China Market Insights:
One of the Biggest IT Growth Markets in the World

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China Economy 2011: Uncertain Times

Negatives

• Global economy is in a weak recovery mode
• RMB appreciation is expected to accelerate, potential impact to export trade
• Investment and export-dependent economic model lacks power to grow
• China GDP growth signals slowdown and fear of hard landing
• High CPI signals inflation, central bank further tightens the liquidity of money supply.

Positives

• Steady and rapid GDP/FDI growth
• Firm domestic demand will offset export slowdown
• Strong growth of fixed-asset investment
• Government's strong investment in industry upgrade, economic structure transformation and regionally balanced development
• GDP growth expected to remain above 8%-10% in the next four years vs. a worldwide average of 4% growth
Key Issues

1. What is the state of IT technology adoption and how big are IT opportunities in China?
2. What are the most promising technologies and local market insights in China?
3. What are the emerging opportunities in vertical markets and their business/IT priorities?
4. How can the best growth opportunities in China be exploited in the next five years?
IT Spending Forecast 2011 and Beyond

End-User IT Spending Forecast, 2008-2014

Millions of Dollars

Market Situation:
- 2011 IT market predicted to be $274 billion (i.e., 27% of the U.S.)
- CAGR (2010-2014) for IT spending: 10.6% vs. 4% in U.S.
- Highly competitive market, global vs. local players

Market Opportunity:
- Market shift to boost virtualization/cloud computing
- Government's strong push for ICT adoption, infrastructure expansion
- 12th five-year plan's strategic focus
- Industry upgrade and balanced regional development

IT Spending and Growth Rate 2010 ($M)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td>China</td>
<td>194,305</td>
<td>217,081</td>
<td>246,568</td>
<td>274,326</td>
<td>303,255</td>
<td>334,360</td>
<td>368,280</td>
</tr>
<tr>
<td>U.S.</td>
<td>956,920</td>
<td>931,605</td>
<td>972,846</td>
<td>1,008,330</td>
<td>1,047,369</td>
<td>1,090,045</td>
<td>1,135,469</td>
</tr>
<tr>
<td>China Growth Rate</td>
<td>12%</td>
<td>14%</td>
<td>11%</td>
<td>11%</td>
<td>10%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>U.S. Growth Rate</td>
<td>-3%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
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<td>4%</td>
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IT Hardware Market

Market Situation:
- CAGR (2010-2014) of IT hardware: 14.3% vs. U.S. 0.4%
- The No. 2 IT hardware market in the world and will get close to the U.S. market size within the next five years
- Client computing market size will exceed U.S. by 2013, major vendors are Lenovo, Acer
- Enterprise computing major vendors: IBM and HP
- Printing systems major vendors: HP and Canon
- Storage subsystems major vendors: EMC and IBM

Market Opportunity:
- Big data is highest growth engine for storage
- Client computing to grow more in rural and small cities
- Infrastructure upgrade and expansion
- Data center consolidation and transformation
- Managed print service (MPS) and commercial printing
- Cloud computing
**Opportunities**

- China is the biggest and fastest-growing software market in Asia/Pacific; CAGR (2008-2014) 14.6% vs. U.S. 8.45%
- Government policies promoting and supporting software industry grow the local and open source development community
- High-tech parks in Tier 1 cities support software industry development
- Local vendors compete more in enterprise applications (ERP/CRM/SCM), while foreign vendors have a strong foothold in infrastructure software area
- Government’s cloud initiatives will drive IT spending in applications redesign in cloud or virtualized environment.

**Threats**

- The government favors local software vendors over foreign vendors in government procurement
- Software piracy is still a very serious issue in China, more in the consumer and SMB markets
- The price-sensitive culture makes local software vendors with low-cost structures compete solely on price
IT Services Market

Market Situation:
- CAGR (2008-2014) for IT services: 17.6% vs. 5% in the U.S.
- No dominant player in the general market
- Customized and resource-intensive services
- Wait-to-see cloud computing delivery model

Market Opportunity:
- Government service economic initiatives in the 12th five-year plan
- Enterprises shift from hardware investment to productivity and operation efficiency
- Service vendors invest in portfolio standardization
- Market shift to cloud computing delivery model
- Lack of services experts and expertise in the market

Source: Gartner (March 2011)
Top Technologies and Adoption Status

As of July 2010

"Hype Cycle for ICT in China, 2010" (July 2010)
One China, Four Markets — Geographic Focus

2010 GDP (Billions of Yuan) by Province

- Guangdong, 4,547
- Jiangsu, 4,090
- Shandong, 3,942
- Guangxi, 1,950
- Henan, 2,200
- Sichuan, 1,690
- Zhejiang, 2,710
- Hebei, 2,020
- Liaoning, 1,750
- Henan, 2,200
- Zhejiang, 2,710
- Shandong, 3,942
- Jiangsu, 4,090
- Guangdong, 4,547

Provincial Economic Growth Plan Under the 12th Five-Year Plan

- Heilongjiang: 8%
- Jilin: NA
- Liaoning: 11%
- Shandong: 12%
- Zhejiang: 13%
- Jiangsu: 13%
- Guangdong: >13%
- Inner Mongolia: 11%
- Tianjin: 11%
- Hebei: 12%
- Shanxi: 12%
- Shandong: 12%
- Henan: 12%
- Hubei: 12%
- Hunan: 12%
- Jiangxi: 12%
- Anhui: 12%
- Fujian: 12%
- Hainan: 12%
- Shanghai: 12%
- Chongqing: 12%
- Sichuan: 12%
- Yunnan: 12%
- Guizhou: 12%
- Chongqing: 12%
- Xizang: 12%
- Qinghai: 12%
- Ningxia: 12%

Source: Published provincial document, Mar 2011
12th Five-Year Plan (2011-2015)

The 11th Five-Year Plan: 2006-2010
- Investment-driven
- Rely on exports
- High energy consumption and pollution
- Regional imbalance

The 12th Five-Year Plan: 2011-2015
- Consumption-driven
- Service/innovation on domestic market
- Energy efficiency and environmental protection
- Balanced regional development
# Government's 2011 Top Priorities

## Control inflation and stimulate domestic consumer spending

- Improve the agricultural products distribution network
- Improve infrastructures of rural, medium and small cities (i.e., commercial trade and logistics, culture, sports, tourism, GIS services, e-commerce, and broadband networks)
- Encourage private capital to enter into different industries, such as national facility, utility, finance, society services, etc.

## Transform economic structure and industrial restructuring

- Upgrade manufacturing: R&D, branding, energy efficiency, M&A, technology innovation, higher value chain...
- Foster strategic industries: ICT, broadband, triple-play, energy savings, environmental protection, clean energy, biotech...
- Improve energy and transportation infrastructure: clean energy and efficiency, transport hubs, services economic
- Foster new rural financial institutions, further develop the financial markets, regional balanced development

## Improve people's quality of life

- Make education a priority: fiscal input to reach 4% of GDP in 2012
- Invest more heavily in job creation and balanced income distribution
- Expand the rural pension system to cover 40% of the county, promote urban pension system
- Reform the healthcare system, reform public hospitals, increase insurance coverage, construct rural and community health stations, encourage private capitals in health
- Improve emergency response system and food safety inspections

### Analysis:
- Optimize logistics cost to construct logistics centers and chain stores
- Upgrade supply chain management
- Promote GIS, e-commerce and broadband services

### ICT sector: Broadband, "triple play" and "Internet of things," software and cloud
- Energy and environment: Clean energy, smart grid, energy savings, reduce pollution
- Industry relocation to Central and Western China
- Other sectors: FSI coverage, integrated transport hubs and service economy

### Education: Invest in education systems and highlights e-learning, etc.
- Government: The national connected employment network, social security, emergency response, public safety, food safety supervision system
- Healthcare: Supply and management of basic drugs, rural and community health station, public healthcare and hospital reform

Source: Published China Government 2011 Work Report
Localize Global Best Practices for China

Local Vendors' Growth Path

- From "low cost" to "good quality"
- From rural to urban
- From OEMs to branded
- From copycat to original design
- Labor in place to capital and technology focus
- From China to global

China's Market Is Highly Competitive

- Numerous local competitors, some getting really strong
- Customers are learning fast
- The market is fragmented and varied

Localize Global Best Practices to Success

- Design new products for China
- Follow your global standards of quality control and environmental protection
- Install global-class manufacturing processes
- Implement local geographic sales coverage
Emerging New Focus — FSI

Industry Development Trends

Banking
• City commercial banks prepare for IPOs and national coverage
• Chinese banks expand into the global market and foreign banks improve coverage in China
• Accelerate developing online business and new business (e.g., trust services, high-end banking services, mobile payment, etc.)

Securities:
• Expand domestic finance market and upgrade the capacity of futures and stocks exchanges
• Prepare for international stock exchange in China

Insurance
• Accelerate to offer integrated financial services
• E-insurance and collaboration with banks

IT Opportunity

Infrastructure upgrade: Expanding capacity and coverage will need huge infrastructure upgrade and expansions.

Cloud computing: Deploying virtualization and interested in cloud computing.

Multifunction IT system: Banks and insurers offer integrated financial services.

Application upgrade: Along with business expansion to enrich services and capacity.

Profits of listed banks (1Q08-3Q10)

Note: The number of banks increased from 14 to 16 since 2Q10.
Source: Financial report of listed banks
Emerging New Focus — Telecom

Industry Development Trends

- Three operators develop mobile Internet services; mobile payment is on the rise
- Promote the integration of triple-play network
- Deep dive in vertical industries to enhance "informationization" rate
- Expand network coverage into rural areas
- Enhance broadband strategy and upgrade infrastructure, especially access to the network
- Develop cloud services product and build out pilot cloud computing platform

IT Opportunity

**Network infrastructure:** Upgrade access and expand coverage to rural areas, 3G optimization, FTTH in 300 cities, digital CATV, satellite communications

**Mobile Internet:** Huge investment in infrastructure and lots of IDC build out, mobile payment systems

**Informationization:** Wireless city, smart city, smart grid, e-commerce, cloud computing platform, triple-play trials, video surveillance, remote metering, city management

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**Profit of Three Telecom Operators (1Q09-4Q10)**

- Total profit (¥ 100M)
- Growth (%)

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**Monthly New Subscribers 2008-2011 (Unit: 10K)**

- Mobile users
- Broadband users
### Emerging Focus — Government

#### Industry Development Trends

- Urbanization population will exceed 50% of total population 2010-2015, require resource-saving and emission reduction
- Smart city programs launch across China, 120 cities invested to build digital city, 53 as pilot
- Smart Grid construction by 2020, invest 17 billion yuan in 2010 and 30 billion yuan in 2011
- Smart Card adoption and development
- "Internet of things" draws attention
- National integrated government systems: pension, medical insurance, social and citizen services
- Healthcare reform plan to invest 850 billion yuan (2009-2011)
- Raise proportion of annual government education expenditures from 2.6% to 4% of GDP
- Strong push for adoption of cloud computing

#### IT Opportunity

- **Smart city and smart grid**: Various IT solutions, R&D center for trials, system integration, optical fiber by utility company
- **Smart card**: Development and system integration with various government systems.
- "**Internet of things:**" Pilot projects in city industrial parks and strong government R&D support
- **Healthcare**: Regional health integration IT platform, electronic medical record, HIS, remote telemedicine
- **Education**: Digital campus, CERNET, digital libraries, virtual labs, remote education systems, etc.
- **Cloud computing**: Government-led cloud computing city projects

<table>
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<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>GDP Growth</td>
<td>8%</td>
</tr>
<tr>
<td>More-sustainable economic growth</td>
<td></td>
</tr>
<tr>
<td>CPI Growth</td>
<td>4%</td>
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<tr>
<td>Stabilizing commodity prices</td>
<td></td>
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<tr>
<td>Job Creation</td>
<td>9M</td>
</tr>
<tr>
<td>Increase employment and promote social harmony</td>
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</table>
Emerging Focus — Manufacturing

Industry Development Trends

- Industry restructuring and relocation to promote high-end equipment manufacturing
- Five subsegments are the focus: aeronautics, aerospace, high-speed rail, marine equipment, smart equipment
- Electrical equipment manufacturing expand capacity in West and Central regions
- New-energy cars develop fast and M&A becomes the focus in the auto industry
- Government's 10 sectors "revitalization plans" increased manufacturing profits by 71.8% in 1H10, industry upgrading is ongoing

IT Opportunity

- **Top five application software**: BI/BA/CPM software, quality management systems, MES, SCM, CRM
- **Top five BI/BA/CPM provider**: IBM, HP, Microsoft, Oracle, SAP
- **Top five technology to invest**: cloud computing, unified communications, green IT, security, virtualization
- **Most-employed IT service provider**: HP, IBM, PricewaterhouseCoopers, Dell, Oracle

**Trends in High-End Equipment Manufacturing**

- Labor cost rising
- Upgrading
- Relocating
Emerging Focus — Transportation

Industry Development Trends

- National highway construction is rapid
- Heavy investment in intercity railways, 2.15 trillion yuan (2010-2012), 42 PDLs planned
- City subway construction is a hot item, 2,100 kilometers of subway lines are planned by 2015 in 22 cities
- Intelligent transportation system booms
- Investment in the aviation industry, and national plan to promote port upgrades

IT Opportunity

**Highway:** Tolling system, monitoring system, smart city, communication systems

**Port industry:** digital ports, Port EDI, Dock processing system, Logistics information platform, warehouse mgmt, etc

**Logistics:** Infrastructure upgrade, logistics public information platform, supply chain management, GPS, RFID, etc

**Others:** Video surveillance, unified communication, green IT, various vertical IT applications, etc.

Investment Growth of Subsegments — Total Growth of 27% (1Q10-1Q11)

- Railway: 46%
- Civil Aviation: 27.2%
- Highway: 22.4%
- Urban Public Transit: 21.8%
- Water: 9.5%

Source: China National Statistics Bureau
Recommendations

Next Monday morning
- Review your China strategy and business plan
- Re-evaluate existing China business model to capture the market shift

Near term (the next 12 months)
- Research the China market to capture the growth opportunities
- Redeploy resources to cover geographic regions

Longer term (the next five years)
- Redesign China business model to capture growth opportunities
- Localize products and services, management and marketing
- Consider adding local R&D and support resources
Related Gartner Research

- Market Insight: What IT Services Providers Need to Know About China's 12th Five-Year Plan
  Tina Tang (G00211601)

- Hype Cycle for ICT in China, 2010
  Jim Longwood, Denise Ganly (G00205573)

- User Survey Analysis: IT Spending by Manufacturers in China, 2010
  Kenneth F. Brant, Derry N. Finkeldey (G00205325)

- Survey Analysis: Cloud Computing Will Grow Quickly in China
  Vincent Fu (G00209574)

- Competitive Landscape: Servers, China, 2010
  Jennifer Wu, Uko Tian (G00175838)

- Market Insight: IBM's "Game Changer" in China Shows Channel Are Key to Success in SaaS
  Michele C. Caminos, Rolf Jester (G00174592)

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