chinese farmers, in particular, to pay much higher fees for electricity. That is why the central government launched a program to construct and upgrade rural power distribution networks several years ago. In the meantime, State Power Corp. has been taking back control of county-level power supplies. All these moves have helped to prepare the industry for the current round of reform, but China still has a long way to go to establish a market-driven pricing mechanism for power tariffs.

The goals of power tariff reform are to optimize resources to produce as much electricity as possible at the lowest cost. Power tariff reform will also help rationalize electricity distribution and facilitate investment in the power industry—essential to stabilize power enterprises' financial situation.

In the long term, four types of power tariffs will exist: on-grid, transmission, distribution, and retail. Grid operators will pay on-grid tariffs to

Table 4: Top Leaders for China's Future National Power Companies

Name	New Position	Position
Chai Songyue	Chair, China Electricity Regulatory Commission (CERC)	Governor of Zhejiang
Shao Binren	Vice Chair, CERC	Deputy Director, State Council's System Reform Committee
Song Mi	Vice Chair, CERC	Vice President, State Development Bank
Shi Yubo	Vice Chair, CERC	General Director, Electric Power Administrative Bureau of the State Economic and Trade Commission
Zhao Xizheng	President, State Power Grid Co.	Vice President, State Power Corp.
Yuan Maozhen	Chair, Southern Power Grid Co.	Chair, Guangdong Power Development Co., Ltd.
Liu Zhenya	Vice President, State Power Grid Co.	Vice President, State Power Corp.
Zhai Ruoyu	President, China Datang Group	President, North China Power Group and Beijing Datang
Zhou Dabin	President, China Guodian Group	Vice President, State Power Corp.
He Gong	President, China Huadian Group	Vice President, State Power Corp.
Li Xiaopeng	President, China Huaneng Group	Vice President, State Power Corp.
Wang Binghua	President, China Power Investment	Director, Operation Department of State Power Corp.

SOURCE: Former State Power Corp.

power plants, wholesale utilities will pay a transmission fee to grid operators, and endusers will pay retail tariffs to wholesale utilities. The market will determine on-grid and retail tariffs, while the government will continue regulating transmission and distribution tariffs. After tariff reform, the rules for power tariff supervision should be clearer, and a normal and transparent tariff administration system should be put in place.

In 2003, China will begin to establish an on-grid pricing mechanism. The country will also establish a transmission and distribution pricing mechanism to facilitate the grids' healthy growth. Finally, big consumers will begin to purchase electricity directly from power generators, and China will establish and optimize a retail pricing mechanism.

Financing and foreign funds

Since 1987, provincial and municipal governments have been able to approve power projects with a total foreign investment of up to \$30 million. In 1987, the government launched the so-called "power construction fund," which was funded by a fee of ¥0.02/KWh (\$0.00242) imposed on industrial and commercial consumers of electric power, to build large and medium-sized power stations. Such funds were considered equity from local governments. As a result of this "two cents" policy, the contribution of local governments to total investment in power plants rose from 1 percent in 1983 to 17 percent in 1990.

But the central government stopped collecting the power construction fee at the end of 2001. Now the policy is to use the "two cents" fund only for constructing and upgrading urban and rural distribution networks.

Plenty of bank loans with low rates are available, but equity funds for sustainable development of China's electricity sector generally are not. A typical national generator has only 10-20 percent of the equity funds it needs to develop power facilities. Most of China's power companies already carry heavy debt, but the current power sector reform plan does not address this issue directly.

In search of new lending outlets, Chinese bankers have been aggressively courting Chinese power professionals engaging in feasible power and other engineering projects. Some bankers have been dissuading these professionals from pursuing options that include foreign participation. They warn, erroneously, that foreign investors will force the project to incur higher costs and charge high power tariffs.

M&A opportunities have emerged as perhaps the best strategy for foreign firms looking to expand their roles and obtain market share in China's power sector. But until recently, China's regulatory framework for M&A was primitive,

M&A opportunities have emerged as perhaps the best strategy for foreign firms looking to expand their roles and obtain market share in China's power sector.

and foreign businesses' participation in M&A activities was relatively rare. According to the World Bank's *2001 World Investment Report*, of the \$47 billion in foreign direct investment in China, only 5 percent was done through M&A while, in the same period, 80 to 90 percent of the world's \$1.5 trillion in investment was channeled through M&A deals.

China's M&A market still lags behind world standards, but is improving rapidly. On March 11, 2003, the 16th National People's Congress

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Power in the 10th Five-Year Plan

China has set a target of 7 percent for annual economic growth for the current 10th Five-Year Plan (FYP, 2001-05). China's GDP growth rates for 2001 and 2002 were 7.3 and 8.0 percent, respectively, according to the National Bureau of Statistics. Because electricity demand typically rises at the same rate as economic growth, Chinese power professionals have recently raised their estimate for annual power demand growth during the 10th FYP from 5 percent to 6 percent. Based on this assumption, by the end of 2005 China's total installed power capacity will be 395 gigawatts (GW), while total power consumption will be 1,830 terawatt hours (TWh). China needs to add 100 GW of capacity during the 10th FYP, or 20 GW each year from 2001 to 2005. Of this amount, 80 GW will come from new facilities, and 15 to 20 GW will come from replacement of existing small units with big ones. But the 11.65 GW of new capacity that came online in 2002 did not reach that goal.

Many Chinese power professionals have already sounded alarm bells, and some say that even 20 GW of new capacity each year will not be enough to support economic growth. The State Development and Reform Commission admitted informally that the power targets in the current 10th FYP are too low to meet economic growth goals. Some power planners are calling for an immediate annual commissioning of 25 GW. Chinese planners also estimate that by the end of 2010 China's total installed power capacity will be 520 GW, while power consumption will total 2,350 TWh.

The 10th FYP designates the development of power transmission networks and hydropower resources in western China as the main priority, but also emphasizes the development of gas-fired and large coal-fired power generation facilities with a unit capacity of 300 megawatts and above.

—Xiaolin Li and Songbin Zhu



FOCUS: ENERGY

Upstream- Downstream

Mitchell A. Silk

Petroleum and gas products have emerged as priorities for China's energy and economic development policymakers. These fuels and feedstock are integral to China's sustainable energy development program since they simultaneously meet economic development, environmental protection, and social demand goals. The program's goal is to develop an upstream, midstream, and downstream economic value chain.

China confronts challenges in each link of the chain. Upstream—unlike the coal sector with its abundant, commercially viable, and established domestic deposits—China must establish secure long-term supply commitments from either onshore or offshore oil and gas sources. Midstream, the program requires a massive infrastructure of gas-receiving, storage, and pipeline facilities as well as transportation fleets. Finally, the program will need to support the development of

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Petroleum and gas projects have room for intrepid foreign investors

numerous large-scale, downstream petrochemical facilities, gas-fired power plants, and retail gas networks that will provide the chain's revenue backbone. Because of the technical complexity, economic diversity, and capital intensity of these projects, China will have to come up with novel supply streams, contractual structures, and financing solutions to achieve these development goals. Players will also need to achieve equitable risk allocation among the individual projects and the various project participants.

Works in the pipeline

A brief survey of the projects that are part of this broad program illustrates the range of opportunities for companies in this sector. These opportunities will only grow over time as China increases its reliance on gas for primary energy consumption.

● Upstream

Three main gas sources drive the upstream segments of the chain: China's recently concluded 25-year, \$13 billion gas supply arrangement with Australia LNG Pty Ltd. (Australia's North West Shelf Venture); onshore gas resources in the Tarim, Sichuan, and Ordos Basins; and offshore fields in the western South China Sea (Yacheng 13-1 and Dongfang 1-1), and East China Sea (Xihu Trough).

● Midstream

Various liquid gas receiving and transport projects link upstream gas reserves and downstream applications. This program has four cornerstones:

The West-East Natural Gas Pipeline is a \$14.5 billion, 4,167 km pipeline project that will run from Xinjiang in China's Northwest to Shanghai. The pipeline is anticipated to reach full capacity in 2005. PetroChina Co. Ltd. leads this project alongside a consortium of Royal Dutch/Shell Group, OAO Gazprom, and ExxonMobil Corp.

Medium-range interprovincial projects include four pipeline projects under the development of PetroChina, namely the Shan-Gan-Ning-Shandong Pipeline, running through Beijing and Hebei in the north and predicted to be China's second-largest gas line; the Chongqing-Hubei Natural Gas Pipeline, running from Chongqing to Wuhan and slated to be the first onshore pipeline built in cooperation with a foreign joint venture; the Se-Ning-Lan Pipeline, linking Sebei in northwestern Qinghai province to Lanzhou, Gansu; and the Zhong-Wu Pipeline, linking Zhongxian, Sichuan, and Wuhu, Hubei.

The Guangdong LNG Terminal is a \$600 million liquefied natural gas (LNG) receiving terminal and related 540 km transmission pipeline network planned for Shenzhen. This plant, to be completed in two stages, will have the ability to handle up to 8 million tons of LNG per year and will be China's first LNG import terminal and associated pipeline. The project is a joint venture between China National Offshore Oil Corp. (CNOOC) and BP plc (among others) with BP currently in exclusive negotiations to take a 30 percent stake.

The Fujian LNG Terminal is set to become China's second import terminal and will supply

power plants in Xiamen and Quanzhou, Fujian, as well as Fujian's coastal cities Fuzhou, Xiamen, Quanzhou, Zhangzhou, and Putian. The project is a joint venture between CNOOC and the Fujian Investment & Development Co. Ltd., with BP and BP's Tangguh LNG (Indonesia) partners supplying the gas. Construction of the terminal is scheduled to begin in 2004, and operation is scheduled for 2007. The terminal is expected to supply Fujian with 2.6 million tons of LNG per year in the first phase of the 25-year agreement.

● Downstream

The primary revenue-generating assets that form the downstream links of the chain include four multibillion-dollar petrochemical facilities expected to begin commercial operations around 2005, numerous smaller but still significant petrochemical projects, and a number of gas-fired power generation facilities:

The Nanhai Petrochemical Project is a \$4 billion petrochemical project planned for Huizhou, Guangdong. Owned by a Shell Petroleum subsidiary (50 percent), CNOOC (45 percent), and Guangdong Investment and Development Co. (5 percent), the project is the largest petrochemical-related investment in China to date.

The Shanghai Ethylene Project is a \$2.7 billion petrochemical project to be located in Shanghai. The project is a Sino-foreign joint venture among BP (50 percent), Sinopec (30 percent), and Shanghai Petrochemical Co. Ltd. (30 percent).

The Fujian Petrochemical Project is a \$3.5 billion petrochemical project that involves the expansion and upgrading of the Xiaocuo refinery in Fujian. The project is half owned by Sinopec and the provincial government, and ExxonMobil and Saudi Aramco of Saudi Arabia each have a quarter.

The Nanjing Petrochemical Project is a \$2.7 billion petrochemical project that is a 50-50 joint venture between BASF AG and Sinopec planned for the Jiangsu provincial capital.

These four downstream projects come on the heels of a number of new, renovated, or retrofitted domestic-invested petrochemical facilities (including plants in Jilin, Maoming, Qilu, and Yanshan) and other large-scale, foreign-invested projects (including the Sinopec/Dow Chemical-sponsored Tianjin Ethylene Project, the Dow-Asahi Petrochemical Plant in Jiangsu, and BP's first purified terephthalic acid plant in Zhuhai, Guangdong).

Downstream LNG-fired power-generating projects include seven planned facilities in southern and central China that will rely on midstream pipeline projects and feed an array of downstream gas projects, including the 30 or so ventures that have signed memoranda of understanding with PetroChina for the West-East Pipeline and no fewer than five independent power producers (IPPs). The IPPs include the 1,050 MW China Light and Power project in Qianwan, Shenzhen; a 3,000 MW project in Shanghai; a 2,400 MW project in Jiangsu; a 2x300 MW project in Shaanxi; and the 2,640

Chinese banks challenge foreign financiers for project funding

Up until the mid-1990s, foreign banks dominated project finance in the PRC. In 1995-96, regulatory shifts in the power sector took root and began to tilt the hand toward PRC banks in project finance transactions. Several trends fueled the emergence of PRC banks as players in the project finance market: new demand from domestic equipment suppliers and contractors for local currency borrowing; the attempt to offset domestic banks' massive bad loan portfolios; Chinese banks' accumulation of both renminbi (RMB) and US dollar funds thanks to the PRC's high levels of foreign exchange reserves and domestic savings patterns; and foreign banks' conservative behavior during their recovery from the nonbank financial institution crises that erupted in the late 1990s. These trends have given rise to a new, hungrier breed of PRC banker. A number of project financings and refinancings involving foreign financiers have stalled while sponsors have put out feelers to domestic PRC banks.

There is every indication that the PRC project finance market is reaching a new level of development in which PRC and foreign banks will need to work together in order to take full advantage of the market. Both groups of banks have strong institutional corporate client bases that will demand foreign and local banks in most, if not all, major financings for projects with foreign investment. When it comes to underwriting, structuring, and credit analysis, the foreign banks have considerably more know-how and far more resources. This is why they are typically chosen to serve in due diligence, project risk analysis, technical, structuring, insurance, and modeling roles. Offshore lenders also have a far more extensive and competitive range of hedging and other structured products. On the other hand, PRC banks have an advantage in funding in both RMB and US dollars, as foreign banks have limited RMB funding sources and simply cannot compete with

local banks on loans in either currency. There is still a gap between foreign and PRC banks in their approach to evaluating project risk and, more important, political risk—two areas that have traditionally been critical in determining pricing for foreign banks and that are highly emotive for foreign sponsors. In addition, the participation of a foreign bank in a PRC project credit imposes a variety of legal issues that would not otherwise arise in a pure PRC bank credit.

There are clear niches in the project finance market for both foreign and PRC banks. The market cannot overlook the benefits of mobilizing the resources and comparative advantages of both PRC and foreign groups to tackle the growing demand for project and structured finance tools in China, particularly with the capital-intensive energy projects discussed here.

—Mitchell A. Silk

MW Shenzhen Eastern Power Station. In total these projects involve \$8.7 billion in investment. Foreign investors are keen to secure procurement, construction, equity, operation, and maintenance roles in these projects.

Risks and challenges

In the past 10 years, a clear model has emerged in China, loosely based on the standard build-operate-transfer (BOT) and negotiated joint venture project finance structures, that has defined the limits of the development and financing of large, capital-intensive infrastructure projects. This model has determined the acceptability of risk allocation in project, finance, and security documents. All completed projects have been in the power (Shajiao, Zhuhai, Shandong Zhonghua, Meizhouwan, and Laibin B BOT) and water (Chengdu No. 6 BOT) sectors and, to a lesser degree, in transportation. This new wave of projects will work off of the existing model. But the significant differences of these oil and gas projects (namely size, technical complexity, revenue stream diversity, and capital intensity) will require considerable financial and legal engineering of the model to ensure their financial viability. These issues play themselves out largely in the areas of managing risk in construction and offtake and the attendant challenges of engineering an acceptable financing structure.

● Construction risk

The China project-finance model construction profile, like that in most other internation-

al jurisdictions, has in most cases involved a turnkey, all-in, fixed-price obligation for the construction of a project. Though turnkey arrangements have not been adopted in some of the model China project financings, the projects have always addressed residual construction risk issues in one way or another. "Big ticket" petrochemical and LNG projects have started to test the standard, however. This is because engineering, procurement, and construction contractors are not prepared to take the enormous risks involved in a turnkey construction contract for projects of this nature without charging a prohibitive risk premium that the project economics simply cannot afford.

Thus, alternative structures are now emerging to address construction risk points. These approaches involve contractual structures that revolve around modular, as opposed to turnkey, construction and coordination arrangements among multiple contractors, as opposed to a single turnkey contractor. The success of these approaches hinges on their ability to maximize the independent production and economic value of any modules in construction; provide performance incentives to project managers or coordinators; create tighter control over performance under each of the contracts; and offset a portion of the residual risk through financial means such as pre-completion guarantees and stiffer debt-equity ratio requirements.

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Case Study: China's Natural Gas Sector

Energy opportunities

Domestic supply

- Tarim Basin (the West-East Gas Pipeline)
- Sichuan Basin
- Ordos Basin
- Western South China Sea (Yacheng 13-1, Dongfang 1-1)
- Xihu Trough (East China Sea)

Imported supply

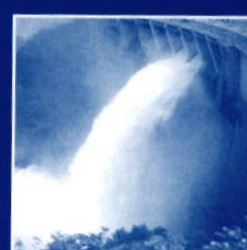
- Through Guangdong liquefied natural gas (LNG)/Fujian LNG Terminals
- Through Russian (Irkutsk and Sakhalin) pipelines

Challenges

- Production areas located far from major demand centers
- Limited pipeline infrastructure; isolated systems with no inter-regional grid
- No long-distance pipeline, cross-border connections, or LNG terminals

- Upstream and midstream operations controlled by three vertically integrated state-owned enterprises (SOEs)
- Distribution controlled by local SOEs
- Industrial sector is current major enduser; power generation and residential and commercial use is minor
- Demand is supply limited; supply is transportation restricted
- No single authority has regulatory oversight of the industry
- Complex chain of interdependent elements: production (liquefaction), transportation (regasification), and market
- High capital costs (\$4-\$8 billion)
- Long lead time
- Concurrent development requirement
- Often, different ownership structures for different elements
- Long-term (25 years) dedication of all elements of LNG chain (LNG gas supply, LNG offtake contract, and ship charters and transportation contracts)

—Mitchell A. Silk and Eric Zaizhi Lin



FOCUS: ENERGY

Generating Profits from Waste in Wenzhou

Ping Chen

Huge amounts of garbage are an unwelcome byproduct of China's accelerating urbanization, and garbage processing has become a big headache for many Chinese cities and towns. According to *China Urban Statistics Yearbook, 2001*, China produced more than 6 billion tons of solid waste annually in the late 1990s, occupying more than 500 million square meters of landfill. In some 200 cities, it is hard to find space to accommodate the growing volume of garbage produced each year. This has resulted in rapid deterioration of the ecosystems of neighboring suburban areas, where the garbage usually ends up.

Wenzhou, Zhejiang, is one of many cities with more garbage than it knows what to do with. The annual total household garbage production in this prosperous Chinese

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Wenzhou privatizes waste processing, with powerful results so far

metropolis on the southeastern coast amounts to 400,000 tons, and this figure rises 8-10 percent each year. Most of this garbage ends up in two landfill sites built in the early 1990s. The main drawback of these landfills is their high cost. The two sites in use are nearly full, but soaring land prices in Wenzhou make land for new sites unaffordable. Moreover, making landfills safe by taking measures to prevent leaks and pollution is expensive. A rough estimate by local officials indicates that the government would have to spend ¥400 million (\$48.4 million) per year to place all of the city's garbage safely in landfills.

One alternative to landfills is incineration, but this solution conserves land at the expense of air quality. The poisonous gases released during incineration would seriously harm public health. Clearly, neither option is an ideal solution for garbage processing in Wenzhou.

Garbage in, power out

Wenzhou municipality, long a bastion of private enterprise in China, proposed a build-operate-transfer (BOT) policy for waste processing in December 1999, based on its research of Western practices. Under this policy, the local government would sell the operational rights of urban garbage processing with favorable terms to attract private investors. These investors would make a profit through construction and operation of the garbage-processing project within a concession period, and then transfer the facility to the government for free.

The first private investor to try the policy was Weiming Environmental Protection Engineering

Co. Ltd. (*Weiming Huanbao Gongcheng Youxian Gongsì*). According to the contract, the Wenzhou government offered two acres of land originally planned for a landfill, and Weiming invested ¥90 million (\$10.9 million), enjoying sole proprietorship of the plant for 25 years. Weiming also promised to be responsible for all of the losses if the project failed. By the end of 2000, the garbage-processing electricity plant had started functioning. It took Weiming only 10 months from the contract signing to generate electricity at its new facility.

According to a document released by the PRC State Environmental Protection Administration, for each ton of garbage processed, the Wenzhou government provides a subsidy of ¥73.8 (\$8.90), which covers garbage delivery expenses. (Weiming gets the garbage for free from the local government, which collects and sorts it.) The government also purchases all of the electricity generated at the price of ¥0.52 (\$0.0629) per kilowatt-hour (KWh). Weiming processes an average of 200 tons per day, which means an annual subsidy of ¥5 million (\$604,790). Also, the plant generates 9 million KWh of electricity each year, 7 million of which are sold, earning ¥3.6 million (\$435,450) annually. If these numbers remain accurate over the life of the plant, Weiming will recoup its investment in less than 12 years.

A key issue in the project is the control of air pollution. Because the electricity plant burns garbage, it must take strict antipollution measures to meet China's emissions standards. To ensure compliance, Weiming's research and development staff invented a "satiation reacting

tower" and a "double-layer membrane filter" for which they have been granted patents. These new inventions purify the waste gas from incineration, allowing the plant to meet China's national standards for airborne industrial waste emissions.

A new role for government

The project has redefined government roles in garbage processing. In the past 50 years, all garbage-processing facilities in China have been owned and operated by local governments, which kept investing and losing money. In the Weiming project, the government is no longer an owner-operator, but instead has taken on the roles of supervisor and provider of infrastructure facilities. Such a market-oriented approach has many advantages: the government saves money and avoids financial risks, while the private investor makes a profit in the long run.

Prospects for replication

When the first project turned out to be a success, Weiming decided to construct two more garbage-processing plants in Wenzhou. The first one has a designed capacity of 600 tons per day, with a total investment of ¥180 million (\$21.77 million). The Wenzhou government is providing 36 acres of land and various infrastructure facilities and services, such as water and electricity

supply, telecommunications services, road building, and land leveling for the first plant. The second plant is even larger, with a daily capacity of 900 tons.

Once all three plants are in service, their combined daily processing capacity will reach 1,700 tons. Daily garbage production in Wenzhou is about 1,500 to 1,800 tons. In other words, almost all of Wenzhou's garbage will be processed in an environmentally friendly way, and Wenzhou will get a ready supply of cheap electricity. More plants would also improve economies of scale and returns on investment for Weiming. At the moment, however, Weiming merely supplements the existing power plants that supply most of Wenzhou's electricity.

Clearly, the Wenzhou experience is applicable to hundreds of other Chinese cities and towns also suffering from solid-waste-processing limitations. And for foreign investors with background in this area, opportunities abound, as China's World Trade Organization agreements have helped open the doors of investment to China's utility sectors. Current national regulations such as the Catalogue Guiding Foreign Investment in Industry (*Waishang Touzi Chanye Zhidao Mulu*) and the Regulation Guiding Foreign Investment Direction (*Zhidao Waishang Touzi Fangxiang Guiding*), both issued in April 2002, permit foreign investment in local utilities, if with a few restrictions. 完

Upstream-Downstream

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● **Cash flow risk**

Petrochemical and gas projects present a greater number of cash flow risks than the power, water, and transportation projects that have been financed on a project basis in China. The most significant differences are that these projects cannot depend on only one offtaker and that prices are cyclical in the petrochemical industry. Midstream projects also are stuck between diverse upstream and downstream risks and thus require much more careful risk management.

More specifically, on the supply side the projects are essentially caught between suppliers and offtakers. Gas projects will involve sales to

urban gas suppliers, electric utilities and IPPs, and chemical and industrial users. Any one of the "mega" petrochemical projects described above will be selling as many as 10 or 12 oil and chemical products to both domestic and foreign markets. The customers will range from single factories to intermediate producers. Project participants must address numerous upstream and downstream mismatches, such as key supply and sales terms, management of minimum committed upstream purchase and downstream sales quality and quantities (which fluctuate seasonally), and force majeure risk. Beyond these fundamental mismatches, each project will need a contractual structure to ensure predictable cash flow to satisfy equity investors and lenders.

China Powers Up

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approved a state-owned asset reform scheme to lift government control from more than \$1.3 trillion state-owned assets nationwide, including some in the power sector. From June 2002 to January 1, 2003, China issued six regulations to guide foreign participation in China's capital market. For instance, the Provisional Regulation on Foreign Investors Merger with or Acquisition of Domestic Companies took effect April 12, 2003. Under this regulation, foreign investors may invest directly in a Chinese company through the purchase or transfer of shareholder rights, or by purchasing assets.

The Catalogue Guiding Foreign Investment in Industry still applies, however. This Catalogue currently restricts foreign investment in the construction and operation of conventional coal-fired power plants with single-machine capacities of 300,000 KW or less and prohibits foreign investment in the construction and operation of electricity networks. Foreign firms will thus be faced with limits on their participation, though they may still find worthwhile opportunities.

Future plans

The keys to the reform of the power sector, along with other monopolistic sectors, include separating government from enterprises,

strengthening competition, creating new enterprise systems, and improving operations and management. Whether China's latest power reform effort will succeed in meeting China's energy needs will hinge on whether government officials can adopt clear ideas on sector and market supervision and find supervisors who have relevant knowledge and experience. Fortunately, government officials have pledged to reform and restructure monopolistic sectors according to the objective rules and regulations of the legal system. There will be no government guidance, or "arranged marriage," according to Wang Qishan, former director of the Political Reform Office of the State Council. On the other hand, the lack of political reform has made implementing power sector and other industry reforms more difficult because China lacks an efficient decisionmaking mechanism, which would require democracy and transparency.

Nevertheless, reform will proceed. China will create multiple operating entities within each service or industry; allow the entry of nonstate capital, including foreign funds, into infrastructure facilities and public utilities; reorganize enterprise assets; and further develop companies based on modern enterprise systems. 完

● Regulatory challenges

Over the past five years, China has implemented a number of legal and administrative reforms that have made it increasingly difficult for investors in the power sector to earn returns. These include phasing out small power plants, banning minimum offtake obligations, and prohibiting guaranteed returns. The most recent power sector reforms have not only separated the main three functions of power generation, transmission, and distribution, but they have also reinforced the commitment to implementing a pooling system in China. This means that cash flow unpredictability will pose an even greater risk and, as such, will have a negative impact on power generation as the linchpin to the economic value chain so critical to the success of this program.

The way forward

Sustainable growth policy goals point to a bright but challenging future for foreign participants in the development, construction, ownership, operation, and financing of petrochemical, oil, and gas projects in China. The China project financing model that has emerged over the past 10 years provides a solid base of reference for this activity. But the special characteristics of this new wave of projects will temper and test the model to ensure that issues of construction and revenue risk and financing interplay are adequately addressed. The winners will need to rely on political wherewithal—as with all projects in China—and a high degree of ingenuity and perseverance to work through the challenges that will arise in recasting the model. 完



SPECIAL REPORT: STANDARDS

NAVIGATING CHINA'S STANDARDS REGIME

Ann Weeks and Dennis Chen

China maintains a technical standards and conformity assessment regime to ensure product quality and safety, to protect consumers' well being, and to safeguard the environment. Its system has evolved considerably since the establishment of the first standards-related regulatory bodies in 1949 and the first commodity inspection procedures in 1984. Subsequent adjustments to the system have been made with an eye toward adopting and helping to set international standards. But the changes are as much about installing a system that bolsters the competitiveness of Chinese products in overseas markets as conforming to international practices.

China's World Trade Organization (WTO) entry in December 2001 prompted another overhaul of its standards

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What foreign companies need to know about how China sets standards

and conformity-assessment regulatory structure in part because it had to comply with the WTO Agreement on Technical Barriers to Trade (TBT). Foreign companies have given mixed reviews of the changes so far. Some perceive PRC authorities as making a good faith effort to improve transparency, to revise or eliminate WTO-incompatible standards, and to unify the country's compulsory certification procedures for domestic and foreign companies. Others believe that the changes complicate, rather than simplify, the compulsory certification process and do little to improve foreign participation in China's standards-setting process.

China's standards regime affects a broad range of sectors, from agriculture, audio and video, automobiles, construction, cosmetics, and household electrical appliances to information technology, low-voltage industrial products, medical equipment, and pharmaceuticals. With a number of the affected products falling under what the US and Foreign Commercial Service characterizes as "best prospects" for US exporters, companies' concerns regarding the new changes are understandable. Even companies that are not directly affected by the recent round of adjustments are watching carefully, knowing that future policy changes in China could affect them.

Foreign companies will thus need to ensure that their interests are protected against any adverse impacts of the new government structure and regulatory framework. They must systematically monitor existing and new policies, build relationships with related PRC government agencies, work with standards bodies to influence standards development, and keep US government and advocacy groups informed of problems. This active approach already appears to have helped some companies resolve problems tied to China's new compulsory certification system.

Positive first steps

The first major WTO-related change in China's standards and conformity assessment structure came in April 2001, when the former State Administration for Entry-Exit Inspection and Quarantine (CIQ) and the State Quality and Technical Supervision Bureau (QTSB)

merged to form the Administration for Quality Supervision Inspection & Quarantine (AQSIQ). AQSIQ combined the standards and certification systems for foreign and domestic goods to ensure that China was meeting its WTO national treatment obligations. The restructuring also reflects an attempt to consolidate agencies with overlapping authority over various imported products.

AQSIQ quickly established the Standards Administration of China (SAC) and the China National Regulatory Commission for Certification and Accreditation (CNCA). AQSIQ supervises the two bodies' budgets, but the State Council oversees their policy-related activities. SAC establishes and oversees national standards. This role involves setting the annual standards agenda, coordinating the drafting of technical standards with the various technical committees, and representing China at international standards organizations. CNCA implements the unified China Compulsory Certification (CCC) program, which is designed to test product safety and conformity to technical standards (see pp.40 and 44). These three agencies, together with the WTO TBT Inquiry Center, which operates under AQSIQ and liaises with the WTO TBT committee in Geneva, serve as the institutional nerve center of China's standards regime (see p.35).

In addition to altering the institutional framework, PRC authorities issued a series of new and revised regulations in 2001-02 to meet WTO obligations. The National People's Congress amended both the PRC Import and Export Commodity Inspection Law and the PRC Product Quality Law. In addition, AQSIQ and SAC issued codes governing the adoption of international and mandatory standards.

Of all of these changes, the move to unify the old "CCIB" mark for imported products and "Great Wall" mark for domestic and imported products under a new "CCC" mark will probably have the greatest impact on foreign companies. The new certification system took effect on May 1, 2002. The transition period during which companies could continue using the CCIB and Great Wall marks ended May 1, 2003. CNCA reported in late February that more than 25,000 domestic and foreign companies had applied for the CCC mark; 37,000 products were approved.

NOTE: As *The CBR* went to press, the deadline by which all products sold in China need the China Compulsory Certification mark was extended from May 1 to August 1, 2003.

Company concerns

Despite China's efforts to ensure a smooth transition to the new system, foreign companies remain concerned about technical standards and compulsory certifications. These concerns can generally be divided into two categories: those related to the new CCC mark process, and those concerning standards-setting procedures at the central, provincial, and industry levels.

Compulsory certification

Some of the CCC-related issues should disappear once PRC officials become better educated about the new procedures, but other glitches will be resolved only with additional changes to the certification process. In addition to inadequate cooperation and coordination among AQSIQ and relevant bureaus and the poor transparency of testing procedures, foreign companies have faced:

● Shipment detention at port

In the early months following the introduction of the new CCC system, many US companies reported instances in which the PRC General Administration of Customs (Customs) detained shipments consisting of products not subject to certification. Customs insisted that the companies to obtain CNCA-certified documentation showing that their products were not

subject to CCC even though such documentation is not required by law. To CNCA's credit, the agency undertook a substantial capacity-building program with Customs to clarify CCC requirements and issued the Customs-requested certified documentation to companies until the training programs were completed.

CNCA reported that by November 2002, the number of such cases had declined significantly, but anecdotal evidence indicates that companies importing products into China that are not subject to the CCC system—but share the same harmonized system (HS) code with products that are—may still experience problems. Another headache for companies is that the exemption documentation for these products is valid for only 30 days.

Companies trying to bring into China specialized products that fall under general HS numbers subject to CCC—but for which PRC standards do not exist—also experience problems. Such companies find it difficult to get a waiver for the CCC requirement without jumping through numerous hoops with CNCA and Customs. To solve this problem, CNCA plans to give products not subject to CCC a slightly different HS code.

● Lengthy approval processes

Under the new CCC procedure, the application and approval process should be completed

China's Main Standards Bodies

Administration for Quality Supervision Inspection & Quarantine (AQSIQ)

The April 2001 merger of State Administration for Entry-Exit Inspection and Quarantine (CIQ) and State Quality and Technical Supervision Bureau (QTSB) resulted in a new ministerial-level agency, AQSIQ. Li Changjiang, former director of CIQ and formerly a vice minister of the General Administration of Customs, serves as director, and Li Chuanqing, former director of QTSB, is the Chinese Communist Party secretary general.

AQSIQ's administrative authority is broad. It manages China's standards and conformity assessment regulatory structure, enforces compliance with certification requirements, and conducts quality and entry-exit inspections for commodities. AQSIQ reviews and approves the CCC product catalogue issued jointly with CNCA.

The agency employs roughly 210,000 people, of which 3,000 have commodity inspection and quarantine responsibilities and 180,000 ensure that products in the market meet standards and technical regulations. This last group also participates in an anti-

counterfeit campaign along with the State Administration of Industry and Commerce.

Standardization Administration of China (SAC)

Established in 2001 by the State Council, SAC is responsible for drafting China's annual national standards agenda and approving, recording, and publishing the final standards. It assumed the responsibilities of the Department of Standards under the former QTSB and is responsible for the further alignment of PRC import and domestic standards regimes. Although other central-government bodies develop and publish sector standards, SAC determines the scope of the standards each agency may set. SAC also manages and coordinates the technical committees assigned to draft technical standards.

SAC has the authority to sign and implement international cooperative agreements and represents China in a dozen international and regional standardization organizations, including the International Organization for Standardization (ISO), the International Electrotechnical Commission, the Asia-Pacific Economic Cooperation Forum, and the

Pacific-Asia Standards Congress. SAC has established cooperative relationships with 52 countries. As a participant in international standards development, SAC has sent experts to join 300-500 working groups among the various international standardization organizations. SAC is also responsible for carrying out the notification and inquiry work of standards stipulated by the World Trade Organization's (WTO) Technical Barrier to Trade (TBT) Agreement.

SAC is interested in working with foreign companies on national standards matters. In particular, SAC wants to ensure that its standards are not impeding trade.

China National Certification and Accreditation Commission (CNCA)

The State Council has authorized CNCA to establish, guide, implement, and supervise the compulsory product certification system.

CNCA designates certification bodies, testing laboratories, inspection organizations, and certificate-mark issuing bodies; publishes an official list of certified products and manufacturers; and directs local AQSIQ branches to find violators of compulsory certification.

in 90 days "under normal circumstances." But a number of high-technology and medical equipment companies report that the certification process is taking between 6 and 12 months to complete. SIMCOM International Holdings, Inc., which provides clients with turnkey applications and technical support to meet China's compulsory certification requirements, reports that its PRC-government-approved US agent status has helped some of its high-tech clients' products gain approvals within the three-month period (see p.37). Some telecommunication equipment companies complain that the new system's 90-day timeframe exceeds the three-to-four-week approval timeframe under the old CCIB scheme.

Some of the delays are the direct result of companies' lack of familiarity with the new system and the subsequent filing of incomplete applications. More commonly, delays are due to China's inadequate certification and testing facility infrastructure. Bottlenecks emerge because only nine designated certification bodies, which manage applications, and roughly 70 designated testing bodies, which conduct actual tests, exist to handle all goods. Each designated certification body's product scope is quite different from the others, though overlap exists in a few areas. Foreign companies are planning to enter the market soon, but until then delays and

even re-testing will be all too frequent. China's WTO commitments may also help—foreign firms will be permitted to take a majority stake in China-based safety-test and quality-inspection ventures by the end of 2003 and will be able to operate wholly foreign-owned testing and certification services by 2005.

Some of the delays US firms experience are exacerbated by US government policies. For instance, PRC regulations require accredited Chinese inspectors to conduct the initial factory inspections, but changes to US visa policies in the aftermath of September 11, 2001 have resulted in significant delays in the approval of travel visas for some of the Chinese inspectors. (Some companies are accredited to conduct follow-up inspections, but a Chinese inspector must perform the initial inspection.)

● Lack of independent testing bodies

Currently, China's designated testing bodies are not independent of the government. In many cases, testing facilities are closely connected with research institutes that may be engaged in research and development activities related to foreign products that they are testing. This raises intellectual property rights concerns among foreign companies.

● Duplicative testing requirements

Although eliminating duplicative testing requirements was one of the objectives of the

CNCA also has the power to approve the exemption of products from compulsory certification and to deal with complaints or appeals regarding compulsory certification.

CNCA draws up and modifies the product catalogue published jointly with AQSIQ and issues implementation rules for certification of products listed in the catalogue. There is no set schedule for revisions to the product catalogue, but CNCA plans to bring other products into its certification regime and has been working with the ministries of Agriculture and Health to extend the certification systems to agricultural products. The move is part of the effort to eliminate protectionism among government agencies in regulation, supervision, and enforcement. This new system appears to have been launched in late February with the release of a new regulation. Although lacking detail, the regulation serves as a rough guideline for China's agricultural product certification system; CNCA will regulate the certification regime of agricultural products. According to CNCA, it is too early to say how long it will take to install this new certification system, but apparently the proposed certification will be voluntary rather than compulsory.

WTO TBT Inquiry Center

To ensure compliance with its technical regulations, standards, and conformity assessment obligations under the WTO's TBT Agreement, China established the WTO TBT National Inquiry Center in 1995. The center operates under AQSIQ's supervision and is headed by Director General Huang Guansheng, who participated in a number of the WTO negotiation sessions.

The center serves three primary functions, the first of which is responding to TBT-related inquiries from other WTO members on the PRC standards and conformity assessment regulatory framework. Companies can request information on pre-existing or new PRC standards by contacting the center (see Contact Box). The center also represents China when submitting TBT-related inquiries to other WTO members and conducting research on international standards and technical regulations. When other countries issue technical standards or conformity assessment requirements, PRC authorities may ask the center to provide technical support through research and analysis to determine whether the standards are scientifically

based and reasonable. When foreign standards and conformity assessments are under review at the WTO—such as the European Union's new wood packaging rules—the center will also coordinate the circulation of information among and responses from relevant PRC agencies.

The center also serves as the clearinghouse for notifying the WTO of all new standards adopted within China, as required by the WTO, and the repository for the catalogue of existing standards. This should increase transparency.

The center will also train AQSIQ employees and other individuals from the State Council, associations, and industry representatives. The center employs a train-the-trainer structure, which it will use to train 2,000 people (under AQSIQ) and then have those individuals train others. The training focuses on the basics of WTO-TBT protocol issues, including inspection and quarantine. The center had trained more than 200 people by the end of 2002.

—Ann Weeks and Dennis Chen

new compulsory certification scheme, companies remain frustrated by the ongoing overlap in testing requirements maintained by other ministries, such as the Ministry of Information Industry (MII). For mobile handsets, for example, MII testing requirements for a network access license overlap with testing requirements for CCC. CNCA is working with MII to eliminate the overlap. Companies had previously complained about similar problems with the State Food and Drug Administration and the Ministry of Agriculture; CNCA and eight other government agencies recently announced new procedures aimed at solving these problems.

● New exemption requirements

Under the old compulsory certification structure, small batches of products imported for market-testing purposes did not have to go through a formal CCIB exemption process. One electronics company has reported that it could previously notify Customs that a shipment was for market-testing purposes without having to secure additional certifications or documentation. Under the new structure, however, a company wishing to

import for market-testing purposes even a small quantity of a product subject to CCC must now undergo a cumbersome exemption process in China before it can import the goods.

● High costs

Because product type testing must be conducted in China, and Chinese inspectors must conduct all factory inspections (regardless of whether the factory is located in China or abroad), costs to bring a product to market in China can be considerably higher for foreign companies than for their domestic counterparts. The type testing costs in China are in addition to costs affiliated with testing done in the country of manufacture. For an information technology product, type testing in China could cost ¥15,000 (\$1,814); for a motor compressor the cost might be around ¥6,200 (\$750). For factory inspections, the average cost of one Chinese inspector per day, according to CNCA, is ¥3,500 (\$423.36), with the initial inspection lasting three to four days. Foreign companies report that they are charged higher fees for product testing than their domestic counterparts, a violation of national treatment that unification of the old certification systems was supposed to eliminate.

Setting technical standards

Many foreign, particularly US, companies are also increasingly concerned about how China sets and drafts standards at the national, provincial, and industry levels and who is allowed to participate in the standards-setting process. Interbureau coordination has been weak, as multiple agencies at different levels set standards according to the special interests of central and local PRC government agencies and domestic enterprises. The result has been insufficient harmonization with internationally accepted standards, a lack of national treatment, and too many mandatory standards. Recent developments have a number of high-tech firms worried that these processes are creating an environment in which China uses technical standards to protect domestic industry and curtail imports.

The Chinese government sets the standards agenda and then farms out specific standards to China's 260 special technical committees (which report directly to SAC) and 422 subcommittees that consist of 27,800 specialists who draft the standards. Most are drafted without foreign, or even public, input. In contrast, the US government does not dictate the standards agenda. The United States has 450 standards-developing organizations with more than 150 consortia and thousands of committees to address technical requirements and 93,000 active standards. The system also incorporates broad public review and comment periods. American National Standards Institute is an umbrella association of standards developers, technical advisory groups, and conformity assessment systems.

Agency Contact Information

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International Cooperation Department
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China National Certification and Accreditation Commission

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Internet: www.cnca.gov.cn
Department of Certification
Deputy Director General: Bo Yumin
International Cooperation Department
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World Trade Organization (WTO) Technical Barriers to Trade (TBT) National Inquiry Point

Inquiry Point
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Haidian District
Beijing, China 100088
Tel: 86-10-8826-0618
Fax: 86-10-8226-2448
E-mail: tbt@aqsiq.gov.cn
Internet: www.wto-tbt.gov.cn
Internet: www.tbt-sps.gov.cn
(under construction)

Notification Center
2 Dong Chang'an Dajie
Dongcheng District
Beijing, China 100731
Tel: 86-10-6519-7336, -7762
Fax: 86-10-6519-7762
E-mail: wtonoti@moftec.gov.cn

China will notify the WTO of measures related to TBTs through the Notification Center, which is now under the new Ministry of Commerce.

—Ann Weeks and Dennis Chen

● Lack of transparency and national treatment

Transparency is a key issue for foreign manufacturers. The WTO TBT Agreement requires members to provide the opportunity for public consultation and comment on proposed standards and technical regulations, due consideration of comments regardless of origin, and minimum timeframes for allowing public comment. Although China's Protocol of Accession (paragraph 178) reiterates its pledge to abide by these obligations, little, if any, advance notice is given, provisions are often vague or unclear, and the drafting process remains opaque.

● Weak harmonization efforts

China has pledged to adopt 2,000 international standards per year during the next five years, at which time 80 percent of "key" industrial products will be aligned with international standards. An examination of China's statistics, however, suggests that "internationally based" is a loosely used term. At the end of 2002, China

had 8,931 national standards based on international standards. Of these, 42.4 percent (or 3,794) were not equivalent to international standards. Only 2,169 were identical, and a sizeable portion (2,968) were modified versions of their international counterparts.

● Foreign companies limited to observer role

In some sectors, foreign companies may now have a representative on Chinese technical committees, though not always a vote. Particularly in the high-tech sector, Chinese entities are reluctant to allow foreign companies a voice in the drafting and approval of technical standards. In telecommunications, an MII-affiliated institute with the authority to set standards for telecommunications products drafts a standards agenda once a year. It might distribute the agenda to a few foreign companies and ask them to prioritize the standards with which they would like to be involved. The institute may allow each company to observe the draft-

Finding Help with the CCC Process

China National Regulatory Commission for Certification and Accreditation (CNCA) has received more than 300 applications for China Compulsory Certification (CCC) agencies from different countries to become official authorized agents, according to Chen Wei, a China Quality Certification Center for Imports and Exports division chief. CCC overseas agents may accept certification applications and provide CCC-related consulting services, but may not perform actual certification work, including testing. CNCA's website indicates that there are 14 registered CCC agencies so far—eight in mainland China, one in Taiwan, three in Japan, one in the United States, and one in South Korea. CNCA will likely approve more agents soon. US-based companies capable of facilitating CCC application and approval processes include EMC Compliance Management Group, SIMCOM International Holdings, Inc., and Underwriters Laboratories Inc.

EMC Compliance Management Group

EMC, a California-based test lab, now conducts electromagnetic compatibility (EMC) testing, through a joint venture launched in May 2002. EMC is equipped to test products in such sectors as medical, information technology, telecommunications, and power systems.

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SIMCOM International Holdings, Inc.

SIMCOM was the first PRC government-approved agent in the United States to facilitate CCC applications in China. SIMCOM claims that it can reduce the approval timeframe from an average of six to eight months to three months (or the average time based on PRC regulations).

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Underwriters Laboratories Inc.

Underwriters Laboratories (UL) has been assisting clients in obtaining Chinese compulsory certifications for many years through its Intermediate Applicant Program. As of May 1, UL's joint venture in China, UL-CCIC Co. Ltd., will officially launch its CCC Agent Services Program.

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—Ann Weeks and Dennis Chen

The current PRC Standardization Law seems to rely more on European-based standards than US ones.

ing process for one or two priority standards, but not all of them. And even if foreign companies sit in on the drafting process, they do not have a vote when the technical committees vote on a draft.

Some foreigners are involved in the process of drafting standards by participating in certain technical committees. SAC encourages the involvement of foreign companies in the standards drafting process, but the technical committees have the right to decide whether to appoint experts from foreign companies. Foreign companies interested in joining a technical committee can apply directly to the secretariat of the committee. Once admitted, they will receive a certificate from SAC.

● European companies' aggressive activity

Several US companies have expressed concern about European companies' aggressive efforts to influence standards-setting in China. For example, SAC has recently signed cooperative agreements with Siemens Ltd., China, and Volkswagen Investment (China) Co., Ltd. The agreements cover standards exchange, training, and involvement in drafting relevant standards in China. According to *International Business Daily*, Volkswagen is involved in drafting national standards on the numeration method for automobile recycling—reportedly the first time that China has worked with a foreign firm to draft national standards in the auto industry. So far, SAC has not established such a relationship with any US company, but Wen Shanlin, director of SAC's International Cooperation Department, says that US and other foreign companies, particularly leaders in their fields interested in working on standards, may contact him (see Box).

The current PRC Standardization Law also seems to rely more on European-based standards than US ones. International Organization for Standardization standards are stacked in favor of the Europeans because of the "one country, one vote" voting structure. In addition, the fact that the European and Japanese governments are directly involved in drafting standards in their countries has helped them negotiate standards deals with the PRC government. For example, the European Commission negotiated

directly with the PRC on boiler standards. In contrast, the US National Institute of Standards and Technology does not draft standards itself; rather, its mandate is to ensure "good standards development." Individual regulatory agencies like the US Food and Drug Administration and the US Department of Transportation, among others, draft the actual mandatory standards but the United States has no centralized standards-drafting body.

● Chinese industry associations

A number of Chinese industry associations have emerged since 1998, when PRC government restructuring led to hundreds of layoffs. Others have been spawned by government agencies. Leaner government agencies have begun turning to some of these associations for assistance in shaping technical standards. The practice has also emerged at the local level—Shanghai authorities issued the Regulations on Promoting the Development of Industry Associations in Shanghai in February 2002, which enables associations, upon the direction of the municipal government, to draft relevant technical standards.

More progress to come

China has made notable strides toward a unified standards and conformity-assessment regime, but room for improvement remains in several areas. Companies would benefit from developing standards management programs that monitor standards agendas of PRC government agencies and recently issued standards, build effective relationships with relevant PRC government agencies, pursue participation in PRC technical standards committees and membership in Chinese industry associations, and promote bilateral cooperation through conferences and training sessions. For instance, Rockwell Automation has developed a standards management system that has helped prevent shipment delays and influence the national fieldbus standard.

Companies have also developed other solutions. One auto company has been able to use its joint venture partner to participate in standards discussions among relevant industry associations. Though the arrangement falls short of direct foreign-invested enterprise participation in the association, it provides an early warning mechanism for the company and allows it an indirect voice as standards are drafted.

Creative strategies that allow foreign companies to voice concerns and to apply pressure for improvements in the system will be key to their ability to navigate China's standards regime. In the long run, such strategies may even encourage the rise of a more transparent and equal-treatment structure in China's standards regime. 完

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SPECIAL REPORT: STANDARDS

BEFORE SELLING PRODUCTS IN CHINA...

Ying Xia and Jing Bian

To ensure that products sold in China meet conformity and safety regulatory standards, the nation launched its China Compulsory Certification (CCC) system on May 1, 2002. Beginning May 1, 2003 all products sold in China must bear the CCC mark. The China National Certification and Accreditation Administration (CNCA) authorized nine organizations—of which the China Quality Certification (CQC) Center is the largest—to handle CCC applications.

In December 2001, China issued the Regulation for Compulsory Product Certification, which applies to products related to human life and health, animals, plants, environmental protection, and national security. The CCC mark certifies that the marked product can be marketed, imported, or used

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The China Quality Certification Center provides CCC-mark assistance

in China. Over the last year, CCC marks have gradually replaced the China Commodity Inspection Bureau (CCIB) mark (previously used for imported products) and the Conformity Certification of Electrical Equipment (CCEE), or Great Wall mark (previously used for domestic products). The CCIB and Great Wall marks were abolished on May 1.

Under China's Compulsory Product Certification system, the Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) is responsible for creating CCC regulations and approving and issuing the Catalogue of Products Subject to Compulsory Product Certification. The catalogue covers more than 130 products, divided into 19 categories (see p.47).

The nine certification bodies that grant the CCC mark are the China Agricultural Machinery Quality Certification Center, China Certification Center for Electromagnetic Compatibility, China Latex Product Quality Certification Center, China Motor Vehicle Product Certification Center, CQC, China Safety Defense Technology Certification Center, China Safety Glass Certification Center, China Tire Product Certification Center, and Fire Fighting Equipment Conformity Assessment Center of the Police Ministry. Among them, CQC is the largest. CNCA also designates testing bodies that perform CCC testing according to the instructions of the certification bodies listed above.

CNCA sets the fees for application, testing, factory inspection, certificates, follow-up inspections, and marks. Testing fees vary according to the product, and the inspection fee is calculated according to the number of auditing days and auditors that are needed.

About CQC

The China Quality Certification Center is an independent, nonprofit certification body dedicated to providing product and management system certification. CQC was founded on March 14, 2002 after incorporating the original CQC Center for Import and Export Commodities and the former CCEE. CQC cur-

rently has 68 contracted laboratories for product certification testing and 11 subcenters that assist the CQC headquarters' Inspection Department with factory inspections throughout the country. Thirty-five audit centers in major cities throughout China certify management systems.

● CQC's product certification

CQC implements CCC certification on 126 products in 16 categories of the CCC catalogue. CQC also has its own certification mark. The catalogue of products covered by CQC certification is available in Chinese on the CQC website (www.cqc.com.cn/center/pdf/016.htm). CQC is in the process of translating the catalogue into English. CQC is currently China's only National Certification Body (NCB) under the International Electrotechnical Commission System for Conformity Testing and Certification of Electrical Equipment (IECEE)-Certification Body (CB) Scheme that is entitled to issue CB test certificates. These certificates are accepted in more than 40 countries and regions.

All product certification applications that CQC receives, including CCC, CQC, and CB certification, are processed by five product certification departments—each responsible for different product categories (see www.cqc.com.cn/business/lianxi_e.htm). All applications are accepted and processed online (www.cqc.com.cn)—CQC accepts paper applications from applicants who do not have Internet access.

● CQC's CCC application procedure

The CCC certification process begins when applicants submit their applications online. Product certification departments take the application, help the applicant identify the appropriate application unit, arrange type testing (product testing), and review testing reports. After type testing, the product certification application is transferred to the inspection department for initial factory inspection. If the factory passes initial inspection, the product certification department will inform the applicant accordingly and arrange for certificate issuance. The inspection department keeps a record of

NOTE: As *The CBR* went to press, the deadline by which all products sold in China need the China Compulsory Certification mark was extended from May 1 to August 1, 2003.

All applications are accepted and processed online—CQC accepts paper applications from applicants who do not have Internet access.

every application and arranges annual post-certification surveillance.

The CQC and CB certification procedures are similar to CCC certification. For CB certification, only type testing is required.

- **CQC's management system certification**

Management system certification is another

one of CQC's major businesses. CQC's certifications include the ISO 9000 Quality Management System, ISO 14000 Environmental Management System, OHSAS 18000 Occupational Health and Safety Management System, QS 9000 Quality System (automotive industry), TL 9000 (telecommunications industry), and HACCP Certification (food safety and quality). Because CQC is a full member of the International Certification Network (IQNet), CQC-issued ISO 9000 and ISO 14000 certificates are accepted by the other 31 members of this international organization. CQC's System Certification Management Department handles all of the above management system certifications.

CQC's quality system certification service has been accredited by the China National Accreditation Board (CNAB). In September 2002, the CQC Center issued an ISO 9000:2000 Quality System Certificate to the News and Commentary Department of China Central Television, which was the first ISO 9000 quality management system certificate granted to a television media outlet in the world. More than 180 CQC auditors have registered with the China

Tips for Getting Started—And Avoiding Mistakes

Many applicants do not know whether their products need a China Compulsory Certification (CCC) mark or how to begin the certification process if the mark is required. To start the CCC application process, applicants should follow these steps and tips:

- Applicants should first confirm that their products are subject to CCC scope by referring to the China Quality Certification (CQC) Center website for the First Catalogue of Products Subject to Compulsory Certification www.cqc.com.cn/ccc/catalogueeng.pdf (in English) and the China National Certification and Accreditation Administration website for the Applications Scope of the Products in the First Catalogue of Products Subject to Compulsory Certification www.cnca.gov.cn/board/bianmabiao.htm (in Chinese).
- When applicants are certain their products need CCC marks, they should proceed to the online application guide (http://210.192.96.82/ccc/app/ccc_application_online_guide-e.doc) which introduces CCC procedures in detail.
- Applicants should also familiarize themselves with information accessible through the CQC homepage www.cqc.com.cn/index-e.htm (English edition).
- When applying for the certification body (CB) certificate, or when providing a CB certificate to obtain a CCC certificate, please refer to www.iecee.org/cbscheme/NCB/CN-CQC.htm and read "Scope of NCB" to understand the CQC scope of issuance and recognition.
- Some foreign applicants misunderstand the meaning of "applicant" on the application form. "Applicant" refers to the name of the legal entity that will hold the certificate—it does not refer to the name of the person completing the form.
- Under "Model Type," applicants should enter model numbers for each product. For instance, for an air conditioner application

with two types of products—KFR-35GW, and KF-35GW—the applicant should write "KFR-35GW" and "KF-35GW" separately for the Model Type, instead of writing "35 series."

- Applicants must fill out the forms in both English and Chinese to receive a Chinese certificate and an English certificate. Most foreign applicants provide the product's information in English only, for which CCC issues an English certificate. But companies need a Chinese certificate to sell their product in China. Applicants must provide specific information in English and Chinese: name and address of the applicant; trademark; name and address of the manufacturer; name and address of the factory; name, model, and specifications of the product; and standards and technical requirements for the product.
- Part of the application process requires applicants to submit proof of trademark registration because CCC certificates include the product's trademark. Many foreign applicants do not provide this material, and thus the trademark item in their CCC certificate is empty. This may lead to trademark ownership difficulties in the future.
- Because CQC is a national certification body in the CB scheme, many applicants believe CQC should issue CCC certificates for products with CB certificates with no additional testing. For products with CB certificates, CQC reviews the testing report first; if there is any deviation from the Chinese standard, additional testing is required. Because the CB testing report does not include electromagnetic compatibility (EMC) test results, products that need the EMC test for a CCC mark must undergo this test (see p.44). All products with CCC marks and/or CB certificates need factory inspections. Factory inspections and additional tests will require additional charges.

—Ying Xia and Jing Bian

Registration Committee for Environmental Management System Auditors. ABB Xiamen Transformer Co. Ltd., a subsidiary of ABB Group, obtained the first CQC-issued ISO 14001 environmental management system certificate in 1996.

● **CQC training force**

The CQC Center's training department, which is accredited by the China National Auditor and Training Accreditation Board carries out training programs for auditors or applicants who need to understand certification rules. CQC's teaching force understands quality management systems, environmental management systems, and product certification and has abundant audit experience. About 100 teachers are recognized by CNAB and 10 teachers are recognized by the United Kingdom's International Register of Certified Auditors. To date, CQC has provided 80,000 person-hours of training to certification professionals from various certification bodies and manufacturers.

CQC's international role

CQC has been playing an active international role in conformity assessment through its participation in the IECEE-CB scheme and IQNet among other activities. Since incorporation, CQC has been developing cooperative relationships with foreign certification bodies. Japan's largest certification bodies, the Japan Quality Assurance Organization (JQA) and Japan Electrical Safety and Environment Technology Laboratories (JET), have signed bilateral inspection entrustment agreements with CQC. CQC is also negotiating agreements with other foreign certification bodies, such as SEMKO AB (Sweden), NEMKO AS (Norway), and PSB Corp. Pte Ltd. (Singapore).

In September 2003, CQC will host the fourth annual meeting of the Asian Network Forum (ANF)—a forum of Asian certification bodies that promotes the mutual business development of ANF members and that enhances the technical competence and capability of members through cooperation.

As China has become one of the most prosperous emerging economies, more and more companies want to sell their products in China. As the largest certification body in China, CQC's role in certification and international trade is growing increasingly important. CQC is working to act as an independent, impartial, disciplined certification body that provides efficient and reliable services for applicants. 完

In September 2002, the CQC Center issued an ISO 9000:2000 Quality System Certificate to the News and Commentary Department of China Central Television. This was the first ISO 9000 quality management system certificate granted to a television media outlet in the world.

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SPECIAL REPORT: STANDARDS

THE INS AND OUTS OF CCC MARKS

Paul Chen

The new China Compulsory Certification (CCC) mark creates new electromagnetic compatibility (EMC) and safety certification procedures for companies that wish to market their products in China. The new regulations governing the CCC mark approval process require a broader range of equipment—from electrical appliances and motor vehicles to telecommunications and medical devices—to meet regulatory standards. And the process of converting the China Commission for Conformity Certification of Electrical Equipment (CCEE) and China Commodity Inspection Bureau (CCIB) marks, or of introducing new products that meet CCC mark standards, can be confusing.

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It takes more than a test to earn a CCC mark

The new system

The new system requires makers of more than 130 types of products to apply for and receive certification before the products can be advertised, imported, or used for any commercial purpose in China. The process involves the testing of products at accredited laboratories in China, the submission of numerous technical documents, and follow-up factory inspections every 12 months. If a product fails any test, the problem must first be identified and then rectified before it can be declared in compliance with the CCC mark. Products that do not comply will be excluded from the Chinese market.

A broad range of electronic equipment falls under the regulations for the new Compulsory Product Certification System (CPCS). The table shows items on the CCC mandatory product list (see p.47). A new list will be released later this year.

Meeting CCC requirements

Between the time a company files an application with the appropriate organization for a particular product and the time the organization approves the application, a company must submit its products for type testing (EMC and safety tests), factories must be inspected, and numerous reports must be filed. Type testing generally takes 30 days, longer if products must be brought into compliance or retested.

All of the nine certification bodies authorized to handle applications require an initial production inspection (IPI) of factories for manufacturers applying for the CCC mark. The certification body designates IPI engineers to perform the factory inspections. This phase of accreditation normally begins after samples have passed type testing. The inspections assess the ability of factories to provide quality assurance and product consistency. Inspections generally take one to four days, depending on the number of products to be certified and the size of the factory.

At least one product sample will be taken for testing from each unit for a consistency check. Inspectors will verify that the name of the product and specification on nameplates and packages, as well as the safety and EMC performance

of the products, are identical with those in the type testing reports.

After the IPI is completed, IPI engineers submit reports to the certification body within five days. The certification body then has five more days to evaluate the results of type testing and factory inspection.

Once testing is completed, and a company's product has met compliance standards, the Chinese government requires reports and associated documents before it will approve a product for marketing or sale in China. These include type test and IPI reports as well as required documentation for CCC application, such as a business license, Chinese labels, and a user manual in simplified Chinese.

Following up

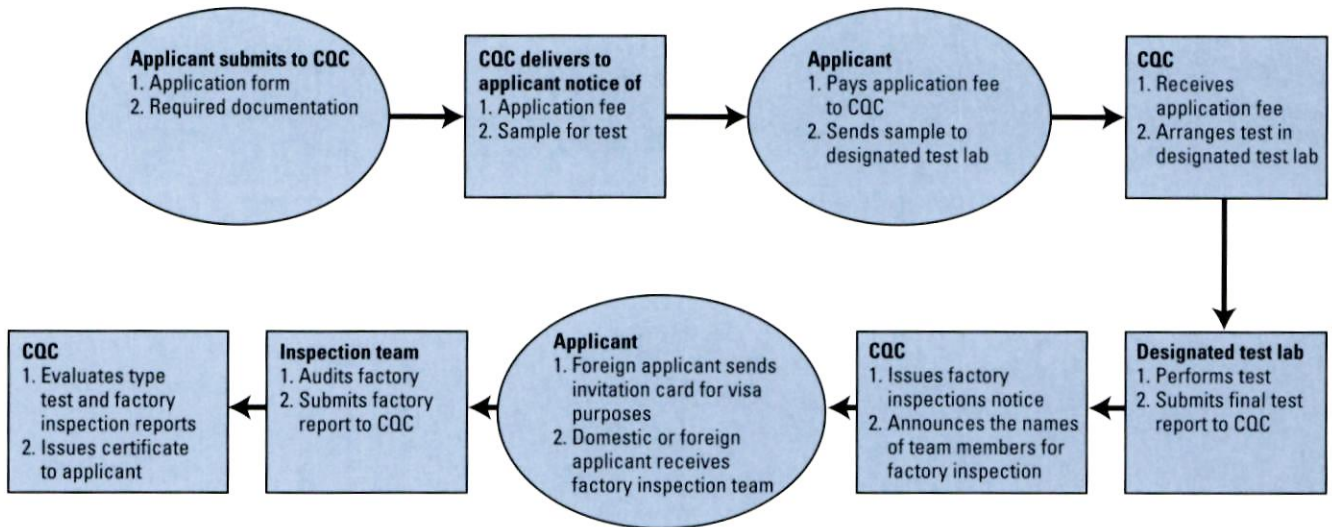
Follow-up inspections generally take place each year. The first follow-up usually occurs 12 months after certification is granted. But they will be held more frequently if:

- The certified product has serious quality problems or is the focus of complaints for which the certification body deems the manufacturer responsible.
- The certification body, with sufficient reason, doubts the certified product meets safety and EMC standards.
- The certification body determines that the conformity or consistency of certified products may be affected by changes in a manufacturer's organizational structure or in the quality of the production process or facilities.

During follow-up inspections, inspectors will re-assess the factory's quality-assurance ability and check the consistency of the certified products. The follow-up inspections generally take one to two days, depending on how many products are to be certified and the size of the factory. If necessary, inspectors will take product samples randomly from the production line, stock, and marketplace for testing, which should be completed within 20 working days.

If inspection results are favorable, products retain certification. If inspectors assigned by the certification body discover noncompliance, manufacturers have three months to correct the

Sample CCC Approval Process



NOTE: China Quality Certification Center (CQC) is one of the organizations officially accredited to issue CCC certificates
SOURCE: Paul Chen/EMC Compliance Management Group

problems. Otherwise, the CCC mark will be withdrawn, and the products will be excluded from the Chinese market.

Chinese characteristics and the role of the agent

Though there is, in general, a global trend toward regulatory harmonization in the area of electromagnetic interference (EMI), Chinese labs often use a 3-meter International Committee on Radio Interference (CISPR) 16-1 chamber to test products built to comply with Guo Biao (GB [national standard])-9254 standards (or the equivalent, CISPR 22). Most labs outside of China use 10-meter chambers or 10-meter Open Area Test Sites for compliance testing. But the differences between facilities in China and those abroad often lead to inconsistent low-frequency results (between 30 megahertz [MHz] and 80 MHz) during final conformity testing in China. An agent in the United States that has a 3-meter CISPR 16-1 chamber to perform pre-compliance EMI tests is better able to handle this issue and help the manufacturer avoid costly delays.

The agent that companies choose to conduct pre-compliance testing and application procedures in China should have a thorough knowledge of the standards required to enter the Chinese market. Having satellite offices in China, with a staff fluent in spoken and written Mandarin, is not just a convenience; it is fundamental to ensuring a quick turnaround on certification applications. Some agents offer help in translating the pertinent documents that must be submitted before a product can be approved.

The agent should not only provide the tests that show a product complies with CCC requirements, but complete the paperwork in simplified Chinese, submit the forms, and work with government officials to smooth the process. In addition to formal and pre-compliance testing performed in the United States, an agent can provide initial pre-production inspection and application consulting services, offer extensive knowledge of China's labeling requirements, prepare final reports, and complete the approval process not only for China, but for markets around the world.

A successful China strategy

Though it may be tempting to perform in-house emission and immunity tests, EMC-related problems are steadily growing in number and complexity. EMC design requires not only knowledge of emissions standards, but also an understanding of digital and analog circuits, power-supply circuitry, and EMC-related mechanical assemblies. It is important for companies to make sure that the lab they choose has a diligent quality-control department that routinely conducts internal audits to maintain high standards and international accreditation.

Regulatory compliance is an important component of any successful China strategy. Companies can help ensure that success by engaging EMC and safety experts early, taking advantage of the multiple levels of service offered by labs, and employing their knowledge in the design and development of electronic products. The right laboratory can make attaining CCC mark standards a painless experience. 完

CCC Mandatory Product List (as of March 01, 2003)*

Catalogue	Description	Number of Items	Products
1	Electrical wires and cables	5	Cord sets; rubber-sheathed cables for mining uses; insulated cable (wires) for railway vehicles of rated voltage up to and including 3KV; rubber insulated cables of rated voltages up to and including 450/750V; polyvinyl chloride insulated cables of rated voltage up to and including 450/750V.
2	Switches for circuits, installation protective and connection devices	6	Appliance couplers for household and similar general uses; plug and socket-outlets for household and similar uses; switches for fixed electrical installations for household and similar uses; thermal links; cartridge fuse-link for miniature fuses; plugs, socket-outlets, and couplers for industrial uses; enclosures for accessories and fixed electrical installation for household and similar uses.
3	Low-voltage electrical apparatuses	9	Other protective devices for circuits, relays; other switches; residual current protective devices (portable residual current protective devices, residual current relay); residual current circuit-breakers with integral over current protection (RCCB); residual current circuit-breakers without integral over current protection (RCBO); circuit-breakers for over current protection for household and similar installations (MCB); fuses; circuit breakers; low-voltage switches; other devices; low-voltage switch gear and control gear assemblies.
4	Small power motors	1	Small power motors: power should be under 1.1KW.
5	Electric tools	16	Drills; screwdrivers and impact wrenches; electric grinders; sanders; circular saws; electric hammers; spray guns for non-flammable liquids; electric scissors; electric tapping machine; reciprocating saws; electric chain saws; electric planers; electric hedge trimmers and grass shears; electric routers and edge trimmers; electric stone cutters.
6	Welding machines	15	Portable arc welding machines; AC arc welding machines; DC arc welding machines; TIG welding machines; MIG/MAG welding machines; submerged arc welding machines; plasma arc cutting machines; plasma arc welding equipment; electric shock protective devices for arc welding transformers; coupling devices for welding cables; resistance welding machines; wire feeder for welders; TIG torches; MIG/MAG welding torches; electrode holders.
7	Household and similar electrical appliances	18	Household refrigerators and food freezers; electric fans; air-conditioners; motor-compressors; household electric washing machines; storage water heaters; room heaters; vacuum cleaners; appliances for skin and hair care; instantaneous water heaters; electric irons; electromagnetic cookers; roasters, electric food processors; microwave ovens; cooking ranges, hobs, ovens, and similar appliances; range hoods; appliances for heating liquids; electric rice cookers; water dispensers.
8	Audio and video apparatuses	16	Active loud speakers; audio power amplifiers; tuners, radio receivers; recorders, players, processors for audio and video with kinds of carrier media; combinations of above sound and vision apparatus, power adapters for audio-video products; color TV receivers and display monitors with of display modes; black and white TV receivers and other monochrome TV receivers and display monitors; TV antenna amplifiers; picture-display tubes; video recorders; electronic organs; satellite TV receivers; equipment and components for cable distribution systems of sound and TV signals.
9	Information technology equipment	12	Personal computers; portable personal computers; display units connected with computer; printers connected with computer; multiplying printer and coping machines; scanners; switching power supply units for computer and adapters; chargers; computer game players; learning machines; duplicators; servers; finance and trade settlement equipment.
10	Lighting apparatuses	2	Luminaries; ballasts.
11	Telecommunications	9	Fixed telephone terminal; cordless telephone terminal; key-phone system; mobile terminal; ISDN terminal; terminal equipment system; mobile terminal; ISDN terminal; data terminal including cards; multimedia terminal; facsimile; modem including cards.
12	Motor vehicle and safety parts	4	Automobiles; motorcycles; safety belts.
13	Automobile tires	3	Passenger car tires; truck tires; motorcycle tires.
14	Safety glass	3	Safety glass for road vehicles; buildings; railway rolling stock.
15	Agricultural machinery	1	Equipment for crop protection.
16	Latex products	1	Rubber condoms.
17	Medical devices	7	Electrocardiographs; artificial heart-lung machines; haemodialysis equipment; extra corporeal blood circuit for blood purification equipment and hollow fiber dialysis; implantable cardiac pacemakers; medical diagnostic X-ray equipment.
18	Fire alarm equipment	3	Fire alarms; fire hoses; sprinkler extinguishing equipment.
19	Security and protective equipment	1	Detectors for intruder alarm systems.

SOURCE: China National Certification Accreditation Administration/EMC Compliance Management Group

* A new list is scheduled for release in May 2003.

China's Next Phase: Hu's New Deal?

Cheng Li

Anyone not excessively cynical about Hu Jintao's capabilities must recognize that he has made impressive political advancements since he became the Chinese Communist Party (CCP) chief in the fall of 2002. Hu's political achievements may not be reflected by his real power, but rather his new image in the minds of the Chinese people. Within months after the 16th CCP Congress, Hu has changed two widely held perceptions: first, that he is an incompetent figurehead, and second, that he is a mysterious, unknown leader. Remarkably, Hu has already outlined a new vision and a "New Deal" (*xinzheng*) for China's future: more balanced regional economic development, greater concern for social justice and fairness, and greater political transparency and institutionalization.

A different leadership style

Hu's political strategy is brilliant. He does not directly challenge Jiang Zemin's power or authority, but has established his own image as a down-to-earth populist leader whose policy priorities differ significantly from those of his predecessor. In fact, Hu's politics and personality contrast sharply with Jiang's in the following important respects.

- Politically, Jiang was eager to appoint his protégés, especially members of the so-called Shanghai Gang, to Party and state leadership positions at the 16th CCP Congress and the 10th National People's Congress (NPC). In contrast, Hu was more interested in gaining broad support from delegates of the provincial leadership. It is revealing that the delegates in both congresses endorsed Hu enthusiastically (only one of the 2,132 delegates at the 16th CCP Congress and four of the 2,937 delegates of the 10th NPC did not vote for him). Jiang, however, received 98 "no" votes and 122 abstentions in the confirmation of his chairmanship of the PRC Central Military Commission. Other members of the Shanghai Gang, such as Vice President Zeng Qinghong, Vice Executive Premier Huang Ju, and State Councilor Chen Zhili, received embarrassingly low votes of confirmation at the NPC.
- Economically, Jiang and his associates have emphasized the notion of the "Three Represents," advocating the pivotal role of new elites in the country, particularly entrepreneurs. In contrast, Hu, along with newly elected Premier Wen Jiabao, has paid a great deal of attention to so-called weaker social groups such as poor farmers, unemployed urban workers, miners in unsafe working conditions, and elders without pensions. The contrast between Jiang and Hu

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China's new leadership heads in a different direction

sharpens when one hears that while Jiang's protégés were allegedly constructing a luxurious mansion in downtown Shanghai for Jiang's post-presidential residence, Hu led his new leadership team to revisit Xibaipo village in Hebei, a historical site where the CCP headquarters were located in the late 1940s, an era known for its high spirit, high morality, low corruption, and low arrogance.

- In contrast to Jiang, who has often been criticized for his "black box" political manipulation, Hu has initiated a new rule that the main agenda of Politburo meetings should be released to the public. Hu's first major speech as Party general secretary last December stressed the importance of the rule of law. He argued that all individuals and institutions in the country—the state apparatus, political parties, the armed forces, and social organizations—should comply with the Chinese constitution.

- Jiang is famous for his pompous personality—he often brags about his artistic talents, proficiency in foreign languages, and knowledge of science and technology. Hu, however, has always kept a low profile. In his recent visit to China Central Television (CCTV), Hu stated that the prime-time news programs should not focus primarily on leaders' activities, but should cover events and issues closely linked to public concerns.

- The way in which Jiang and Hu reacted to the election results of the 10th NPC also illustrates their different personalities. Jiang simply waved to the delegates, mirroring Mao's and Deng's "great leader" style on such occasions. In contrast, Hu bowed three times to the delegates when his presidency was "approved." He acted similarly to political leaders across the Taiwan Strait such as Chen Shuibian and Ma Ying-Jeou as they expressed their gratitude to voters after their triumphant elections.

Such contrasts between Jiang and Hu extend beyond differences in leadership style and personality. Hu's recent political moves may herald the next phase of China's socioeconomic development—the coming era of the Chinese "New

Deal." PRC history shows that each generation of leaders has its own mandate and policy priorities. New leaders often dedicate themselves to resolving the problems left behind by their predecessors.

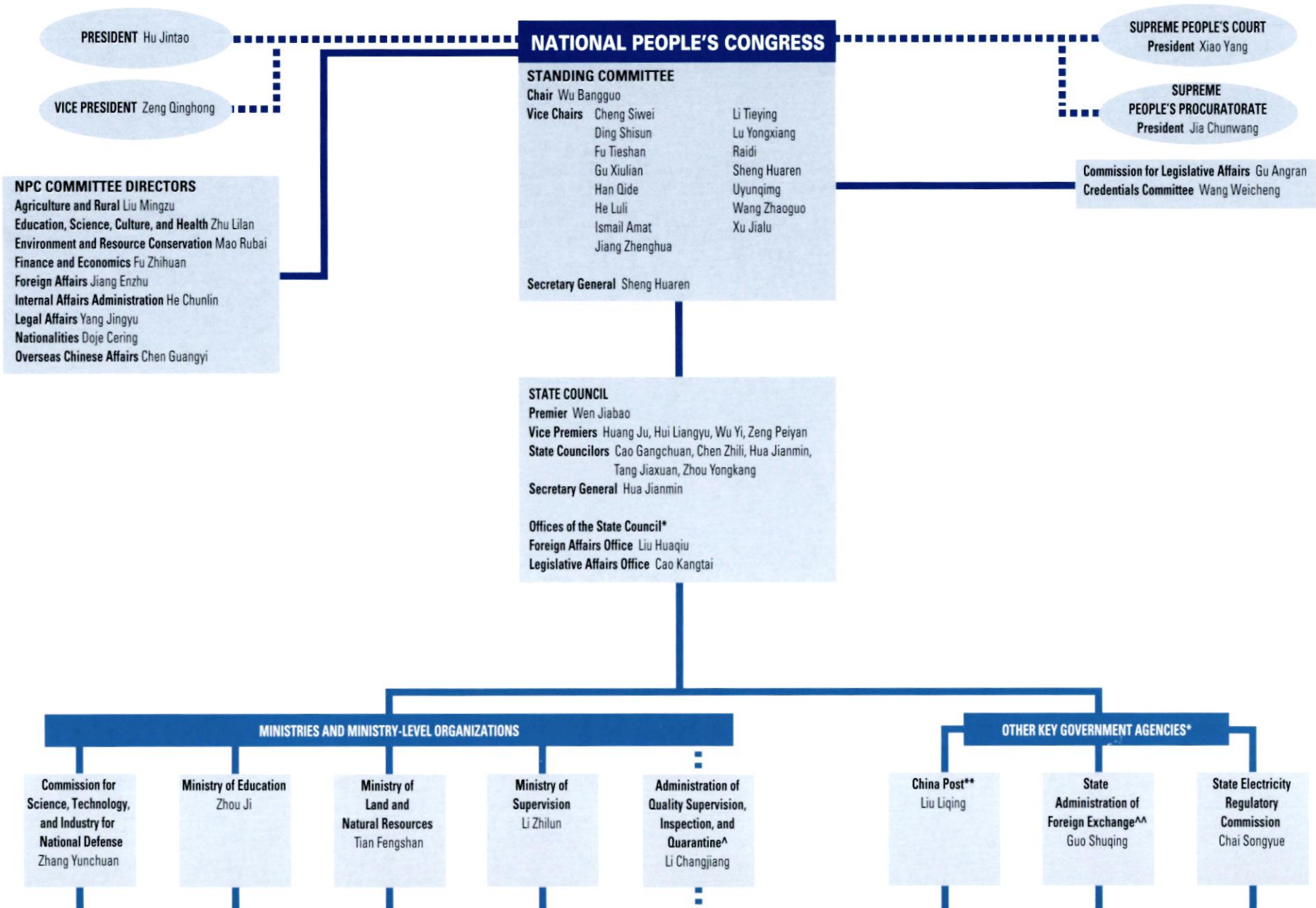
A New Deal for China?

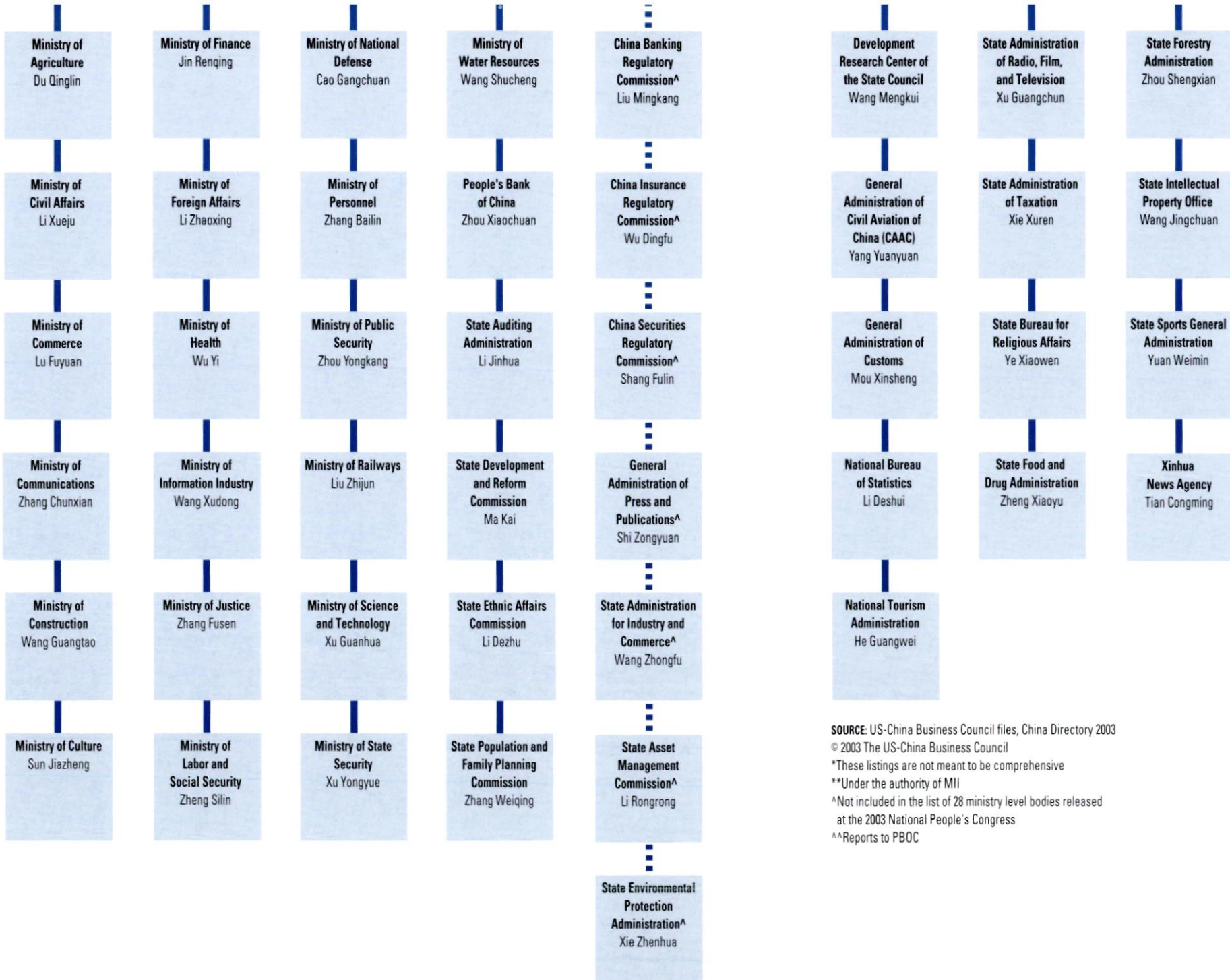
Despite rapid economic growth, the Jiang era was also known for the growing economic gap between urban and rural areas, coastal and inland regions, and new-economy and traditional sectors. For instance, Jiang allocated disproportionate economic resources to Shanghai and other coastal cities while allowing many inland provinces to lag behind. Within a generation, China has been transformed from one of the most equitable countries in the world in terms of income distribution to one of the least equitable. Rampant official corruption, an enormous number of bad bank loans, a high unemployment rate, growing rural discontent, environmental degradation, major health crises, and frequent industrial accidents all suggest that the Chinese regime is sitting atop a volcano of mass social disturbance.

Hu and other fourth-generation leaders seem to understand China's daunting challenges better than their predecessors did. Hu has spent most of his adult life in some of the poorest provinces of China's interior, including 14 years in Gansu, three years in Guizhou, and four years in Tibet. Similarly, Wen spent 25 years after he finished college working in extremely arduous conditions, mainly in Gansu. Enormous physical hardship and an ever-changing political environment during their formative years nurtured valuable traits, such as adaptability, endurance, and grassroots consciousness. The fact that both Hu and Wen advanced to the top of the Party's hierarchy in China's poorest regions indicates they will be more sensitive to the needs and concerns of the inland provinces. In his first press conference as premier, Wen told reporters that he had visited 1,800 of China's 2,500 counties.

Based on political discourse, initiatives, and signals articulated by new leaders and members of their think tanks, Hu's resulting "New Deal"

China's Government Structure





SOURCE: US-China Business Council files, China Directory 2003

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*These listings are not meant to be comprehensive

**Under the authority of MII

[^]Not included in the list of 28 ministry level bodies released at the 2003 National People's Congress

^{^^}Reports to PBOC

The new leadership's plan to transform Chongqing is not just lip service.

consists of interrelated economic policies that aim to:

- Reallocate resources from the coastal to inland provinces through measures such as state bonds and favorable policies
- Reduce the tax burden on farmers by downsizing rural village and township bureaucracies
- Accelerate infrastructure development, particularly in the backward western and inland regions, by building railroads, highways, airports, and natural gas pipelines
- Improve the natural environment in western provinces
- Absorb millions of surplus rural laborers into the newly expanding urban centers (the household registration, or *hukou* system, which has segregated urban and rural areas, will soon be abolished)
- Stimulate demand in the domestic market
- Attract both foreign direct investment and domestic funds from the coastal region to China's interior by offering domestic investors most of the same preferential policies and permissions that are available to foreign investors
- Establish a social safety net including welfare payments, poverty alleviation funds, and other funds for rural elementary education, health care, and research and development

Chongqing stands up

Just as Jiang intended to establish his legacy by rapidly developing Shanghai and other coastal regions to serve as the showcases of China's "coming of age," Hu sees his mandate as implementing China's Western Development Program (WDP, *xibukaifa*). China's western region includes 11 provinces and one municipality under the direct administration of the central government (Chongqing, Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang, and Yunnan). This region is home to 358 million people, almost 30 percent of China's total population. Most of China's ethnic minorities reside in the region.

It is too early to assess how far and how fast the WDP will progress. It is a long-term program that may require the effort of several generations. As one NPC delegate observed, the "east-west differences are not the result of 20 years, but of several hundred years." Hu's effort to promote the WDP must avoid two pitfalls. On the one hand, he should not accelerate west-

ern development if it means stagnation in the coastal areas. On the other hand, if the WDP does not engender significant progress in the near future, the credibility and legitimacy of the Hu administration will be severely damaged.

A possible response to this dilemma is to transform an inland city such as Chongqing into another Shanghai. People may doubt that Chongqing can become another Shanghai in 15 to 20 years. Yet few could have imagined today's Shanghai only a decade ago. All the signs suggest that Hu and his colleagues plan to use Chongqing as a showcase for China's western development.

Recent personnel appointments in Chongqing and Sichuan are particularly significant. Huang Zhengdong, the former minister of transportation, now serves as Party chief in Chongqing. Huang Qifan, former chair of the Shanghai Economic Planning Commission, now serves as executive vice mayor of the city. Zhang Xuezhong, Hu's long-time deputy in Gansu and Tibet and former minister of Personnel, was appointed Party chief of Sichuan immediately after the 16th Party Congress. Such appointments send a clear message: The new leadership's plan to transform Chongqing is not just lip service. Transportation and infrastructure development, foreign investment, and human capital are conducive to the rapid development of Chongqing, the most populous city in the world. The new mayor of Chongqing, Wang Hongju, recently claimed that the city plans to double its GDP growth in five years.

At present, the coastal provinces are enthusiastic about the development of the western region because it can increase consumer demand and provide an enormous domestic market for the coastal region. In fact, Jiang Zemin has also endorsed the strategy of developing Chongqing. But tension between the coastal and inland regions could increase in the years to come as competition intensifies for dwindling natural resources. There is also no clear indication that Chongqing will be as accessible to capital and technology from foreign and domestic sources as Shanghai has been. One can argue that some cleavages within the fourth generation of leaders, especially the lack of consensus on major social and economic policies and the conflict of regional interests, are so fundamental that major political crises are inevitable.

Yet few observers doubt the aptness of Hu's political advancement and policy initiatives. If Chongqing indeed experiences an economic boom in the coming decade like the one achieved by Shanghai during the last decade, China's economic landscape will be forever reshaped. The new generation of leaders will have significantly enhanced its political legitimacy—and Hu's "New Deal" will have profound implications both for China and the rest of the world. 完

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Short Takes

Hukou Reforms Accelerate

Beijing municipality is relaxing the distinction between its urban and rural dwellers. As of April 1, rural newborns are eligible for urban household registration (*hukou*). Rural students enrolled in advanced vocational colleges and secondary technological schools may apply for urban *hukou*, as may rural residents with stable employment and fixed residence.

Shenzhen has gone several steps further. As of April 1, residents without Shenzhen *hukou* may register with relatives who live in the city. And Xinhua News Agency reports that nonstate enterprises that employ more than 20 people will soon be able to apply for collective *hukou* and that university graduates who have not yet found work may also apply for a Shenzhen *hukou*.

Domestic Brands Take the Lead

Chinese brands are pushing their foreign counterparts aside in most market sectors. This is particularly true for home appliances, apparel, personal computers, shoes, and food. According to Wang Yao, vice director of the China National Commercial Information Center, 80 percent of the 3,000 registered brands in China are domestic, and many are surpassing foreign brands in popularity. In the appliance market, Haier Group Co. and Changhong Electronics Group elbowed out Japanese brands in 1998, while Farmer's Mountain Spring Water of Zhejiang took the top spot in the bottled-water market from France's Danone Group in 1999.

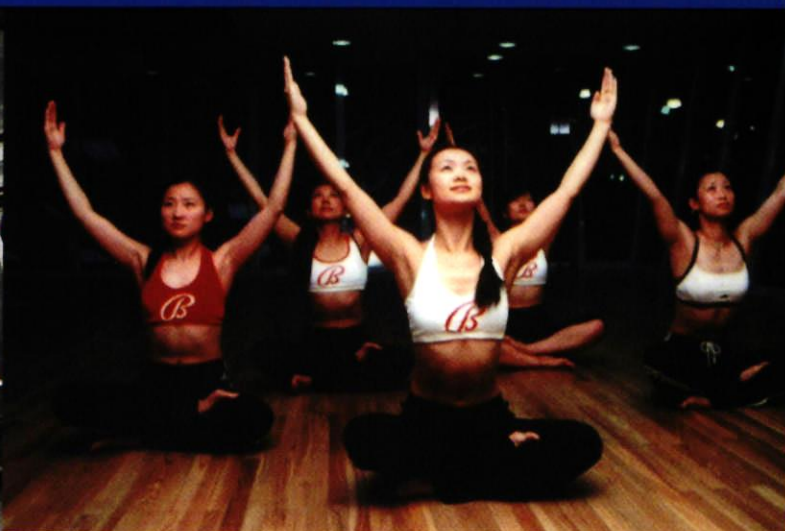
The main exceptions to this trend are personal-care products and luxury goods. Officials at the China General Chamber of Commerce plan to reduce consumption tax to spur local manufacturers to develop luxury goods that can compete with imports.

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Working Out in Beijing

Kathryn C. Ousley

Local health clubs
are pumping up
their services

Upon my return to China in 2002, after two years in the United States, I was pleasantly surprised by the explosion of Western-style health clubs in Beijing. Back in 1995, during my first trip to China, it was nearly impossible to find an adequate gym—I frequently resorted to jogging and exercising with locals in Beijing parks. When I returned in 1999, I found that gym options had improved and that there were even two advanced athletic facilities in Beijing—the China World Hotel Fitness Center and the Swissôtel Fitness Center. As a former collegiate varsity athlete and a hardcore sports and fitness enthusiast, I decided to evaluate Beijing's new health club offerings based on my previous athletic experience in the United States and China. My goal was not only to find out where to get a good workout, but also to get a general sense of the current state of Beijing's fitness industry.

Of the more than two dozen Western gyms in Beijing, I researched the eight facilities most recommended by my peers: China Sports Industry Co., Ltd. (CSI)-Bally Total Fitness, China World Hotel Fitness Center, Clark Hatch Fitness Center China Ltd., Evolution Fitness Center Co. Ltd., Kerry Sports Center, PowerLand Fitness, Pulse Health Club, and The Spa (see Table). I spent a week at each club, attending classes, speaking with clientele, interviewing staff, and taking a fitness evaluation test. I analyzed the gyms in six areas: competition within the industry, facilities and equipment, gym culture, personal trainers, exercise class instructors, and staff background and certification.

Kathryn C. Ousley

is a research assistant at the US-China Business Council. She recently returned from a year-long fellowship at Beijing University.

Photos courtesy of
China Sports Industry Co., Ltd.-Bally Total Fitness

Industry competition

Beijing's fitness industry is developing rapidly, with established facilities and new entrants working together to make the average consumer aware of the importance of exercise. Because Western fitness methods are still fairly new in China, competing gyms—sometimes inadvertently—help each other out through marketing efforts that educate potential Chinese customers about the benefits of health club offerings. As Evolution Fitness's General Manager Matt Lewis explains, the proliferation of international-style gyms enlarges the industry's market niche. And given the size and population of the city, the market is still underserved.

Competing health clubs target the same market segment: white-collar workers who can afford a health club membership. David Du, owner of PowerLand Fitness, claims that it is easier to recruit foreigners than local Chinese to join the gym because foreigners are generally more educated about health and fitness. Yet 90 percent of his current members are Chinese. In my eight-gym sample, between 10 and 40 percent of members were foreigners, with an average of about 15 percent.

Four of the gyms that I surveyed are independent gyms and four are hotel fitness centers. I immediately noticed a clear difference between the membership-driven independent gyms, which focused on customer fitness, and the elite hotel gyms, which tended to concentrate on customer service.

Nonhotel gyms are aggressively pursuing nearby residents through advertising. I was recruited to join The Spa by a team of advertising professionals working in a popular mall next door to the facility. Many of the newest gyms advertise on large subway station billboards. And Du of PowerLand, the only completely Chinese-owned gym that I visited, was planning on recruiting customers by releasing an on-screen commercial at the Christmas Day premiere of Zhang Yimou's latest movie. Although Bally Total Fitness has launched a comparatively high-profile multimedia advertising campaign, Tomer Rothschild, chief representative and director of Bally's business development for China, claims that membership growth is mainly a result of word of mouth—90 percent of members join because of existing member referrals. And despite all of the advertising, most gym managers realize that members choose a gym based on its proximity to their home or work, though price is also a factor.

Equipment and facilities

The eight clubs I visited met their managers' goal of providing equipment and facilities comparable to the highest international standard;

some were three stories, covered 6,000 square meters, and had state-of-the-art equipment. The gyms I visited offer similar equipment to gyms in the United States. All facilities have sufficient free and Nautilus-type weights. Dumbbells are plentiful—the Beijing gyms are stocked with just as many dust-collecting 80-pound dumbbells as US gyms. The gyms also offer typical aerobic equipment: treadmills, stairsteppers, stationary bicycles, elliptical machines, and rowing machines.

Another draw for local customers are swimming pools, which six of the eight gyms I visited offer: The Spa, Evolution, Kerry Sports, Pulse, China World, and Clark Hatch. Almost all of the athletic facilities provide extras such as a steam room, sauna, and whirlpool. For an additional fee, some gyms offer more extensive facilities. The Kerry Center boasts tennis, squash, basketball, and badminton courts, as well as table tennis and a billiard room, while China World has racquetball courts and a golf club.

When I asked Ben Thorns, manager of Kerry Sports, what customers find most appealing about gym facilities, he responded that men are attracted to nice weight-lifting facilities, while women are drawn to impressive locker rooms. If this is true, then Bally Total Fitness will soon be overflowing with men, and women will congregate in the breathtaking locker room at China World. Bally scores points for the sheer amount of equipment and size and layout of its weight room; China World dazzles with a locker room with marble floors, flattering lighting and mirrors, artwork, cylindrical sinks, and personal dressing areas that are stocked with more toiletries than a typical American's medicine cabinet.

To customize their layout for the Chinese market, designers at Bally and The Spa studied research showing that Asians are more likely to value group activities than Westerners. At the time of my visit, Bally had applied for a retail license to open a coffee shop in the lobby, with the aim of creating the feel of a community meeting place. For the same reason, Bally has three group exercise rooms. Bally and The Spa have also incorporated more showers in their locker rooms than would be required by comparably sized gyms in the United States because research shows that a Chinese woman typically spends 15-20 minutes in the shower as opposed to the average American woman's 10 minutes.

The other gyms I surveyed cater to members in general instead of Chinese members in particular. Jeffrey Sussman, executive assistant manager of the China World Fitness Center, pinpointed the needs of the club by working out and interacting with guests every day. Du of PowerLand designed his stadium-like aerobic equipment area, located beside floor-to-ceiling windows and facing large-screen televisions,

Selected Beijing Health Clubs

China Sports Industry Co., Ltd.- Bally Total Fitness

Chang An Grand Theater
Building
7 Jianguomennei Dajie
Beijing, China 100005
Tel: 86-10-6518-1666

China World Fitness Center

China World Hotel
1 Jianguomenwai Dajie
Beijing, China 100004
Tel: 86-10-6505-3156

Clark Hatch Fitness Center China Ltd.

2nd Floor Beijing International
Hotel
9 Jianguomennei Dajie
Beijing, China 100005
Tel: 86-10-6512-6688, ext. 83

Evolution Fitness Center Co., Ltd.

Da Bei Property Center
2 Donghuan Nanlu
Chaoyang District
Beijing, China 100022
Tel: 86-10-6567-3499/0266/4743

Kerry Sports Center

Kerry Center Hotel
1 Guanghua Lu
Beijing, China 100020
Tel: 86-10-6561-8833, ext. 6477

PowerLand Fitness

3 Xiaoyun Lu
Chaoyang District
Beijing, China 100016
Tel: 86-10-8448-1084

Pulse Health Club

Kempinski Hotel
Beijing Lufthansa Center
50 Liangmaqiao Lu
Chaoyang District
Beijing, China 100016
Tel: 86-10-6465-3388

The Spa

China Life Tower B-1F
16 Chaoyangmenwai Dajie
Chaoyang District
Beijing, China 100020
Tel: 86-10-8525-1818/1819

after exercising in Canadian gyms during his extensive travels.

Though management was generally aware of the problem of polluted air in Beijing, few gyms took more than rudimentary steps to eradicate the hazard. I did not notice a difference between the air quality in gyms with professionally filtered air and those that had standard air conditioners.

Gym culture

Though facilities and equipment in the gyms I visited in Beijing are comparable to those in the United States, the expectations and characteristics of patrons are not. Managers agreed that Chinese members have the same fitness goals as expatriates but are less knowledgeable about the gym and its uses. Du of Powerland added that many Chinese are not only discovering Western-style fitness for the first time but are also less likely to ask for help.

Fortunately, the shyness and inexperience of many Chinese members are counteracted by the rising trend in China to spend more on leisure and relaxation, which Rothschild of Bally Total Fitness claims influences members to use personal trainers to pamper themselves. In contrast, Du says that foreign guests generally do not want assistance working out, illustrating the difference between Chinese and Western preferences concerning group activities.

Personal trainers

The majority of the clubs I visited included a fitness evaluation and sample workout with a personal trainer as part of their membership packages. Given the limited workout experience of new Chinese members, most gyms pushed the help of personal trainers to prevent injuries. Almost all facilities offered at least one free session with a personal trainer.

After evaluations by six different personal trainers, however, I was left confused about the state of my body and what exercise regime I should follow to keep in shape. All trainers subjected me to standard tests, including body measurements—height, weight, and body fat, among others—aerobic fitness, resting heart rate, blood pressure, flexibility, and muscular endurance and strength (the Kerry Center's package does not include a fitness test, and China World offers a high-tech scale/body fat percentage measuring machine). Though these tests seemed reasonable, the manner in which they were executed caused my results to vary from "extremely aerobically fit" one week to "below average" the next; my body fat percentage rose—and fell—14 percent in one week. Although there were some amazing bakeries near the gyms—the Kempinski Hotel bakery was offering 50 percent off baked goods right around the time I finished my workout each day—it is physically impossible to eat that much chocolate cake!

Beijing Health Club Profiles

Health Club	Year opened	Management	Chain	Hours	Membership	No. of Personnel	Facility Size (sq m)
China Sports Industry Co., Ltd.-Bally Total Fitness	2002	United States and China	Two in Beijing, with extensive plans for Asia	7:00 am-10:30 pm daily	1,000	80	4,500
China World Fitness Center	1990	Hong Kong	Three hotel fitness centers in Beijing and 42 in Asia	6:00 am-10:30 pm daily	320 + hotel guests	21	1,700
Clark Hatch Fitness Center China Ltd.	2000	Malaysia	Biggest chain outside of United States. Seven locations in mainland China.	6:00 am-11:00 pm daily	350 + hotel guests	20	2,200
Evolution Fitness Center Co., Ltd.	2001	Australia, New Zealand, and China	Single location	6:30 am-10:30 pm M-F; 8:00 am-9:00 pm SS	1,250	23	2,100
Kerry Sports Center	2000	Hong Kong	Three hotel fitness centers in Beijing and 42 in Asia	6:00 am-11:00 pm daily	550 + hotel guests	30	6,000
PowerLand Fitness	2002	China	Single location	8:30 am-10:30 pm M-F; 12:30-9:00 pm SS	750	40	2,700
Pulse Health Club	1992	Germany, South Korea, and China	Single location	6:00 am-10:30 pm daily	560 + hotel guests	24	1,300
The Spa	2001	Hong Kong	Ten Fitness First centers Asia. Third-largest chain in world. The Spa also in Shanghai.	6:30 am-10:30 pm M-F; 9:00 am-9:00 pm SS	1,300	30	1,850

SOURCE: Kathryn C. Ousley

NOTE: NA = Not available

Most of the trainers that administered my fitness tests assumed my fitness goals were the same as the average Chinese woman's. My trainer at Pulse measured my body fat percentage and proclaimed that I was in shape and should be doing maintenance—that it was undesirable for me to bulk up or slim down. He then went on to prescribe a standardized workout, recommending weight machines, aerobic machines, and classes. He laughed with skepticism when I said I enjoy free weights. Andrew Hjelmeland, general manager of The Spa, alluded to this tendency of Chinese trainers to stereotype members and assign the same workouts to everyone without regard for individual goals, experiences, or needs. (One of Hjelmeland's trainers spent 30 minutes begging me to tell him the secret of my calves while, only days later, my Pulse trainer confusingly informed me that my calves were too big and that I should jump rope and run long distances to make them smaller.)

My training with Chen Chen, fitness manager at The Spa, was the highlight of my eight weeks of working with personal trainers. After a comprehensive fitness evaluation, Chen took all of my input into consideration while writing a personalized workout plan and subsequently guiding me through the drill. I boxed at his outstretched, red-gloved hands until long after I had the energy to do so—thanks solely to his motivational way of cheering me on. I flashed back to college track

practice as I performed up-tempo wind sprints on the treadmill, again with Chen urging me to work harder. I loved it. The day's workout was quite successful—marked by the fact that I could barely roll out of bed the next morning.

In addition to The Spa, trainers at Bally and Evolution also recognized that I enjoy having muscles, although everyone except Chen pushed Nautilus-style machinery over free weights. My Bally trainer took an active interest in my goals and effectively combined my various needs into a workable plan, showing me exercises that targeted the specific muscles I wished to work. And Chris, a Chinese fitness pro that is unfortunately no longer with Evolution, impressed me with his attention to my muscular balance and past fitness history.

Group exercise classes

Group exercise classes have drawn me into gyms, both in the United States and in China. I attended a wide selection of class offerings in my two-month period and found class styles to be as wide-ranging as my fitness evaluation and recommended workout regime. The quality of classes varied greatly, with the more professional classes taught at independent gyms. Quality generally depended on the instructor, however.

Continued on page 62

No. of Free Weights	No. of Nautilus-style Weights	No. of Aerobic Equipment	No. of Group Classes/Week	Swimming Pool	Whirlpool	Sauna/Steam Room	Spinning Room	Juice Bar	Other
14	26	62	50-60	No	No	Yes	20 bikes	Yes	Three group exercise rooms
9	24	16	12	20 m, 3 lanes	Yes	Yes	No	No	Squash courts, tennis and golf center, cold whirlpool
4	11	11	10	15 m, round	No	Yes	No	Yes	Tennis court
12	7	23	50	25 m, 5 lanes	Yes	Yes	15 bikes	Yes	Boxing equipment
13	16	30	23	35 m, 6 lanes	Yes	Yes	No	Yes	Track, tennis, squash, basketball, badminton, table tennis, cold whirlpool
14	14	31	20	No	Yes	Yes	20 bikes	Yes	NA
6	12	17	20	15 m, 2 lanes	Yes	Yes	No	No	Squash and tennis courts, table tennis, cold whirlpool
5	17	59	20	25 m, 3 lanes	No	Yes	14 bikes	Yes	Boxing equipment, attached Spa Clinique

The following tables contain recent press reports of business contracts and negotiations exclusive of those listed in previous issues. For the most part, the accuracy of these reports is not independently confirmed by *The CBR*. Contracts denominated in foreign currencies are converted into US dollars at the most recent monthly rate quoted in the International Monetary Fund's International Financial Statistics.

Firms whose sales and other business arrangements with China do not normally appear in press reports may have them published in *The CBR* by sending the information to the attention of the editor.

Architecture, Construction, & Engineering

CHINA'S EXPORTS

Huadian Engineering Corp. (Beijing)

Signed agreement with PT Dana Mulia Sukses and PT Radu Pratama of Indonesia to build power plants in Java and Lampung, Indonesia. 02/03.

Automotive

CHINA'S EXPORTS

SAIC Chery Automobile Co., Ltd. (Shanghai)

Will build an automobile production base, with an expected annual production capacity of 30,000 sedans, in Iran. 02/03.

CHINA'S IMPORTS

Bharat Forge (India)

Won contract to supply engine components to Guangxi Yuchai Machinery, a unit of Second Auto Works. 01/03.

Daihatsu Motor Co. (Japan)/First Auto Works Huali (Tianjin) Motor Co.

Signed agreement to provide technology to manufacture Terios compact SUV. 01/03.

OTHER

Bayerische Motoren Werke AG (Germany)/Brilliance China Automotive Holdings Ltd. (Liaoning)

Received approval for a feasibility study of a production and distribution joint venture. (Germany:50%-PRC:50%). \$481 million. 03/03.

Ssangyong Motor Co. (South Korea)

Gave Shanghai Huizhong Co. exclusive distribution rights to Istana model passenger vans. 01/03.

Aviation/Aerospace

OTHER

Civil Aviation Authority of Singapore/CAAC (Beijing)

Signed agreement to set up China-Singapore Airport Management Academy in Xiamen, Fujian, and to launch exchange scholarships for aviation officials. 02/03.

Banking & Finance

INVESTMENTS IN CHINA

ABN Amro Asset Management Co. (the Netherlands)

Agreed to purchase a 33% stake in Xiangcai Hefeng Fund Management of Shanghai. (US:33%-PRC:67%). 02/03.

OTHER

Goldman Sachs & Co. (US)/Huarong Asset Management Co. (Beijing)

Received approval for and completed purchase of nonperforming loans. \$230 million. 03/03.

Hana Bank (South Korea)/Nanjing City Commercial Bank (Jiangsu), Ningbo Commercial Bank (Zhejiang)

Signed cooperation agreement for trade, corporate financing, and product development. 03/03.

Vietnam Bank for Agriculture and Rural Development, Cao Bang Branch/ABC, Guangxi Zhuang Autonomous Region Branch

Signed credit agreement for cross-border trade. 03/03.

Microsoft Corp. (US)/Beijing Municipal Government

Signed MOU to improve city's software industry. 02/03.

Microsoft Corp. (US)/ICBC

Signed agreement to develop security for bank's personal online banking system. 02/03.

Abbreviations used throughout text: ABC: Agricultural Bank of China; ADB: Asian Development Bank; ASEAN: Association of Southeast Asian Nations; AVIC I and II: China Aviation Industry Corp. I and II; BOC: Bank of China; CAAC: General Administration of Civil Aviation of China; CATV: cable television; CCB: China Construction Bank; CCTV: China Central Television; CDB: China Development Bank; CDMA: code division multiple access; CEIEC: China National Electronics Import and Export Corp.; China Mobile: China Mobile Communications Corp.; China Netcom: China Netcom Corp. Ltd.; China Railcom: China Railway Communications Co., Ltd.; China Telecom: China Telecommunications Group Corp.; China Unicom: China United Telecommunications Corp.; CIRC: China Insurance Regulatory Commission; CITIC: China International Trust and Investment Corp.; CITS: China International Travel Service; CNOOC: China National Offshore Oil Corp.; CNPC: China National Petroleum & Gas Corp.; COFCO: China National Cereals, Oils, and Foodstuffs Import and Export Corp.; COSCO: China Ocean Shipping Co.; CSRC: China Securities Regulatory Commission; ETDZ: economic and technological development zone; ICBC: Industrial and Commercial Bank of China; MII: Ministry of Information Industry; MOFTEC: Ministry of Foreign Trade and Economic Cooperation; MOU: memorandum of understanding; NA: not available; NORINCO: China North Industries Corp.; P&T: Post and Telecommunications; PBOC: People's Bank of China; PetroChina: PetroChina Co., Ltd.; RMB: Renminbi; SARFT: State Administration of Radio, Film, and Television; SEZ: Special Economic Zone; SINOCHEM: China National Chemicals Import-Export Corp.; SINOPEC: China National Petrochemical Corp.; SINOTRANS: China National Foreign Trade Transportation Corp.; SDPC: State Development Planning Commission; UNDP: United Nations Development Program; WFOE: wholly foreign-owned enterprise

VneshTorgBank (Russia)/ABC

Signed agreement to open account for Heilongjiang branch of ABC at Khabarovsk branch of VneshTorgBank. 02/03.

American Express Co. (US)

Set up a travel management center in Shanghai. 01/03.

Deutsche Bank AG (Germany)/China Xinda Assets Management Corp.

Signed an agreement to transfer assets into stock. 01/03.

Warburg Pincus LLC (US)

Set up representative office in Beijing. 01/03.

Chemicals, Petrochemicals, & Related Equipment**CHINA'S IMPORTS****Emerson Electric Co. (US)**

Won contract from Shanghai SECCO Petrochemicals Co., a joint venture between BP and Sinopec, to supply engineering, integration, and project management to petrochemical plant in eastern China. \$30 million. 02/03.

Tecnicas Reunidas SA (Spain), Tecnimont SpA (Italy)

Won engineering contracts from Royal Dutch/Shell Group's China petrochemical joint venture in Guangdong. \$410 million. 02/03.

OTHER**Nan Ya Plastics Corp. (Taiwan)**

Received approval from Taiwan authorities to build a polyester filament factory in Kunshan, Jiangsu. \$18.5 million. 01/03.

Defense/Military**CHINA'S IMPORTS****Rosoboroneksport (Russia)**

Won contract for 24 Su-30MKK multifunctional fighters. \$1 billion. 01/03.

Distribution, Logistics, & Related Services**INVESTMENTS IN CHINA****Mitsui Corp. (Japan)/Dazhong Transportation Co. Ltd. (Shanghai), Xinya Group (Shanghai)**

Formed logistics joint venture, Shanghai Xintian Dazhong Low Temperature Logistics Co. Ltd. (Japan:30%-PRC:70%). \$130 million. 01/03.

Education**INVESTMENTS IN CHINA****Informatics Holdings Ltd., Synergile Inc. Pte. Ltd. (Singapore)**

Signed agreement to expand franchise of Informatics Professional Development Centre in Shandong. 03/03.

OTHER**Japanese Institute of the Chinese Academy of Social Sciences**

Established a Sino-Japanese Studies Center in Beijing. 02/03.

Electronics, Hardware, & Software**INVESTMENTS IN CHINA****Emulex Corp., Veritas Software Corp., Vixel Corp. (US)/Langchao (Beijing) Electronic Information Industry Co. Ltd.**

Formed storage alliance to provide customer services. 02/03.

Royal Philips Electronics NV (the Netherlands)

Acquired a 4% stake in TCL Corp. of Guangdong. 01/03.

OTHER**IBM Corp. (US)**

Will set up a joint research and development center in Dalian Software Park, Liaoning. 02/03.

LG Electronics Inc. (South Korea)

Signed letter of intent with Nanjing municipal government to invest \$70 million in production of plasma display panels. 02/03.

Microsoft Corp. (US)

Signed agreement to give Chinese government controlled access to Windows operating systems as part of the Government Security Program, an international agreement. 02/03.

Taiwan Semiconductor Manufacturing Co.

Received approval from Taiwan authorities for initial phase of wafer fabrication plant near Shanghai. 02/03.

Energy & Electric Power**CHINA'S IMPORTS****GE Power Systems Group, a unit of General Electric Co. (US)**

Won contract to supply gas turbines in association with Harbin Power Equipment Co. Ltd. 03/03.

Mitsubishi Heavy Industries Ltd., Mitsubishi Corp., Mitsubishi Electric Corp. (Japan)

Won contract to supply gas turbines to Dong Fang Electric Corp. of Sichuan. \$640 million. 03/03.

INVESTMENTS IN CHINA**General Electric Co. (US)**

Acquired majority stake in Kvaerner Power Equipment Co., manufacturer of hydropower generation equipment in Hangzhou, Zhejiang. 02/03.

GE Power Systems Group, a unit of General Electric Co. (US)/Shenyang Blast Plant (Liaoning)

Set up maintenance and repair joint venture in Shenyang, Liaoning. \$13.7 million. (US:75%-PRC:25%). 02/03.

OTHER**Government of Pakistan/Shenhua Group Corp. (Beijing)**

Signed agreement to establish two coal power plants in Sindh, Pakistan. 03/03.

Food & Food Processing

CHINA'S IMPORTS

JC Design P/L (Australia)

Sold customized food preparation line to factory in Zigong, Sichuan. \$592,950. 02/03.

Forestry, Timber, & Paper

CHINA'S IMPORTS

Metso Corp. (Finland)

Won order to supply a fine paper machine to Sun Paper Co. Ltd. in Yanzhou, Shandong. \$29.82 million. 01/03.

Insurance

INVESTMENTS IN CHINA

Nippon Life Insurance Co. (Japan)/Guang Dian Group (Shanghai)

Will set up an insurance joint venture, Nisei SVA Insurance, in Shanghai. (Japan:50%-PRC:50%). 02/03.

OTHER

Aon Corp. (US)

Received approval to set up joint venture with COFCO in Shanghai. \$3.6 million. 01/03.

Internet/E-Commerce

INVESTMENTS IN CHINA

Digital China (Hong Kong)

Acquired 70% stake in Beijing SicTech NorthNet Co. Ltd., an e-government service and consulting provider. \$4.24 million. 02/03.

OTHER

Intel Corp. (US)

Signed an agreement to build infrastructure facilities and provide training for Internet services to East Networks Chain-store Management Corp. Ltd. of Shanghai. 02/03.

Machinery & Machine Tools

CHINA'S IMPORTS

Metso Corp. (Finland)

Will supply China Shell Petrochemical Complex with rotary control valves. \$10.6 million. 02/03.

Media, Publishing, & Entertainment

CHINA'S IMPORTS

Cartoon Network, run by Turner Broadcasting, a unit of AOL Time Warner (US)

Signed a one-year agreement to broadcast Powerpuff Girls on two channels of CCTV starting in May this year. 03/03.

INVESTMENTS IN CHINA

Siemens Information and Communication Mobile Group (Germany)/China Football Industry Development, Chinese Football Association

Signed a two-year contract, including a joint logo and advertising rights, to be the main official sponsor of seven Team China football teams. 03/03.

OTHER

Sing Pao Media Group Ltd. (Singapore)

Signed letter of intent to acquire three privately owned audiovisual, publication, and distribution companies in Guangzhou, Shenzhen, and Fujian. 03/03.

IMAX Corp. (US)

Will open three new IMAX theaters in the China Film Museum in Beijing; the South China Mall in Dongguan, Guangdong; and the Dongguan Science and Technology Museum. 02/03.

Metals, Minerals, & Mining

INVESTMENTS IN CHINA

Fortress Gold Mining Inc., a unit of SKN Resources Ltd. (Canada)

Will form joint venture with Yunnan provincial government on Tongchang Gold Project in Yunnan. (Canada:70%-PRC:30%). 02/03.

OTHER

Biogan International, Inc. (US)

Signed a letter of intent to acquire stake in Jinya gold mine and Gaofeng tin, zinc, and lead-antimony mine in Guangxi. 03/03.

Kluane International Drilling, Inc., a subsidiary of Energold Mining Ltd. (Canada)/Yunnan Geology and Minerals Co. Ltd.

Signed a letter of intent to form a contract drilling joint venture. (Canada:60%-PRC:40%). 03/03.

Fury Explorations Ltd. (Canada)

Signed a letter of intent giving Fury Explorations the right of first refusal for the acquisition of exploration sites in Yunnan. 02/03.

Miscellaneous

OTHER

State Government of Ogun (Nigeria)/Government of China

Signed package contract to build auto, cement, and ceramics factories in Nigeria. \$125 million. 01/03.

Petroleum, Natural Gas, & Related Equipment

CHINA'S IMPORTS

Hyundai Heavy Industries Co. (South Korea)

Won order from Sinopec Corp. for offshore pipeline across Hangzhou Bay, in Zhejiang. \$120 million. 02/03.

Tecnimont SpA, a unit of Edison SpA (Italy)

Will build polyolefin complex for CNOOC & Shell Petrochemicals Co. Ltd. in Guangdong. \$220 million. 01/03.

CHINA'S INVESTMENTS ABROAD

CNPC

Will develop an oilfield in northeastern Syria with Syrian Petroleum Co. \$3.5 million. 03/03.

OTHER

Phillips China Inc., a unit of ConocoPhillips (US)/China Oilfield Services Ltd. (Tianjin)

Signed turnkey contract to conduct drilling operations at Peng Lai fields. 01/03.

Pharmaceuticals

INVESTMENTS IN CHINA

Immtech International, Inc. (Hong Kong)

Will form pharmaceutical manufacturing joint venture, Immtech Hong Kong Ltd., in Shenzhen. 01/03.

Rail

OTHER

Government of Morocco/Government of China

Signed cooperative agreement to build a railway tunnel in Meknes, Morocco. \$10,000. 02/03.

Real Estate & Land

INVESTMENTS IN CHINA

Hero Group (India)/Shanghai Luodian Investment, Shanghai Real Estate Ltd.

Will form land development joint venture in Shanghai. (India:27.37%-PRC:72.63%). 03/03.

Retail/Wholesale

INVESTMENTS IN CHINA

Woodard LLC (US)/Leisure Garden (Beijing)

Will form an outdoor furniture manufacturing joint venture, Woodard China, in Hangzhou, Zhejiang. 01/03.

OTHER

Amway Corp. (US)

Launched 100th store in China in Shanghai's Pudong New Area. 02/03.

Telecommunications

CHINA'S IMPORTS

Intel Corp. (US)

Won contract from China Netcom and China Mobile to provide wireless local area network hotspots. 03/03.

Nanjing Ericsson Panda Communications Co., a joint venture between LM Ericsson AB (Sweden), Nanjing Panda Electronics Co., and China Putian Information Corp. Group.

Won contract from Hebei Mobile to supply telecom equipment. \$10.8 million. 03/03.

Nortel Networks Corp. (Canada)

Will upgrade China Mobile's GSM infrastructure in Hebei. \$26 million. 03/03.

UTStarcom Inc. (US)

Won contract to expand China Netcom's Xiao Lingtong (Little Smart) network. \$50 million. 03/03.

Calypso Wireless Inc. (US)

Won contract from China Telecom to provide cellular broadband video phones. \$500 million. 02/03.

NDS Group plc (UK)

Won contract from Chongqing Broadcast and TV Network and Guizhou Tianguang Cable Network Co. to provide end-to-end digital broadcasting solutions for migration from analog to digital cable. 02/03.

UTStarcom Inc. (US)

Won contract from Hubei Telecom to provide IP-based personal access system platform in Wuhan, Hubei. \$26.5 million. 02/03.

AsialInfo Holdings, Inc. (US)

Won contract from Shandong Mobile to provide analytical customer relationship management software solution. 01/03.

AT&T (US), UNISITI, a joint venture between Shanghai Telecom, AT&T, and Shanghai Information Investments Inc.

Won contract from COSCO to build its VPN-based European and Asia Pacific networks. 01/03.

Ericsson (China) Co. Ltd., a joint venture of LM Ericsson AB (Sweden)

Won contract from China Telecom to provide digital communications network. 01/03.

Nortel Networks Corp. (Canada)

Won contract from China Netcom to deliver and install long-haul networks covering 5,000 km. 01/03.

UTStarcom Inc. (US)

Won contract from China Telecom to build networks in Guangdong. \$80 million. 01/03.

INVESTMENTS IN CHINA

Chloride Group plc (UK)

Bought 75% stake in Siemens Telecom Power Supply Ltd., a joint venture between Siemens AG and China Mobile. (UK:75%-PRC:25%). 02/03.

Qualcomm Inc. (US)/China Unicom

Formed a telecom joint venture, Unicom-Brew Wireless Technologies Ltd., in Beijing. \$3.6 million. (US:50%-PRC:50%). 02/03.

OTHER

Microsoft Corp. (US)/China Unicom

Signed agreement to develop value-added CDMA services. 02/03.

Tourism & Hotels

OTHER

Kempinski Hotels & Resorts (Germany)/Sichuan Xiang-yang Real Estate (Group) Co. Ltd.

Signed contract for decoration and management of Kempinski Hotel in Chengdu, Sichuan. 02/03.

Working Out in Beijing *Continued from page 57*

The gyms I visited offered standard classes such as aerobics, step aerobics, spinning, and yoga in addition to more specialized classes like *gongfu*, belly dancing, Latin aerobics, *taijiquan*, and *ba gua zhang*. I primarily selected classes I was familiar with, but I also branched out occasionally. I am now certified in four blocking styles of *ba gua zhang*.

My advice for picking a class would be to wait until five minutes after start time to enter the room in order to survey potential classmates. Generally, classes with mostly foreign participants had an above average difficulty level. But this method was not foolproof. My *ba gua zhang* instructor, who was apparently accustomed to Chinese students who are generally smaller than Westerners, was very excited about throwing around his tall foreign guest. Waking up bruised is not as satisfying as waking up sore.

One of my favorite classes was a Bally spinning class complete with loud, thumping techno-music, and a disco ball that lit up the otherwise dim room. The Spa's Jing Jing also led me through a phenomenal body combat class (similar to kickboxing) and a tough spinning class. The three classes that I took at Evolution were taught solidly, but were not as challenging as the classes at Bally and The Spa.

Staff background and certification

Perhaps the lack of standardization in staff training and certification can account for discrepancies among different gyms' fitness tests and class styles. Almost all of the managers I spoke with stressed the comprehensive training of their staff. Each gym either taught the instructors internally or required certain credentials upon employment.

Staff recruited to work in top gyms in Beijing generally hold Bachelor's degrees in Physical Education, but do not necessarily have background in the sports or fitness industries. Personal trainers with applied experience in athletics stood out from their peers. Chen of The Spa has a background in martial arts fighting and track; my knowledgeable trainer from Bally had competed in gymnastics for many years.

Individual gyms chose from among various training programs to certify their staff. The China Bodybuilding Association, China Aerobics Association, Asian Association of Sports and Fitness Professionals, and National Association of Sports Medicine all offer certification.

Until certification is standardized, there will continue to be a shortage of personnel trained to international gym standards, thus creating competition among facilities to recruit the most

qualified staff. This predicament has already manifested itself; Bally's Rothschild said that there is not enough industry talent in Beijing to go around, and as a result, gyms are forced to hire staff from all over China. And once someone is certified, he or she becomes a valuable commodity. Job hopping is common. Thorns from the Kerry Center said that much of his current staff had moved over from China World; the trainer with whom I worked out at China World had formerly worked at The Spa; and PowerLand General Manager Andrew West shifted over from the Hilton Beijing's gym.

So, which gym is best?

After evaluating Beijing's fitness industry for eight weeks, I thought it would be easy to pick the best gym, but this was not the case. Like most people who select a gym based on its location, I too would probably pick any of the ones I visited, depending on which one was most conveniently located. If I were living in the Sohu apartment complex on Jianguomenwai, I would work out at Evolution. But if I lived in a mobile home or could weather the traffic across town, I would attend classes and lift weights at Bally, but would want Chen from The Spa as my personal trainer. After working out, I would shower and use the locker room at China World. If I wanted a swim, I would head to the Kerry Center, and if I were injured, I would use the ice whirlpool there as well.

Bulking up

Beijing's health club industry has changed enormously since 1995, and the city's fitness industry growth will continue. Many of the gyms I visited for this article were planning to open additional locations in Beijing and other parts of China, though some had just opened up their first site. Bally plans to emulate its US market plan of being the single largest provider—with two locations in Beijing and a goal of opening 50 clubs in China within the next 10 years. PowerLand is planning to open another club in Chaoyang Park in the Central Business District. And Fitness First, a larger version of The Spa, is considering several locations in Beijing.

The pace of construction of new, well-designed, advanced facilities has outstripped the development of talent and standard staff training. Yet, even if, because of a lack of standardized staff training and a lack of consumer knowledge and interest toward gyms, Beijing's fitness industry is still imperfect, its expansion comes at a crucial time. As the industry matures, it could help counteract growing health and weight problems among urban residents. 完

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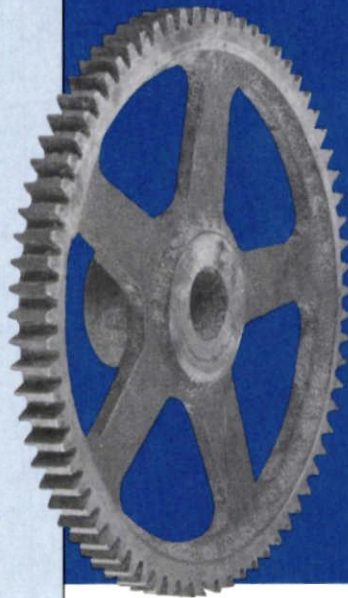
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A China Dimension for Project Planners

How engineers can add
“understanding China” into
their project planners

John E. Coulter

Many project managers, especially in mining and oil exploration, but also in other extractive and construction programs, come from a technical background. But even experienced project managers who have succeeded in applying advanced technologies in geographic and cultural conditions as diverse as Siberia and the Middle East may not be able to imagine what is needed to plan and successfully implement a project in China. Quite a few times while working on projects in China, I have stood before an office wall absorbing the project plan and tried to trace in it the pain, frustration, and pending slips I knew existed. The plan’s author could only refer to what was on the wall—expected start and completion dates of each line activity—and curse vague mysteries and unforeseen obstacles that had been reported to him.

As a geophysical survey crew manager in the Qaidam Basin, Qinghai, from 1981 to 1983, I experienced firsthand the bedlam that can result when a manager is unfamiliar with how things work in China. Now, 20 China projects on, having been a project manager and an adviser on entries to make money or exits to cut losses, I have been able to formulate an approach to help technical specialists overcome the obstacles that projects in China often confront.

The conventional planner

Engineers and technical project managers have institutionalized project planning software as a natural language with which to address the problems that invariably crop up when implementing a complex project. Essentially, the software sets a list of things to do against a timeline of start and completion dates. Coded arrows and links emphasize that progress along the path to subsequent activities is conditional upon achieving positive results in the preceding steps.

The software rigorously disciplines the manager to achieve goals by set deadlines and highlights when preparations for upcoming events must be completed. Typically, a printout of the plan extends right along an office wall, and the list of things to do can reach from ceiling to floor.

In a conventional project planner the first line is the trigger—an agreement to commit to a phase of the project. Then the engineering mindset takes over. The race is on. The focus is a hundred line items of physics and chemistry, all absolutely vital. And then, almost as an afterthought, are the “soft and woolly” items, crammed into the last few lines—environment, health and safety, labor, and administration.

Time is on the X-axis, and the Y-axis consists of two parts that need to be addressed separately to avoid confusion before adding the China dimension. The first hundred or so lines are

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The author wishes to acknowledge support and challenging stimulation from two colleagues at BHP Billiton (China), Clinton Dines, president, and Jon Coates, manager, Energy Coal China Business Development.

project specific—preparing the site, pouring concrete, etc. Then come the corporate-wide functions. For instance, a project manager cannot invent a new accounting system for the project—he must comply with ordering procedures and human resource rules that are part of a company's global system. Getting all of this on the Y-axis can be hard enough.

If the project is being implemented in Texas or western Australia, or even Irian Jaya or Mozambique, and the employees, subcontractors, and officials are compliant, or have been trained or paid off enough to allow open technology transfer, then the project can follow the plan. Someone in the office can go out and get a permit, the team can be pushed to get everything done on time, and the plan works.

China: The third dimension

China adds another dimension to the project planner. In the figure on page 56, the project planner with activities on the Y-axis and time on the X-axis has a Z-axis to plot the path through the Chinese institutional landscape. Anyone brave enough to sponsor a China project had better plot this third, China dimension.

For Western people living in their own culture, the third dimension is absorbed almost from childhood. There is no need for an organization chart on how to get a driver's license, for

The hand of government can hardly be avoided, so a wise project manager draws up a chart of the commissions and ministries that affect the project.

example, and more arcane services can be found through the Yellow Pages (or these days, the Internet), an industry or alumni network, or by asking a buddy.

But China is made up of 31 regions, unified at the top for negotiations with outsiders, but otherwise as diverse as the nations of Europe. It is also made up of 2,100 rural counties each with an average population of half a million, with another quarter of a billion in the big cities and megalopolises. The late Tip O'Neill once said,

First Things First: Before Starting a China Project

Supporters of an engineering project in China who know that the country is a labyrinth of institutional landscapes and traditions realize that they should generally allow twice as much time as they would allow for a similar project elsewhere in the world. When the "interpreter" (Chinese or foreigner) between the project manager and Chinese bureaucracy tries to explain how difficult implementing the project can be, the project manager unfamiliar with China may view him or her as obstructionist and as introducing unnecessary intrigue. The engineer, under pressure to meet deadlines, sees a person who is "soft on China" insisting that the task at hand will take time and that he or she must be patient.

In my experience, undertaking two preliminary studies can prevent this scenario:

1. First, any potential project must be thoroughly studied before a firm decides to undertake it. The person leading the concept study—which typically takes about six person-months and \$100,000, and may simply review existing data—needs to be a broad-

minded, lateral thinker (someone who thinks of all possibilities, even the most unlikely) who is prepared to consider a wide variety of options. A team with a humble approach might discover that the reason a project is not being done locally is not necessarily the lack of technology or foreign funds.

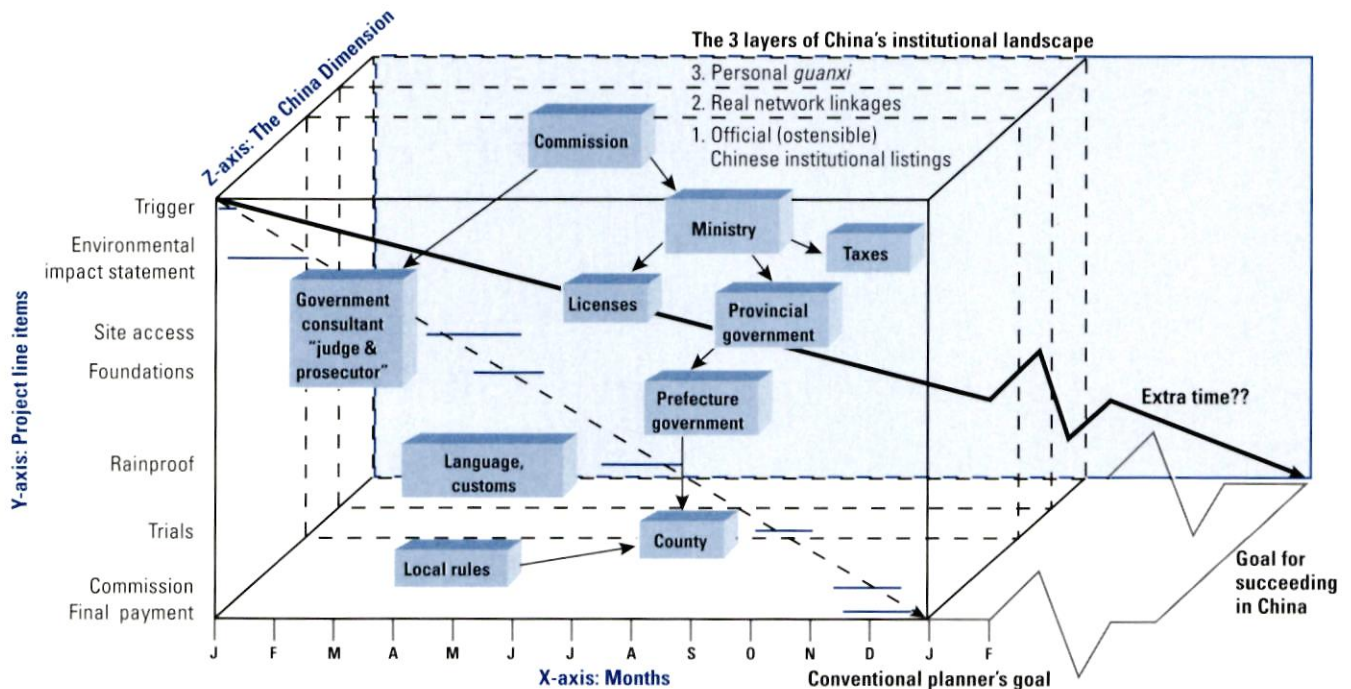
The study should begin by asking the following questions: What was going on here before we came, and for how long? Why are foreign investors considering a project when it is not being done as a local exercise? What can foreigners bring to the project that the locals lack? What do the locals expect the foreigners to bring?

The study must be broad and consider radical options. Considering a variety of scenarios might lead to solutions not previously imagined. Above all, if a firm wants an honest evaluation of whether the project is worthwhile, it should not burden the study team with the expectation that the team will recommend that the firm undertake a certain project. The team may, perhaps, end up advocating a project. But it needs the power to recommend *not* doing a project.

2. If a concept firms into a possible project, and a technical team is set up to perform a prefeasibility study (which generally requires engineering tests, new research, 100 person-months, and several million dollars) the team will need a new tool—a project planner with a China dimension. This tool should be introduced during a formal induction course on "working in China," which could be provided by a consulting or training firm with hands-on China management experience. Good management textbooks address the matrix management organization system, which mixes project-specific tasks with corporate-wide functions. Of course there are clashes because of different reporting lines. A good textbook will have a chapter on installing mechanisms to address and resolve misunderstandings and cross-purposes. Some of the best books admit that cultural differences can exacerbate misunderstandings.

—John E. Coulter

Project Planner: The China Dimension



Key → = Relationship between PRC government entities.

The front face of the figure is the conventional project planner, as depicted on a computer screen or paper printout. The X-axis is time (typically in months or quarters) and the Y-axis is the list of things to do, with each line below contingent on the completion of the one above. This example lists milestones for which there are financial commitments. The China dimension on the Z-axis reminds the project manager that completion of each activity also depends on compliance with local institutions, at their face value, how they really function, and possibly most important and least obvious, on the personal relationships among key players (their *guanxi*). By recognizing these functions as a fact of life in China as real as any engineering aspect of the project, a technically minded manager can address them and plot where to apply leverage constructively.

with reference to America, "All politics is local." This saying is even more pertinent in China. Wherever the project is, there are untold stakeholders, each one of which, if not embraced, may deliberately sabotage the project.

An example illustrates how plotting the political-cultural dimension helps project managers achieve their goals. In the first foreign onshore oil exploration project in China, in Hainan, a carefully drafted organization map identified several potential sources of trouble. Apart from the obvious gap in between Beijing and Hainan's provincial capital Haikou, deep distrust between officials in Haikou and those at the worksite county of Lin'gao led to serious miscommunication. The working language in Lin'gao did not even seem related to Hainanese, let alone Mandarin. Six kilometers of 1024-trace seismic cable had to be rolled out each morning and collected each night because villagers had slashed it several times out of contempt and hostility for what they perceived to be arrogant officials from the provincial capital.

To solve this problem, the project manager recruited a Singaporean with Western management and technical skills who was also from a family whose ancestral home was Lin'gao. He

could speak directly to all stakeholders in their own language to address grievances and nurture cooperation. This novel solution sidestepped the outsider issue and won instant respect for the project among the villagers and allowed the project to be completed in record time.

Plotting the third dimension

There are several ways to begin mapping the Chinese institutional landscape. The hand of government can hardly be avoided, so a wise project manager draws up a chart of the commissions and ministries that affect the project. A hierarchy of institutions at different levels of government stretches down from the national level through provinces to prefectures to counties. When the project meets new government entities, they can be put into context.

In fact, the two-dimensional China organization chart is multilayered. After plotting the various government bodies with names to explain their functions, the next layer spells out, with respect to the project, how each one can actually contribute to, or delay, the project. Another layer adds the key individuals in the decisionmaking bodies and the chemistry among them and their

attitudes toward the project. A plot of the *guanxi* of leading personalities can be a key to keeping the project on schedule.

The China dimension of the project planner can help project staff and temporary short-term experts share corporate wisdom about the environment on which the project depends. The alternative is for staff to refer to “Mr. Wang from the government” without knowing where he fits in. The plan is most valuable when the “hard-line” project manager and the person who knows how to get things done in China both accept the China dimension of the plan and together plot the obstacles to see where they might constructively apply leverage to reduce or avoid delays.

Another example shows how this sort of cooperation can smooth the project’s progress. From corporate headquarters in Middle America, one chief operating officer (COO) planned to take the company jet on a swing through a belt of major customers in China. The flight plan was set in detail and then the China office was notified. The China office was horrified, because the customer bases were strung out within view of the Russian border. Obviously, obtaining permits for a US plane to fly low and to land in these areas would be time consuming if not impossible. But the China office was able to respond by referring to the original plan, inserting the institutional complications, and then noting that these offered opportunities as well as obstacles. The China office’s solution was to have the corporate jet flown to the provincial capital and have a charter helicopter service loosely affiliated with the army fly the COO and his team around the customer bases. The COO not only got to see his clients, but generated excellent goodwill with local government branches in the process.

The best aspect of the China dimension of a project planner is that it fits the mindset of people with technical backgrounds who get thrown into China without a roadmap.

The best aspect of the China dimension of a project planner is that it fits the mindset of people with technical backgrounds who get thrown into China without a roadmap. Unless it is introduced as an enhancement to the two-dimensional conventional project planner, many technical types view “understanding China” as just getting in the way of meeting deadlines. By adding China as a third dimension to a standard two-dimensional plan, the analytical technical manager can anticipate the contours and more realistically draw a reasonable timeline—improving the chances that the project will be completed successfully.

N E W

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C O M I N G S O O N !

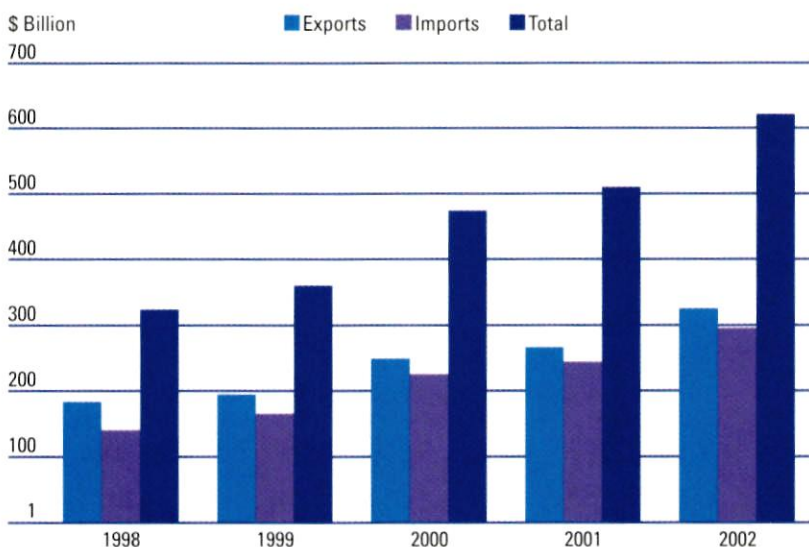
China's Economic Indicators, 1998-2002

	1998	1999	2000	2001	2002
GDP (RMB billion)	7,834.5	8,206.8	8,944.2	9,593.3	10,200.0
Real GDP growth (%)	7.8	7.1	8.0	7.3	8.0
Consumer price index (%)	-0.8	-1.4	0.4	0.7	-0.8
Urban disposable per capita income (RMB)	5,425.1	5,854.0	6,280.0	6,895.6	7,500*
Rural net per capita income (RMB)	2,162.0	2,210.3	2,253.4	2,366.4	2,470*
Urban unemployment rate (%)**	3.1	3.1	3.1	3.6	3.9^

NOTES: *NBS estimates; ** According to official PRC National Bureau of Statistics (NBS) figures, which do not include under-employment or the migrant population; ^September

SOURCES: China Statistical Yearbook, 2002; Dow Jones News Service; Foreign Broadcast Information Service; Financial Times

China's Trade with the World



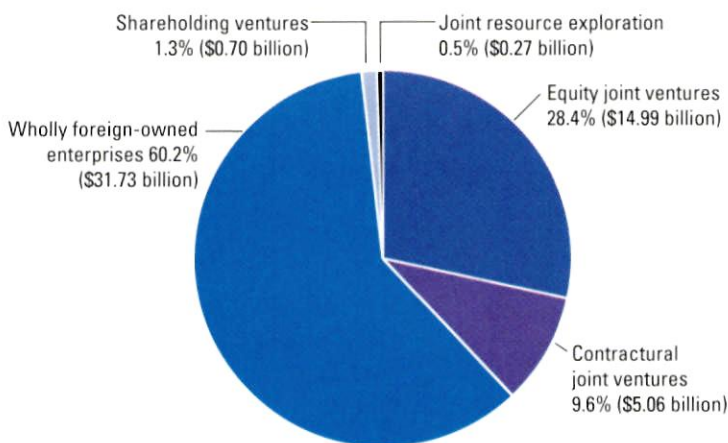
NOTE: PRC exports reported on an FOB basis; imports on a CIF basis
SOURCE: PRC General Administration of Customs, China's Customs Statistics

Top 20 Most Competitive Chinese Cities

- 1 Hong Kong
- 2 Shanghai
- 3 Shenzhen
- 4 Beijing
- 5 Macao
- 6 Guangzhou, Guangdong
- 7 Dongguan, Guangdong
- 8 Suzhou, Jiangsu
- 9 Tianjin
- 10 Ningbo, Zhejiang
- 11 Hangzhou, Zhejiang
- 12 Nanjing, Jiangsu
- 13 Wuxi, Jiangsu
- 14 Qingdao, Shandong
- 15 Jinan, Shandong
- 16 Wuhan, Hebei
- 17 Wenzhou, Zhejiang
- 18 Chongqing
- 19 Xiamen, Fujian
- 20 Zhongshan, Guangdong

SOURCE: Blue Book of City Competitiveness

Utilized Foreign Direct Investment, 2002



SOURCES: CEIC; MOFTEC

China's Trade with the United States (\$ billion)

	1998	1999	2000	2001	2002
US Exports	14.3	13.1	16.3	19.2	22.1
% change	10.9	-8.0	24.4	18.3	14.6
US Imports	75.1	87.8	107.6	109.4	133.5
% change	14.1	16.9	22.6	1.6	22.0
Total	89.4	100.9	123.9	128.6	155.6
% change	13.7	12.9	22.8	3.8	21.0

SOURCE: US International Trade Commission, US Department of Commerce

The Rural-Urban Gap

China's 10 richest urban areas are in:	Urban per capita disposable income (RMB)	China's 10 poorest rural areas are in:	Rural per capita net income(RMB)
Shanghai Municipality	12,883.46	Inner Mongolia Autonomous Region	1,973.37
Beijing Municipality	11,577.78	Chongqing Municipality	1,971.18
Zhejiang Province	10,464.67	Shanxi Province	1,956.05
Guangdong Province	10,415.19	Guangxi Zhuang Autonomous Region	1,944.33
Tianjin Municipality	8,958.70	Ningxia Hui Autonomous Region	1,823.05
Fujian Province	8,313.08	Xinjiang Uygur Autonomous Region	1,710.44
Tibet Autonomous Region	7,869.16	Qinghai Province	1,557.32
Jiangsu Province	7,375.10	Gansu Province	1,508.61
Shandong Province	7,101.08	Shaanxi Province	1,490.80
Yunnan Province	6,797.71	Guizhou Province	1,411.73

SOURCE: China Statistical Yearbook, 2002

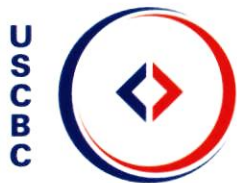
NOTE: \$1=RMB 8.28

HOW MUCH THINGS COST

Product	Beijing	Shanghai
Can of regular Coca-Cola	1.9	1.8
Base subway fare	3	2-3
Haagen-Dazs ice cream (scoop)	25	25
Domestic ice cream	1-3.5	1-3.5
Taxi ride (5 km)	11-14	14-17
Large Pizza Hut Pizza	85	85
Youtiao (fried dough stick)	0.4	0.5
Big Mac	9.9	9.9
Colgate toothpaste (100g)	5	5.4
Jieyin toothpaste	4	4
Apples (1 kg)	5	6
Rice (1 kg)	2.2-2.8	2.5
Handmade noodles (1 kg)	2.6	3
Pork (1 kg)	15-18	13
Cabbage (1 kg)	0.16-2.8	1.4
Soy sauce (1 liter)	3.5-7.5	4-6
Cooking oil (1 liter)	10-24	6
Milk (1 liter)	5.6-11.5	5-6.8
Gasoline (1 liter)	3.29-3.4	3.2-3.7
Movie ticket	30-50	30-50
Fenghuang bicycle	380-460	250-500
<i>Joint Venture Car</i>		
Red Flag	166,000-319,800	328,000-399,100
Audi China A6	155,500-219,800	328,000-512,200
<i>Imported Car</i>		
Toyota 2000	398,000	580,000-1,720,000
Mercedes-Benz E280	425,000	850,000

NOTE: All figures are in RMB. Exchange rate: \$1 = RMB 8.28

SOURCE: The US-China Business Council



UPCOMING EVENTS

30th Annual Meeting 2003

Washington, DC
June 5

Keynote: A Dialogue with Key Government Figures on US-China Business

- **US Under Secretary of Commerce for International Trade**
Grant Aldonas
- **US Assistant Secretary of State for Democracy, Human Rights, and Labor**
Lorne Craner

Plenary Session: China's Business and Political Climate

- **China's Evolving Services Market: The View from Shanghai**
Iain McDaniels, USCBC
- **The Chinese Consumer: Benchmarking Trends and Reaching Customers**
Victor Yuan, Horizon Research
Roy Sheldon, ITT Industries
- **Decisionmaking in China: The New Role of Bureaucrats and Special Interests**
Kenneth Lieberthal, University of Michigan
Margaret Pearson, University of Maryland

Concurrent Sessions

- **Corporate Best Practices: Doing "Good" in China**
Robert A. Kapp, USCBC
Tom Conley, Toy Industry Association
Pia MacRae, BP
Richard Brecher, Motorola Inc.
- **Taking Control of Your Intellectual Property**
Managing Risk—David Fernyhough, Hill and Associates
Enforcement—Douglas Clark, Lovells

May Issues Luncheon

Washington, DC
May 15
Featuring Craig Allen, incoming senior commercial officer, US Embassy, Beijing

EVENT WRAP-UP

Washington

March

Issues Luncheon: Panel on Congressional China Issues in 2003
Featured Meredith Broadbent, House Ways and Means Trade Subcommittee; Kerry Dumbaugh, Congressional Research Service; Frank Jannuzi, Senate Foreign Relations Committee; Peter Yeo, House International Relations Committee

Quarterly WTO Working Group Briefing Featured Wendy Cutler, assistant US Trade Representative, North Asia, and Charles Freeman, deputy assistant USTR for China, Hong Kong, Taiwan, and Mongolia

April

Issues Luncheon: Reflections on the Export Control/Technology Licensing Problem and Rule of Law Development in China Featured Carol A. Kalinoski, chair of the Operating Committee on Export Policy, Bureau of Industry and Security, US Department of Commerce

Beijing

March

Breakfast Meeting: Natural Gas Education and Institutional Development Featured US Gas Technology Institute

Council Co-hosts Training for Shanghai Officials

The Council has been sponsoring groups of trainees from Shanghai who are visiting the United States to learn about the practical concerns of US companies and government officials vis-à-vis China's World Trade Organization (WTO) membership. The trainees, who were selected by the Shanghai WTO Affairs Consultation Center, have participated in Council-organized meetings on WTO-related issues with Council member companies, industry leaders, and US government officials. These meetings have provided the Shanghai trainees with insights on how trade disputes are handled, as well as how US companies manage their trade interests in Washington.

Council member companies that have supported the most recent training session are American International Group, Inc., Amway Corp., AT&T, Chindex International, Inc., E.I. du Pont de Nemours & Co., Eastman Kodak Co., Eli Lilly and Co., General Electric Co., General Motors Corp., Kaye Scholer LLP, Morrison & Foerster LLP, New York Life Insurance Co., Powell, Goldstein, Frazer, & Murphy LLP, Sidley Austin Brown & Wood LLP, The Chubb Corp., and Wal-Mart Stores, Inc.

USCBC



THE US-CHINA BUSINESS COUNCIL

美中贸易全国委员会

30th ANNUAL MEMBERSHIP MEETING

CHINA MARKET 2003

China's Evolving Services Market: The View from Shanghai

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Concurrent Sessions

Corporate Best Practices: Doing "Good" in China

Taking Control of Your Intellectual Property

A MEMBERS ONLY EVENT

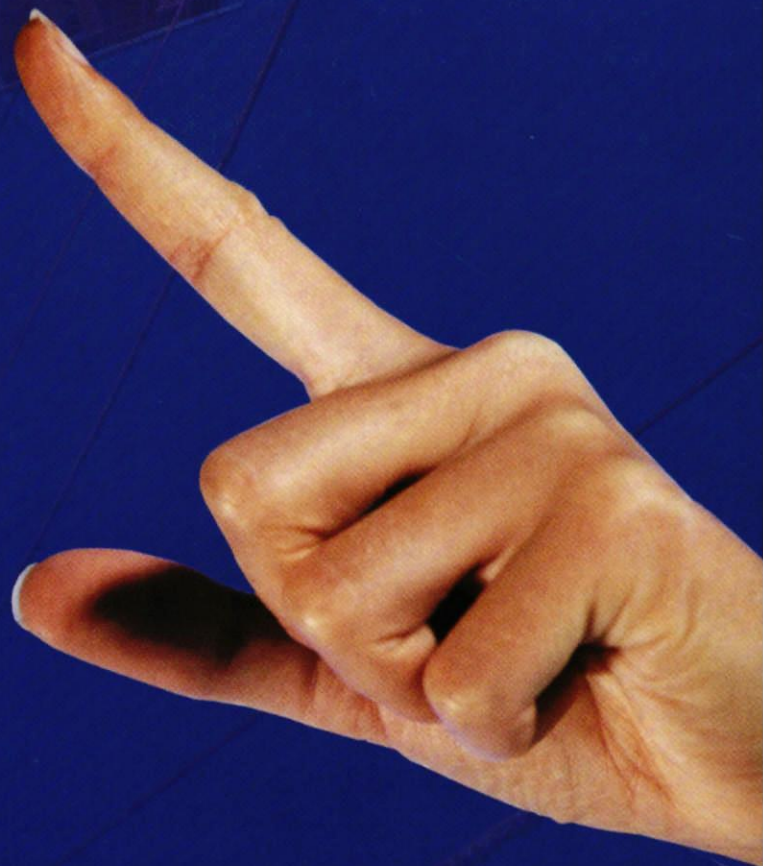
For detailed conference information,
speaker profiles, fees, lodging,
and registration see
www.uschina.org

June 5, 2003
8:30 am-4:00 pm
The St. Regis Hotel
Washington, DC



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When you want it.
How you want it.
At internet speed.

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Rates	●
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