

In a nutshell

Over three decades of nearly double-digit economic growth, have not only fuelled China's rapid rise to the world's second-largest economy but also caused the nation to start moving away from manufacturing low-end goods and services. In 2012, China's BeiDou GNSS system commenced operations for the provision of Asia-Pacific services and China has started to pave the way for its global service in 2015. The Chinese government is actively promoting the development and use of BeiDou in different GNSS markets. The industry related to the BeiDou system has entered a high-growth period. The huge potential of Chinese markets in LBS, personal mobility, road, rail, aviation and maritime systems offers an opportunity for European partners to sell or licence their technology. Moreover, European companies could cooperate with Chinese firms, in particular SMEs, in accessing markets outside China. Smaller Chinese companies tend to find it difficult to expand overseas without some form of foreign participation. Issues of standardisation, technology transfer and market access should be considered.



Key opportunities



China's highly successful mobile phone market and its well-developed information infrastructure provide a mass market for GNSS-enabled applications and valued-added LBS. In 2015, there were 1.3 billion mobile subscribers, 890 million of these being mobile internet users. Over 420 million smartphones were sold in China in 2014, which represents 30% of the global sales volume. Qualcomm still dominates China's mobile chipsets market. E-commerce, taxi-hailing, online dating, community, advertising, hiking and other entertainment activities based on LBS are gaining popularity in China and are attracting many developers. In particular, the three largest Chinese Internet companies – online marketplace Alibaba, search engine Baidu, and messaging-app Tencent – are competing for a larger mobile audience while developing more comprehensive GNSS-enabled applications.



The transport sector is the fastest growing industry market. In 2013, the sales of Chinese vehicle monitoring terminals reached €520 million. The pre-installed and installed IVS markets reached respectively €730 million and €1.9 billion, while the PND market was around €61 million. Modules supporting both BeiDou and GPS are becoming standard. Moreover, fleet management (logistics, express mail, transport of cash and dangerous goods) and intelligent transportation system are also very important sectors. China's logistics industry remains a key driver for the country's long-term economic growth. In 2014, the total revenue of China's logistic sector topped €870 billion, projecting a 6.9% year-on-year growth. Meanwhile, the value of goods transported by the logistics industry also increased to €26 trillion, reflecting a 7.9% year-on-year growth.



Government subsidies for the purchase of agricultural machinery reached €2.6 billion in 2013, and the rate of production of large agricultural machinery has maintained a stable growth rate of 20% over the last six years. Precision agriculture has been slow to take off but there is a growing awareness of its benefits (notably through successful demonstration campaigns).



The target for the Ministry of Agriculture and Forestry is to equip 90% of all marine fishing vessels with a collision prevention and communication system. Some marine fisheries with information service platforms based on BeiDou are already in place or being developed. More than 100,000 BeiDou maritime terminals were sold for fishing vessels by the end of 2014, encouraged by government subsidies.



By the end of 2014, China's rail network ranked as the second biggest in the world with a route length of 112,000km, and the biggest high-speed rail network with 16,000 km. GPS is extensively used to monitor geological hazards along the rail, the infrastructure and its construction, to track important cargos, and for emergency command and control. However, the gradual implementation of BeiDou for the modernisation of railways has been put forward as a requirement for equipment manufacturers by the Chinese government. A series of recent accidents have magnified the need for more advanced safety-critical applications. As for road applications, logistics is another area that needs improvement. The Chinese government has been giving considerable policy support to the state-owned national champions in the field of railway equipment manufacturing and has encouraged them to enter the international market.

Strengths

- ▶ China's GNSS market is booming.
- ▶ The implementation of COMPASS system is raising awareness for GNSS (possibly multi-constellatio) applications.
- ▶ Strong mobile phone usage and booming urbanisation movement (smart city, Internet of Things) is forging the development of a major LBS industry.

Weaknesses

- ▶ The technology base in GNSS ground segment is underdeveloped and R&D awareness of GNSS is still poor.
- ▶ Lack of information integrators and software developers; Lack of awareness and consumer perception.
- ▶ Fragmented sectors with limited market access for foreign companies.

GNSS industry

- ▶ **Market Size of the Chinese Mainland:** Five industrial zones account for more than 80% of the domestic GNSS market: The Bohai Economic Rim, the Yangtze River delta, the Pearl River delta, Central China and Western China. According to the GNSS and LBS White Paper of China of 2013, the total output of China's navigation service sector topped €13 billion in 2013 with an annual growth of 28.4%. China's GNSS and LBS market is expected to exceed 23 billion in 2015 and €58 billion in 2020. By the end of 2013, the number of PNT devices topped 348 million, including 330 million smartphones and 1.3 million BeiDou terminals used for civilian applications. There are over 11,000 Chinese companies and organizations active in the GNSS-related industry, accounting for a total of more than 330,000 employees.
- ▶ **Market Access:** The Chinese Government is fuelling the GNSS & LBS market growth as the majority of sales are generated by public procurements. Hindrances remain in the form of licence requirements, local standards, requirements for national security, unequal access to subsidies, direct ownership restrictions. Some protected market sectors, such as railway, surveying and aviation, are not open to foreign companies. Regulatory barriers exist in sectors such as LBS.

Most relevant key GNSS actors

Institutions					
 中国卫星导航定位协会 The GNSS & LBS Association of China		 中国智能交通协会 ITS CHINA			 中关村空间信息技术产业联盟
Chipsets/Receivers					
	 和芯星通			 联星 OLinkStar	
Applications/System Integrators/Solution Providers					
 奥吉通 Autosoft Ji Tong				 四维图新	 高德 AutoNavi
				 合众思壮	 北斗星通 BDStar Navigator

Contribution to Multi - GNSS

System	BeiDou (Compass)
Space Segment	Final constellation: 5 GEO+30 MEO satellites. The global system will be completed by 2020.
User segment	L-Band: B1:1559.052 - 1591.788MHz; B2: 1166.220 - 1217.370MHz; B3: 1250.618 - 1286.423MHz S-Band: E1: 1590MHz; E2: 1561MHz; E6: 1269MHz; E5B: 1207MHz
Position accuracy	The free service will have a 10 meter location-tracking accuracy, will synchronise clocks with an accuracy of 10 ns and measure speeds within 0.2 m/s.
Current status	Starting to provide global service with 20 satellites, 22 satellites already launched Laos, Pakistan, Brunei and Thailand have signed an agreement with China to use the BeiDou System.



China

GNSS.asia partner: European Chamber of Commerce in China
 Next event: ITS Shenzhen Expo in Shenzhen, 17-19 June, 2016.
 For more information on the ongoing activities of GNSS.asia, specific queries concerning the GNSS markets and matchmaking opportunities please contact Mr Davof Xu at dxu@european-chamber.com.cn or +86 10 6462 2066 or visit <http://china.gnss.asia>