July–August 2007

The China Business Review

USCBC THE MAGAZINE OF THE US-CHINA BUSINESS COUNCIL

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October 18–20, 2007

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www.shrm.org/conferences/diversity

Philadelphia, PA

The China Business Review

USCBC THE MAGAZINE OF THE US-CHINA BUSINESS COUNCIL

Focus: Human Resources

The Great Look Forward: China's HR Evolution 16
Adopting a total rewards strategy and segmenting their talent will help companies in China meet human resources challenges.
Jill Malila

Feeling the Pressure? 20
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Andreas Lauffs and Jonathan Isaacs

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The passage of the Labor Contract Law could significantly affect how a buyer manages its employees during and after an acquisition.
K. Lesli Ligorner

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Recent compensation and benefit trends
Jim Leininger

FASTEST FROM THE FAR EAST

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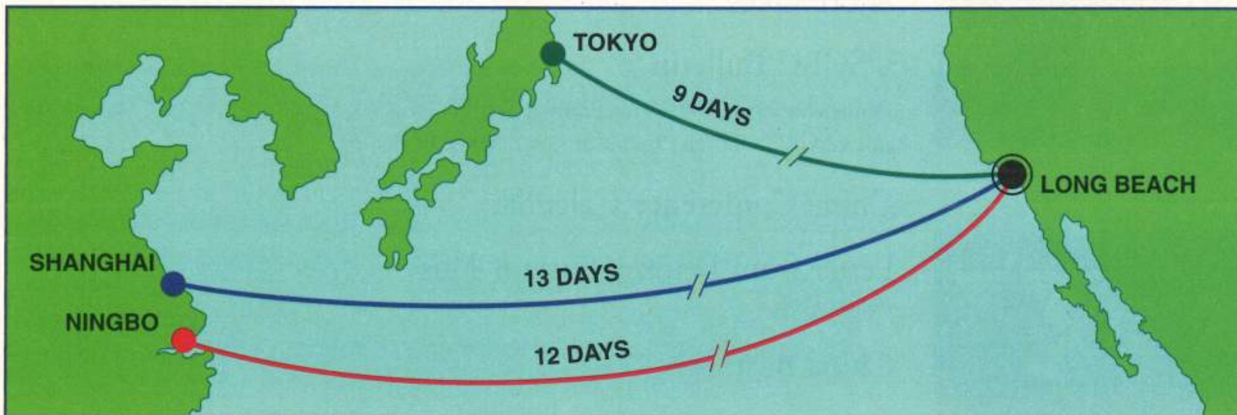

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Cover art: Jesse Marth

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Foreign firms are rushing into the Middle Kingdom's booming online gaming market.
Richard Daniel Ewing

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- Richard Margolis, Regional Director, North-East Asia, Rolls-Royce International Ltd.

Feature
- China's Plan to Address Climate Change
- China's Energy Production and Consumption Forecasts

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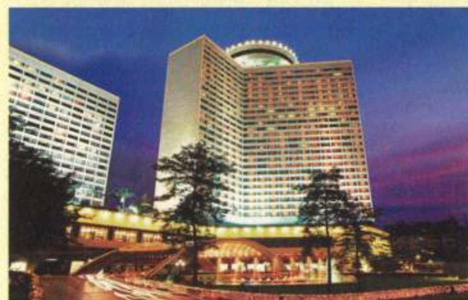

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Short Takes

Strategic Economic Dialogue

At the second round of the Strategic Economic Dialogue in late May, the United States and China agreed to double the number of daily passenger flights between the two countries by 2012 and to lift all restrictions on the number of cargo flights and carriers by 2011.

China also agreed to resume approving the license applications of foreign securities firms, allow foreign banks to offer renminbi credit- and debit-card services under their own brands, and finish reviewing outstanding applications by foreign insurance firms to convert their China branches into subsidiaries.

Census

China's second nationwide land census will begin in July 2007 and end in 2009. The census will focus on the use of agricultural land while also surveying the use of other land in both rural and urban areas. China's first land census took place in 1996.

China will launch its first nationwide census of environmental pollution in December 2007. The census will seek to identify the quantities and geographic distribution of pollutants from all sectors of the economy and from residences. The results of the census will be reported in the first half of 2009.

Software

Software piracy in China dropped 10 percentage points to 82 percent from 2004 to 2006, a Business Software Alliance report indicates, but annual losses from piracy rose from $3.8 billion to $5.4 billion in the same period. The US piracy rate in 2006 was only 21 percent, but the resulting losses reached nearly $7.3 billion.

Exports of software from China will grow 28 percent annually to reach $12.5 billion in 2010, the PRC Ministry of Information Industry predicts. Domestic sales of software, meanwhile, are expected to rise 30 percent annually and reach ¥1 trillion ($130.8 billion) in 2010.

Trade

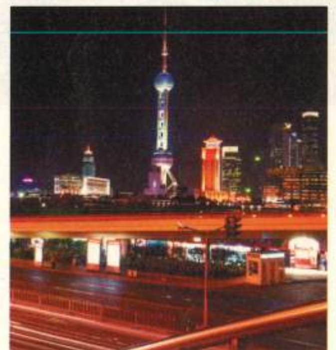
To discourage the export of energy- and resource-intensive and polluting products and to trim the trade surplus, the PRC government on June 1 raised export tariffs for 142 items and lowered import tariffs for 209 products. The majority of items that saw export duty hikes are steel products, some of which had their value-added tax rebates canceled in April.

Five US manufacturers of steel nails in late May filed an antidumping case, arguing that imports from China have led to "material injury" to US industry. Observers expect the final determinations of injury and dumping to be reached in mid-2008.

The US Department of Commerce in late May announced its preliminary determination that Chinese exporters of coated free sheet paper have sold glossy paper at 23.19–99.65 percent less than fair value. The department is expected to issue its final antidumping determination in the fall.

Economy

China jumped three places to rank fifteenth among 55 economies in the *World Competitiveness Yearbook*, compiled by the International Institute for Management and Development. The United States tops the list, followed by Singapore and Hong Kong, but 40 economies are gaining or maintaining their position relative to the United States.

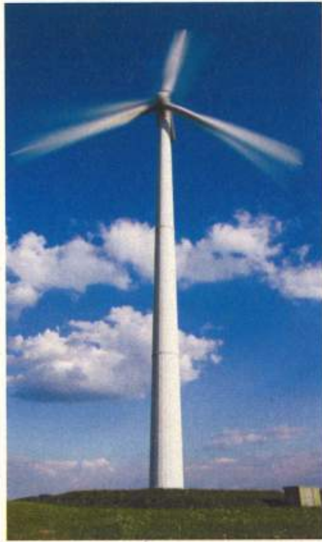


Sixty percent of Americans believe that China's economy will eventually catch up with that of the United States, but only one in three think that China's economic rise will have negative consequences, according to a survey by the Chicago Council on Global Affairs and the Program on International Policy Attitudes.

The World Bank predicts that China's GDP growth this year will reach 10.4 percent, up 0.8 percentage points from its previous estimate. The bank attributes this increase to an economic policy that is "less tight than expected" and to better export prospects.

Energy

The PRC State Council in early June released China's first policy blueprint on climate change. The document rejects mandatory caps on greenhouse gas emissions but says that China plans to emit 1.5 billion metric tons less carbon dioxide equivalent by 2010 by developing renewable energy and enhancing energy efficiency.



Public buildings, including those of businesses, may not set their thermostats below 26 degrees Celsius (78.8 degrees Fahrenheit) during the summer or above 20 degrees Celsius (68 degrees Farhenheit) during the winter, the State Council mandated in early June. The new policy is aimed at reducing energy use.

Food and Drug Safety

Zheng Xiaoyu, the former head of the PRC State Food and Drug Administration, was sentenced to death in late May. He had taken bribes worth more than ¥6.5 million ($850,000) from eight pharmaceutical companies that were seeking approval for their drugs and medical devices.

The General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) will finalize regulations on food recall, an AQSIQ official said in late May. The regulations would require all domestic and foriegn food distributors and producers to withdraw products that the government deems to be dangerous.

WTO

By the end of July, China will formally begin negotiations to join the World Trade Organization (WTO) Government Procurement Agreement, according to official PRC press reports. At the 2006 Joint Commission on Commerce and Trade meeting, China agreed to begin such talks by the end of 2007. In 2006, PRC government procurement exceeded ¥350 billion ($45.7 billion).

The United States and China in early June failed to reach a settlement in consultations on the two WTO cases filed by the United States in April. The United States has argued that PRC law does not adequately protect intellectual property rights and that restrictions on the import and export of media products violate China's WTO commitments.

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Event Wrap Up

WASHINGTON

May

Discussion on the Global Services Sector with Richard W. Fisher
Featured Fisher, president and chief executive officer of the Federal Reserve Bank of Dallas. Fisher is a former vice chair of Kissinger McLarty Associates and served as a deputy US Trade Representative from 1997 to 2001. Cosponsored by the American Council of Life Insurers, Coalition of Service Industries, and US-China Business Council (USCBC).

Issues Luncheon: A Preview of the Strategic Economic Dialogue (SED) II
Featured Ambassador Alan F. Holmer, special envoy for China and the SED, US Department of the Treasury.

Dinner Honoring PRC Vice Premier Wu Yi
Featured Wu and the ministerial delegation to the SED (see p.11).

June

34th Annual Membership Meeting
USCBC held its 34th Annual Membership Meeting on June 5. Former Secretary of State and of the Treasury James A. Baker III was the keynote speaker at the meeting's luncheon; the meeting also featured speakers on China's economy, innovation policies, human resources trends, key operational issues, and bilateral trade politics.

Roundtable: Dual-Use Export Controls
Featured US Department of Commerce Undersecretary for Industry and Security Mario Mancuso, who spoke on the new dual-use export control regulations for China, and Deputy Assistant Secretary for Export Administration Matthew Borman, who answered technical questions about the final rule. Special thanks to Hogan & Hartson LLP for hosting this event.

Issues Luncheon: Americans' Views of China
Michelle Van Gilder, director of Business Development and International Marketing at Zogby International, discussed Zogby International's recent polling of 5,000 Americans on China and US-China trade.

BEIJING

May

China Operations 2007
A full-day members-only conference on key operational issues in China (see below).

SHANGHAI

May

Luncheon: The Impact of China's Changing Demographics on Business
Featured Zuo Xuejin, executive vice president, Shanghai Academy of Social Sciences, and vice president, China Population Society; and Brian Murray, managing director, Asia-Pacific Research, American International Group, Inc.

June

Luncheon: Safe Sourcing: Strengthening Supplier Compliance in China
Featured Andrew Polins, general manager, the Children's Place/Disney Store, North America; and Simon Chuang, manager, International Purchasing Office, China Region, Tyco Electronics Corp.

SAN FRANCISCO, CA

June

Roundtable: Business Trends in China and US-China Trade Politics
Featured USCBC President John Frisbie, who reviewed the latest developments in US-China trade politics and Shanghai-based Chief Representative Godfrey Firth, who briefed attendees on current operational challenges that US companies face in China and recent business trends. Special thanks to Kirkpatrick & Lockhart Preston Gates Ellis LLP for hosting this event.

SEATTLE, WA

June

Roundtable: Business Trends in China and US-China Trade Politics
Featured USCBC's President Frisbie and Shanghai Chief Representative Firth.

Upcoming Events

WASHINGTON

Issues Luncheons
July 19, 2007
September 20, 2007
October 18, 2007

Gala 2007
December 5, 2007
For more information, see p.53

Forecast 2008 Reception and Conference
January 30–31, 2008

USCBC Holds China Operations Conference in Beijing

USCBC held its Beijing China Operations 2007 conference on May 24. Yang Chaofei, director general of the PRC State Environmental Protection Administration's Department of Policy and Law, opened the conference with a discussion on China's environmental protection policies in 2007. Stephen Green, senior economist at Standard Chartered Bank (China) Ltd., followed with an update on China's economy. Robert Poole, USCBC's vice president, China Operations, and Godfrey Firth, USCBC's chief representative in Shanghai, discussed bilateral trade relations and rising protectionism in China, respectively. In a panel on mergers and acquisitions (M&A), Tom Jones, partner at Allen & Overy LLP; and Lawrence Chia, managing partner, Corporate Finance-M&A, Deloitte, discussed new M&A regulatory and legal challenges and pricing issues. Daphne Wu, general manager of *Caijing* magazine, provided the luncheon address: "The Rising Tide: China's Changing Media Environment."

Vincent Ng

Beijing China Operations 2007 conference speaker David Michael, managing partner, the Boston Consulting Group

In the afternoon, Andrew Browne, partner at Brunswick Group LLP, discussed managing relations with the Chinese

USCBC Co-Hosts Dinner in Honor of PRC Vice Premier Wu Yi

USCBC and other organizations co-hosted a reception and dinner in honor of PRC Vice Premier Wu Yi and her delegation to the Strategic Economic Dialogue (SED) in Washington, DC, on May 24. Wu was accompanied by 14 State Council ministers, 11 vice ministers, PRC Ambassador to the United States Zhou Wenzhong, ranking PRC Embassy officials, and SED delegation members. US cabinet officials, members of Congress, and other senior US government officials—including Treasury Secretary Henry Paulson, Commerce Secretary Carlos Gutierrez, Labor Secretary Elaine Chao, Secretary of Health and Human Services Michael Leavitt, Federal Reserve Board Chair Ben Bernanke, Environmental Protection Agency Administrator Stephen L. Johnson, and US Ambassador to China Clark T. Randt, Jr.—attended the reception and dinner. In her remarks, Wu provided the PRC view of the recent SED meetings and of the US-China trade relationship. More than 600 guests attended the event.

USCBC President John Frisbie welcomes PRC Vice Premier Wu Yi to the USCBC co-hosted reception and dinner in her honor.

Amb. Carla Hills, USCBC board vice chair and chairman and CEO of Hills & Co.; Martin Cargas, vice president, Government Affairs, Anheuser-Busch Cos., Inc.; and Amb. Wendy R. Sherman, principal, the Albright Group, welcome Wu.

PRC Ambassador to the United States Zhou Wenzhong introduces Rep. Mark Kirk (R-IL) to Wu.

About 600 guests attended the dinner in honor of Wu.

US Treasury Secretary Henry Paulson gave opening remarks at the dinner.

USCBC Chair and Chairman, President, and CEO of the Boeing Co. W. James McNerney, Jr. and Wu

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media. In a panel on environmental issues, Charles McElwee, of counsel, Squire Sanders & Dempsey LLP; Scott Zhao, environment, health, and safety (EHS) manager, Intel Corp.; and Feng Jianmei, public policy counsel, General Electric Co., discussed environmental law and litigation in China, China's restriction on hazardous substances, and bringing global EHS standards to China, respectively. Murray Covello, president-Asia, Praxair, Inc., spoke on the impact of rising costs on strategic planning, and David Michael, managing partner of the Boston Consulting Group's Beijing office, spoke on expanding distribution networks in China. The conference concluded with a panel on human resources issues. Chris Watkins, managing partner, MRI Worldwide China Group, discussed attracting senior management talent. Anne Marie Moncure, president, United Family Hospitals and Clinics, Chindex International, Inc., covered health and medical challenges.

USCBC Beijing China Operations 2007 speaker Scott Zhao, environment, health, and safety manager, Intel Corp.

China Conference Calendar

China-related events near you

July–November 2007

Please confirm dates and venues with the organizer prior to attending events. To suggest an entry for our next issue, send your announcement to Jesse Marth (jmarth@uschina.org). You can also post your listing and view additional entries on the *China Business Review*'s website at www.chinabusinessreview.com/conference-calendar.php.

Drug Development in China, September 10-11, 2007

China Internet & Games Business Development Tour

JULY 8–13

Location: Shanghai and Beijing: Various venues
Organizers: Pearl Research; China GC Networks
Contact: Allison Luong
Tel: 1-415-376-7310
research@pearlresearch.com
www.pearlresearch.com

China (Shenzhen) International Logistics Fair 2007

JULY 17–19

Location: Shenzhen Convention and Exhibition Center
Organizers: Shenzhen Municipal Government; Shenzhen Federation of Logistics and Purchasing
Contact: Jianjun Yu
Tel: 86-755-8358-1221
vivian@szflp.org.cn
www.scmfair.com/scmen

Sino-American Logistics Conference & Exhibition

JULY 18–20

Location: Beijing: China International Exhibition Center
Organizers: American Society of Transportation and Logistics; National Industrial Transportation League; China Communications and Transportation Association; China Council for the Promotion of International Trade (CCPIT)
Contact: Laurie Denham
Tel: 1-202-580-7270
ldenham@astl.org
www.astl-china.org/salce

US-China Small and Medium-Sized Enterprise (SME) Conference

AUGUST 6–8

Location: Hangzhou, Zhejiang
Organizers: Institute for Enterprise Development; Zhejiang Bureau of SMEs
Contact: Daniel Strouhal
Tel: 1-202-587-5652
dstrouhal@ied-edge.org
www.ied-edge.org

International Construction Material & Indoor Decoration Exhibition

AUGUST 21–24

Location: Shanghai New International Expo Center
Organizers: World Expo Group Shanghai Modern International Exhibition Co., Ltd.; Shanghai Building Materials Industry Association
Contact: Mr. Kavana
Tel: 86-21-6328-8899
kavana@chinamie.com
www.expojc.com/en

Medical Equipment Design & Technology Exhibition Shanghai

AUGUST 28–30

Location: Intex Shanghai Exhibition Center
Organizers: Cannon Communications LLC; Shanghai CCPIT Expo Co., Ltd.
Contact: Maggie Cheng
Tel: 86-21-6387-0211
chengxuandong@cpitsh.org
www.devicelink.com

Assembly Technology Expo

AUGUST 28–31

Location: Shenzhen Convention and Exhibition Center
Organizers: Reed Exhibitions; Guangzhou Overseas Trade Fairs Ltd.
Contact: Elaine Zeng
Tel: 86-21-5153-5120
elaine.zeng@reedexpo.com.cn
www.atexpochina.com

China Urumqi Foreign Economic Relations & Trade Fair

SEPTEMBER 1–5

Location: Urumuqi, Xinjiang: Xinjiang International Exhibition Center
Organizer: Xinjiang Department of Foreign Trade and Economic Cooperation
Tel: 86-991-285-0497
office@urumqifair.com
www.urumqifair.com/en

China Jilin Northeast Asia Investment & Trade Expo

SEPTEMBER 2–6

Location: Changchun, Jilin: Changchun International Exhibition Center
Organizers: PRC Ministry of Commerce (MOFCOM); PRC State Council, Office of the Leading Group on Revitalizing the Northeast; Jilin Provincial Government
Tel: 86-431-271-8210
cnaitfs@yahoo.com.cn
www.neasiaexpo.org.cn

China International Equipment Manufacturing Expo

SEPTEMBER 4–8

Location: Shenyang, Liaoning: Shenyang International Exhibition Center
Organizers: Shenyang Municipal Government; CCPIT, Liaoning Sub-Council; Liaoning Economic Commission; CCPIT, Machinery Sub-Council; Shenyang Renaissance International Exhibition Co., Ltd.
Contact: Li Kezhong
Tel: 86-24-6212 4054
cieme@zxexpo.com
www.zxexpo.com

China International Solar Energy & Photovoltaic Application Expo

SEPTEMBER 6–9

Location: Shenzhen Convention and Exhibition Center
Organizer: Shenzhen Herong Guokc Exhibition Industrial Co., Ltd.
Tel: 86-755-8353-6061
spe@vip.163.com
www.solarchina.org/en/index.asp

China International Fair for Investment & Trade

SEPTEMBER 8–11

Location: Xiamen, Fujian: International Conference and Exhibition Center
Organizers: MOFCOM; Fujian Provincial Government; Xiamen Municipal Government
Contact: Liaison Department of the Organizing Committee
Tel: 86-592-266-9825
cifit@chinafair.org.cn
www.chinafair.org.cn

Drug Development in China

SEPTEMBER 10–11

Location: Park Hyatt Philadelphia
Organizer: Cambridge Healthtech Institute
Contact: Jim Prudhomme
Tel: 781-972-5486
chi@healthtech.com
www.healthtech.com

China Conference Calendar

China International Food Safety & Quality Conference

SEPTEMBER 12–13

Location: Beijing: The Landmark Tower Hotel
Organizer: World Services Ltd.
Contact: Sang Wenjue
Tel: 86-10-6277-1798
wenjue.sang@infoexws.com
www.chinafoodsafety.com

China International Exhibition on Financial Banking Technology & Equipment

SEPTEMBER 13–16

Location: Beijing Exhibition Center
Organizer: China Financial Computerization Corp.
Tel: 86-10-6465-0495
cif@ciftee.com.cn
www.ciftee.com.cn

China International SME Fair

SEPTEMBER 15–18

Location: Guangzhou International Exhibition Center
Organizers: PRC National Development and Reform Commission (NDRC), SME Department; PRC Ministry of Finance, Enterprise Department; MOFCOM, Trade Development Bureau
Contact: Luo Kui
Tel: 86-20-8319-8921
cismef@sme.gov.cn
www.csmef.com.cn

China International Meat Industry Exhibition

SEPTEMBER 17–19

Location: Nanjing, Jiangsu: Nanjing International Exhibition Center
Organizers: China Meat Association; Beijing Zhongyue-Onis Expo Co., Ltd.
Contact: Bian Zenglin
Tel: 86-10-6609-5157
chinameat@sina.com
www.cimie.com/web/index_en.jsp

China Paper China Forest

SEPTEMBER 18–20

Location: Beijing: China International Exhibition Center
Organizer: E. J. Krause & Associates, Inc.
Contact: Carol Chen
Tel: 86-10-8451-1832
ejkbeijing@gmail.com
www.ejkrause.com

International Fair for Measurement Instrumentation & Automation

SEPTEMBER 18–21

Location: Shanghai Everbright Convention and Exhibition Center
Organizer: China Instrument and Control Society
Tel: 86-10-8280-0621
qxw@cis.org.cn
www.miconex.com.cn

China Northeast Asia (Shenyang) Commodities Fair

SEPTEMBER 20–23

Location: Shenyang, Liaoning: Liaoning Industrial Exhibition Hall
Organizers: CCPIT; Shenyang Municipal Government
Contact: Justin Zhang
Tel: 86-24-2272-9952
ccpitlei@hotmail.com
www.northeastasiafair.cn

China Hi-Tech Fair

OCTOBER 12–17

Location: Shenzhen: China Hi-Tech Fair Exhibition Center
Organizers: MOFCOM; PRC Ministry of Science and Technology; PRC Ministry of Information Industry; NDRC; PRC Ministry of Education
Contact: Fang Fang
Tel: 86-755-8284-8857
fang@chtf.com
www.chtf.com/english

China Magnetics

OCTOBER 15–17

Location: Beijing: Novotel Xinqiao Hotel
Organizer: IntertechPira
Contact: Joshua Vermette
Tel: 207-781-9605
jvermette@intertechusa.com
www.intertechusa.com

China Import & Export Fair

OCTOBER 15–30

Location: Guangzhou: Pazhou and Liuhua complexes
Organizers: MOFCOM; China Foreign Trade Center
Tel: 86-20-2608-9999
webmaster@cantonfair.org.cn
www.cantonfair.org.cn

International Home Textiles, Garments, Fabrics & Accessories Fair

OCTOBER 18–20

Location: Macao: The Venetian Macao-Resort-Hotel
Organizer: Kenfair International (Holdings) Ltd.
Tel: 852-2311-8216
info@kenfair.com
www.kenfair.com

Electronic Manufacturer Exhibition

OCTOBER 18–21

Location: Suzhou, Jiangsu: Suzhou International Expo Center
Organizers: Suzhou Municipal Government; Jiangsu Commission on Foreign Trade and Economic Relations; Jiangsu Department of Information Industry
Contact: Lucas Wu
Tel: 86-512-6808-1691
lucas@goemex.com
www.goemex.com

Food Logistics & Supply Chain Management China

OCTOBER 20–21

Location: Shanghai: InterContinental Pudong
Organizer: Terrapinn Ltd.
Contact: Stella Teo
Tel: 65-6322-2737
stella.teo@terrapinn.com
www.terrapinn.com/2007/food

PT/EXPO COMM China 2007

OCTOBER 23–27

Location: Beijing: China International Exhibition Center
Organizers: China National Postal and Telecommunications Appliances Corp.; China International Exhibition Center Group Corp.; E. J. Krause & Associates, Inc.
Contact: Beth Harrington
Tel: 301-493-5500
harrington@ejkrause.com
www.expocommcn.com

Eco Expo Asia

OCTOBER 27–30

Location: Hong Kong: Asia World Expo
Organizers: Hong Kong Trade Development Council; Mësse Frankfurt (HK) Ltd.
Contact: Charmaine So
Tel: 852-2238-9950
charmaine.so@hongkong.messe frankfurt.com
www.ecoexpoasia.com

China Mining

NOVEMBER 13–15

Location: Beijing International Convention Center
Organizer: BMC-TBG Ltd.
Contact: Andy Yu
Tel: 86-10-5822-1789
info@china-mining.org
www.china-mining.com

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Sustain This

Robert Poole

As the midpoint of 2007 approaches, the one word that seems most apt when considering the state of US business in China is this: sustainability. From the vantage point of the US-China Business Council (USCBC) in Beijing, there is more to this word than is found in media coverage of discussions about the environment and natural resources. Specifically, we are thinking of the need for sustainability in various areas that may affect our member companies, namely the PRC economy, US-China relations, company performance in China, and, of course, the environment itself.

The Chinese economy

Premier Wen Jiabao's assessment this spring that the PRC economy is unbalanced, unstable, uncoordinated, and unsustainable seems to have been accepted by economic experts both inside and outside of China. None of these experts, however, has identified a "showstopper" for the PRC economy. For example, a slowdown in the United States would certainly hurt Chinese exports and slow economic growth, but China's export markets have diversified to the point that a slowdown in any particular market would not derail the economy. Some say that, in the event of a major political disruption to trade, China could redirect resources to major and overdue spending on rural infrastructure and social plans like health care, for example. Similarly, alarm bells that sounded in world commodity markets a year ago, when China's voracious demand for base commodities gained global attention, have subsided; world markets seem to have adapted to the new demand pattern, albeit at higher prices in many cases.

The greater question may be when, or whether, PRC policymakers will take real steps to boost domestic consumption and shift away from an export-led growth model. Isolated and incremental measures such as changing value-added tax (VAT) rebates on exports, raising export taxes, or widening the renminbi (RMB) trading band are unlikely to be significant, and mooted policy changes—such as plans to make state-owned enterprises pay dividends to the government, which would spend the money on health care, education, and pensions, rather than invest more in excess production capacity—have yet to be implemented. Most important, when will there be real steps toward sustainability that involve market-based (and much higher) pricing for inputs such as water, energy, and other scarce resources?

The word in Beijing is that social stability, which in the medium and long runs will require economic and environmental sustainability, will remain the primary leadership focus. Major reforms in the areas of water, energy, other resources, and market access in protected industries will likely remain on the back burner unless unforeseen events make them more urgent priorities. Domestic politics in the form of the upcoming Chinese Communist Party Congress, which convenes only once every five years and will bring considerable changes in the leadership, will likely restrain ministries and agencies from making significant changes that could be disruptive.

US-China bilateral relations

Sustaining harmonious US-China trade relations will also be a challenge. Both sides believe that they have legitimate grievances, and a statutory calendar of trade dispute actions will bring these to the foreground as summer deadlines approach for action on the three cases the United States has brought against China at the World Trade Organization (WTO) and on the US Department of Commerce countervailing duty and antidumping cases on coated free sheet paper. In addition, members of the US Congress are taking legislative action in an attempt to redress the trade imbalance. There is little doubt that China's trade surplus will do anything but grow larger for some time to come, which will likely create even greater unhappiness in Washington and Brussels.

Here in China, most US companies report that business is going reasonably well and believe that their China business is good for the US economy and their companies. When the bilateral trade relationship becomes acrimonious, however, US companies experience first hand the displeasure that comes from WTO cases and other trade dispute actions. PRC government officials express resentment, local media protest unfairness and espouse protectionism, and—worst of all—US companies worry about the possibility of retaliation. (Examples include sales redirected to competitors or less favorable reviews of license applications by regulators.)

Company performance

Sustaining company profitability and growth, meanwhile, is another challenge. A USCBC member company that produces industrial goods for sale in China and for export recently listed the pressures on its export business: reduced VAT rebates on exports; new export taxes; a 7 percent increase in the RMB against the US

Letter from Beijing

For US companies in China, concerns about "sustainability" go beyond the environment and the economy.

dollar; and the impending increase in corporate income taxes. All of these developments are eroding a cost advantage to producing in China that was once 15–20 percent. These are all, in fact, changes that the United States and economists have urged China to make to bring market factors and fairness into its economy, but their bite on earnings will force domestic and foreign companies alike to adapt. One such change already under way is the movement of some production facilities away from the higher-cost coastal areas. More than 100 cities in China have a population of more than 1 million. Moving inland allows companies to penetrate more markets within China, take advantage of improved inland transportation and distribution networks, and respond to PRC government encouragement of investment in less-developed markets.

In China's domestic market, foreign and PRC companies face pressures such as rising costs for labor, land, and other inputs and increasing competition, in terms of both price and quality. At the same time, there is evidence of at least the "seeds of inflation," as one of our economist friends recently observed. Most government officials and economists are not yet worried, because inflation thus far has largely come from rising food prices, which may contribute to the government's goal of boosting rural incomes. May inflation was 3.4 percent, however, exceeding the government's 3.0 percent target for the year, and cumulative inflation for the first four months has been 2.9 percent.

The environment

My own worry about sustainability is of what comes next. China will certainly need to take measures to introduce more rational pricing of inputs such as water and energy and impose stricter environmental regulations. The question is not whether but when—and the signals are that these important developments will only happen slowly. USCBC and its member companies are in favor of sustainable development, particularly when the governing regulations are clear and fairly applied. We also look forward to more opportunities for US technology and products that will come with serious devotion to environmental protection in China. Nevertheless, higher standards will almost certainly mean higher costs as well.

In sum, sustainability appears to be a broader mission than a set of environmental or corporate social responsibility goals. The dynamic forces at play in China's economy present significant management challenges in and of themselves. To operate with the overlay of potential strains in the US-China relationship increases that difficulty. And, while we know more regulatory and economic reforms are on the way in China, we cannot predict their pace and direction. Here in USCBC's Beijing office, we remain optimistic but know that much hard work lies ahead.

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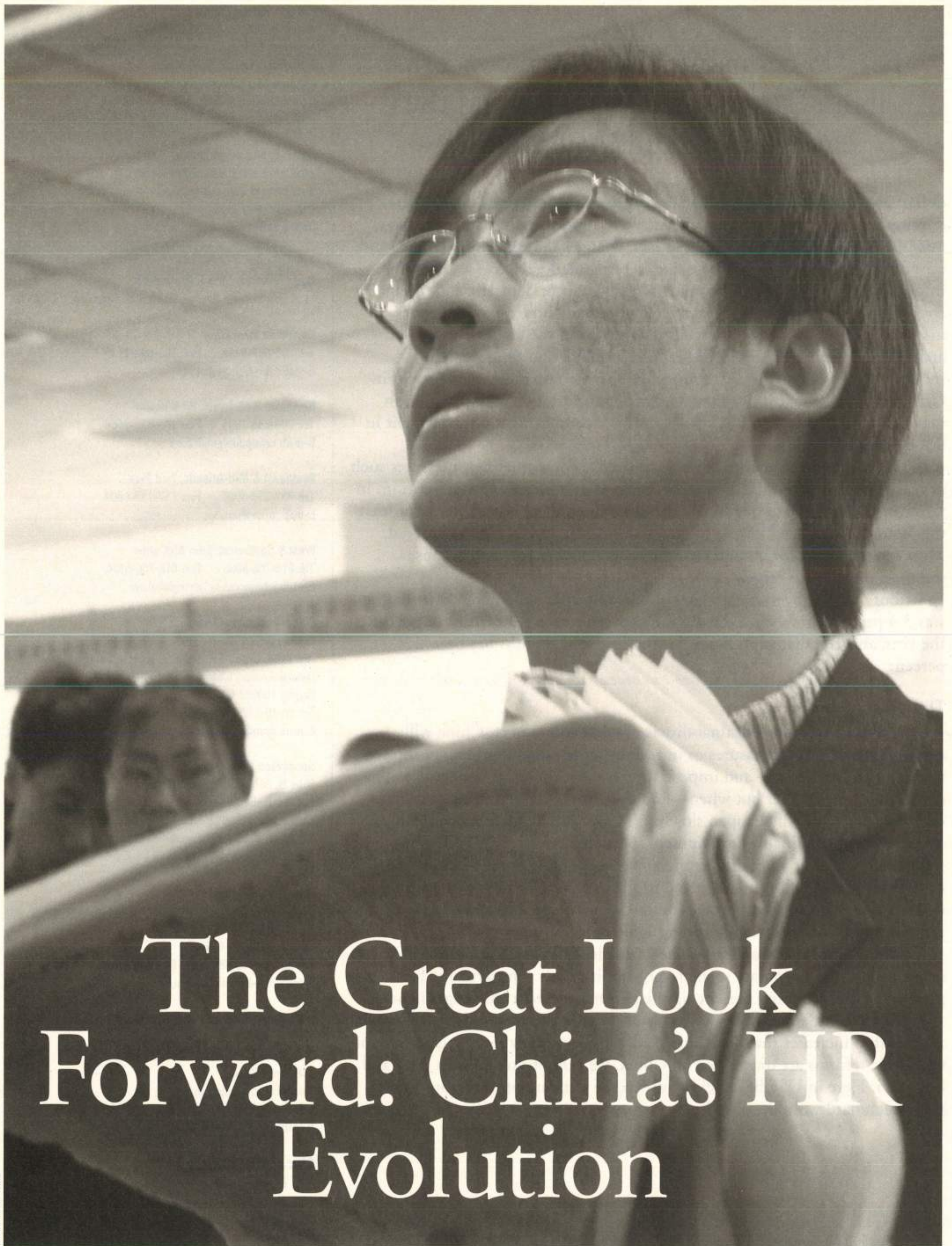

The Great Look Forward: China's HR Evolution

China FotoPress

The future of effective human resources management in China lies beyond the challenges of recruiting, training, and retaining qualified workers

Jill Malila

The engine of international commerce is roaring in China, yet its enormous population belies the fact that the country lacks qualified talent to meet foreign employers' demand. An often-quoted McKinsey Global Institute 2006 study notes that less than 10 percent of new Chinese university graduates—estimated at more than 4 million in 2006—have the skills required by foreign firms that operate in China.

As a result of acute talent shortages, high attrition rates, and the tremendous ease with which skilled workers can hop from one job to another, companies are struggling to attract, train, and retain the employees that they need to gain a competitive edge in human capital. Multinational corporations (MNCs) in China consistently cite this human resources (HR) challenge as their top concern.

Urgent as these issues are, firms doing business in China can no longer afford to settle for a short-term focus on the "talent crisis." Instead, even as they seek to address today's challenges efficiently, companies should consider building, and not merely buying, a sustainable and scalable workforce—one that can grow and evolve as their needs change. Over the next few years, MNCs in China must change their HR strategies to enable them to keep pace with surging market competition and with changing employee needs and profiles.

Steps to tackle today's challenges

Adopt a total rewards strategy

Maintaining a strong focus on the talent crisis means more than addressing it as many China-based firms have thus far—that is, by throwing more money at the most desirable employees and, to retain them, resorting to quick fixes such as title inflation, by which employees are often promoted beyond their skill level. Many companies pay insufficient attention to training, career development, and pay for performance. In other words, companies too often "buy" talent for the short run rather than "build" talent for the long run.

Instead, companies should consider a total rewards strategy, which encompasses not only salaries and bonuses, but also benefit packages, training and career development opportunities, and other long- and short-term incentives. Such a strategy distinguishes itself by taking into account employees' career development—the key and most effective retention factor in China, according to a 2006 survey by Mercer Human Resource Consulting LLC. Communicated effectively, a total rewards approach can help companies differentiate themselves in the competition for talent.

Understand employment brands and foster employee engagement

In fast-moving China, it is no longer enough for a company to be viewed merely as a leading producer of goods or as a top provider of services. Increasingly, the better a company defines its value proposition to its customers—for example, by emphasizing its quality control or its status as a global and not just a regional leader—the more its brand can attract desirable employees who, in turn, are more likely to remain and grow with the company.

Understanding and shaping a company's employment image can boost employee engagement—an employee's sense of personal connection and commitment to the company. The more employees view their company as a world-class organization and take pride in working for the company, the stronger their sense of engagement will be.

Improve HR effectiveness

China's HR professionals are not always equipped to handle the complexities of China's talent marketplace, and companies need to improve the effectiveness of their HR processes, programs, and leadership. Indeed, with cutting-edge HR concepts still relatively new to China's HR managers, the need to boost HR competency is critical to business success. Chinese HR professionals must quickly learn the complexities of more strategic HR solutions, and not just the tactical implementation and execution of compensation and benefits strategies.

This improvement in HR effectiveness must also include alternative delivery of HR processes, through, for example, the use of technology, a shared-services arrangement with other functional units of the company, or an outsourcing or co-sourcing arrangement with HR service providers. Such alternative delivery arrangements often ensure higher and more consistent quality of administrative processes.

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The future of HR management in China

The strategic landscape for HR management shifts as one looks beyond 2007, and companies would do well to focus on the following aspects of their long-term HR strategy.

Develop the next generation of leaders

For companies doing business in China, the great leap forward in HR effectiveness occurs when they can boast a truly scalable and sustainable workforce, which requires processes and practices that contribute to the development of future leaders. This concept is not new, of course, but the rapid growth and transformation of China creates challenges for even the most experienced expatriate managers, whose organizations need to be agile enough to enter markets rapidly and respond quickly to changes.

As the Asia-Pacific region becomes increasingly important in the global economy, companies must understand China to succeed. MNCs not only need to develop the skills of Chinese leaders and managers through training, development, and overseas rotations, but also cross-pollinate talent by rotating their talent through China to ensure that all future leaders and high-potential employees—not just those in China—know the Chinese market. This does not mean that MNCs should merely staff leadership and management roles in China with expatriate talent. Indeed, MNCs, particularly US firms, are seeking to ensure upward mobility for talented PRC nationals and are often dissatisfied with the pace of "localization" or their overreliance on expatriate leadership. As a result, MNCs are increasingly bringing expatriate talent into China at the professional and technical levels on short-term assignments of less than two years. This two-pronged approach allows all high-potential employees and future global leaders to gain a deeper understanding of China, leaving companies better equipped to deal with the changing global market and the emergence of the Middle Kingdom.

Segment talent successfully

A key practice that companies should carefully examine is talent segmentation—the manner in which companies organize, structure, and reward their talent to achieve specific business results. Rather than being driven by the

Case Studies: Improving HR Strategies

Several real-world examples illustrate the concept of measuring and improving returns on human resources (HR) investments and the importance of talent segmentation.

For instance, Mercer Human Resource Consulting LLC has worked with a leading auto company in China to increase the commitment of its sales professionals and to improve its performance. The company implemented several HR programs linked to quantitative improvements in sales and aimed at identifying, training, and retaining high-performing salespeople within the company. In particular, the company conducted surveys to assess employee engagement and developed tools to identify high performers within the company and to gauge employee perceptions. These tools demonstrated the connection between strong sales and high employee retention and allowed the company to hire the most suitable candidates by delineating the attributes of high performers. Over time, the dealers who implemented these processes reported double-digit improvements in monthly sales and a reduction in staff turnover and associated costs.

In another case, Mercer worked on talent segmentation with a global energy company doing business in China. Because the organization had several profit models that required different strategies for talent management, the challenge of reducing turnover and boosting sales was more complicated. The solution, in this case, involved separate talent-segmentation approaches for two profit models. One approach aligned with the company's global strategy—a long lifecycle with significant profits over time (blockbuster profit). This approach applied to the company's workforce and emphasized career-based rewards, which are tied to movement along a career path; undifferentiated performance awards, which are based on the company's overall success in attaining specific profit and other targets; and learning and development. The second approach—keyed specifically to the local, retail organization and applied to the sales force (a local leadership profit model)—involved "buying" talent, spot rewards, and differentiated performance awards, which are paid based on the specific skills and achievements of the individual employee, rather than on the company's overall performance. These two segmentation approaches were implemented together and helped the company boost employee retention and achieve its business objectives.

The above scenario illustrates one of the key differences between the common HR strategy that many companies use today and the one required for long-term sustainability. Today, companies in China often segment their talent based on ad hoc considerations and factors, particularly their ability to attract and retain certain talent. To ensure future success in China, companies should instead segment their talent based on their specific profit models, while striking a balance between company-wide workforce strategies and local realities. This requires companies to carefully assess which practices should be applied throughout the company and which should be implemented in specific business units.

—*Jill Malila*

need to fill particular job vacancies and other immediate factors, companies should take a broader, more strategic view and align their talent management strategies and rewards programs with their specific profit models (for example, a blockbluster profit model yields large global profits over time, while a local leadership profit model earns profits mainly from transactions in local markets). In other words, companies should ensure that the incentive structure and the corresponding rewards programs, such as pay, benefits, and career development, encourage the type of employee performance that supports their business structure and profit models (see p.18). As MNCs expand their operational structures in China and make them more complex, using profit models to design HR programs can help ensure a company's future viability.

Companies should consider a total rewards strategy, which encompasses benefit packages, training and career development opportunities, and other incentives.

Plan for regulatory changes

As China develops, so too will rules and regulations that affect HR strategies. For example, demand is growing for better corporate governance and transparency, which can be key to a company's employment image. More directly related to HR, the PRC government is also aggressively developing and adopting new laws and regulations, such as the PRC Labor Contract Law and the Employment Promotion Law, to better protect the labor force. Last year, many provinces raised their minimum wage and clarified tax provisions related to pension rules, and the PRC government adopted measures to raise social security contributions. This year, it issued foreign exchange rules that permit PRC nationals to officially participate in employer-sponsored stock plans and introduced new individual income tax filing requirements.

These and other moves may affect companies' HR policies and strategies. Though MNCs may welcome more regulatory clarity and the adoption of global HR standards, such rules and regulations may also impose new administrative requirements and costs. Organizations must keep track of these changes to minimize surprises that may have financial and operational repercussions.

Link engagement to productivity

Given China's importance, it is not surprising to see top executives increasingly involved in decisions related to talent and HR management. The talent crisis, compounded by the shortage of qualified HR staff, has led top executives to scramble for solutions and to consider alternative delivery models for HR processes, such as shared services and outsourcing arrangements. Executives are also demanding returns on HR investments by linking HR programs—including talent management, compensation, and benefits—to improvements in productivity.

A new approach

Businesses can take a number of steps to ensure that they meet the HR needs of tomorrow. Companies should use China as a training ground for future global leaders and take measures to build, not just buy, their workforce. A more rigorous approach to labor forecasting and business planning would take into account the changing regulatory environment, as well as the evolving needs and requirements of talent. Companies should also include talent segmentation in their total rewards strategy, a strategy that includes a strong focus on career development. By implementing these steps, companies can build a more effective employment brand and a scalable, sustainable workforce. Finally, companies can make the leap from today's quick-fix attraction-and-retention tactics to an HR model that best serves the business by formally linking engagement to productivity and measuring returns on HR investments. 完

China's Shifting Labor Market

The emerging urban markets from which and to which skilled employees are drawn are changing China's human resources (HR) landscape. So far, most skilled employees have flowed into the first-tier cities—Beijing, Guangzhou, and Shanghai—which have relatively high salary ranges, large populations, and strong GDP growth. But demographic shifts, such as the expected migration of 150 million rural Chinese into urban centers over the next decade, will likely blur the distinction between first-tier cities and the hundreds of second- to fifth-tier cities. The growth of these centers will undoubtedly influence the evolution of China's mass markets and future recruitment and retention strategies by, for example, increasing the cost of talent. China's rapidly aging workforce will also affect companies' HR strategies. As companies set up or expand their operations, they should consider these and other long-term labor market issues.

—Jill Malila

Feeling the Pressure?

A resurgent campaign seeks to unionize workers in foreign-invested enterprises

Andreas Lauffs and Jonathan Isaacs

An increasing number of foreign-invested enterprises (FIEs) in China report that they have received unexpected visits from officials of the All-China Federation of Trade Unions (ACFTU), the national umbrella organization to which all unions in China belong. The stories that FIE management tell of their meetings with ACFTU officials are generally the same: The FIEs are instructed to organize an enterprise union among their employees as soon as possible or face unspecified legal consequences.

Although ACFTU has made sporadic attempts to unionize FIEs in the past, this campaign—which started in 2004 but has picked up momentum over the last year or so—seems to be stronger and have more government support than previous efforts. In the past, virtually all state-owned enterprises (SOEs) had their own unions, and ACFTU could rely on SOE employees to sustain its membership base. Now, with the PRC economy increasingly in private hands, ACFTU can no longer depend on SOEs alone for its membership and finances.

This new situation, and PRC President Hu Jintao's March 2006 speech in which he called upon ACFTU to boost its presence in FIEs to stabilize labor relations, has added a sense of urgency to the FIE unionization campaign.

ACFTU has announced that it will seek to unionize 80 percent of FIEs by the end of 2007. Provincial-level branches of ACFTU have also set certain benchmarks. For example, the Shanghai branch of ACFTU reportedly intends to unionize 80 percent of FIEs in Shanghai by the end of 2007. In the face of this campaign, many FIEs have been asking how they can best respond to these new pressures.

The unionization campaign

From ACFTU's perspective, the resurgent unionization campaign has scored notable successes within the past year, many of which have been reported in the PRC and international press. The most widely reported case occurred in July 2006 when the first enterprise union at a Wal-Mart Stores, Inc. outlet in China was established in Quanzhou, Fujian. After several other Wal-Mart stores were unionized without the involvement of management, Wal-Mart management and ACFTU officials reportedly reached an agreement to help establish unions in all remaining Wal-Mart stores in mainland China. Press reports indicate that this goal has been accomplished, though PRC media have also reported that ACFTU may have paid some Wal-Mart employees to join the unions. More recently, subsidiaries of McDonald's Corp. and Taiwan-based Foxconn Technology Group, a supplier for Apple Inc., were unionized following allegations that management at those subsidiaries had not complied with labor rules.

In dealing with Wal-Mart and Foxconn, ACFTU reportedly changed its tactics by engaging in grassroots organization efforts directed at the workers rather than by exerting pressure on company management. In other cases, however, ACFTU and its local branches have been using the tactics that it used in previous efforts: putting pressure on company management, rather than on workers, to organize unions.

Is a union required?

Despite the claims of some ACFTU officials, no national law or regulation requires enterprises to establish unions among their employees. Recent PRC press reports indicate that some labor officials have recommended amending the PRC Trade Union Law to require the formation of a union within one year of an enterprise's establishment and to mandate that firms that do not set up unions within such a timeframe pay into a "union preparation fund" (*"gonghui choubeijin"*). This idea has precedent in some local regulations, such as those of Jiangsu, Shanghai, and Zhejiang, which require a union to be organized within six months or a year of an enterprise's establishment.

These proposals have not been enacted into national law, however, and both the PRC Trade Union Law and the ACFTU-issued Constitution of Trade Unions stipulate that employees should organize and join unions voluntarily. In other words, the employees bear the responsibility for organizing a union. Enterprises may not obstruct ACFTU or employee efforts to organize unions, but PRC law is silent on what an enterprise must do while its employees form a union.

Cooperation with ACFTU

Some FIEs have decided to cooperate with ACFTU in encouraging employees to form unions and to sign on as union members. These FIEs believe that because unions in China are relatively passive, refusing to cooperate in union organization is not worth the negative publicity in the state-run press, the threat of being put on an ACFTU "blacklist," and the possibility of undermining relations with the government.

Indeed, in practice, and up until now, most unions simply organize cultural, educational, and recreational activities for employees. In employee-management disputes, unions act primarily as mediators between management and employees and rarely adopt a confrontational role against management, as industrial unions in the United States and Europe frequently do.

Meanwhile, many enterprises have attempted to co-opt unions by ensuring that mid-level managers—in particular, human resources managers or deputy general managers—are elected as chairs or vice chairs of unions.

Potential risks

Companies should be aware that although unions in China rarely cause difficulties or much disturbance for company management, PRC law formally grants significant powers to these organizations. For example, under various overlapping laws and regulations, a company is required to consult with its union over major matters, such as business restructuring or operational changes. Furthermore, when an enterprise holds a meeting to discuss matters directly related to the rights and interests of employees, a union representative must attend the meeting, and the enterprise should "obtain the cooperation of the union" (*"qude gonghui de hezuo"*).

Although PRC law does not explicitly grant veto power to unions over employee-related matters, it can be interpreted as essentially doing just that when the various laws and regulations are read together. Moreover, as government support for ACFTU increases, unions could seek to exercise their rights more frequently, consultation requirements could be enforced more vigorously, and penalties could be imposed for

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failure to comply with these requirements. Indeed, the draft Labor Contract Law that the National People's Congress is expected to pass this year will likely require explicitly that management negotiate company rules with unions and amend rules that unions deem inappropriate. The most damaging consequence of a failure to invite, consult with, or "obtain cooperation" from a union could be the judicial invalidation of a management or board decision.

PRC law also empowers unions to demand that management engage in collective bargaining. If a union requests collective bargaining, management must respond within 20 days and may not refuse to negotiate unless it has "sufficient reasons" for doing so. Though current law and the draft Labor Contract Law do not specify what "sufficient reasons" could be, the term likely refers to truly compelling circumstances only.

In addition, under current law, unions must be notified prior to any unilateral termination of an employee and can comment on the termination. Although unions may not veto a unilateral termination of employment, they can raise objections that companies must in turn consider. If a company terminates an employee despite union objection, the union may assist the employee in bringing a claim against the company for wrongful termination.

Finally, controlling an enterprise union may no longer be easy. New regulations issued by ACFTU last December prohibit persons responsible for the administration of an enterprise, partners, or any of their close relatives from being union committee members.

Chinese Communist Party cells

Another interesting new development is the subtle change in PRC law that appears to boost the role of Chinese Communist Party (CCP) cells in union activity and in employee representation. CCP cells are often established simultaneously with enterprise unions. For example, the first CCP cell in a Wal-Mart store was established at the same time as the enterprise union in a Wal-Mart outlet in Shenyang, Liaoning, in early August 2006.

Although PRC law does not explicitly require companies to have CCP cells in their enterprises, the revised PRC Company Law, which took effect in January 2006, has a vague provision that requires companies to "provide necessary conditions for CCP cell activities." It is unclear whether this provision specifically requires companies to help set up CCP cells, but it signals a new push from the government to encourage the establishment of CCP cells in more companies.

CCP cells may also become more important in employee representation and organization. While PRC laws and regulations have established a general principle that unions should work under the supervision and leadership of the CCP, new ACFTU regulations issued last December stipulate that if an enterprise has both a CCP cell and an enterprise union, the union should work primarily under the leadership of the enterprise CCP cell rather than the higher-level union. In addition, the enterprise CCP cell must vet the list of candidates who seek to chair the enterprise union.

> In employee-management disputes, unions act primarily as mediators between management and employees and rarely adopt a confrontational role against management.

A greater voice for unions

Two other recent developments signal that the government may push harder to boost employee and union participation in companies' decisionmaking processes. First, since the revised Company Law took effect, PRC authorities are beginning to more strictly enforce the requirement that FIEs formed on or after January 1, 2006 have a supervisory board to oversee and audit the activities of company managers and the board of directors. (This requirement may be waived for relatively small enterprises, which can appoint a single supervisor instead of a full supervisory board.) Under PRC law, employee representatives must account for at least one-third of the members of the supervisory board, and in practice, enterprise unions generally appoint these representatives. This employee representation requirement can weaken a foreign investor's control over a Sino-foreign equity joint venture or a foreign-invested joint stock company even when the foreign investor has majority control. This is because union-appointed employee representatives may join the supervisors appointed by the Chinese investors to form a majority on the supervisory board.

Second, the area of collective bargaining, in which unions can play a decisive role, has also seen recent developments. Traditionally, collective bargaining in China has taken place only at the enterprise level—that is, between company management and employees within that company—and current laws and regulations focus on collective bargaining at this level. There are signs, however, that

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RECRUITING THE RIGHT STAFF FOR CHINA

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The Human Face of M&A Deals

A successful M&A transaction requires the buyer to adeptly navigate labor issues from the proposed deal's inception

K. Lesli Ligorner

Employment matters have traditionally taken a back seat in merger and acquisition (M&A) deals in China. The expected passage of the draft Labor Contract Law (LCL) before the end of the year will usher in significant changes, however, and understanding employment issues will become more important. (The PRC National People's Congress read the draft LCL for the third time at the end of April.) The LCL will likely reduce the flexibility of short, fixed-term contracts by requiring that they be converted into open-ended contracts upon the second renewal date, and that an employer pay severance to employees whose contracts it decides not to renew. It will also likely require the employer to consult with the trade union or employee representatives on work rules and policies. Thus, foreign companies should consider the legal challenges involved in setting up or buying an entity in China from an employment perspective.

Considering human resources (HR) matters throughout the various stages of an M&A deal greatly improves its chances of success. The buyer's HR team should flank its business team throughout the due diligence stage to evaluate the target company's human capital and to prepare for pre- and post-closing HR issues. Companies commonly make the fatal mistake of neglecting significant

HR issues, such as determining which party will assume current severance liabilities, until the eleventh hour, when a smooth and steady transaction becomes increasingly difficult to achieve.

Pre-closing HR costs and issues

Conducting detailed pre-closing due diligence can uncover hidden HR legal issues and costs, thus allowing the parties involved to try to resolve, or at least address, them before the deal closes.

The buyer's approach to analyzing human capital issues depends on the goal of the transaction. In transactions where the buyer's goal does not include maintaining the pre-closing staffing levels, developing a strategy to reduce personnel is critical to the post-merger integration (PMI) process. Conversely, in cases where the buyer's goal is to retain as many of the target company's employees as possible, developing a retention plan is crucial.

Regardless of the goal, however, the buyer must understand the terms and structure of the target company's workforce. For example, employers should determine whether most employees have fixed-term or open-ended contracts. If the latter, then a workforce reduction will likely be more costly and difficult to achieve. If a trade union exists in the target company, PRC law requires the buyer and seller to discuss the transaction with the trade union. Finally, employers should inquire whether employees with access to trade secrets have signed noncompete agreements and, if so, whether the agreements provide adequate coverage to protect the employer from unfair competition or limit the employees' work for the target company post-closing. Careful consideration of these issues during pre-closing due diligence can ensure that the buyer pays the right price for the acquisition and avoids unexpected HR costs during or after the purchase.

When employee retention is not the goal

A buyer that does not wish to retain many of the target company's employees should conduct due diligence to determine whether layoffs are necessary or whether natural attrition will satisfy staffing goals. Layoffs will likely raise the cost of the transaction because employees generally are entitled to severance pay. The buyer must take into account the number of employees to be laid off, each employee's contract terms and years of service, and the total severance amount. Depending on how much severance is owed, the buyer may want to consider including that cost in the purchase price or negotiating a pre-closing layoff.

Buyers will likely have to strategize about layoffs during the early stages of the M&A transaction because the LCL stipulates that the target company's trade union, if one exists, or all of its employees receive notification 30 days prior to any workforce reduction of 20 or more employees or 10 percent or more of the workforce. In addition, the LCL permits a layoff of that size only under certain conditions, such as bankruptcy, production difficulties, company relocations, and other major changes in the company's operations.

Buyers should also contact the local authorities when considering layoffs because those officials have broad discretion over the approval of the transaction and can secure local support for buyers. Working closely with the authorities early on in a transaction that involves layoffs is critical, particularly if the local economy is weak or unemployment rates are high.

When employee retention is the goal

When the buyer wants to keep the target company's employees, it must determine which ones are crucial to post-closing operations and how to retain them. The buyer may choose to keep the target company's employment contracts or enter into a new contract with each retained employee. The buyer also may choose to honor the employees' years of service with the target company. Of course, these decisions will affect the buyer's future severance liabilities. For example, if the buyer decides to honor employees' service years with the target company, the buyer's severance liabilities will increase because the employees' wages and service years will increase over time. (Severance calculations are based on the employees' service years—rounded up under the LCL—and average monthly wage.)

The LCL requires an employer to offer either to renew a fixed-term contract or provide an open-ended contract—either of which must have the same terms and conditions as the existing contract—or the employer must pay severance. Employers should bear in mind that renewing fixed-term contracts, or providing open-ended contracts, affects their flexibility in structuring staff. The LCL stipulates that an employer may renew a fixed-term contract only once before it must be converted to an open-ended contract. If an employer fails to provide the employee with an open-ended contract after renewing a fixed-term contract twice, the employer may have to pay a penalty double the severance amount owed to the employee. Furthermore, under the LCL, the employer must pay severance to the employee if the employer decides not to renew the contract upon its first or second expiration date. The LCL states that the number of times that an employer consecutively renews a fixed-term contract will begin after the LCL takes effect.

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Whether the buyer chooses to terminate the existing employment contracts and pay the severance owed, or maintain the existing contracts, may well depend on what the due diligence process reveals about the target company's workforce. For example, under the LCL, if any of the target company's employees have more than 10 service years and if the buyer wishes to retain them, the buyer must provide the employee with an open-ended contract. (Under current PRC labor law, an employer must provide an open-ended contract to an employee with 10 years' service only upon the employee's request.) On the other hand, if a large proportion of the target company's employees have more than 10 years of service, and the buyer does not wish to retain all of them, the buyer should negotiate the desired terminations pre-closing to allow for greater staffing flexibility during PMI. Neglecting to address potential pre-closing layoffs will likely make it more difficult for buyers to implement the desired dismissals during PMI, in part because terminating an employee under PRC law requires statutorily defined cause, such as a serious violation of company policy, a serious dereliction of duty, or a criminal conviction.

If the buyer decides to terminate the target company's employment contracts and enter into new contracts, the buyer should also consider whether and how the severance pay could affect employee retention rates. A buyer may consider paying the severance itself or striking a deal in which the target, or its parent company, pays the severance. Alternatively, a buyer may negotiate to have the severance amount count as a deduction against the purchase price or use it in connection with a holdback provision, which allows the buyer to hold back part of the purchase price in connection with potential conditions or liabilities that the seller must satisfy before receiving the full payment.

In some circumstances, it may be in the buyer's best interest not to pay severance but to recognize the employees' service years. If the buyer intends to retain many of the target company's employees, then by carrying over the service years that the employees worked for the target company to the new company, the buyer can ensure that the employees maintain a vested interest in remaining with the new company. Generally, more tenured employees will not forfeit their vested severance payments. Conversely, paying severance to the employees upon the deal's closing, while reducing the buyer's severance liabilities post-closing, may reduce employee loyalty toward the buyer because employees will have less of a vested monetary interest in remaining with the company after closing. For instance, an employee who worked five years at the target company will be entitled to five months' salary as severance pay. If the company decides to terminate the old contracts, pay severance, and enter into new contracts, that employee's motivation to remain at the new company may diminish. If, on the other hand, the company recognized those five years of service, the employee has more incentive to stay, knowing that his or her severance pay, when that day comes, will be greater.

In a transaction that involves layoffs, working with authorities early on is critical, particularly if the local economy is weak or unemployment high.

Develop a communication plan

After announcing the transaction, the buyer must maintain the motivation and productivity of the workforce. The best way to do this is to develop specific goals for the PMI and communicate them to the target company's employees so that they understand the transaction's impact on them, such as whether they will retain their jobs and, if so, whether their pay and benefits will change.

To keep retained employees motivated while integrating them into its corporate culture, the buyer should collaborate with the target company to develop a detailed communication strategy and consistently execute it immediately after the deal's announcement. The communication plan should include a schedule for discussing decisions on the organization's structure, staff, and reporting lines. The plan should also articulate the buyer's key values and organizational culture to ease the PMI, especially if the business environment will change significantly.

Analyzing the target's employment practices

The buyer can avoid unexpected HR costs by analyzing the seller's past employment practices to ensure compliance with PRC labor laws. For example, employers and employees in China must make social insurance contributions. Employers must also withhold individual income taxes from their employees' wages. Fines and penalties for noncompliance can range from 50 to 300 percent of the owed income taxes and from ¥1,000 ($130) to ¥20,000 ($2,599) of the owed social insurance contributions. Unpaid overtime is a frequent discovery during due diligence.

Local authorities may require that the buyer settle any overdue social insurance, income tax, penalties, and overtime pay before approving its workforce reduction plan.

As with severance pay, the buyer can try to strike a deal in which the penalties owed can be used as discounts on the purchase price or in connection with a holdback provision. The buyer may also want to negotiate the inclusion of indemnification provisions, and representations and warranties, against any past due amounts in the purchase agreement. Addressing these issues later in the transaction or after the closing can weaken the buyer's leverage to apply such liabilities against the purchase price or use them in connection with a holdback provision.

separate payrolls, benefit statements, and annual performance reviews. Thus, if the buyer decides to integrate any part of the target company's administrative operations, preparing a thorough transition plan is vital for a successful acquisition and PMI.

New employment documents

Executing new employment documents with the retained employees is one of the key tasks during PMI. To avoid gaps in employment, the buyer should prepare these documents—which in China typically include an offer letter, employment contract, employee handbook, and code of conduct—prior to closing to ensure that its employees receive them upon closing. Providing the workforce with the buyer's employee handbook and code of conduct upon or immediately after closing is important because, under PRC law, workplace rules and policies are not binding unless the employees receive them.

In some cases, the execution of new documents is merely for administrative purposes. In other cases, however, where the buyer assumes the target's existing employment contracts in an asset transaction agreement, or automatically in the case of a share transaction, a material change in the terms and conditions of employment requires employee consent and possibly additional consideration from the buyer. During due diligence, a buyer should assess whether it will materially alter any terms and conditions of employment and develop a strategy to obtain the consent of those affected.

> Layoffs will likely raise the cost of the transaction because employees generally are entitled to severance pay.

Understanding the post-closing workforce

The buyer must ensure that the target company will have a sufficient post-closing workforce. A solid understanding of the target's daily operations is necessary to guarantee seamless post-closing operations. The buyer should identify key personnel and develop specific strategies for their retention, particularly if they possess critical technical, operational, or institutional knowledge. The buyer must also determine whether the target can perform necessary functions after closing the deal; whether the target company relies on its parent to provide basic corporate functions, such as accounting, payroll, legal fees, and taxes; and whether it can provide these functions immediately after closing. A buyer should address these issues before the completion of the deal to ensure that there is no interruption in business and profits.

Deciding whether to integrate

After the closing, a buyer must decide whether and how to integrate the acquired company and assess the advantages and disadvantages of integration. It may be desirable to amend the target's existing HR system to align it with the buyer's system, particularly if the target's operations become well-integrated into those of the buyer after the transaction. One advantage of such integration, for example, may be the administration of only one set of welfare and retirement plans.

If the target's business is less integrated with that of the buyer, the existing HR system may need to remain intact to maintain operational continuity and workforce stability. Friction may arise between the buyer's employees and those of the target company, however, if they receive unequal benefits under different HR systems. In addition, maintaining separate HR systems imposes an administrative burden on HR personnel because they must prepare

Corporate compliance procedures

Another critical aspect of PMI is corporate compliance. Buyers should review the target's internal controls and introduce a code of conduct that addresses employee behavior, such as bribery, that may be more prevalent or customary in China. Buyers would do well to review the target's compliance practices, if any, to determine whether

- It has a written antibribery compliance program that all employees have received;
- Employees and the previous employer are aware that turning a blind eye to kickbacks may be actionable; and
- The workforce received training on the repercussions of disguising a kickback or "grease payment" in an accounting

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Recent Compensation and

China's labor market is one of the most challenging in the world, and many companies list human resources as their top operating issue in China, largely because of rising labor costs and high turnover rates.

Indeed, mainland China's turnover rate has remained one of the highest in Asia, and the figure for 2006—14.2 percent—is no exception. Only Hong Kong, recently emerging from an economic slump that bottled up turnover for several years, has a turnover rate higher than that of mainland China. In addition, over the last four years, salaries have risen around 8 percent annually. These increases, coupled with consistently low inflation, give China the highest wage inflation rate in the Asia-Pacific region.

Two trends drive the consistently large salary increases and high turnover rates. First, foreign companies continue to invest heavily in China, and demand for talent remains high. Second, as first-tier Chinese companies transform their businesses to compete on the global stage, their expectations for talent are beginning to match those of foreign companies. The result is a persistently tight labor market for first-tier multinational and domestic companies operating in China.

A related trend is increasing employee dissatisfaction with their work experience. Watson Wyatt Worldwide's *2006–07 WorkChina Employee Attitude Survey*, which polled employees in 100 companies in China, shows that employees' views of their employers are becoming less favorable. The latest survey results indicate that only 23 percent of employees are satisfied with their compensation and benefits. Employees who intend to leave their company cite compensation as the top reason behind their decision (see Figure 1). Moreover, assessments of all major aspects of the workplace have deteriorated in the last four years (see Table 1).

Annual salary rises

Average annual salary hikes remain high for first-tier foreign and domestic companies in China. Most industries in China are forecasting 8–11 percent salary increases for 2007, with the financial services sector witnessing the biggest jumps (see Figure 2). As in previous years, raises for managers will be as high as, or even higher than, those for other employees.

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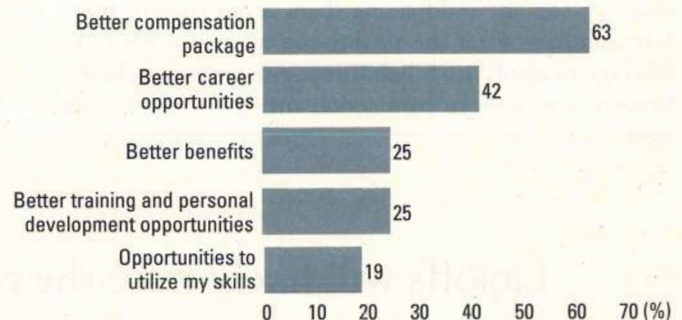
Figure 1: Top Five Reasons Employees Cite for Leaving

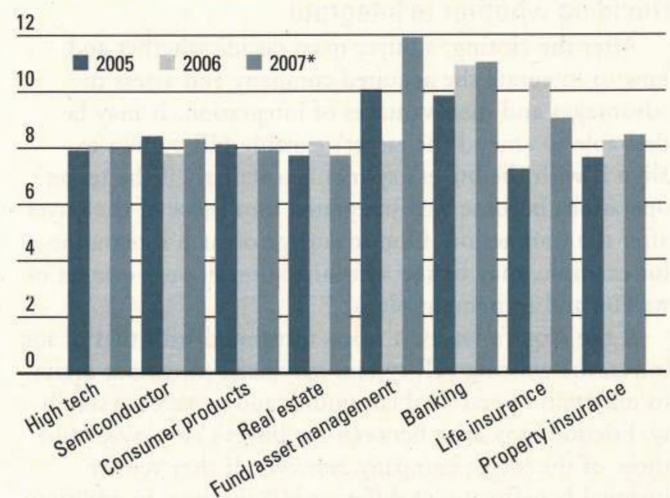


Note: Employees were asked to select their top three reasons, from a list of 20, for leaving the company.

Table 1: Workplace Favorability Rankings and Scores

Rank	Category	% favorable	Trend 2003–05	Trend 2005–06
1	Performance management	52	→	↓
2	Work environment	51	↓	↓
3	Team work	50	↓	↓
4	Workplace innovation	49	↓	↓
5	Communication	48	↓	↓
6	Job satisfaction	48	↓	↓
7	Supervision	45	↓	↓
8	Leadership and management	43	→	↓
9	Training and development	41	↓	↓
10	Compensation and benefits	23	↓	↓

Figure 2
Salary Increase Rates Across Industries, 2005–07 (%)



*Forecasts

Benefit Trends in China

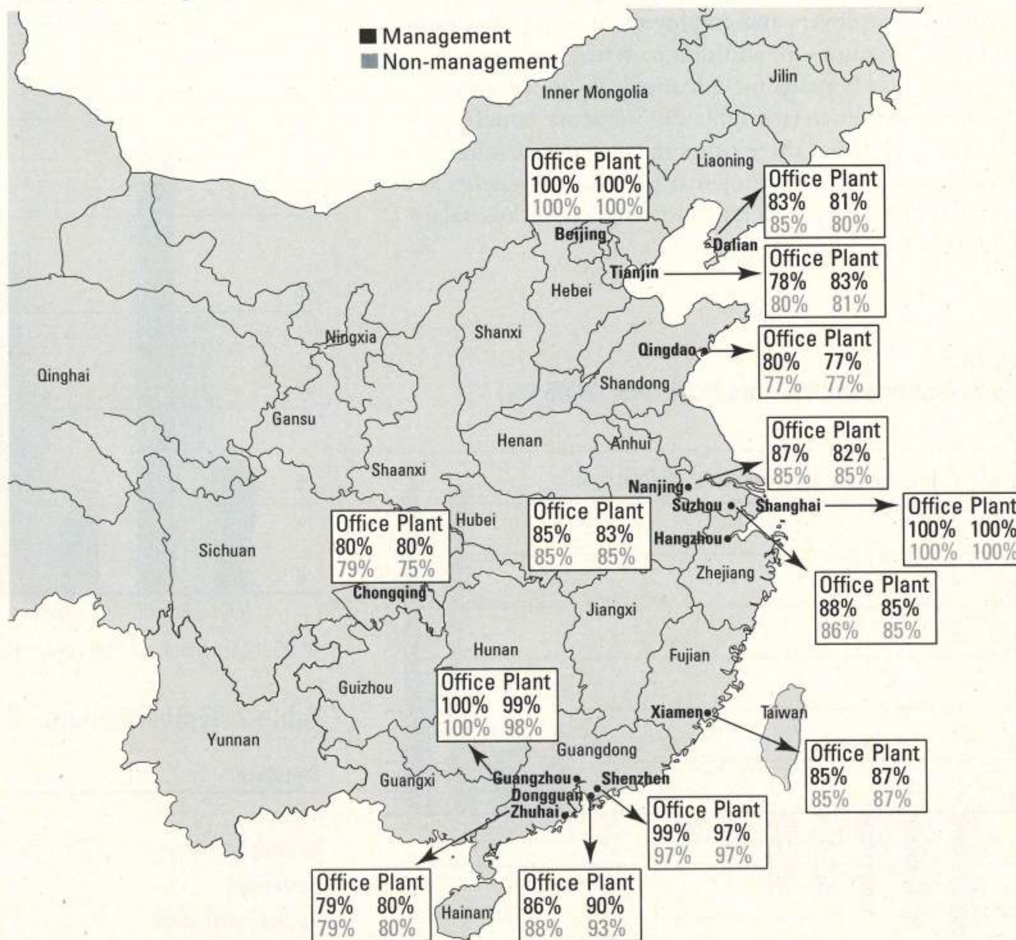
Turnover rates

Turnover rates are expected to remain high in China's major cities, with rates of 13–15 percent common, and even higher rates expected in financial services (see Figure 3). Once again, turnover at the management level will likely be higher than at lower levels.

Differences by location

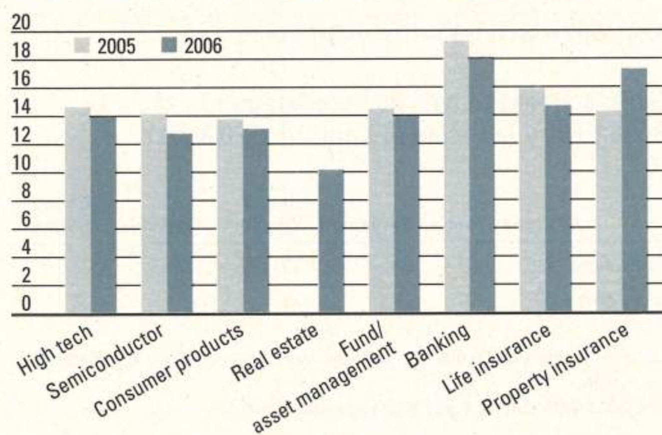
In the past, salary differences among the four largest labor markets—Beijing, Shanghai, Guangzhou, and Shenzhen—were significant. Currently, wages have reached virtual parity in these major cities. Multinational corporations typically unify compensation packages for employees in similar positions across first-tier cities. Wages are lower in second- and third-tier cities, however (see Map).

Relative Salary Levels in Selected Chinese Cities, 2006



Note: Figures indicate salaries in individual cities as a percentage of salaries in Shanghai.

Figure 3: Turnover Rates by Industry, 2005–06 (%)



Note: Real estate data for 2005 not available

Position premiums

In line with trends over the last two to three years, certain jobs in China are paid a premium over other jobs at the same grade level. Research and development, sales, marketing, and business development positions currently command the highest pay (see Figure 4).

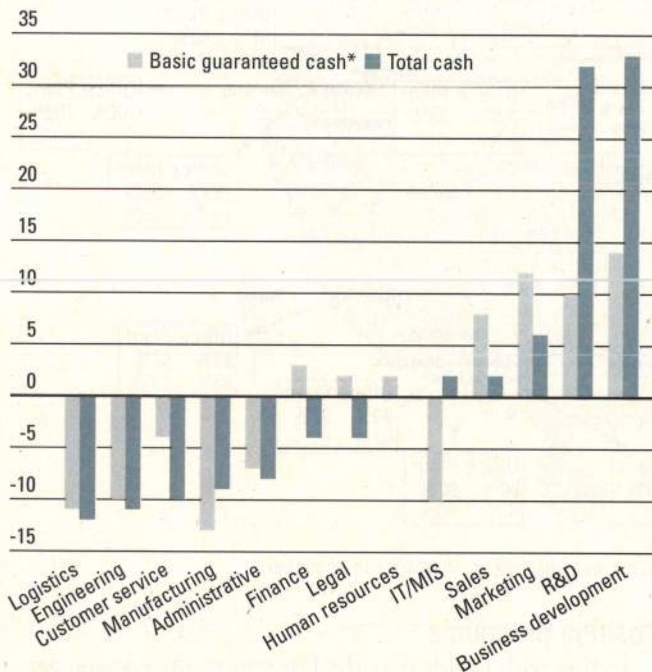
Increase in variable pay

The amount of variable pay—annual bonuses that reflect performance—has gradually increased in recent years. For most companies, the amount of variable pay at the senior level will be equivalent to nearly two months' salary (see Figure 5). Variable pay in some industries, such as financial services, is much higher.

Benefits

In an effort to improve China's social security system, the PRC government recently issued a regulation that encourages employers and employees to set up individual retirement accounts. In addition to retirement, typical supplementary benefits include medical, housing, and education assistance (see Table 2). Statutory benefit payments are capped at three times the average earnings in a particular city, which means that the cost of benefits as a percentage of salary is significantly higher for low-salary employees (see Table 3). 完

Figure 4
Pay Premiums for Various Positions, 2006 (%)



Note: Figures represent relative pay levels for different positions at the same grade level.
*Includes salary, guaranteed bonuses, and cash-based allowances
IT/MIS = Information technology/management information systems
R&D = research & development

Figure 5
Variable Pay as Percentage of Total Cash, 2006 (%)

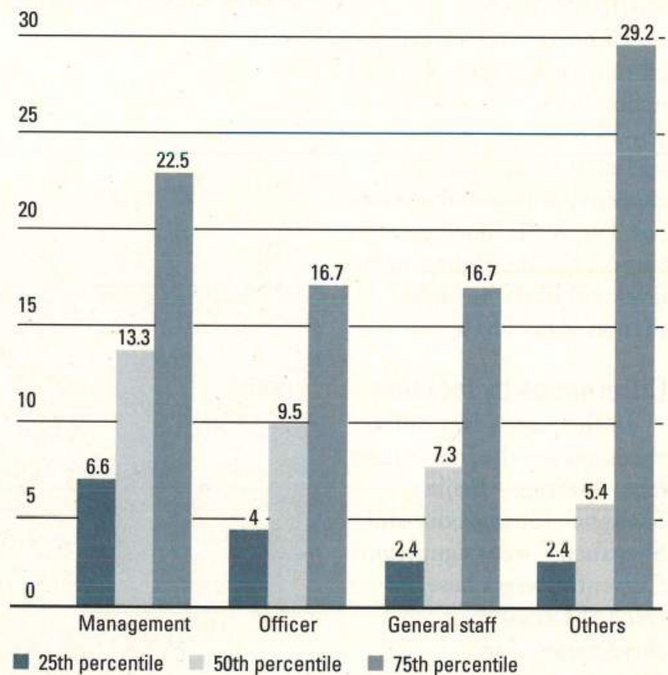


Table 2: Typical Benefits Offered in China

Statutory	Supplementary
Medical	Medical
Housing	Housing
Retirement	Retirement
Occupational injury	Life insurance (AD&D, disability)
Maternity	Incentive
Unemployment	Travel/car
	Stocks
	Education assistance/training

Note: AD&D = Accidental death and dismemberment.

Table 3: Benefit Costs as Percentage of Base Salary in Selected Countries, 2006 (%)*

	China	India	Singapore	United Kingdom	Germany	United States
High salary	21	37	29	36	26	31
Low salary	52	32	28	29	25	33

Note: High salary = ¥25,000 ($3,271.1) per month; low salary = ¥5,000 ($654.2) per month.
*Includes both statutory and supplementary benefits

Source: Watson Wyatt Worldwide: *2006–07 WorkChina Employee Attitude Survey, Total Rewards Survey*

Feeling the Pressure?

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more collective bargaining may soon occur on a regional or industry basis. Last year, nearly 50 companies in Shenzhen and their employee representatives signed a regional collective-bargaining agreement, the first such agreement reported in China. Moreover, the draft Labor Contract Law would allow collective contracts to be negotiated on an industry basis in areas below the county level and in certain industries. This is in line with an opinion issued last year by the Ministry of Labor and Social Security that calls upon local labor bureaus and ACFTU to encourage more collective bargaining at the regional and industry level.

Wait and see

Though companies have not reported that ACFTU has become more assertive in unionized enterprises, PRC laws and regulations provide significant powers to unions over employment-related matters within enterprises. Unions and CCP cells may also provide the government with enterprise information that officials could not ordinarily access.

It is still too early to gauge how long the unionization drive will last and how successful it will ultimately be. Although the current ACFTU unionization campaign appears to have more government backing and momentum than past unionization drives, there are indications that not all government departments fully support it or agree on how much power unions should be given. For instance, while ACFTU aggressively sought to unionize FIEs, the government diminished the role of unions in the second draft of the Labor Contract Law.

ACFTU and its branches have not taken any action against most FIEs that have not yet encouraged employees to establish unions, though they have threatened to put some FIEs on a "blacklist," the consequences of which are uncertain. Until it becomes clearer what role unions will be allowed to play, companies may be able to take a "wait-and-see" attitude before deciding whether to actively support the establishment of unions among their employees. 完

Although unions in China rarely cause difficulties or much disturbance for company management, PRC law formally grants them significant powers.

The Human Face of M&A Deals

Continued from page 27

entry as stipulated in the US Foreign Corrupt Practices Act (see the *CBR*, November–December 2006, p.22).

If the previous employer neglected to educate its workforce on these points, the buyer should be sure to address them shortly after closing.

Equally important is providing adequate training for the target company's employees on the antiharassment and antidiscrimination provisions often contained in a multinational corporation's (MNC) code of conduct. Such provisions frequently exceed the legal requirements in China, and MNCs should ensure that the newly acquired workforce understands them. Instilling new standards and cultural norms in the workplace through training and dissemination of the employee handbook and code of conduct shortly after closing should reduce the likelihood and risk of improper behavior in the workplace.

A successful transaction

Human capital issues associated with M&A deals in China are complex in both form and substance. To benefit fully from a transaction, companies must address the human component of the deal—and the liabilities they may face if they do not understand the HR environment. Addressing HR issues through careful due diligence and a well-designed PMI plan is essential to a successful transaction. 完

Cleantech Boom... or Bust?

An environmental freight train is speeding through China—and it needs a hybrid engine

Weng Hui/China Foto Press

William Brent

This past spring Tristan Fischer, then chief executive officer of Camco International Ltd., a global firm that helps companies identify and develop projects that reduce greenhouse gas (GHG) emissions, scoured China's countryside for a new breed of opportunity. Rather than looking for cheap shoes to stock the shelves of big-box retailers, he was searching for carbon-belching smokestacks in need of clean technology to offset carbon emissions and make them available for market trading.

Though China has benefited from more than 25 years of rapid economic growth, that progress has also created an environmental nightmare of global proportions, with worse to come in the next 20 years. The country, which gets nearly 70 percent of its energy from burning dirty coal, is on track to surpass the United States as the world's top GHG emitter as early as the end of this year—more than a decade earlier than previously predicted—according to International Energy Agency Chief Economist Fatih Birol. In addition to GHG emissions, China has many other environmental problems, including water shortages and poor air quality that threaten public health and industrial output. With finite supplies of carbon-based energy and growing global demand, China will have to find other—and cleaner—sources of energy.

China's large and growing appetite for clean technology will create one of the biggest market opportunities in the next few decades, providing the potential for enormous wealth creation by cleaning up the ecological mess that has come from its miraculous, but dirty growth. Many climate change experts are betting that the solution to the world's environmental problems resides in the technological innovation coming out of Silicon Valley and other high-tech clusters in the United States and Europe. But to fully benefit from such technology, China will have to change its policies and consumer attitudes quickly to speed its adoption of the technology—or face significant economic, social, and public health ramifications.

Policy push

"China says it will obtain 15 percent of its [primary] energy from renewables by 2020," says Mike Eckhart, president of the American Council of Renewable Energy, referring to

the goal China first announced in November 2005. "But China has got it backward. If it's not at 85 percent renewable, we're in big trouble."

Though China is unlikely to change its renewable energy targets so radically, the central government is highly motivated to address China's chronic energy shortage and severe environmental pollution. Across the board, Beijing is enacting policies that will require huge investments in renewable energy, energy efficiency, smart building, clean water, and cleaner coal. These initiatives include

■ **Support for renewable technologies** Under the Renewable Energy Law, which took effect January 1, 2006, and its supplementary regulations, the PRC government will provide support for wind, solar, water, biomass (natural plants, excrement, and organic waste), geothermal, ocean energy, and other nonfossil energy technology in the form of tax breaks, targeted loan subsidies, and special funding (see the *CBR*, July–August 2006, p.40). Wind energy has received the bulk of the support thus far; in the past five years, China has invested $1 billion in wind turbines in a dozen provinces. By 2020, it aims to increase the capacity of wind farms nearly 10-fold.

■ **Top 1,000 enterprises program** The PRC National Development and Reform Commission (NDRC) launched a program in 2006 to improve the energy efficiency of China's 1,000 largest enterprises, which together consume one-third of China's primary energy. By using energy efficiency measures determined through a still maturing auditing process, the program aims to save 100 million tons of coal and cut 242 million metric tons of carbon dioxide emissions by 2010, which is equivalent to about 5 percent of China's emissions in 2004, according to NDRC figures.

■ **Appliance efficiency standards** New efficiency standards, issued by the the China National Institute of Standardization for consumer appliances—such as refrigerators, air conditioners, TVs, lamps, and washing machines—seek to cut residential electricity use by 10 percent in 2010, thereby reducing the need for more than 30 large, coal-fired power plants.

■ **Building codes** In the last year and a half, China has seen several developments in the area of energy conservation in buildings. National standards on energy conservation for public and residential buildings and on technical evaluations of residential buildings, as well as guidelines for assessing green buildings, took effect in the first half of 2006. The new energy efficiency standards aim to reduce the energy consumption of new buildings by 65 percent in Beijing, Chongqing, Shanghai, and Tianjin and by 50 percent in less-developed cities. As the *CBR* went to press, the State Council was reviewing the Energy Conservation Law to accommodate the country's new energy standards. By 2020, China plans to renovate 25 percent of residential and public buildings in large cities, 15 percent of these buildings in medium-sized cities, and 10 percent in small cities. In June 2007, the State Council decreed that public buildings may not set their thermostats below 26° C (78° F) during the summer or above 20° C (68° F) during the winter.

Meanwhile, the PRC Ministry of Construction has launched stricter energy codes in six pilot cities—Chongqing; Fuzhou and Xiamen, Fujian; Guangzhou and Shenzhen, Guangdong; and Shanghai. According to the ministry, on average, buildings in China consume two to three times as much energy as buildings in large countries with comparable climates.

■ **Water efficiency** In 2006, China launched a program with 100 pilot projects to cut water consumption per unit of GDP by 20 percent by the end of 2010, an annual drop of 4 percent in 2006–10. In May 2007, NDRC issued a water resources plan that aims for China to raise the proportion of land that is irrigated efficiently and to reuse water consumed for industrial purposes.

■ **Fuel economy** The PRC General Administration of Quality Supervision, Inspection, and Quarantine and the Standardization Administration of China jointly issued a set of compulsory fuel efficiency standards for passenger vehicles in October 2004. The Limits of Fuel Consumption for Passenger Vehicles, which took effect in July 2005, detail the limits of fuel consumption for car models with a weight below 3,500 kg and a minimum speed of 50 km per hour. The PRC standards are more stringent than US standards but less strict than the semi-voluntary standards that the auto industry has adopted in Europe. China projects that by 2008 the average fuel economy of new vehicles in the country will be 36.7 miles per gallon.

New Energy Finance Ltd. predicts that China's renewable energy industry will account for up to 19 percent of the country's energy needs by 2020, not 15 percent, and require total investment of $267 billion—about 50 percent more than the NDRC forecast. Whatever the actual dollar figure, enforcement of government policy will be key in driving investment and creating opportunities.

Challenges and conflicts of interest

In China, central government goals often conflict with local government aspirations—a fact that becomes more apparent as some of the central government's implementation deadlines pass unmet. The State Environmental Protection Administration (SEPA) has already acknowledged

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that China will fail to meet some goals, including the key target of reducing its level of energy consumption per unit of GDP (energy intensity) by 20 percent by 2010. This projected failure is in part the result of local intransigence. "Some cities are interested [in meeting China's energy goals], but there's an awful lot of green washing going on," says Doug Ogden, executive vice president of the Energy Foundation and director of its China Sustainable Energy Program, which works actively with PRC policymakers. Despite SEPA's acknowledgement, this goal was reiterated by the State Council in the National Plan to Address Climate Change released in June.

Critics of China's environmental and clean energy policies say that SEPA—China's ministry-level department responsible for the formulation and enforcement of national environmental policy and the coordination and supervision of major environmental projects—lacks teeth. SEPA often cannot control large enterprises with government connections and local officials who report to local governments instead of SEPA. Such problems may improve, however. In May, SEPA released measures that call upon government agencies and enterprises to disclose environmental information to the general public. And in December 2006, SEPA and the Ministry of Supervision issued regulations that penalize officials who fail to protect the environment and that incorporate environmental performance into regular performance evaluations of local officials. Ultimately, stricter enforcement will mean more cleantech business opportunities.

Critics also say China's clean energy incentives and pollution fines are weak. In addition, they remark that China's natural resources are priced too low to encourage conservation. Utility pricing needs further reform, but most analysts do not expect it anytime soon.

Finally, the central government itself sometimes creates a business environment that is difficult for investors to parse, whether because of high quotas for locally manufactured parts, opaque investment regulations and processes, restrictions on foreign investment, or vague references in merger and acquisition regulations about protecting "national economic security." Some foreign cleantech investors have privately said that PRC officials have delayed cleantech deals by trying to bring in Chinese investors; it is difficult to confirm these assertions, however.

Attracting private investors

The current potential for clean technology in China is still largely that—potential. Though government and private funding is available, the level of domestic entrepreneurship and seasoned management teams in the cleantech sector is still low, which means that a lot of money is chasing few quality investment opportunities. According to Cleantech Group LLC, a global network of companies that work to accelerate the market adoption and commercialization of clean technologies, venture capital (VC) in China's clean technology sector totaled $420 million in 26 cleantech deals in 2006, up 147 percent over 2005. This is still a fraction of the total for North America and Europe last year, which was $3.6 billion. But with $154 million invested in the first quarter of 2007 in China—an investment level four times that of the first quarter 2006—China is starting to pick up momentum.

Foreign investors are setting up cleantech projects, many in the form of Sino-foreign partnerships. Cleantech Group recently moved into China with the backing of several large multinational corporations, private investors, and service providers. It also launched, with its Chinese joint venture partners, a cleantech park in Xuzhou, Jiangsu. The park will serve as a center for businesses that develop clean technology in renewable energy, energy efficiency, water and waste water purification, resource recycling, clean production, and more.

Cleaning China's Water

Just as shifting energy consumption and production to cleaner alternatives is vital, so is solving China's impending water crisis.

Jeff Fulgham, chief marketing officer for GE Water & Process Technologies, is bullish about China's cleantech business opportunities in water. He notes that water in China "is more of a technology play [more about technology innovation] than just building concrete basins in the ground," in part because the water in China is much dirtier than in other markets and requires more effective and relevant technology. He predicts that China will play a significant role in the innovation of technology for water disinfection and biological control. GE's technology research center in Shanghai is expected to become a global hub for developing new technologies in the coming years.

David Henderson, managing director of Toronto-based XPV Capital Corp., a boutique venture capital firm focused on water technology, adds that traditional purification technologies like reverse osmosis use too much energy and waste too much water for a market like China. He says that "China is already starting to leapfrog" existing water technologies, noting that the Beijing National Laboratory for Molecular Sciences is producing homegrown innovation around nanocomposite (a plastic that is stiffer and lighter than other plastics when heated or cooled) structures with water treatment applications.

China also uses water less efficiently than many other countries. For example, Chinese steelmakers use 20 times more water than their US counterparts, according to Fulgham. This means China needs industrial water reuse, effluent, and membrane technologies. Fulgham predicts that in 5–10 years, China will have a market for point-of-use systems that treat water in the basement of green buildings.

—William Brent

In another example, Peggy Liu, chief operating officer of Mustang Ventures, a US VC firm based in Shanghai, recently organized a forum on the future of China's energy sector. Liu plans to start up a new US-China public-private body, tentatively called Joint US-China Cooperation on Clean Energy, which would more aggressively foster an environment conducive to clean energy deals.

Many other Sino-foreign partnerships have emerged with a focus on green building, renewable energy, and energy efficiency. All of these efforts will be needed to turn China into a consumer of clean technology. Currently, it is largely an exporter—primarily of photovoltaics (PV) and meters that were developed by foreign companies attracted to China's high-tech, lower-wage dynamic.

Signs that China will soon become a cleantech consumer and innovator are slowly emerging. For example, the General Electric Co. has based its global water technology research efforts in China, which will inevitably lead to significant innovation coming out of China. Other organizations are following suit: The US Business Council for Sustainable Development is working with the US Environmental Protection Agency to set up an exchange center in Beijing to foster sustainable technology projects, and the China-US Energy Efficiency Alliance is promoting the use of existing energy efficiency technologies as the cheapest and easiest way to reduce GHG emissions in China.

A fully developed carbon market will be one key to China's ability to attract clean energy investment. Although China ratified the Kyoto Protocol in August 2002, its status as a developing country exempts it from meeting the protocol's GHG emission reduction targets. China can, however, provide carbon credits to developed countries under the protocol's Clean Development Mechanism (CDM). The CDM allows developed countries to fulfill their emission reduction requirements by investing in clean energy projects in developing countries, where carbon credits generally cost much less (see the *CBR*, November–December 2002, p.26). As of early June, China had registered 85 CDM projects with the United Nations (UN) Framework Convention on Climate Change secretariat—about 12.3 percent of UN CDM projects. The total average annual certified emission reductions (CER, equivalent to 1 metric ton of carbon dioxide reduction) from China's registered projects were estimated at about 64.7 million metric tons of carbon dioxide equivalent—roughly 43.2 percent of total CER in UN CDM projects. China's CDM project priority areas include energy efficiency improvements, development and use of new and renewable energy, and methane recovery and use.

Camco International completed its first CDM deal in China in 2004 and has since made considerable capital investments in GHG-reducing technologies. It now boasts 100 million metric tons of carbon credits, the majority of which are from China. In one project, Camco worked with a coal mine in Shanxi to convert methane—a GHG more than 20 times more potent than carbon dioxide—into natural gas. "Clearly there is a lot of carbon credit that can come from China, but the question is: What is the demand?" says Fischer. Currently, demand is lagging because the verification of offsets has been difficult to standardize, and the immature market remains illiquid.

Asia's first carbon exchange is scheduled to open in Beijing sometime this year and will tap into a market worth billions of dollars. The exchange is a joint effort between the UN Development Program, the Ministry of Science and Technology, and the Ministry of Commerce's China International Center of Economic and Technical Exchange.

Energies to tap

Wind energy

Wind capacity has grown 20–30 percent a year for the past five years. According to its draft Medium- and Long-Term Renewable Energy Development Plan (Renewable Energy Plan), China aims to increase wind capacity from 3,500 MW today to 30,000 MW by 2020, which would place China's wind power output at about twice that of Germany—currently the world's largest wind power producer. But several issues impede faster growth, including the fact that competitive bidding by state-financed domestic utility companies in the wind tendering process is driving prices up, which may cool off the market (see the *CBR*, July–August 2006, p.40). In addition, foreign manufacturers looking to sell wind turbines to China are restricted by the PRC government's shifting local-content requirements, despite the fact that local manufacturing cannot support demand. China's wind turbine sector currently has more than 30 domestic firms, which some industry insiders argue are over-supplying the sector with low-priced and low-quality equipment.

Solar power

China's entry into the PV industry and the initial public offering (IPO) of the solar gear maker Suntech Power Holdings Co., Ltd. drew the attention of many industry observers and Wall Street. A slew of other solar manufacturers, such as Trina Solar Ltd., Solarfun Power Holdings Co., Ltd., and JA Solar Holdings Co., Ltd., have also listed, and Yingli Green Energy Holding Co. Ltd. and others are poised to list, taking China from not even a blip on the solar radar five years ago to becoming the world's third-largest producer of PV. But with a conservative target of using 1,800 MW from solar energy by 2020, solar is not a major focus of China's new energy plans under the draft Renewable Energy Plan.

One area in which China is the undisputed leader, however, is the solar water heater industry, which made around ¥19.9 billion ($2.6 billion) last year. Under the draft Renewable Energy Plan, China should have 300 million m^2 of solar water heater panels by 2020.

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Xiang Zhonglin/China Foto Press

Future World Leader in GM Crops

China's market for genetically modified crops is about to sprint forward—but that doesn't mean the market will open to foreign companies any time soon

Charles Oliver and Jessica Hankins

China's genetically modified (GM) cotton market has grown rapidly in recent years. In 2006, the country planted 3.5 million hectares of GM cotton, up 6 percent over 2005, allowing China to become the sixth-largest global producer of GM cotton. China has also become a leader in the research and development (R&D) of this product. China's other approved GM crops—such as petunias, tomatoes, sweet peppers, and papayas—may soon follow the same trend.

A milestone in the development of China's GM crop market may occur when the PRC government approves a GM version of rice, the country's most important staple crop, for large-scale commercial production. The PRC Ministry of Agriculture's (MOA) approval of GM rice,

which may occur by the end of this year, should have a large impact on the development and acceptance of GM crops worldwide. Other countries with GM rice have been waiting to clear the product for commercial release, mostly because of consumer resistance to GM food products. Once China approves GM rice, consumers worldwide may change their views on GM food products, and other countries may follow suit. Companies—such as the Dow Chemical Co., E. I. du Pont de Nemours and Co. (DuPont), Bayer AG, Monsanto Co., and Syngenta AG—have been eyeing China as a market for their own GM crops. The PRC government's approval of GM rice will put China, which already has a sizeable and diverse agricultural industry, on the map as a leading producer and developer of GM technology.

GM products in China today

Cotton is the country's largest non-edible crop and is the only major GM crop that China has approved for large-scale commercial production. The pest-resistant *bacillus thuringiensis* (Bt) cotton, which the US biotech giant Monsanto first introduced in China in 2001, has become so popular that many cotton producers in China illegally reproduce the seeds.

To date, the PRC government has permitted several varieties of GM agricultural products to enter China's market, although none of the food products are yet produced for large-scale commercial sale (see Table 1). China has also permitted the use of GM agricultural products for noncommercial and pharmaceutical purposes and animal feed.

According to the China Agriculture Biotechnology Commission, state researchers and local agricultural institutes are currently researching nearly 50 types of GM crops in China, including 7 cereal crops, 5 economic crops (corn, cotton, rapeseed, soybean, and tobacco), 4 oil plant crops, and up to 31 types of fruits and vegetables. This research involves more than 100 types of genes and is focused on crops in highest demand in China, such as rice, instead of crops that would reap high export earnings. Once approved by MOA, GM rice will be the first GM food product cleared for large-scale commercial production in China.

The pros and cons of GM crops

Though the global community still debates the pros and cons of GM products, they could be important for China's food security—ensuring that the country can feed 20 percent of the world's population with only 6 percent of the world's arable land. Proponents of GM crops hope the crops will produce higher yields, have a higher resistance to pests and drought, and reduce the need for pesticides and herbicides, making them safer for farmers to use. Opponents of GM crops worry about potential long-term effects on the environment—such as a decrease in biodiversity—and on public health. Some also wonder whether farmers will become dependent on large corporations for their seeds.

According to research by GCiS China Services, in China the average cost per hectare of cultivating GM cotton was ¥1,660 ($216) last year while the average cost per hectare of cultivating conventional cotton was ¥2,580 ($335). Thus, growing GM cotton instead of conventional cotton cut farmers' costs by an average of 35 percent. This translates into savings of about ¥650 ($84) per household last year, a significant amount for many Chinese farmers. (In 2006, China's annual rural per capita net income was only $463.) The savings mainly come from the use of less pesticide, which must be reapplied to conventional cotton as many as 15 times per year, compared to 8 times per year for GM cotton. GM cotton seeds sell for roughly ¥60 ($8) per kg while conventional cotton seeds cost only ¥25 ($3) per kg—plus the cost of pesticide.

In general, the PRC government and Chinese consumers are not as concerned about the ethical ramifications of genetic engineering as consumers in the West, particularly in Europe. They are concerned about food safety, however. PRC agricultural authorities are proceeding with GM crops cautiously to fully assess their safety and to establish a thorough regulatory system before making them widely available for public consumption. The ethical, environmental, and health concerns of large export markets such as the European Union and the influence these markets exert on world agriculture are another reason to move slowly. (Because of a GM rice contamination scare last summer, the European Union now tests all US rice imports to determine whether they contain GM rice.)

Government support

China's GM crop market looks promising for Chinese GM crop companies in the near future in part because the PRC government supports the industry—particulary R&D. According to MOA, over the past five years, the PRC government has invested at least ¥100 million ($13 million) per year on GM crop R&D, though estimates vary and many industry analysts think this number is understated. According to the Chinese Academy of Sciences, over the past few years the PRC government has invested up to ¥2 billion ($261.4 million) on GM crops per year—which includes investment in R&D, subsidies and financing, buying materials, and leasing technologies—and intends to increase this amount by 20–30 percent in the next few years. In 2006, GM crop farmers obtained about ¥2.5 billion ($326.8 million) in financing from the government.

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Table 1: Genetically Modified Crops Approved in China

Status	Crop
Large-scale commercial production	Insect-resistant cotton
Small- and medium-scale commercial production	Black poplar, papaya, petunia, sweet pepper, and tomato
Noncommercial production	Cabbage, corn, pimiento, potato, red pepper, rice, soybean, tobacco, and watermelon
Pharmaceutical purposes and animal feed	Corn and soybean

Note: This table is not comprehensive; GM corn and soybeans are imported for use as animal feed and for oil
Source: GCiS China Services

Significance for foreign companies

Because the PRC government wants Chinese compa nies to become global leaders in the development of GM crops, it limits foreign investment in the sector. China's 2005 Catalogue Guiding Foreign Investment in Industry prohibits foreign investment in the production and development of GM seeds. Because GM crops are not covered in China's World Trade Organization accession agreement, the country has more control over them than over the auto, finance, telecom, and other industries.

The future of foreign investment in China's GM crop market is uncertain because of this prohibition (Monsanto entered the China market before the ban). Final products, however, may still be imported into China, with the necessary approvals (see below). Though market watchers do not expect significant openings in the near future, large foreign suppliers, such as Bayer and Syngenta, are lobbying China to open the market further.

Market projections

To project the future market sizes for GM crops in China, GCiS first examined the market development model for GM cotton. GCiS then estimated the date of approval (by year or quarter) for each subsequent crop, starting with GM rice, and assumed that the price differences between GM crops and non-GM hybrid crops would be proportionate to the price differences between GM cotton and conventional cotton. The prices for pesticides needed for each hectare of crops were also taken into consideration. With this information, GCiS mapped the development of these crops to follow GM cotton's growth since approval.

The resulting estimates show that the cultivated area of GM cotton will grow to nearly 5.5 million hectares by 2010. If GM rice is approved this year, and follows a development pattern similar to that of GM cotton, China could have nearly 30 million hectares of GM rice by 2015. This would be true even if GM rice were to account for only 67 percent of total rice cultivation. These projections do not take into account the possibility of government restrictions on GM rice.

GM Crop Approval Procedures

China has a complex certification process for the approval of commercial production of genetically modified (GM) crops. To be approved and certified for commercial production in China, each GM crop seed and mature crop must undergo a five-stage testing process: laboratory research; small-, medium-, and large-scale testing; and biosafety certification. (Imported GM crops must undergo the same approval process after receiving GM approval abroad.)

The Agriculture Genetic Engineering Safety Commission (AGESC) must complete testing of, and approve, the seeds and mature crops at each stage. In the first two stages—lab research and small-scale testing—researchers or companies must submit all materials, data, and experimental results to the PRC Ministry of Agriculture, which, in turn, submits them to AGESC. The final three stages are controlled by a somewhat opaque approval system. After receiving a biosafety certificate in the final stage, the applicant can then produce and sell the approved types of GM crop.

Most of China's domestically produced GM crops have already passed the initial stage of this process and are being tested on small-scale farms, primarily in northern and northeastern China. GM rice has gone through the five-stage testing process and is waiting for certification for commercial production, which can take a long and seemingly arbitrary time—in some cases five years. As a result, it is difficult to predict the course of the GM market.

—Charles Oliver and Jessica Hankins

GM Crops in Testing Stages for Commercial Production

Crop	Stage	Location
Herbicide-tolerant cotton	Laboratory research	Hebei, Henan, Jiangsu, Shandong
Virus-resistant soybeans	Laboratory research	Heilongjiang
Insect-resistant tobacco	Small-scale testing	Heilongjiang, Henan, Shandong
Cold-resistant tobacco	Small-scale testing	Heilongjiang, Henan, Shandong
Drought-resistant tobacco	Small-scale testing	Heilongjiang, Henan, Shandong
Insect-resistant corn	Medium-scale testing	Beijing
Virus-resistant corn	Medium-scale testing	Beijing
Insect-resistant soybeans	Medium-scale testing	Heilongjiang
Improved-quality wheat	Medium-scale testing	Beijing, Henan, Shandong

Source: GCiS China Services

Industry observers believe that even though the PRC government is moving slowly, it is essentially sold on GM technology and will allow the market to develop. In addition, if other staple food products, such as wheat and corn, follow rice's pattern, China's GM crop market could grow rapidly in terms of uptake and revenue, encouraging the emergence of large Chinese suppliers with multi-crop product lines.

Where this leaves leading Western suppliers is uncertain. The PRC government is emphasizing local R&D of GM crops and will likely continue to limit foreign participation. On the other hand, because Western companies are still the leaders in GM technology, China may need to reach an agreement on GM crop trade with its trading partners soon, or risk further accusations of protectionism. Close observation of this market is the best way for Western companies to prepare themselves for opening day. 完

Table 2:
Genetically Modified Crops Approved for Import into China for Processing

No.	GM Crop Variety	Company*	Period of Validity**
1	Herbicide-resistant soybean GTS40-3-2	Monsanto	Feb. 20, 2004–Feb. 20, 2007
2	Herbicide-resistant corn GA21	Monsanto	Feb. 20, 2004–Feb. 20, 2007
3	Insect-resistant corn MON810	Monsanto	Feb. 20, 2004–Feb. 20, 2007
4	Insect-resistant cotton 531	Monsanto	Feb. 20, 2004–Feb. 20, 2007
5	Herbicide-resistant cotton 1445	Monsanto	Feb. 20, 2004–Feb. 20, 2007
6	Insect-resistant and herbicide-resistant corn Bt176	Syngenta	Apr. 6, 2004–Apr. 6, 2007
7	Insect-resistant and herbicide-resistant corn Bt11	Syngenta	Apr. 6, 2004–Apr. 6, 2007
8	Insect-resistant and herbicide-resistant corn TC1507	DuPont, Dow	Apr. 6, 2004–Apr. 6, 2007
9	Herbicide-resistant corn T25	Bayer	Apr. 6, 2004–Apr. 6, 2007
10	GM rape Ms1Rf1	Bayer	Apr. 6, 2004–Apr. 6, 2007
11	GM rape Ms1Rf2	Bayer	Apr. 6, 2004–Apr. 6, 2007
12	GM rape Ms8Rf3	Bayer	Apr. 6, 2004–Apr. 6, 2007
13	Herbicide-resistant rape T45	Bayer	Apr. 6, 2004–Apr. 6, 2007
14	Herbicide-resistant rape Topas19/2	Bayer	Apr. 6, 2004–Apr. 6, 2007
15	Herbicide-resistant rape Oxy-235	Bayer	Apr. 6, 2004–Apr. 6, 2007
16	Herbicide-resistant rape GT73	Monsanto	Apr. 6, 2004–Apr. 6, 2007
17	Insect-resistant corn MON863	Monsanto	Jun. 25, 2004–Jun. 25, 2007
18	Herbicide-resistant corn NK603	Monsanto	Jul. 8, 2005–Jul. 8, 2008

*Full company names: Monsanto Co., Syngenta AG, E. I. du Pont de Nemours and Co., Dow Chemical Co., and Bayer AG

**Many of these companies have renewed, or are in the process of renewing, their import approval certificates.

Source: PRC Ministry of Agriculture

China's GM Cotton Market

China has grown genetically modified (GM) cotton since 2001, when the Monsanto Co. first introduced *bacillus thuringiensis* (Bt) cotton in the country. At that time, GM cotton accounted for only about 35 percent of the cotton sold in China. Since 2004, however, GM cotton has accounted for nearly 70 percent of the total cotton sold, a remarkably fast uptake. Much of this is illegally copied GM cotton. The growth path does, however, show that China has a market for GM crops.

The top suppliers in China's GM cotton market are all domestic suppliers. Key players include

- Anhui Runhe Cotton Industry Co., Ltd.;
- Hebei Chuangshiji Technology Stock Co., Ltd.;
- Hebei Ruixing Seeds Industry Co., Ltd.;
- Hefei Fengle Seeds Industry (Group) Stock Co., Ltd.;
- Hebei Yintian Seeds Industry Co., Ltd.;
- Nanjing Hongtaiyang Seeds Industry Co. Ltd.;
- Shandong Jinqiu Seeds Industry Co., Ltd.;
- Shandong Nongxing Seeds Industry LLC;
- Shandong Runfeng Seeds Industry Co. Ltd.;
- Shayang Esha Seeds Co.; and
- Zhengzhou Guoxin Chuangshiji Seeds Co., Ltd.

Despite the rapid uptake of GM cotton, the development of this market is not without setbacks. Some of the Bt cotton strains still require pesticide applications mainly because other insects infest the crops. According to a Cornell University survey of Chinese farmers in 2006, after seven years of growing Bt cotton, many Bt-cotton farmers use about the same amount of pesticide as conventional cotton growers. Because Bt cotton is lethal to bollworms only and less insecticide is sprayed on GM crops, other insects thrive and threaten the crops. Researchers are studying how to improve these varieties of GM cotton. If a solution is not discovered soon, some farmers could lose their faith in GM cotton. If GM-cotton farmers still need to use high quantities of pesticides, they might as well purchase conventional cotton seeds—which are less expensive than GM varieties.

—Charles Oliver and Jessica Hankins

Sales and Investment

March 16—May 15, 2007

The following listings contain information from 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*. 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.

Compiled by Bryan Klein and Catherine Hagbom

Agriculture

INVESTMENTS IN CHINA

Bunge Ltd. (US)/Chia Tai Group (Tianjin), a unit of Charoen Pokphand Group (Thailand)
Formed joint venture to operate a soybean-processing facility in Tianjin. 04/07.

Automotive

CHINA'S EXPORTS

Zhengzhou Yutong Bus Co., Ltd. (Henan)
Signed contract to supply 500 buses to Russia. $10 million. 03/07.

CHINA'S IMPORTS

GM Holden Ltd. (Australia), a subsidiary of General Motors Corp. (US)
Will supply V6 engines to Shanghai General Motors Co., Ltd., a joint venture between General Motors and Shanghai Automotive Industry Corp. Group. 04/07.

CHINA'S INVESTMENTS ABROAD

SOCMA Group (Argentina)/Chery Automobile Co., Ltd. (Anhui)
Will form joint venture to manufacture cars in Uruguay to be sold in the South American market. (Argentina:49%-China:51%). 03/07.

Zhengzhou Yutong Bus Co., Ltd. (Henan)
Will construct a spare parts warehouse in Moscow and after-sales service stations throughout Russia. 03/07.

INVESTMENTS IN CHINA

Inergy Automotive Systems (France), a joint venture between Plastic Omnium Group (France) and Solvay SA (Belgium)
Will construct a plant in Wuhan, Hubei, to supply fuel systems for the China operations of Japan-based Nissan Motor Co., Ltd. and US-based General Motors Corp. 05/07.

Kohler Co. (US)/Chongqing Yinxiang Motorcycle Group Co., Ltd.
Formed joint venture to develop, manufacture, and distribute gasoline engines in Chongqing. 05/07.

Mitsubishi Motors Corp. (Japan)
Will establish WFOE to oversee its marketing and sales operations in China. 05/07.

Aviation/Aerospace

CHINA'S IMPORTS

ARINC Inc. (US)
Will provide its Avinet airport IP technology to connect Guangdong-based China Southern Airlines Co. Ltd.'s Beijing network to its passenger operations in Australia, Japan, and South Korea. 04/07.

The Boeing Co. (US)
Will supply blended winglet systems to Shandong Airlines Co., Ltd. 04/07.

INVESTMENTS IN CHINA

Airbus SAS (France)/Tianjin Zhongtian Aviation Industry Investment Co., a joint venture of Tianjin Bonded Zone Investment Co., AVIC I, and AVIC II
Signed joint venture agreement to assemble Airbus' A320 aircraft in Tianjin. (France:51%-China:49%). 04/07.

Fraport AG (Germany)
Will acquire a 24.5% stake in Xi'an Xianyang International Airport from Shaanxi-based China West Airport Group. $67 million. 04/07.

Schiphol Group (the Netherlands)
Signed contract to provide retail and food and beverage services at Guangzhou Baiyun International Airport. 04/07.

OTHER

Kinesix Software (US)/China Aerospace Science and Industry Corp. (Beijing)
Signed licensing agreement under which China Aerospace Science and Industry Corp. will use Kinesix's KX EDGE software. 03/07.

Banking & Finance

INVESTMENTS IN CHINA

Bank of America Corp. (US)/CCB (Beijing)
Signed framework agreement to form joint venture to issue co-branded credit cards in China. (US:37%-China:63%). 04/07.

Dah Sing Bank, Ltd., a subsidiary of Dah Sing Banking Group (Hong Kong)
Acquired a 17% stake in Chongqing Commercial Bank Co., Ltd. 04/07.

DBS Asset Management Co., Ltd., a subsidiary of DBS Bank Ltd. (Singapore)
Will acquire a 33.3% stake in Beijing-based Changsheng Fund Management Co., Ltd. $22.7 million. 04/07.

Eurizon Financial Group, a unit of Intesa Sanpaolo SpA (Italy)
Acquired a 49% stake in Guangdong-based Penghua Fund Management Co., Ltd. $74.6 million. 04/07.

Kleiner Perkins Caufield & Byers (US)/TDF Capital (Shanghai)
Established first venture capital fund, KPCB China, with offices in Shanghai and Beijing. $360 million. 04/07.

Calyon Financial Hong Kong Ltd., a unit of Calyon Financial, a subsidiary of Crédit Agricole SA (France)/CITIC Futures Co., Ltd., a subsidiary of CITIC Shanghai (Group) Corp., Ltd., a unit of CITIC East China Group, a subsidiary of CITIC (Beijing)
Will form a futures brokerage joint venture in Shanghai. 03/07.

UCBH Holdings, Inc. (US)
Will acquire Shanghai-based Business Development Bank Ltd. $205 million. 03/07.

Chemicals, Petrochemicals & Related Equipment

CHINA'S INVESTMENTS ABROAD

PetroChina Ningxia Petrochemical Co., a unit of PetroChina Co. Ltd. (Beijing)
Will purchase a 1.6% stake in Canada-based Hanfeng Evergreen Inc. $6.2 million. 04/07.

INVESTMENTS IN CHINA

Akzo Nobel NV (the Netherlands)
Will build two plants to manufacture ethylene amines and chelating agents in Ningbo, Zhejiang. $342.5 million. 04/07.

Degussa GmbH, a subsidiary of RAG AG (Germany)
Will construct a plant in Shanghai to manufacture methyl methacrylate and methacrylic specialties. $271.4 million. 04/07.

Dow Epoxy, a unit of the Dow Chemical Co. (US)
Will build glycerine-to-epichlorohydrin and liquid epoxy resins plants in the Shanghai Chemical Industry Park. 04/07.

Rhodia (France)/Qingdao Dongyue Sodium Silicate Co., Ltd., Qingdao Haiwan Group (Shandong)
Formed joint venture to construct a sodium silicate plant in Qingdao, Shandong. 04/07.

OTHER

The Dow Chemical Co. (US)/Shenhua Group Corp. Ltd.
Signed cooperation agreement and will conduct a feasibility study on building a coal-to-chemicals complex in Shaanxi. 05/07.

Distribution, Logistics & Related Services

INVESTMENTS IN CHINA

United Parcel Service, Inc. (US)
Will build an international air hub at the Shanghai Pudong International Airport. $20 million. 04/07.

Federal Express Corp. (US)
Will build a terminal for its China operations at Hangzhou Xiaoshan International Airport in Zhejiang. $4 million. 03/07.

Macquarie Goodman Group (Australia)
Will acquire a logistics distribution center in Shanghai. $15.8 million. 03/07.

Electronics, Hardware & Software

CHINA'S IMPORTS

Aladdin Knowledge Systems Inc. (Israel)
Will provide software protection keys to Beijing-based Hanwang Technology Co. Ltd. 04/07.

iASPEC Services Ltd. (Hong Kong)
Won contract to provide its automated border control system to Sha Tau Kok Border Control Station in Shenzhen, Guangdong. 04/07.

Intel Corp. (US)
Will supply discounted central processing units to Shandong-based Haier Group. 03/07.

CHINA'S INVESTMENTS ABROAD

Great Wall Technology Co. Ltd. (Shenzhen)
Signed an agreement to purchase a 10.27% stake in TPV Technology Ltd. $145.7 million. 05/07.

INVESTMENTS IN CHINA

Hynix Semiconductor Inc. (South Korea)
Will acquire an additional 16.6% stake in Jiangsu-based Hynix-ST Semiconductor Ltd., its joint venture with Switzerland-based STMicroelectronics NV, increasing its overall stake to 83.3%. $250 million. 05/07.

State Street Corp. (US)
Will acquire a 49% stake in Zhejiang Insigma Hengtian Software Co. Ltd., a software-outsourcing subsidiary of Zhejiang-based Insigma Technology Co. Ltd. $634,000. 04/07.

OTHER

JDA Software Group, Inc. (US)/eFuture Information Technology Inc. (Beijing)
Signed agreement to jointly market and distribute JDA software and eFuture services to retailers in China. 05/07.

Microsoft Corp. (US)/ Shanghai Baosight Software Co., Ltd., a unit of Shanghai Baosteel Group Corp.
Signed agreement to cooperate in solutions development, technology, software outsourcing, and training. 04/07.

Energy & Electric Power

CHINA'S IMPORTS

Canadian Solar Inc.
Won contract to supply a building-integrated photovoltaic solar glass roof system to Henan-based Luoyang Polysilicon Co. 03/07.

Windtec GmbH (Austria), a subsidiary of American Superconductor Corp. (US)
Will supply 150 wind energy electrical systems to Beijing-based Sinovel Wind Co., Ltd. 03/07.

INVESTMENTS IN CHINA

Alstom SA (France)
Acquired Shandong-based Qingdao Sizhou Electric Power Equipment Co., Ltd. 05/07.

Rowsley Ltd. (Singapore)
Agreed to buy Perfect Fields Investment Inc. in return for issuing a 92% stake to Beijing-based Sinocome Group. 05/07.

Synthesis Energy Systems, Inc. (US)/Yima Coal Industry Group Co., Ltd. (Henan)
Signed preliminary agreement to form joint venture to build and operate a coal gasification plant in Henan. 05/07.

EnterpriseAsia plc (UK)
Will acquire a 49% stake in Jiangxi Dayu Yangchuan Hydro Power Development Co. Ltd. $225,754. 04/07.

Pulse Energy (Australia)/Chongqing Coal Group Co. Ltd.
Formed joint venture to build and operate four 60-MW clean energy power plants in Chongqing. $257.3 million. 04/07.

OTHER

Kyushu Electric Power Co., Inc., Sumitomo Corp. (Japan)/Datang International Power Generation Co., Ltd. (Beijing)
Signed cooperation agreement to develop renewable energy sources. 04/07.

Environmental Equipment & Technology

CHINA'S IMPORTS

Keppel Seghers, a unit of Keppel Corp. Ltd. (Singapore)
Won contract to supply and install a multi-stage air-cooled grate, combustion control system, boiler, and semi-dry flue gas

Abbreviations used throughout text: ABC: Agricultural Bank of China; ADB: Asian Development Bank; ASEAN: Association of Southeast Asian Nations; ATM: automated teller machine; 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; CBRC: China Banking Regulatory Commision; 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; DSL: digital subscriber line; ETDZ: economic and technological development zone; GSM: global system for mobile communication; GPS: global positioning system: ICBC: Industrial and Commercial Bank of China; IP: Internet protocol; IT: information technology; LNG: liquified natural gas; MII: Ministry of Information Industry; MOFCOM: Ministry of Commerce; MOU: memorandum of understanding; NA: not available; NDRC: National Development and Reform Commission; NORINCO: China North Industries Corp.; PAS: personal access system; PBOC: People's Bank of China; PetroChina: PetroChina Co., Ltd.; RMB: renminbi; R&D: research and development; SARFT: State Administration of Radio, Film, and Television; SASAC: State Assets Supervision and Administration Commission; SEZ: special economic zone; SINOPEC: China National Petrochemical Corp.; SINOTRANS: China National Foreign Trade Transportation Corp.; UNDP: United Nations Development Program; SME: small and medium-sized enterprise; Wi-Fi: wireless fidelity; WFOE: wholly foreign-owned enterprise

cleaning system to Tianyi Energy Sources Co. Ltd., a subsidiary of Guangdong Tianyi Group. 03/07.

INVESTMENTS IN CHINA

Best Type Investments Ltd., a subsidiary of George Kent Bhd (Malaysia)/Binzhou Nanhai Water Co., Ltd. (Shandong)
Formed joint venture, Binzhou George Kent-Nanhai Water Co., Ltd., to operate and upgrade a waste-water treatment facility in Binzhou, Shandong, for 30 years. (Malaysia:60%-China:40%). 04/07.

China Water Affairs Group Ltd. (Hong Kong)
Will acquire a 75.5% stake in Beijing-based Foundation Water Affairs Investment Co., Ltd. $6.2 million. 04/07.

Food & Food Processing

CHINA'S IMPORTS

Brunton Vineyards Inc., a subsidiary of Brunton Vineyards Holdings, Inc. (US)
Signed letter of intent to provide wine to Zhejiang Ouhai International Trade Corp. 04/07.

INVESTMENTS IN CHINA

Tata Tea Ltd. (India)/Zhejiang Tea Export & Import Co., Ltd.
Formed joint venture to manufacture and sell green tea, instant tea, and other tea-related products. 05/07.

International Beverage Holdings Ltd., a subsidiary of Thai Beverage Public Co. Ltd. (Thailand)
Acquired Anhui Gujing (Group) Co., Ltd. 04/07.

Human Resources & Labor

INVESTMENTS IN CHINA

Randstad Holding NV (the Netherlands)
Acquired an additional 23% stake in Talent Shanghai Co., Ltd., increasing its overall stake to 70%. 04/07.

Infrastructure

INVESTMENTS IN CHINA

Magplane Pipeline Technology, Inc., a subsidiary of Magplane Techonology, Inc. (US)/Beijing Farthest Technology, Co., Inner Mongolia Maglev Investment and Development Co., Ltd.
Signed MOU to establish joint venture to build pipelines for coal transportation. (US:45%-China:55%). 04/07.

Insurance

INVESTMENTS IN CHINA

Eurizon Financial Group, a unit of Intesa Sanpaolo SpA (Italy)
Purchased a 19.9% stake in Hubei-based Union Life Insurance Co., Ltd. $1.1 billion. 04/07.

Internet/E-Commerce

CHINA'S IMPORTS

Google Inc. (US)/China Telecom Corp. Ltd., a subsidiary of China Telecom (Beijing)
Signed agreement under which Google will provide advertising services on China Telecom's web portals. 04/07.

OTHER

YeePay.com Inc. (Beijing)
Entered partnership with Bertelsmann Book Club, a unit of Germany-based Bertelsmann AG, to provide online payment services in China. 04/07.

Light Industry/Manufacturing

INVESTMENTS IN CHINA

Johnson & Johnson (US)
Acquired Beijing Dabao Cosmetics Co., Ltd. $300.6 million. 03/07.

Machinery & Machine Tools

INVESTMENTS IN CHINA

Gildemeister AG (Germany)
Will build two technology centers in Shenyang and Dalian, Liaoning. 04/07.

Media, Publishing & Entertainment

CHINA'S IMPORTS

IMAX Corp. (Canada)
Signed agreement with Heilongjiang-based Daqing Science and Technology Association to install an IMAX theater in the Daqing Science and Technology Museum. 03/07.

INVESTMENTS IN CHINA

Subaye.com, Inc., a subsidiary of Telecom Communications, Inc. (US)
Signed letter of intent to acquire Guangdong-based Free Stage Studios Ltd., a stage lighting, sound, and video company. 04/07.

Metals, Minerals & Mining

CHINA'S EXPORTS

China National Machinery Industry Corp., China Nonferrous Metal Industry's Foreign Engineering and Construction Co., Ltd. (Beijing)
Won contract to develop an alumina and aluminum project in Saudi Arabia for Saudi Arabia-based Western Way for Industrial Development Co. 04/07.

CHINA'S IMPORTS

Companhia Vale do Rio Doce (Brazil)
Signed five-year contract to supply 900,000 tons of iron ore per year to Anhui-based Xinxing Ductile Iron Pipes Group Co., Ltd. 04/07.

Fortescue Metals Group Ltd. (Australia)
Will provide 20 million metric tons of iron ore to Baosteel Trading Co. Ltd., a subsidiary of Shanghai Baosteel Group Corp. 03/07.

Novolipetskii Metallurgicheskii Kombinat OAO (Russia)
Will supply 94,000 tons of grain-oriented electrical steel to Xinjiang-based Tebian Electric Apparatus Stock Co., Ltd. $460 million. 03/07.

CHINA'S INVESTMENTS ABROAD

Jinchuan Group Ltd. (Gansu)
Purchased an 11% stake in Australia-based Allegiance Mining NL. $32 million. 05/07.

Aluminum Corp. of China Ltd. (Beijing)
Signed agreement to launch and develop a bauxite mine and an alumina refinery project in Australia. $2.3 billion. 03/07.

Best Decade Holdings Ltd. (Beijing)
Will acquire a 70% stake in the Cape Lambert Project, an iron ore mining project operated by Australia-based Cape Lambert Iron Ore Ltd. $192.5 million. 03/07.

Chiping Xinfa Huayu Alumina Co. Ltd. (Shandong)
Acquired an additional 7.5% stake in Australia-based Cape Alumina Pty Ltd., a subsidiary of Metallica Minerals Ltd., increasing its overall stake to 17.5%. 03/07.

Chiping Xinfa Huayu Alumina Co. Ltd. (Shandong)
Acquired a 2% stake in Metallica Minerals Ltd. 03/07.

Fortescue Metals Group Ltd. (Australia)/Shanghai Baosteel Group Corp.
Signed MOU to establish joint venture to explore and develop an iron ore project in Australia. 03/07.

INVESTMENTS IN CHINA

Asian Dragon Group Inc. (Canada)
Acquired a majority stake in Fujian-based Fuding Mining Development Co., Ltd. $10 million. 05/07.

Hua Yi Copper Holdings Ltd. (Hong Kong)
Signed preliminary agreement to acquire a 51% stake in Jiangxi Hongyang Copper Co., Ltd. $5.3 million. 04/07.

Terra Nostra Resources Corp. (US)
Will acquire an additional 39% stake in Shandong Terra Nostra Jinpeng Metallurgical Co. Ltd. and Shandong Quanxin Stainless

Steel Co. Ltd., raising to 90% its overall stake in both companies. 04/07.

TKC Steel Corp. (the Philippines)
Acquired a 90% stake in Fujian-based Zhangzhou Stronghold Steel Works Co. Ltd. $12.8 million. 04/07.

Canam Group Inc. (Canada)
Will acquire a 39.2% stake in Guangdong-based United Steel Structures Ltd. $7.7 million. 03/07.

Carlyle Asia Partners II, an investment unit of the Carlyle Group LLC (US)
Purchased a 49% stake in Jiangsu-based Yangzhou Chengde Steel Tube Co., Ltd. $80 million. 03/07.

SK Networks Co., Ltd. (South Korea)
Will acquire a 45% stake in Beifang Tongye Co., Ltd. $133 million. 03/07.

Wits Basin Precious Minerals Inc. (US)
Signed letter of intent to purchase an initial stake of 51% in Chang Jiang Mining Co., Ltd. 03/07.

OTHER

Vietnam Steel Corp./Kunming Iron & Steel (Group) Co. Ltd. (Yunnan)
Will launch an ore, coke, and steel billet project. $70 million. 04/07.

KGHM Polska Miedz SA (Poland)/China Minmetals Corp. (Beijing)
Signed agreement to cooperate in copper mining. 03/07.

Miscellaneous

INVESTMENTS IN CHINA

Rentokil Initial plc (UK)
Purchased a 65% stake in Beijing Taiming Technology Ltd.'s pest control business. $16.9 million. 04/07.

Petroleum, Natural Gas & Related Equipment

CHINA'S EXPORTS

Changqing Petroleum Exploration Co., a subsidiary of CNPC (Beijing)
Won contract to drill 12 natural gas wells in Turkmenistan's Iolotan field. $150 million. 05/07.

CHINA'S IMPORTS

The Bahrain Petroleum Co. BSC
Will supply 6 million barrels of crude oil per year to Beijing-based China National Chemicals Import & Export Corp. 03/07.

CHINA'S INVESTMENTS ABROAD

China Zhenhua Oil Co., Ltd., a subsidiary of China North Industries Corp. (Beijing)
Received two licenses to explore for oil in Pakistan. $200 million. 03/07.

Empresa Estatal Petróleos Del Ecuador, Empresa Nacional Del Petróleo (Chile), Petróleo Brasileiro SA (Brazil)/Sinopec (Beijing)
Signed MOU to develop an oil field in Ecuador. $5 billion. 03/07.

INVESTMENTS IN CHINA

Texas American Resources Co. (US)/CNOOC (Beijing)
Signed production-sharing contract under which Texas American Resources will bear the costs of exploring a block in the South China Sea. 04/07.

OTHER

Mitsui & Co., Ltd. (Japan)/CNOOC (Beijing)
Signed framework agreement on LNG spot trading. 04/07.

Nippon Oil Corp. (Japan)/CNPC (Beijing)
Signed agreement to develop overseas oil and natural gas resources and to explore venues of future cooperation. 04/07.

Pharmaceuticals

INVESTMENTS IN CHINA

Alpharma Inc. (US)
Acquired Hebei-based Shenzhou Tongde Pharmaceuticals Co., Ltd. 04/07.

Beijing Med-Pharm Corp. (US)
Will acquire 49% stake in Hebei-based Sunstone Pharmaceutical Co., Ltd. 04/07.

Ports & Shipping

CHINA'S EXPORTS

China Road and Bridge Corp., a unit of China Communications Construction Co., Ltd. (Beijing)
Won contract to build a port in Equatorial Guinea. $427.3 million. 04/07.

Jiangsu Yangzijiang Shipbuilding Co., Ltd.
Won contract to build and supply two 2,500-TEU boxships to Canada-based Seaspan Corp. $92.8 million. 04/07.

Shanghai Zhenhua Port Machinery Co. Ltd.
Will supply 20 quayside container cranes and 30 rubber-tired gantry cranes to Denmark-based A.P. Møller-Mærsk AS. 04/07.

INVESTMENTS IN CHINA

Hutchison Ports Haicang, a unit of Hutchison Ports Holdings Ltd. (Hong Kong)/Xiamen International Port Co., Ltd. (Fujian)
Formed joint venture, Xiamen Haicang International Container Terminals Co., Ltd., to operate Haicang Port Berth No. 1 in Xiamen, Fujian. (Hong Kong:49%-China:51%). $95.8 million. 05/07.

COSCO Pacific Ltd. (Hong Kong)
Signed letter of intent to purchase a 30% stake in Fujian-based Fuzhou Port Group Co., Ltd. 04/07.

COSCO Pacific Ltd. (Hong Kong)/Hainan Harbor & Shipping Holding Ltd.
Formed joint venture to develop Qiongbei Port in Haikou, Hainan. 04/07.

Mitsubishi Heavy Industries, Ltd. (Japan), Wärtsilä Corp. (Finland)/China Shipbuilding Industry Corp. (Beijing)
Will form joint venture, Qingdao Qiyao Wärtsilä MHI Linshan Marine Diesel Co. Ltd., to manufacture low-speed marine diesel engines in Qingdao, Shandong. (Finland:27%-Japan:23%-China:50%). 04/07.

Nippon Yusen Kabushiki Kaisha (Japan), Wallenius Wilhelmsen Logistics AS (Sweden)/Tianjin Port (Group) Co., Ltd.
Formed joint venture to develop and operate a roll-on roll-off port terminal in Tianjin. (Japan:34%-Sweden:15%-China:51%). $35 million. 04/07.

Yangzhou Yuanyang International Port Co., Ltd. (Jiangsu), a subsidiary of COSCO Pacific Ltd. (Hong Kong)
Signed letter of intent to develop and operate two berths at the Jiangdu and Yangzhou ports in Jiangsu. 04/07.

OTHER

Vietnam Shipbuilding Industry Corp./Yunnan Machinery Import & Export Co., Ltd.
Will jointly launch and operate a shipyard project. $200 million. 04/07.

Rail

CHINA'S IMPORTS

Nokia Siemens Networks (Finland), a joint venture between Nokia Corp. (Finland) and Siemens AG (Germany)
Won contract to provide a GSM-railway system in China. 04/07.

Raw Materials

CHINA'S EXPORTS

Sinoma International Engineering Co., Ltd. (Beijing)
Signed agreement to build a cement plant in Iraq for Mass Iraq for Industrial Investment Co. $127.4 million. 04/07.

CBMI Construction Co., Ltd., a unit of Sinoma International Engineering Co., Ltd. (Beijing)
Will build a cement plant for Tanzania Portland Cement Co. Ltd, a unit of Germany-based HeidelbergCement AG. $68.6 million. 03/07.

INVESTMENTS IN CHINA

Taiwan Cement Corp.
Awarded contracts to build two cement plants and two dock projects in Guangxi to Beijing-based Sinoma International Engineering Co., Ltd. $128.2 million. 04/07.

Kohlberg Kravis Roberts & Co. (US)
Purchased a controlling stake in Tianrui Cement, a unit of Henan-based Tianrui Group. 03/07.

Real Estate & Land

INVESTMENTS IN CHINA

JPMorgan Chase & Co. (US)
Purchased a 50% stake in Shanghai-based Big Profit Enterprises Ltd., a subsidiary of Hong Kong-based China Overseas Land & Investment Ltd. $67 million. 05/07.

Morgan Stanley Real Estate Fund, a unit of Morgan Stanley (US)
Purchased a 29.99% stake in Shanghai-based Shimao Property Holdings Ltd.'s Wuhan Shimao Splendid River project in Wuhan, Hubei. $130.8 million. 04/07.

Stora Enso Oyj (Finland)
Signed agreement to purchase 250 hectares of industrial land in Beihai, Guangxi. $36.2 million. 04/07.

ING Real Estate, a subsidiary of ING Groep NV (the Netherlands)/Gemdale Corp. (Guangdong)
Formed joint venture to develop a 64,900 m^2 residential project in Wuhan, Hubei. 03/07.

Retail/Wholesale

INVESTMENTS IN CHINA

Lifestyle International Holdings Ltd. (Hong Kong)
Purchased four retail stores in Dalian, Liaoning; Harbin, Heilongjiang; Qingdao, Shandong; and Tianjin. $97 million. 04/07.

Macquarie MEAG Prime Real Estate Investment Trust (Singapore)
Will purchase a 50% stake in Renhe Spring Department Store in Chengdu, Sichuan. $19.6 million. 04/07.

Parkson Retail Group Ltd. (Hong Kong), a subsidiary of Lion Diversified Holdings Bhd (Malaysia)
Purchased remaining 49% stake in Liaoning-based Anshan Tianxing Parkson Shopping Center Co., Ltd. from joint venture partner Anshan Tianxing International Properties Development Co., Ltd. $95.5 million. 04/07.

The Bear Stearns Companies Inc. (US)/Eagle Investment Group (Beijing)
Will form joint venture to invest in China's retail sector. (US:50%-China:50%). $500 million. 03/07.

OTHER

Herbalife Ltd. (Cayman Islands)
Received license from MOFCOM to operate a direct selling business in Suzhou and Nanjing, Jiangsu. 03/07.

Telecommunications

CHINA'S EXPORTS

ZTE Corp. (Guangdong)
Won contract to supply network expansion equipment to Zimbabwe-based Econet Wireless Ltd. 05/07.

Huawei Techonologies Co., Ltd. (Guangdong)
Will supply Central African Republic-based Société Centrafricaine de Télécommunications with next-generation networks and CDMA products and services. $1.5 million. 04/07.

ZTE Corp. (Guangdong)
Will build mobile networks for, and supply CDMA products and services to, Ethiopian Telecommunications Corp. $200 million. 04/07.

ZTE Corp. (Guangdong)
Won contract to set up Wi-Fi networks for Mexico City, Mexico. 04/07.

ZTE Corp. (Guangdong)
Won contract to build a backbone network in Rwanda and a network for Kigali, Rwanda. 04/07.

CHINA'S IMPORTS

Nokia Corp. (Finland)
Will supply mobile devices to Beijing-based China Postel Mobile Communications Co., Ltd. $2.5 billion. 05/07.

Sony Ericsson Mobile Communications AB (UK), a joint venture of Telefonaktiebolaget LM Ericsson (Sweden) and Sony Corp. (Japan)
Will provide mobile handsets to Guangdong-based Shenzhen Telling Telecom Development Co., a unit of Jiangxi-based Telling Telecom Holding Co., Ltd. $520 million. 05/07.

Sony Ericsson Mobile Communications AB (UK)
Will supply 5 million handsets to Beijing-based China National Postal and Telecommunications Appliances Corp. 05/07.

China Expert Technology Inc. (Hong Kong)
Won contract to construct an e-government system for Xi'an, Shaanxi. $48 million. 04/07.

Sitronics JSC (Russia)
Signed five-year contract to supply microelectronic products to Beijing-based China National Machinery Import & Export Corp. $75 million. 03/07.

CHINA'S INVESTMENTS ABROAD

China Mobile (Beijing)
Will acquire remaining 11.14% stake in Pakistan-based Paktel Ltd. 05/07.

China Netcom (Beijing)
Established an operation in Japan to allow Internet providers to use its Japan-China communications network. 04/07.

INVESTMENTS IN CHINA

Sun 3C Media plc (Ireland)
Will acquire Henan-based mobile services company, CEC-Unet Ltd. $9.4 million. 05/07.

Telefonaktiebolaget LM Ericsson (Sweden)/China Netcom (Beijing)
Signed agreement to build a commercial IP multimedia subsystem network in Beijing. 04/07.

OTHER

Global Marine Systems Ltd. (UK)/Huawei Technologies Co., Ltd. (Shenzhen)
Signed MOU to set up an undersea-cable joint venture. 05/07.

Ethiopian Telecommunications Corp./ZTE Corp. (Guangdong)
Signed three-year framework agreement to cooperate on various mobile network projects and CDMA services. 04/07.

Thuraya Satellite Telecommunications Co. (United Arab Emirates)/China Satellite Communications Global Ltd., a subsidiary of China Satcom Guomai Communications Co., Ltd. (Shanghai)
Signed agreement under which China Satellite will be the sole service provider and distributor of Thuraya space-based products and services. 04/07.

Tourism & Hotels

INVESTMENTS IN CHINA

MGM Mirage (US)/Diaoyutai State Guesthouse (Beijing)
Will form joint venture to develop luxury hotels and resorts initially in China and later worldwide. 04/07.

World of Warcraft/Blizzard Entertainment, Inc.

China's Online Video Game Wars

The Middle Kingdom is emerging as a vital new front in the battle for the global video games market

Richard Daniel Ewing

With more than $30 billion in total worldwide revenue and 15 percent annual growth last year, video game sales outpaced box office ticket sales, which reached $25.8 billion, for the second year in a row. Part of this phenomenal growth can be attributed to the recent release of next-generation gaming consoles that boast blazing performances and sleek new features by three major console companies—Sony Corp., Microsoft Corp., and

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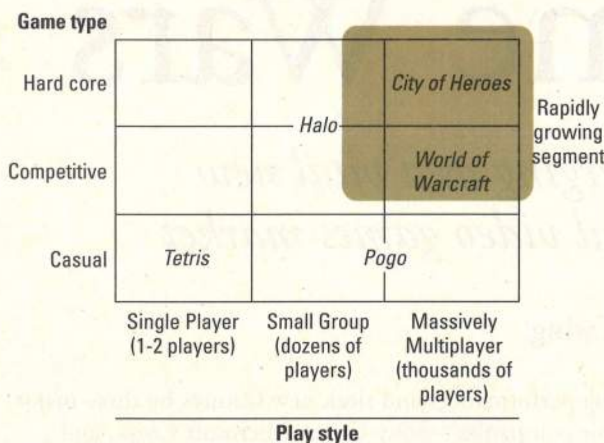
Nintendo Co., Ltd. In addition, massively multiplayer online games (MMOGs) are revolutionizing the global gaming market (see p.47). At the nexus of technology, entertainment, and social interaction—and with gross profit margins as high as 70–80 percent for major online game titles—the online gaming industry lies in the cross-hairs of a wider set of media companies.

No longer a backwater market for video games, China is emerging as a major battleground for foreign investors vying for the spoils of a market that in 2006 took in roughly $1 billion in revenue, a figure that could hit $2 billion by 2010, according to various estimates. China is currently on track to become the world's largest online video games market in the next decade and could surpass South Korea this year to take the top position in Asia.

Several factors are driving this market expansion. First, China has roughly 140 million Internet users, making it the world's second-largest market after the United States. Second, while China's current gamers—about 30 million according to various estimates—primarily use Internet cafés as their gaming gateway, home broadband access is expanding rapidly, with 77 million users in 2006, a 45.3 percent jump over 2005, according to the China Internet Network Information Center. Third, innovative new revenue models have dropped the initial product price for consumers, drawing more new customers. Finally, the quality of online games has improved dramatically in recent years, making them more appealing to a wider audience.

This new model—use your card and then throw it away—solved two of the biggest problems companies faced: high entry costs for customers and piracy.

Figure: Video Game Industry Matrix



Note: Casual games are simpler games designed for shorter periods of play; competitive games are moderately difficult with wider appeal; and hardcore games involve complex back stories, multiple plot lines, and generally better graphics.
Source: Richard Daniel Ewing

As China emerges as a pivotal market in the global video games industry, leading domestic companies, such as NetEase.com, Inc., Shanda Interactive Entertainment Ltd., and The9 Ltd., are facing intense foreign competition and are revamping their corporate strategies to fend off new entrants (see p.48). Meanwhile, global video game powerhouses, such as Sony, Microsoft, and Electronic Arts Inc. (EA), are establishing a foothold in the Chinese market. US companies, such as the Walt Disney Co., PepsiCo, Inc., and the Coca-Cola Co., are also leveraging this market to pursue their own growth strategies, primarily through marketing alliances. For example, Pepsi and The9 plan to jointly launch *Guild Wars*, one of The9's new titles.

Development of the Chinese gaming market

In the 1990s, the Chinese video games market was unprofitable and grew slowly. Rampant piracy, low per capita income, and strict government regulations on foreign companies made the market unattractive for game companies. In addition, the business model used in developed markets stalled in China because companies relied on sales of game cartridges to make a profit. Most Chinese consumers could not afford the consoles or personal computers (PCs) needed to play the games.

In 2001, an innovative business model dramatically lowered gaming costs. Departing from traditional approaches, companies such as Shanda began selling online gaming time on pre-paid cards. Games are hosted on secure company servers and accessed from Internet cafés. This new model—use your card and then throw it away—solved two of the biggest problems companies faced: high entry costs for customers and piracy. With customers paying only a few cents per hour, the new model immediately and dramatically widened the customer base. Moreover, piracy was largely eliminated because the content was maintained on secure corporate servers. Companies could also interact directly with consumers, gain customer information, and update game content based on customer input.

The success of this business model has steered the market toward MMOGs. Unlike in developed markets, China's video game revenue is primarily generated by online games. In 2006, 90 percent of China's 37.5 million gamers played online games, which took in $995 million in revenue,

according to Niko Partners. (The remaining 10 percent were PC-based games, consoles, and handhelds.)

Chinese video game players focus mostly on role-playing games in which they create and direct fantasy characters. Over time, this market could broaden to include other genres such as first-person shooter games, sports games (popular in North America), racing games (popular in Japan), and casual games (see Figure). The importance of China-specific game content remains unclear. On one hand, NetEase, the current market leader, has developed a series of successful games, such as *Fantasy Westward Journey*, based on Chinese mythology. On the other hand, major titles such as *World of Warcraft* (*WoW*) have no Chinese-specific elements but are also popular. Game design and playability appear to be more important in attracting consumers than culturally relevant content.

Global competition

The explosion of China's gaming market has awakened major international companies, which are now developing new ways to incorporate China into their global strategies. The China market, however, does not play to those companies' traditional strengths in console games and sports-themed franchises, thus pressuring them to adapt and build new online capabilities such as sophisticated software for multiplayer access.

EA is the world's largest video game company with a market capitalization of $16 billion and roughly $3 billion in annual revenues mostly from North America and Europe. Historically a powerhouse in console gaming, EA has had limited experience in the China market. Over the past year or so, however, EA has taken a series of steps to strengthen its position in the China market. First, in June 2006, it acquired Mythic Entertainment, Inc., a Virginia-based online game developer with several important new titles in development (*Warhammer Online* and *Dark Age of Camelot*) and a stake in Neowiz Corp., a South Korean developer. These acquisitions are aimed at building online gaming development expertise and securing popular new titles for distribution in China and other markets. Second, EA hired Vivendi Universal Games' (VUG) former head of video games for Asia Hubert Larenaudie, one of the key executives behind *WoW*'s successful expansion into China. Third, EA last year opened a new game development facility in Shanghai with more than 100 developers to spearhead the development of online content for local and global distribution. Fourth, EA has agreed to license mobile content and several of its titles, including *FIFA Soccer*, *NBA Live*, and *Harry Potter*, to Beijing CITVC Netempire Entertainment Co., Ltd., its joint venture with China Central Television. In July 2006, EA also licensed *Tales Runner* to South Korea-based Nowcom for distribution on the mainland. Finally, EA recently announced a $167 million strategic investment in The9 that will allow the Chinese company to become a portal for many of EA's global titles.

Video Games Industry Overview

The video games market can be roughly divided into two platform types: personal computer (PC)- and console-based platforms, such as Sony Corp.'s Playstation and PSP handhelds, Microsoft Corp's Xbox, or Nintendo Co, Ltd.'s Wii. In most developed video game markets, such as Japan, South Korea, and the United States, these two platforms dominate the gaming market.

Online video gaming is a relatively new segment that allows players to access game content through the Internet via PCs and, increasingly, consoles. Game participants compete in virtual worlds populated with thousands of players. Within each of these platforms, game content ranges from the simple to the highly elaborate.

Three major forces are transforming the global video games industry. First, massively multiplayer online games that involve thousands of simultaneous players are reshaping the industry because these games challenge traditional retail models. This genre of games allows a large number of players to interact and creates social networks among players as well as valuable links among companies and consumers.

Second, competitive dynamics in the video game industry mirror those in the film industry. That is, single blockbusters, rather than a large portfolio of games, drive commercial success. Game development is growing more complex and expensive, and like Hollywood studios, video game companies are investing in costlier and more elaborate games in search of a chart-topper. In general, successful video games resemble motion pictures—a mix of global blockbusters with universal appeal and local titles for targeted audiences. This trend is attracting creative talent, particularly famous actors, writers, and even directors, who have collaborated on new game titles. For example, Chinese director Chen Kaige has teamed up with Shanda Interactive Entertainment Ltd., and George Lucas is working with Electronic Arts Inc.

Finally, as traditional media are finding it harder to connect with their target audiences, advertisers and companies are exploring new ways to attract customers. Given their strong appeal to several key demographics, video games are drawing interest from major advertisers for in-game advertising and cross-promotional linkages. For example, The9 Ltd. recently formed a marketing partnership with the Coca-Cola Co. that will include in-game advertising in the *World of Warcraft*.

—Richard Daniel Ewing

Other global companies are following EA's lead. The Walt Disney Internet Group, for example, partnered with Shanda in May 2006 to develop new web-based games that include Disney characters. Meanwhile, Sony and Microsoft are both seeking to develop the game console market. In October 2006, Microsoft opened an Xbox 360 incubation center in Chengdu, Sichuan, to help third-party developers create games that are compatible with the Xbox Live Arcade game platform. Sony moved production of its new Playstation 3 to China to ensure sufficient supply for its global debut and is working with local developers on new online games for the China market. VUG, Blizzard Entertainment's parent company, recently purchased a game development studio in Shanghai.

Gaming industry challenges in China

Development issues

Long a hardware manufacturing center, China is now becoming a major hub for game software development. To lower costs and tailor games to the Chinese market, more than 100 video game development centers have sprung up. Companies are looking to tap the pool of skilled and relatively inexpensive talent to design games that suit the tastes of Chinese players. One of the most important studios is France-based Ubisoft Entertainment SA's Shanghai operation because it has a large number of experienced developers—about 500—and global hit titles—*Ghost Recon* and *Splinter Cell*. Though low-cost and talented programmers are plentiful in China, experienced game developers are

The Players

Three Chinese gaming companies dominate the domestic market: Shanda Interactive Entertainment Ltd., The9 Ltd., and NetEase.com, Inc.

Shanda

Founded in the 1990s, Shanda initially struggled as a software company, but in 2001, after it won the rights to license a popular South Korean game, *Legend of Mir II*, its business exploded. This success led to the company's NASDAQ initial public offering in 2004 and a series of acquisitions.

Faced with dwindling interest in its blockbuster titles and heightened competition, Shanda embarked on a radical new strategy in 2005 to become a global entertainment company. First, Shanda launched an Internet-based home entertainment system called EZ Pod. It also took a page from South Korean online gaming companies by abandoning the subscription-based model and freely distributing games. Shanda now charges for in-game items and upgrades. Although initially unprofitable, this new business model has picked up steam. Finally, Shanda expanded its strategic alliances by acquiring a stake in China's leading web portal Sina Corp., by striking licensing agreements with foreign companies such as Bethesda Softworks LLC for new game content, and by entering into a major deal with Motorola, Inc. to offer games on customized handsets.

The9

The9 recently rocketed onto the gaming scene with a wildly popular title: *World of Warcraft* (*WoW*). In a move similar to that of Shanda, The9 obtained a license for Blizzard Entertainment's *WoW* in June 2005. With millions of subscribers worldwide, *WoW* has become the most successful online video game in history and boasts more than 3.5 million subscribers in China alone. *WoW*, which smashed industry opening-day sale records in China, has been a runaway success for The9, raking in 99 percent of its $126 million revenue in 2006, according to a company press release. Riding the momentum from *WoW*'s success, The9 has expanded its game suppliers network and secured licenses for several premier foreign titles, including *Hellgate: London*, *Guild Wars*, and *Granado Espada*.

NetEase

Originally established as an Internet company, NetEase has recently become the leading domestic online gaming company by releasing several big hits based on traditional Chinese mythology. Its top-selling games are *Westward Journey* and *Fantasy Westward Journey*, which enjoy 1.3 million and 0.5 million peak concurrent users, respectively. With a strong stable of in-house games, NetEase is hoping to strengthen its position as a market leader and is pushing to further segment the market into urban and rural markets.

—*Richard Daniel Ewing*

The Top Three Video Game Companies in China

Company	2006 revenue ($ million)	Percent growth over 2005	Main titles	Upcoming releases
Shanda Interactive Entertainment, Ltd.	198	-7	*Legend of Mir II* *World of Legend* *Magic Land*	*ChangChun* *Evil Inside—World of Legend* *Kung Fu Masters* *LaTale*
NetEase.com, Inc.	238	35	*Fantasy Westward Journey* *Westward Journey* *Datang*	*Tianxia II* *Westward Journey III*
The9 Ltd.	126	112	*World of Warcraft*	*Guild Wars* *Hellgate: London* *Huxley* *Ragnarok* *Soul of the Ultimate Nation*

Sources: NetEase.com, Inc.; Shanda Interactive Entertainment, Ltd.; and The9 Ltd.

harder to find. Thus, development studios in China must focus on upgrading their talent before they can truly challenge the established centers located outside of China.

Operational issues

The PRC government's major role in shaping the gaming industry affects all participants, particularly in terms of market access. Foreign companies say that regulatory unpredictability and myriad approvals have delayed their entry. For example, the government has focused on limiting the duration of game play in response to reports of video game addiction and other health concerns linked to excessive gaming. Companies must now include "fatigue" controls in their games to halt game play after several hours.

The government has also taken other measures to regulate the industry. Recently, the government announced that it may regulate the sale of virtual items (items that exist only in virtual reality but are sold for real money) and the exchange of in-game currency for renminbi, an increasingly important source of revenue for players and game companies. (Although the United States has not restricted the conversion of online currency, it has grappled with the issue of online games that provide virtual havens for illegal activities such as gambling.)

In addition, the government is reportedly backing a new video game to promote patriotism and combat the perceived foreign influences of video games. In *Chinese Heroes*, developed by Shanda, players compete by doing good deeds and can choose to be Lei Feng (the Maoist-era model soldier), Zheng Chenggong (a sailor who seized Taiwan from the Dutch in 1662), or other heroes. Interest in this game appears tepid, however.

The evolving industry

Though the future of this rapidly expanding and increasingly competitive sector is uncertain, several trends could shape the Chinese gaming market in coming years. First, Chinese firms will likely develop more content in-house and rely less on licensing. Growing numbers of domestic game programmers and increasing professionalism in the sector will support this shift. These changes, however, will take place gradually as the creativity and experience of game designers rise to global standards.

Second, Chinese companies could become major game exporters to Asia and the rest of the world. Games such as Kingsoft Corp.'s *Perfect World* are already entering the Japanese and South Korean markets.

Third, the integration of online and mobile gaming should add a new component to the industry, especially as the appeal of casual games grows. China is the world's largest mobile phone market, so success there should prove wildly profitable.

Finally, the combined success of online gaming, its appeal to young consumers, and its growing importance to the entertainment industry will make this sector a key area for a broad range of consumer companies. From fast food to consumer electronics, companies will likely forge a series of major advertising and strategic alliances in the years ahead. To succeed in this dynamic environment, domestic and foreign companies must carefully pick their winning titles, build a franchise around these products, and continuously fine-tune their approach to Chinese consumers by tailoring products to diverse market segments. The only constant in this industry is change. 完

Development studios in China must upgrade their talent before they can truly challenge the established centers located outside of China.

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Hong Kong 10 Years On

Ten years after the return of Hong Kong to China, the city highlights its advantages in the face of increased competition from the Mainland

Evan M. Thorpe, Business Advisory Services manager at the US-China Business Council (USCBC) in Washington, DC, recently asked Margaret Fong, Hong Kong commissioner for Economic and Trade Affairs, USA, for her views on Hong Kong's trade and investment environment. The following article consists of excerpts from the interview. For the full interview, see www.chinabusinessreview.com.

USCBC: July 1 will mark 10 years since Hong Kong's return to China. What are the top three changes in Hong Kong since then, particularly in the business environment?

Fong: First, Hong Kong has developed a more robust financial sector over the past 10 years. This happened in the wake of the Asian financial crisis, which occurred soon after the handover. Hong Kong wanted to make sure its financial system was up to new challenges. In the wake of calls for heightened financial reporting standards, Hong Kong introduced a financial reporting council, which highlights the importance Hong Kong places on transparency. The Hong Kong stock market's listing rules are on par with the highest global standards. In addition, Hong Kong's financial sector was the first to implement the international BASEL II risk management standards. The standards, which took effect on January 1, 2007, improve the financial services sector's ability to manage risk effectively.

Second, Hong Kong has experienced major infrastructure developments in the last 10 years—including the addition of the new Hong Kong International Airport (HKIA), Container Terminal 9, and a major telecom framework in which all commercial and residential areas have broadband Internet access. Also, HKIA now has a capacity of 87.5 million passengers and processed 44.5 million passengers last year; the old Kai Tak Airport had a design capacity of 24 million passengers. Air cargo throughput grew from 1.8 to 3.6 million tons over the past 10 years, and Hong Kong is currently the world's top international air cargo handler in terms of volume. Throughput of container cargo has increased from 14.4 million TEUs [20-foot equivalent units] in 1997 to 23.5 million TEUs in 2006.

Third, the 2003 signing of CEPA [Closer Economic Partnership Arrangement], Hong Kong's free-trade agreement with the Mainland that took effect on January 1, 2004, was a major development. Mainland China is the world's single largest market. It is a major advantage for Hong Kong to have access to this market under favorable terms and to receive this access before others. CEPA is a broad agreement that allows goods under 1,448 tariff codes, covering all products currently manufactured in Hong Kong, to enter the Mainland tariff-free and liberalizes 27 service areas. For example, if a foreign bank wants

to set up a branch office in the Mainland, it needs $20 billion [US dollars are used throughout this interview] in assets per branch. But if the foreign bank goes through Hong Kong, under the CEPA agreement the bank needs just $6 billion per branch. CEPA is important and relevant because it is nationality-blind. As long as a company is incorporated in Hong Kong and is a certified Hong Kong service provider, it can enjoy CEPA benefits.

USCBC: Mainland China's rapid development has brought new challenges to Hong Kong's commercial positioning. Please describe some of these challenges and how the city is meeting them. What are Hong Kong's strengths and weaknesses?

Fong: Because some companies are entering the Mainland directly nowadays, Hong Kong officials and businesspeople ask, "How will Hong Kong continue to play a key role as the gateway to China? How are we going to maintain Hong Kong's position as a financial, trading, and logistics hub?" Hong Kong responds to these questions by looking for ways to keep developing and to work more with not just the Mainland market, but with global markets. Statistics on IPO [initial public offering] listings and growth of investment from US companies in Hong Kong to access the Mainland affirm this. Compared to 1997, capital raised in IPOs tripled to $42.9 billion in 2006, making Hong Kong second in the world after London.

In terms of strengths, Hong Kong wants to ensure that transparency in the SAR [the Hong Kong Special Administrative Region] is of the highest international standard. We want investors to be at ease and to have complete confidence in doing business in the city. Hong Kong is also striving to invest further in its infrastructure—to improve the airport and increase air cargo and passenger capacity. In addition, Hong Kong's talent pool is experienced in international trade. The SAR continues to invest to ensure that the biliterate and trilingual workforce remains competitive: 25 percent of its annual budget goes to education, and 20–30 percent of the students in Hong Kong's three most established universities are international students.

The Hong Kong government always seeks to add value to what the SAR can provide. To fulfill its role as a responsible player in the global fight against terrorism, Hong Kong was among the first to sign on to the Container Security Initiative. Hong Kong is not just a place to do business, but is also a place where companies have confidence in the business conditions in which they operate. Above all, Hong Kong always goes back to the core values that are the foundation for the city's economic success: its commitment to the free flow of capital, information, and people; clean and efficient government; rule of law; transparency; free trade; and a level playing field for all.

Margaret Fong, Hong Kong Commissioner for Economic and Trade Affairs, United States of America

HKETO

As commissioner to the United States, Margaret Fong is the most senior representative of the Hong Kong Special Administrative Region government in North America. Based in Washington, DC, she directs all of the Hong Kong government's economic development, trade policy, and constituency-building activities in the United States and supervises the work of the Hong Kong Economic and Trade Office (HKETO) in Washington, New York, and San Francisco. Prior to her appointment as commissioner, Fong was director general of HKETO in Washington. In this position, she was responsible for US-Hong Kong bilateral trade relations and relations with the US Congress, prominent think tanks, and the business community.

USCBC: Mainland China's distribution facilities, particularly its ports, have vastly improved over the last 10 years. In addition, Shanghai seems to aspire to be the financial center of Greater China, and the Mainland's real estate sector is booming. These three sectors have been pillars of growth in Hong Kong for decades. How is Hong Kong maintaining its competitiveness in these sectors? What new frontiers or other sectors present opportunities for Hong Kong?

Fong: It boils down to Hong Kong having extra value added in these three and other sectors. In terms of logistics, Hong Kong isn't just looking at the number of cargo boxes it handles—there will come a time when, because of their sheer size, Mainland ports will handle more. Instead, Hong Kong is looking at the number of cargo boxes and thinking about where companies do their branding and consumer, legal, and financial services. Hong Kong handles the whole supply chain.

Regarding financial services, Hong Kong is on par with the best financial standards. Earlier this year, Hong Kong abolished the estate duty and exempted offshore funds from profits tax—two measures that add to Hong Kong's attractiveness as Asia's leading asset management center. In the financial sector, transparency, free flow of information, and a freely convertible currency are keys to success. In real estate, Hong Kong takes the same approach: It makes sure that the property sector is well regulated. And with CEPA, not only does Hong Kong act as the gateway into the Mainland, Mainland companies see Hong Kong as the launching pad to go international—this is a two-way street.

We are also reaching out to the Middle East, Southeast Asia, and other markets. We are always on the lookout for

more opportunities. Plus, new strengths are emerging in Hong Kong—such as biotechnology—and Hong Kong can capitalize on its existing expertise to develop new sectors, such as arbitration and design.

USCBC: How might Hong Kong's importance as a global financial center evolve as China loosens controls on its currency? How will this affect its positioning in the Mainland domestic financial services market?

Fong: If you step back just 30 years to when Hong Kong became a financial center, though not yet a global center, market capitalization of the stock exchange was $11 billion, and annual turnover was $1.3 billion. Today, the same turnover can happen in an hour. At the end of 2006, market capitalization reached $1.7 trillion, and annual turnover was above $1 trillion. Hong Kong has developed quickly, and compared to 30 years ago, the depth of its financial market has grown substantially. Good, transparent rules are required for a robust financial sector. Responses of the Shenzhen and Shanghai stock exchanges following recent central government moves are different from those of the Hong Kong stock market. The impact of central government actions on Mainland markets was huge, but for Hong Kong, it resulted in only a blip. It takes time to build not just the institutions but also a base of experienced investors. This holds true not just for the stock market, but also for other financial institutions. Seventy-one of the world's top 100 banks are located in Hong Kong, and this number is rising.

Hong Kong is the only place outside of the Mainland that conducts renminbi (RMB) business. Not just on the credit side, but now also on the debt side (RMB-denominated bonds can be issued in Hong Kong by authorized Mainland financial institutions). Down the road, Hong Kong will be in a good position because it already offers real-time settlement in euros and US dollars. Once the RMB reaches real-time settlement, Hong Kong will be the only place that can deal in the RMB, euro, and US dollar. This gives Hong Kong a head start [on global currency markets] and puts it in a competitive position vis-à-vis the rest of the world. Hong Kong is not just looking at its role as a robust center for raising capital for China, but for the entire world. In the future, growth of listings will be large for the Mainland—and for the Middle East, Southeast Asia, and Australia.

USCBC: Hong Kong has benefited from the concentration of manufacturing in Guangdong. As costs rise for companies located along China's coast, companies are beginning to move inland. How will Hong Kong companies cope as manufacturing starts to shift inland? Are inland cities beginning to develop as Shenzhen and Guangzhou have, and do you see them as new sources of demand for the types of services in which Hong Kong has expertise?

Fong: Hong Kong currently accounts for 60 percent of Guangdong's investment. But we have never just focused on Guangdong. Looking at today's figures, Hong Kong is responsible for 40 percent of FDI [foreign direct investment] into the Mainland (on a cumulative basis). Companies are also coming from all over China to raise capital in Hong Kong. Since 1993, when the first H shares began listing in Hong Kong, 367 Mainland enterprises have listed on Hong Kong exchanges. And since August 2004, it has been easier for Mainland companies to invest in Hong Kong and open branches. From September 1, 2004 to mid-2006, Mainland companies formed 603 new enterprises in Hong Kong, investing $3.9 billion. Over the past three years, more than 25 percent of the companies in InvestHK's annual surveys quoted CEPA as a key reason for setting up regional operations in Hong Kong. The many companies that accessed the Mainland under CEPA in the logistics, transportation, advertising, and other services sectors are not focused on one region of the Mainland, but are all over the country. Likewise, Hong Kong companies investing in apparel, textiles, plastics, and healthcare products are not all in Guangdong. Consequently, the Hong Kong government is not just looking at the Pearl River Delta region, but at all of China. Last year, the Hong Kong government added two offices in the Mainland—an office in Chengdu, Sichuan, and in Shanghai. Together with our offices in Guangzhou and Beijing, this allows broader coverage. InvestHK recently launched a campaign "On Your Mark, Get Set, Go" that will help private enterprises in seven key provinces, including Guangdong, to use Hong Kong as their gateway to expand internationally.

USCBC: How would you describe Hong Kong's sustained regional importance as a location for Asia-Pacific headquarters? How has Hong Kong built upon this foundation in the 10 years since the handover?

Fong: Hong Kong has always been attractive because of certain fundamentals: rule of law, clean and efficient government, free flow of information and capital, strong economic and telecom infrastructure, and transparency. Hong Kong is always looking at new services that it can provide to augment this. For example, Hong Kong wants to make its airport the most efficient in the region. The HKIA has 85 airlines that operate 5,600 flights per week to more than 150 destinations. Within four hours, passengers can reach almost any country in Asia from Hong Kong.

Hong Kong also has low and simple taxes, making it easy for companies to locate their headquarters there. In addition, it has high-quality international schools. According to 2006 figures, over the past 10 years, the number of firms with regional operations in Hong Kong

grew from 2,514 to 3,845—up 53 percent. The United States has been a large contributor to this growth. During the same period, the number of US firms using Hong Kong as the base for their regional operations grew to 889 from 481; 20 percent of all foreign firms in Hong Kong are US companies.

USCBC: Over the next 10 years, how will Hong Kong's role and business environment evolve? Which regional or China-based business functions will companies coordinate through Hong Kong offices 10 years from now?

Fong: Hong Kong has always had an external-oriented economy so it is sensitive to the nuances of global change. Versatility and the ability to seize new opportunities and develop the city as an investment hub for expansion in the region are important. Hong Kong will build on its relationship with the Mainland and other countries in the region. But we will also reach out to new markets, such as Eastern Europe and the Middle East, and strengthen our presence in Southeast Asia.

Hong Kong's niche is as an international financial, trading, and logistics hub. We will do everything to put Hong Kong at the cutting edge of these three sectors, in terms of regulatory standards, efficiency, and supply of quality personnel. For example, three US banks have come to Hong Kong with the specific target of launching into the Mainland, in addition to capturing the Hong Kong market. The insurance sector is similar. Also, earlier this year, DHL [DHL Express] and FedEx [Federal Express Corp.] announced multi-million dollar investments in Hong Kong to capitalize on growth in the region's trade. Distribution management and legal services boast many strengths and show growth potential too. Construction is another example; a US company has already used CEPA to enter the Mainland to capitalize on the many engineering projects related to the 2008 Olympics in Beijing and 2010 World Expo in Shanghai. Environmental services, which is growing rapidly in Hong Kong and the Mainland right now because demand is so high, and healthcare products and services also have huge growth potential. 完

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Smart meters and power storage

Chinese companies are also emerging in the markets for power storage, such as batteries and fuel cells, and smart meters—advanced meters that take interval measurements, automatically transmit data, and are capable of two-way communication between the point of electricity consumption and the utility. China is already the world's largest manufacturer of smart meters and batteries—two technologies that will be crucial for utility reform and advanced transportation, respectively. In addition, power storage will be critical to the success of renewables, which often need to be stored for peak use. China manufactures 75 percent of the world's meters, largely for export, but it will also become a market for smart meters, according to Peter Xiong, founder and CEO of Miartech, Inc., a global fabless semiconductor company with operations in the United States and China. Xiong says that pilot smart-grid projects will be launched this year in Guangdong, Hunan, and Sichuan.

Biomass

According to China's draft Renewable Energy Plan, by 2020 China aims to generate 30,000 MW of energy from biomass sources. A number of biomass and waste-to-energy facilities are coming online in China, but feedstock and transportation remain a challenge (see the *CBR*, May–June 2003, p.28). Canada's Richway Environmental Technologies Ltd. is building a facility near Xi'an, Shaanxi, with an exclusive biomass contract for corn straw, and is setting up a municipal solid waste facility in Qingdao, Shandong.

By 2020, China aims to generate 10 million tons of bio-ethanol and 2 million tons of bio-diesel, according to the draft Renewable Energy Plan. Ultimately, however, water problems may force China to adopt an import-focused biofuel policy, because food security is likely to take precedence.

Coal

Coal is indisputably the energy source most in need of clean technology. Cheap and plentiful, coal will be the most tempting energy choice for China as it grows rapidly. According to the NDRC's 11th Five-Year Plan (FYP) on Energy Development, in 2010 coal power will make up 74.7 percent of China's total power produced and 66.1 percent of power consumed—down only slightly from 76.5 percent and 69.1 percent, respectively, in 2005.

The country added a staggering 92,000 MW of coal-fired electricity generating capacity in 2006, about the same capacity as two Californias, according to Ogden. Last year, the carbon dioxide emitted from those coal plants alone exceeded the amount the European Union committed to cut under the Kyoto Protocol. To make matters worse, most of China's coal-powered plants are dirty (spewing forth nitrogen oxides, sulfur dioxide, carbon dioxide, particulate matter, and mercury) and use antiquated emissions systems. Because of a lack of central coordination, few, if any, of the new generating facilities are connected to China's grid, resulting in huge inefficiencies.

Though "clean coal" projects like FutureGen—a multinational initiative to design, build, and operate the world's first coal-fueled, near-zero emissions power plant—are still years from commercial viability, China has a huge need today for pre-burn coal technologies, says Robert Hanfling, senior vice president of Evergreen Energy Inc. Others, like Chris Poirier, the CEO of Coaltek Inc., agree, but he also cautions that "the power infrastructure system in China is inconsistent. We rely on a consistent source of high-quality line power and relatively high up time to be successful, so China presents a number of execution challenges that other markets don't." Both Evergreen and Coaltek offer pre-burn technologies.

Helping to build a more intelligent transmission grid in China is critical for achieving efficiency. Many of the new plants being built are not on the network and are running below capacity. To achieve the most efficient use of these plants, transmission and monitoring equipment needs to be upgraded (see the *CBR*, September–October 2005, p.16).

Nuclear energy

Though uranium is not a renewable source, the PRC government groups nuclear power with other clean energy sources. China has stated publicly that it will heavily promote nuclear energy and leapfrog into more efficient, safer nuclear technologies than those currently used in the United States—but that will take time. According to NDRC's FYP on Energy Development, in 2010 nuclear power will make up 1 percent of China's total power produced and 0.9 percent of power consumed, up slightly from 0.9 percent and 0.8 percent, respectively, in 2005.

It's not easy being green—but it's necessary

With new studies and estimates painting ever bleaker pictures of looming environmental disaster, the need to reduce pollution and GHG emissions has never been more urgent, and that sense of urgency among PRC leaders and senior business executives in China is increasing. China, as both a rising power and as one of the world's largest energy consumers and polluters, has a key role to play in mitigating the effects of climate change—as does the United States. China also has the ability to take previously unaffordable technologies and make them commercially viable. "This is the century for transition to sustainable energy, and China could be the low-cost provider," says Ogden. "China could help everyone get to a green energy future, but it's got to get the policies in place and be able to enforce them and support technology innovation and adoption." Foreign companies and investors stand ready to help with new technologies and investments. 完

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