



The ICT Market in China

China's ICT sector has grown rapidly due to the support of China's 12th Five Year Plan. By the end of 2012, the number of users of Internet and mobile phones has reached 564 million and 1.1 billion respectively, demonstrating the growth of the market for the ICT sector. However, although a catch up process on technical innovation capacity is taking place, the overall technical innovation capacity of the Chinese ICT industry is still weak.

The ICT industry covers a wide range of products and services, including telecommunications, hardware, software and IT services. European SMEs will find opportunities and niche markets in some of these sectors in China. However, due to complicated regulations and market barriers, EU SMEs may also encounter various challenges while entering the Chinese ICT market.

This report, updated in November 2013, highlights a growing number of opportunities for SMEs in China's ICT sector; in particular in the area of mobile applications, 4G, cloud computing and green ICT. Despite these new areas of opportunity, challenges remain, including issues surrounding Intellectual Property (IP) licensing and regulatory and administrative restrictions.

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1. Market size

According to data from MIIT (Ministry of Industry and Information Technology of the People’s Republic of China), the ICT market size in China reached USD 1.79 trillion in 2012 (compared to USD 746 billion for the European market in 2011)¹.

With the development of 3G, wireless and smart terminal technology, the Internet and mobile phone markets in China have been developing fast during the past ten years. By the end of the 12th Five Year Plan, 3G and wireless broadband networks are expected to cover most urban and rural areas, and 4G LTE² is set to be commercialised across most cities.

According to ABI Research³, the smart phone market in China will replace the USA market and become the world’s largest in 2013. MIIT published a report indicating that by the end of 2012 there were over 1.1 billion mobile phone users in China with 300 million of them using 3G technology.⁴ Internet users were 564 million by the end of 2012, spending on average 20.5 hours each week to access the Internet.⁵ But the penetration rate remains rather low compared to Germany, France or the UK, and therefore significant potential exists for further market expansion.

Figure 1 below presents the number of Internet users in China from 2009 to 2012⁶. Figure 2 presents number of the mobile phone users in China from 2009 to 2012.

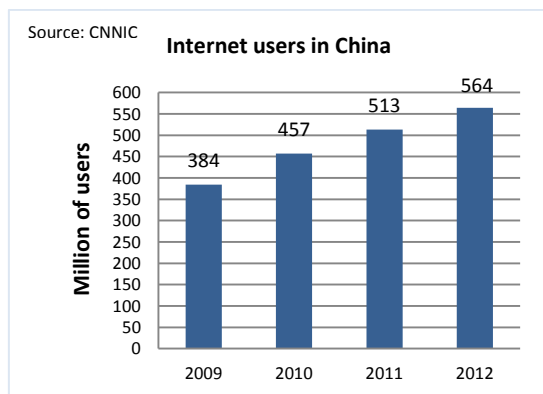


Figure 1: Internet users in China

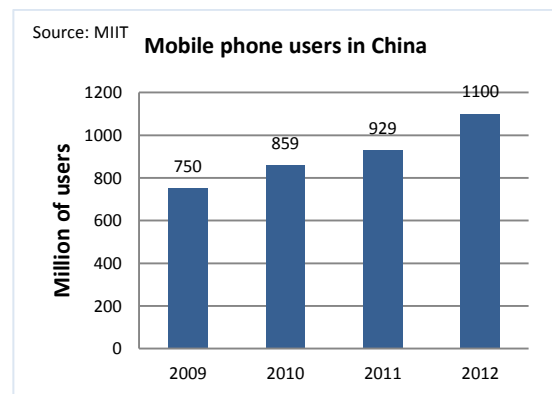


Figure 2: Mobile phone users in China

¹ <http://www.information-age.com/it-management/outsourcing-and-supplier-management/1629283/europes-ict-market-lagging-behind-us-asia>

² Long-term evolution: it is a standard for wireless communication of high-speed data for mobile phones and data terminals

³ <http://www.abiresearch.com/>

⁴ <http://www.forbes.com/sites/chuckjones/2012/12/27/china-cell-phone-market-and-market-shares/>

⁵ <http://www.emergingmarketsdirect.com/asia/china/china-telecommunication-industry-2h12/>

⁶ CNNIC: China Internet Network Information Centre

The data above demonstrates the tremendous development of mobile Internet in the past years. Internet users have moved from desktops to smart terminals and are starting to use different cloud services, which will bring significant transformation in telecommunication and other relevant ICT sub-sectors. The supply chain and business mode of the traditional ICT industry are starting to be affected and the traditional players are impacted by new players in the market with innovative technologies and new business models.

1.1 ICT sub-sectors

The ICT industry covers a wide range of products and services. This report mainly focuses on the following four sub-sectors: telecommunications, hardware, software and IT services.

Table 1 below presents these sub-sectors.

Table 1: ICT sub-sectors

ICT sectors			
Telecommunications	Hardware	Software	IT services
<ul style="list-style-type: none"> • Basic service and value added services • Telecommunications equipment 	<ul style="list-style-type: none"> • Computers • IT network equipment • Storage devices • Consumer electronics 	<ul style="list-style-type: none"> • Software Product • System Integration & Support • Embedded Software • Software related IT Consulting • Design & Development 	<ul style="list-style-type: none"> • Network services • System integration • IT outsourcing services • Maintenance and support services • IT consulting services • Education and training services

2. Key growth drivers

2.1 Strong support from government

Since 2000, the Ministry of Science and Technology has been supporting the Chinese ICT industry as a major national priority. The ICT sector is also one of the most important sectors in the Chinese National 12th Five Year Plan (hereafter ‘the Plan’). The Plan is considered as the most important document for enhancing economic and social development in China until 2015.

According to the Plan, the government will further encourage the construction of the next generation national information infrastructure. The key areas include next generation Internet, convergence of three networks (Internet, Telecomm and TV Broadcasting), the IoT (Internet of things), cloud computing, new display equipment, high-end software, high-end servers and information services. In the telecommunication sector, the policy of indigenous innovation has brought significant progress to the development of TD-LTE⁷, which paved way for the global next-generation mobile LTE system.

Published in 2012, the China National Broadband Plan announced that China will build the next generation information infrastructure to satisfy the increasing demands for data throughput. By 2015, to complete broadband coverage in both urban and rural areas, the penetration rate of fixed-line broadband will reach 50%, and the users of 3G and LTE will reach 32.5% of the total

⁷ TD-LTE: Time Division Long Term Evolution

mobile users. The speed of Internet connection in cities and rural areas will reach 20Mbps and 4Mbps, separately, and 100Mbps for developed cities. The gap of broadband infrastructure between China and developed countries will be decreased significantly by 2020.

2.2 ICT clusters

The cluster development of China has had its roots deeply set in the economic development and innovation transformation over the past decades. The Chinese central government has given all kinds of support to cluster development, and local governments have also provided support, such as providing favourable land/tax policies, enhancing local infrastructures, establishing industrial parks and trading places, organising trade fairs, supporting technology upgrade of enterprises, and coordinating the link between industry and research. Almost all the important ICT companies and start-up companies with leading technologies are connected with the ICT clusters, thus they can enjoy the favourable policies and also take advantage of the close cooperation with other companies in the same ICT cluster.

As an example, the Zhongguancun (ZGC) cluster in Beijing is supported by the government with favourable policies. There are a large number of universities and high-tech research and development centres in ZGC. Many researchers/professors established their own businesses that formed the largest IT services hub in northern China.

Zhongguancun Science Park (Z-Park) is the first high-tech industrial development zone, founded in 1988. Multinational and large domestic companies, such as IBM, Oracle, Lenovo, Baidu, Sina and Tencent set their R&D centres in Z-park. As a result, Z-Park fosters collaborative R&D activities and international technology transfer that had led to a rapid development of the ICT industry in China.

2.3 Development of cutting edge ICT technology

The ICT sector is always driven by new, leading technologies. The technologies of cloud computing, smart terminal, 4G LTE and 3D printing have made great progress. Cloud computing made a breakthrough with the rapid growth of the IoT. Smart terminals can easily access all information by connecting the mobile services. 4G is a successor to the third generation (3G) standards and it brings faster speed connection and better user experience. In addition, the 3D printer is one of the cutting edge technologies that can apply to many manufacturing related industries – excellent for making prototypes and customised tasks.

3. Market structure

3.1 Telecommunications

China's carriers in the telecommunications industry are dominated by the three state-owned companies, which are China Mobile, China Unicom and China Telecom. China Mobile is the world's largest mobile phone operator. The company currently has more than 650 million subscribers. China Unicom is China's second largest mobile phone services and telecommunications provider, and China Telecom is the largest fixed-line services and telecommunications provider in China.

Figure 3 and 4 present China's mobile subscribers and 3G subscribers in 2012.

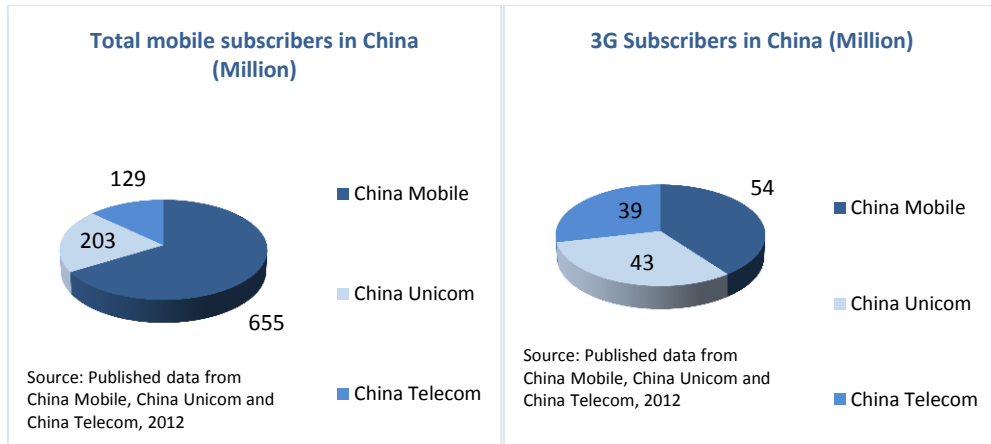


Figure 3: China's mobile subscribers

Figure 4: China's 3G subscribers

The comprehensive competitive strength of the three Chinese leading communication operators is equally remarkable. Communication equipment manufacturers, such as Huawei and ZTE, are the most important players in the domestic market.

According to the 12th Five Year Plan, the market of telecommunications will focus on several key fields, including optical fibre broadband, 4G LTE, cloud computing, IoT and the convergence of the three networks.

The 4G TD-LTE technology is promoted by China Mobile. In 2012, TD-LTE-Advanced was officially confirmed as a 4G international standard. China Mobile constructed the TD-LTE experiment laboratory networks in 15 cities in China, fully covering the major urban areas in Hangzhou, Shenzhen and Guangzhou, and carried out large scale diversified TD-LTE user experience activities. It is predicted that China's 4G telecommunication technology TD-LTE will be used globally by 2015 and will have 60 million TD-LTE subscribers by 2016.

The issuance of China 4G licence and commercialisation of networks will fuel the development of the Chinese ICT industry. Although the latest and the largest tendering of Chinese mobile 4G network construction mainly focuses on traditional telecom equipment, the construction of 4G network supporting systems (transmission network, operation management and data centre) will present enormous market opportunities for SMEs. Meanwhile, with about twenty times the speed and loading capacity of the 3G network, the 4G network will bring significant market potential for the mobile Internet industry. IDC expects the amount of IT investment under the influence of the commercialisation of the 4G network to reach \$33.6 billion in 2014 and \$46 billion in 2017.

3.2 Hardware

China has become the computer production base for the world for many years. It is also the largest market of computer products in the world. Growing demand from domestic and international markets has been driving the development of the hardware (computer, mobile, etc...) manufacturing industry in China. Chinese ICT production, including those for export, is mainly concentrated in the coastal region, namely Guangdong, Jiangsu and Shanghai.

Industry revenue is set to grow by 11.3% in 2013 to USD 236.5 billion⁸. The technology for mobile phone development has been improving rapidly in recent years, which drives new consumption demand and promotes the upgrading of products.

The Chinese government makes great efforts to support the development of computer technology, integrated circuit and display technology. For computer technology, high-performance computing, grid computing and intelligent computing technologies are the key technologies being promoted by the government; for integrated circuit, the key is to develop a core chip such as the SoC⁹ design technology, the MEMS¹⁰ technology and high-density integrated circuit; for display technology, it aims to develop such display components as LED, plasma, organic light emitting and projection technology.

3.3 Software

China's software industry has shown steady progression. In 2012, the total revenue of the software industry in China reached USD 400 billion, representing a year-on-year rise of 32.7%¹¹. Overall, China's software market is heavily dominated by domestic companies, while global software companies currently have an edge in the more high-end software sectors. Domestic companies are now catching up due to accumulation of experience, increasingly skilled talents, and government support. According to MIIT, the software industry can be divided into six segments: software product, system integration, operation service, embedded software, IT consulting and IC design.

Figure 5 below shows the percentage of revenue of China's software industry in 2011.

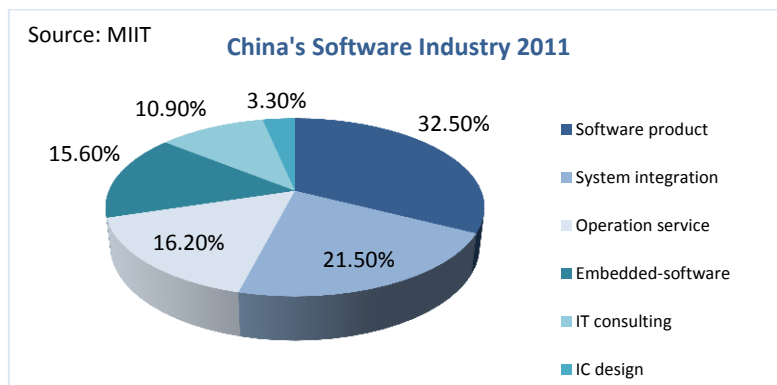


Figure 5: China's software industry

SaaS (software as a service) technology is an on-demand information technology trend. SaaS applications such as web conferencing and team collaboration activities have already occupied huge markets. Gartner predicted that China's SaaS market would embrace a rapid growth at a compound average growth rate of 28.9% from 2009 to 2014, reaching USD 336 million by 2014.¹²

⁸ <http://www.ibisworld.com/industry/china/computer-manufacturing.html>

⁹ System on a chip: an integrated circuit (IC) that integrates all components of a computer or other electronic system into a single chip.

¹⁰ Microelectromechanical systems: the technology of very small devices

¹¹ <http://www.researchmoz.us/china-software-industry-report-2013-report.html>

¹² APCO worldwide Market Analysis Report: China's Enterprise Software Industry

In 2012, there were over 28 thousand software companies (middle or large size) in China.¹³ The key software companies in China are Insigma, Langchao, Neusoft, UFIDA, Beyondsoft, Chinasoft and Hisoft. Moreover, multinational corporations (MNCs) with an established presence in China include Microsoft, Oracle, SAP and IBM.

3.4 IT services

China's IT services industry has developed rapidly in the past five years due to growing domestic demand and government support. Industry revenue is expected to total USD 100.4 billion in 2013, increasing by 9.0% from the 2012 value.¹⁴ Many Internet-based IT services, such as mobile apps, e-commerce, online gaming and cloud computing, have become more and more popular in China.

China's mobile app market is developing with the fast growing number of users of smart phones. Many apps have more than 100 million users, such as Tencent's WeChat, an instant messaging (IM) service on mobile. WeChat has gained beyond 300 million users in China at the beginning of 2013. The main functions of WeChat are very similar to the text messaging, voice call and video conference features that are provided by telecom carriers. And the rapidly increasing number of users is likely to reshape methods of telecommunication.

The Chinese e-commerce market is highly developed. There are 243 million e-shoppers in China with an annual increase of 30 million in terms of new users.¹⁵ In 2012, the turnover of Taobao and Tmall reached USD 163 billion. It is estimated that the total market size will exceed USD 800 billion in 2015.

Online gaming is one of the largest and fastest growing Internet businesses in China. It is expected to reach USD 8 billion in 2014. Driven by China's growing Internet and broadband coverage, these early actors have quickly become the major industry players with the highest revenues.

Cloud computing is also making huge progress and will drive forward the next growth cycle for the ICT sector. The number of users of cloud storage is predicted to reach over 200 million by the end of 2013. China is rapidly developing cloud computing, covering all relevant technologies and applications – cloud data centres, broad band usage, software services and terminal installations.

¹³ <http://www.miit.gov.cn/n11293472/n11293832/n11294132/n12858477/15136108.html>

¹⁴ <http://www.ibisworld.com/industry/china/it-services.html>

¹⁵ <http://marketingtochina.com/e-commerce-china/>

3.5 The ICT value chain and main players

While by no means comprehensive, Table 2 below presents the more visible ICT players in China.

Table 2: *ICT players*

	Network infrastructure suppliers	Network operators and service providers	Suppliers of computer /mobile hardware and software	Media, content providers, e-commerce platforms	ICT consultants and systems integrators	Web/app/game developers and design/marketing agencies	Distributors
Domestic	Huawei Datang ZTE Putian	China Mobile China Telecom China UNICOM China DBSAT	PC/Mobile: Lenovo Founder Haier Tsinghua Tongfang Components: Foxconn Tech-Com Xiaomi Meizu Software: Insigma Beyondsoft Chinasoft hiSoft Kingdee Neusoft UFIDA	Sina Baidu Sohu Tencent NetEase Youku Kaixin Ctrip Taobao Alibaba Jingdong Dangdang Vancl Yihaodian Laoshou Dianping Nuomi	Tsinghua Tongfang Great Wall PCCW	Shanda KongZhong The9 Limited NetDragon Giant Interactive Perfect World ChangYou	Digital China ECSCChina Unis Digital Highly IT Founder Changhong Xiaotong
Foreign	Alcatel Nortel Networks Motorola Ericsson Cisco Nokia Siemens	AT&T Verizon Vodafone	IBM HP Dell Apple Samsung Microsoft Oracle SAP, Cisco CDC Software	Google Amazon Eachnet (ebay) Groupon	IBM HP	OlgivyOne UbiSoft Electronic Arts Rovio	Ingram Micro

Among these players, the major losers include Google, Groupon, Amazon, Eachnet (ebay), HP, Nokia, ZTE and Dangdang (market share going down or even almost out of market) due to the dynamic environment and competition. While some other players, such as Samsung, Lenovo, Xiaomi, Meizu, Alibaba, Jingdong, Tencent and Baidu, became the new winners taking the market opportunities from the fast development of mobile Internet and smart terminals

4. Challenges in the market

Over the past ten years, Chinese ICT companies have been developing rapidly and their market shares in both domestic and international markets grew through competitive pricing strategies, aggressive exporting into third markets and rapid industry consolidation. In contrast, European SMEs have a comparative disadvantage in costs and are facing a number of barriers when trying to enter the Chinese market. These barriers are related to the legal and regulatory environment, the characteristics of the market and the dynamic business environment.

4.1 Legal and regulatory barriers

Regulatory and administrative restrictions

Regulatory and administrative policies are most heavily restricted in sectors that can be argued to be supplying public goods, for example, the telecommunication industry. Despite the market strength and some receptiveness from policy makers, the legal framework of the Chinese telecommunication market has further room for improvement to develop a fairer and more transparent market environment. Due to favourable treatment and a lack of accountability, the three major domestic players mentioned above in the industry operate outside normal market conditions without strong incentives for productivity, efficiency and innovation.

Moreover, a licence is always needed for the new players. For instance, OTT (Over the top)¹⁶ development in China has opened up opportunities for new players to enter into the communication services field. However, foreign players who intend to enter the OTT market (to get a licence) are restricted by the proportion of foreign shareholders. According to the regulation from MIIT, only Chinese, private-owned companies are qualified to apply for a licence. Foreign ownership is limited to 10% of total shareholding.

IPR licensing and infringement

European ICT companies have demonstrated that they are equally dedicated to the growth of R&D initiatives in China as domestic enterprises. A large percentage of European-invested ICT companies have built up R&D bases in China, which have made a significant contribution to China's own intellectual property rights (IPR) development.

However, China's IPR is still a big issue for most European SMEs. According to the European Chamber's Business Confidence Survey 2012, 81% of all respondents rated China's

¹⁶ OTT refers to a system for broadband internet delivery of video and audio without a multiple system operator being involved in the control or distribution of the content. "Skype" and "Wechat" are typical OTT applications through which users exchange voice messages without making phone calls.

enforcement of IPR laws and regulations as inadequate. Over the years, gaining market access in exchange for bringing foreign technology to China has been a successful bargain for many European companies. Unfortunately, some Chinese companies seeking to acquire foreign technology often obtain it from European companies either through inadvertent leakage of IP, or breach of agreements or Chinese law. Protection of IP through courts and other avenues in China remains mixed as the legal system continues to develop.

The China IPR SME Helpdesk provides first-line information, advice and training to SMEs to protect and enforce their IPR in China. Financed by the European Union, the Helpdesk's services are free for European SMEs and SME intermediaries, and include training events in China and Europe, online tools and materials, and tailored advice from their IP expert by phone, email or through the website at <http://www.china-iprhelpdesk.eu>.

Government procurement policy

The Chinese Government Procurement Law (GPL) was promulgated on January 1st, 2003 and it is administered by the Ministry of Finance (MOF). Despite the European public procurement market being very open to Chinese companies, the Chinese public procurement market is still challenging for EU SMEs to access. According to the GPL, there is very limited regulation of government procurement to refer to and it does not include the vast proportion of public procurement projects tendered by public entities and state-owned enterprises (SOEs) that are of public interest and/or use public funds. The policy has become a challenge for foreign companies' smooth operation in the Chinese market due to non-transparent drafting of the procurement catalogues of public tenders.

4.2 Market barriers

Market fragmentation

The Chinese ICT market is very fragmented in many aspects. For example, many companies find it difficult to connect with clients and business partners in other cities/provinces. Most of the business activities are still concentrated in the coastal provinces, but there is a trend for companies and business activities to move towards inland areas.

High competition

The development of the Chinese ICT market is extremely fast and the competition is fierce. Cheap price and efficient work are two major competencies in the industry. Apart from Chinese companies, EU SMEs also face increasing competition from other international players.

Indigenous innovation

The Chinese government encourages the lawful and legitimate transfer of technology while at the same time supporting innovation by Chinese companies, otherwise known as 'indigenous innovation'. The policy aims at promoting the development of domestic technologies and IPR owned by Chinese companies and decreasing dependence on foreign technologies. In some public procurement projects the products with IPR owned by Chinese companies are a priority.

4.3 Operational barriers

Human resources management

Human resources are often seen as the number one challenge for foreign companies, particularly for SMEs, in China. The most important stages of employment are to hire and to retain loyal and dedicated staff in key positions. The turnover of staff in the ICT industry is much higher than average, particularly for the positions of middle-level engineers and project managers with good industry knowledge and technical skills. Companies need to take into consideration the amount of time that is needed to find experienced and capable managers/staff for the local entity in China. The rapidly growing labour cost also makes the recruitment process more difficult.

Rise of office rent

In line with the general trend of increasing property prices in China, office rent in China has risen dramatically in recent years. Some companies have reported an increase of over 50% since 2008, especially in the first-tier cities such as Beijing and Shanghai. Such huge and unexpected rise in office rent has inserted enormous pressure on European SMEs during the process of establishing and maintaining business operations in China. Although companies within an ICT cluster may receive subsidies for rent, the high rent is still a big challenge for European SMEs.

5. Opportunities for EU SMEs

5.1 Niche markets

Mobile application

With over a quarter of the Chinese population accessing the Internet through mobile phones, the demand for mobile apps is huge. According to data collected by Guohe, a Chinese mobile advertising firm, 48% of iPhone users and 36% of Android users spend two hours or more using apps per day.¹⁷ Those apps include online games, marketing tools for retail business, city navigators, e-business, news readers, etc.

IT outsourcing

China's efforts in becoming a future IT outsourcing powerhouse are supported by central and local governments. Many science parks were built in different cities with a focus on outsourcing services. Within these parks, both foreign and Chinese companies can enjoy favourable policies (subsidies, tax rebate, etc.). In addition, for well-established European companies in China, who need to outsource part of their business process, the parks also provide a great market potential.

¹⁷ <http://www.china-briefing.com/news/2012/07/24/chinas-mobile-apps-market.html>

Enterprise private clouds

Large companies in China are increasingly seeking enhancement of their management information systems through the construction of enterprise private clouds. As cloud computing technology matures and the rate of user acceptance increases, the technology of enterprise private clouds will be a key field for large companies in the next few years, which provides great opportunities for SMEs with technology advantages in this field.

4G LTE

The Chinese government aims to grant 4G LTE licences by the end of 2013. Although large companies will occupy a big market share, in particular for equipment procurement, SMEs will still have opportunities to provide small equipment, components, software and other supporting systems.

Internet of things (IoT)

The concept of sustainable development has greatly influenced the policy-making of the Chinese government. In the IoT field, the Chinese government has realised the huge potential benefits of energy efficiency through smart metering, which offers a special opportunity for European SMEs. Such applications are characterised by network embedded systems, for example application specific microprocessors. In the area of customised application microprocessors, many EU SMEs are owners of cutting-edge technologies.

Green ICT

ICT infrastructures have been identified as a key element in global strategies for sustainability across society. Green ICT goes on to address how the use of smart technology could make many other processes more efficient. According to forecasts from McKinsey, smart technology and application could reduce 15% of carbon emissions, which is very important for China's sustainable development in the future. Green ICT technologies and products (smart meter, smart grid, smart sensors, etc.) will have great potential in the next years.

5.2 Opportunities by region

China is not just a single market, and it is important to understand more about the difference in each regional market. For example, Hangzhou and Suzhou have witnessed heavy investments in their telecommunication infrastructures; Dongguan is one of the most important locations for computers and telecommunication equipment manufacturing; Xi'an and Wuhan have strong ICT clusters (Optic-electronics); and IT outsourcing centres include Tianjin, Dalian, Hangzhou and Chengdu.¹⁸

In recent years, ICT production has focused on computers, intelligent televisions and mobile phones. Guangdong is an important manufacturing centre for electronic and information products, housing the headquarters of two giant companies, namely Huawei and Foxconn. As

¹⁸ Summary China Regional Cities

the top telecommunication province, Guangdong contributed to 11% of the total number of national telephone users as well as Internet users in 2011, according to data from MIIT.

Zhongguancun in Beijing is the hub of top universities and high concentration of R&D organisations. Many science parks have been created around Zhongguancun with support from both central and local governments.

6. Practical advice to EU SMEs

SMEs are recognised as a key source of growth, entrepreneurship, innovation, competitiveness and employment in Europe. At the same time, they typically have access to fewer resources than larger companies to address the complexities and risks of entering a new market. Although the Chinese ICT market is very attractive to EU SMEs, the challenges and difficulties faced by European businesses entering it should not be underestimated. Below is some practical advice for SMEs to approach the market:

Understand the market

The Chinese domestic ICT market is as dynamic as the global market, though even more complex. Many companies decide to expand their businesses in China without doing much market research. This relative unpreparedness often causes failure and deception. However, the difficulties are greatly reduced once the company puts enough effort in to understanding the market – the specific ICT market the company is going to approach in terms of government regulations, standards, customers, distribution, competitors, etc. A good start would be to consult experienced support organisations, such as the local chamber of commerce, trade association, or well-established consulting firms with local knowledge and proven networks. The EU SME Centre has published a diagnostic toolkit entitled “Are you ready for China?” which provides a step-by-step introduction to the Chinese business environment allowing SMEs to gauge their preparedness in doing business in China. The documents can be downloaded from the Centre’s website at: <http://www.eusmecentre.org.cn/content/diagnostic-kit>.

Be present in the market

To understand the market does not mean only reading a market research report. To approach the Chinese ICT market, the companies have to be in the market, which means they have to visit China several times per year at least and talk with the players in the market – industrial associations, potential partners, customers, competitors, investors, research firms, etc. In this way they can collect first-hand information and have a full understanding on the market at the macro-level as well as micro-level. Moreover, meeting and talking with people is crucial to building effective networks and relationships.

Focus on a niche market

ICT is quite a broad sector. With limited resources, EU SMEs have to focus on a specific niche market in which they have the know-how, the expertise, or that special product which makes them stand out in the market. The opportunities in the several niche markets presented in this

report (Section 5.1) provides more information for SMEs that have competitive advantages in the specific ICT market.

Build partnerships with local industry leaders

Partnerships are always very important in any market. Considering the dynamic environment in the Chinese ICT market (regulations, technologies advancement, standards, etc.), SMEs usually need to partner with industrial leaders in order to invest in the right direction in terms of future trends of technology development. In the Chinese ICT market, although the major standards and core technologies are dominated by international players, more and more domestic players are becoming industrial leaders in the domestic market, and even in international markets (for example, Huawei). Partnerships with local Chinese industry leaders are very helpful for European SMEs to really understand the market and develop unique competencies in the industrial value chain.

Usually the first step to establishing a partnership is through personal contacts for most EU SMEs. Participating in trade fairs and exhibitions is also another good way to begin establishing partnerships. After the stage of testing the market, it is advisable that long term partnership strategies be developed with support from a well-established consulting firm.

7. Report summary

	Telecommunications	Hardware	Software	IT Services
Legal challenges	Licence required Restriction on foreign companies for basic services and value-add services (OTT and others) Complicated certification	Certification required IPR infringement Non-transparent government procurement	IPR infringement Non-transparent government procurement	Consultancy and design services are open to all players.
Market challenges	Dominated by large local players Moving to 4G technology Local competition	Highly competition from both domestic and international players	Piracy issue Indigenous innovation	Pricing Competition from both domestic and international players
Operational challenges	HR issues Large capital investment needed	HR issues Increasing labour cost	HR issues High cost of rents	HR issues High cost of rents
Niche markets	4G LTE Value-added services	IoT equipment Cloud computing	Enterprise Private cloud Mobile apps IT outsourcing	E-commerce Cloud computing IoT
Opportunities by region	Hangzhou Suzhou	Yangtze Delta Pearl River Delta	Zhongguancun, Beijing	Tianjin Dalian Chengdu

8. Resources

Further reading

Telecommunication Statistics Report 2012

<http://www.miit.gov.cn/n11293472/n11293832/n11294132/n12858447/15460361.html>

Published by: MIIT

Accessed on: 18 July 2013

Software Industry Statistics Report 2012

<http://www.miit.gov.cn/n11293472/n11293832/n11294132/n12858477/15136112.html>

Published by: MIIT

Accessed on: 18 July 2013

China Internet Development Statistics Report- 31th Edition

<http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/201301/P020130801546406723463.pdf>

Published by: CNNIC, January 2013

Accessed on: 18 July 2013

Chinese ICT Roadmap Survey

http://openchina-ict.eu/files/2013/05/D2.2-China-Survey-24.05_public.pdf

Published by: European Commission

Accessed on: 18 July 2013

Study on the Future Opportunities and Challenges of EU-China Trade and Investment Relations: ICT Equipment

http://trade.ec.europa.eu/doclib/docs/2007/february/tradoc_133307.pdf

Published by: EU Commission - DG Trade, Feb 2007

Accessed on: 18 July 2013

Market Analysis Report: China's Enterprise Software Industry

http://www.export.gov.il/uploadfiles/03_2012/chinaenterprisesoftwareindustry.pdf

Published by: APCO Worldwide, November 2010

Accessed on: 18 July 2013

Exhibitions

2013 China (Shanghai) International Internet of Things Technologies and Smart City Application Exhibition, Shanghai

<http://www.shiotexpo.com/>

The exhibition offers a platform for businesses in the RFID, information perception and smart sensor.

November 7-9, 2013

Email: rfidabc@gmail.com

10th Asia Electronics Exhibition in Shanghai (AEES 2013)

<http://www.aeesshow.com/en/main1.shtml>

AEES is organized by five leading electronic exhibition organizers in Asia. AEES will promote the cooperation between Chinese and overseas electronics and IT enterprises.

November 13-15, 2013

Email: aees@ceac.com.cn

For more updated exhibition information please visit the EU SME Centre website

<http://www.eusmecentre.org.cn/events>

Useful websites

Ministry of Information and Industry (MIIT)

The latest statistics on China's ICT and telecommunications industries from the Chinese government.

www.miit.gov.cn

China Internet Network Information Centre

The latest statistics on internet usage in China.

<http://www.cnnic.net.cn/en/index/>

Chinese Academy of Telecommunication Research of MIIT

Professional research report on China's ICT industry.

<http://www.catr.cn/>

EU Commission - DG Trade

DG Trade provides a large number of guides, research reports and policy documents for all sectors and trading partners.

<http://trade.ec.europa.eu/doclib>



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The EU SME Centre assists European SMEs to export to China by providing a comprehensive range of free, hands-on support services including the provision of information, confidential advice, networking events and training. The Centre also acts as a platform facilitating coordination amongst Member State and European public and private sector service providers to SMEs.

The Centre's range of free services cover:

- Business Development – provision of market information, business and marketing advice
- Legal – legal information, 'ask the expert' initial consultations and practical manuals
- Standards – standards and conformity requirements when exporting to China
- HR and Training – industry and horizontal training programmes
- Access to a service providers directory and information databases
- Hot-desking – free, temporary office space in the EU SME Centre to explore local business opportunities
- Any other practical support services to EU SMEs wishing to export to or invest in China.

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Date: November, 2013



The EU SME Centre is a project funded by the European Union.