

**BUSINESS STRATEGY ANALYSIS OF RIM
IN CHINA'S SMARTPHONE INDUSTRY**

by

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Abstract

China, the biggest mobile phone market in the world, is crucial for the future of Research In Motion (RIM). While RIM entered China's market in 2006, its market share is still very small in China. The launch of 3G amid the restructuring of China's telecom industry proved crucial to the company's development. RIM has partnered with all mobile operators in China to provide BlackBerry Enterprise Service and BlackBerry Internet Service to both business and individual users. It has gained a competitive edge within the business market. The expansion of RIM in the consumer market is impeded by insufficient applications and competing instant messaging products. RIM is managing to navigate these deficiencies by nurturing application development partners. However, there are still many challenges RIM faces, including product strategy, channel strategy, marketing capabilities and R&D investment.

Key Words: RIM, Smartphone, Mobile Operator, 3G, Strategy, China

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Glossary

Global System for Mobile Communications (GSM)	A standard set developed by the European Telecommunications Standards Institute (ETSI) to describe technologies for second generation (or "2G") digital cellular networks.
General Packet Radio Services (GPRS)	A packet-based wireless communication service that promises data rates from 56 up to 114 Kbps and continuous connection to the Internet for mobile phone and computer users. The higher data rates allow users to take part in video conferences and interact with multimedia websites and similar applications using mobile handheld devices as well as notebook computers. GPRS is based on Global System for Mobile (GSM) communication and complements.
Enhanced Data rates for GSM Evolution (EDGE)	A digital mobile phone technology that allows improved data transmission rates as a backward-compatible extension of GSM.
Wideband Code Division Multiple Access (W-CDMA)	An air interface standard found in 3G mobile telecommunications networks.
CDMA2000 1x EV-DO (Evolution-Data Optimized)	Abbreviated as EV-DO or 1xEV-DO and often EVDO, a wireless radio broadband data standard adopted by many CDMA mobile phone service providers. It is standardized by 3GPP2, as part of the CDMA family of standards.
Time Division Synchronous Code Division Multiple Access (TD-SCDMA)	An air interface found in UMTS mobile telecommunications networks in China as an alternative to W-CDMA.
Average revenue per user (ARPU)	A measure used primarily by consumer communications and networking companies, defined as the total revenue divided by the number of subscribers.
High Speed Packet Access (HSPA)	An amalgamation of two mobile telephone protocols - High Speed Downlink Packet Access (HSDPA) and High Speed Uplink Packet Access (HSUPA) - that extend and improve the performance of existing WCDMA protocols. A further 3GPP standard, Evolved HSPA (also known as HSPA+), was released late in 2008 with subsequent adoption worldwide beginning in 2010.
LTE Advanced	A preliminary mobile communication standard, formally submitted as a candidate 4G system to ITU-T in late 2009, was approved into the International Telecommunications Union (ITU), IMT-Advanced and expected to be finalized by 3GPP in early 2011. It is standardized by the 3rd Generation Partnership Project (3GPP) as a major enhancement of the 3GPP Long Term Evolution (LTE) standard.

Glossary - continued

Wi-Fi	A wireless local area network (WLAN) technology that conforms to the IEEE 802.11 standard. Wi-Fi is the wireless counterpart to the wired Ethernet network, which is the ubiquitous local area network (LAN) technology used in companies and homes worldwide.
China Mobile Multimedia Broadcasting (CMMB)	A mobile television and multimedia standard developed and specified in China by the State Administration of Radio, Film, and Television (SARFT).
Office automation (OA)	The varied computer machinery and software used to digitally create, collect, store, manipulate, and relay office information needed for accomplishing basic tasks.
Enterprise resource planning (ERP)	A system to integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc. ERP systems automate this activity with an integrated software application.
Customer Relationship Management (CRM)	The computer software designed to help companies keep track of and easily access information about the customers or clients the business is dealing with.
Instant Messenger (IM)	A platform or service that allows exchanging text messages in real time between two or more people logged into a particular instant messaging (IM) service. Instant messaging is more interactive than e-mail because messages are sent immediately. Instant messaging services may also provide video calling, file sharing, PC-to-PC voice calling and PC-to-regular-phone calling.
Social Network Service (SNS)	An online service, platform, or site that focuses on building and reflecting of social networks or social relations among people who, for example, share interests and/or activities.

1. Background Information

1.1 Overview of RIM

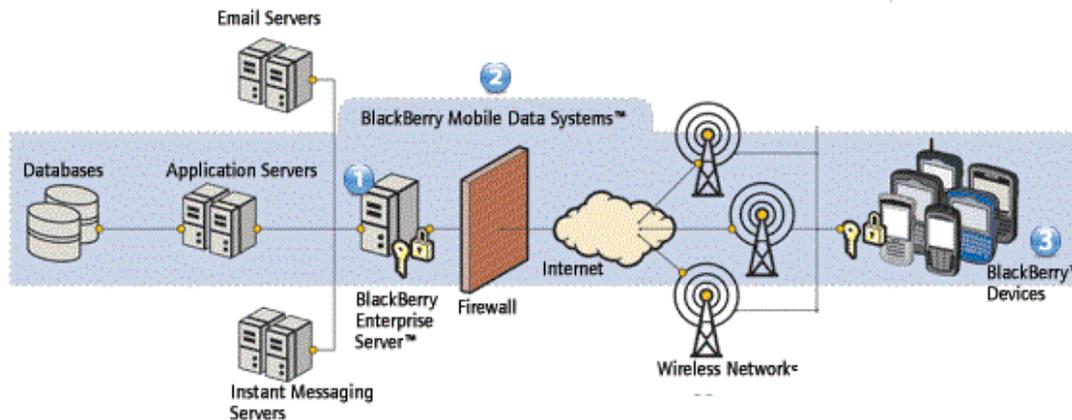
Founded in 1984 and headquartered in Waterloo, Ontario, Research In Motion (RIM) has grown from a small Canadian company to a leading designer, manufacturer and marketer of innovative wireless solutions in the international mobile communications field. Through the development of integrated hardware, software and services that support multiple wireless network standards, RIM provides platforms and solutions for seamless access to time-sensitive information, including email, phone, short messaging service, Internet and Intranet-based applications. RIM technology also enables a broad array of third-party developers and manufacturers to enhance their products and services with wireless connectivity to data. The company's sales and marketing efforts to promote the sale of its products and services include collaboration with strategic partners and distribution channels, as well as its own supporting sales and marketing teams. In 26 years RIM has grown its global presence to approximately 500 operators and distributors in 170 countries and BlackBerry subscriber accounts number around 41 million (RIM, 2011). The company operates through its offices located in North America, Europe and the Asia-Pacific.

1.1.1 Products and services

The company's portfolio of products, services and embedded technologies is composed of the BlackBerry wireless solution, the RIM Wireless Handheld product line, software development tools, software and hardware. The BlackBerry wireless solution includes BlackBerry hardware, software and service. This wireless solution provides users with a wireless extension of their work and personal email accounts, including Microsoft Outlook, IBM Lotus Notes, Novell Groupwise and many ISP email services. RIM's flagship wireless solutions are BlackBerry Enterprise Service (BES) and BlackBerry Internet Service (BIS). BES, designed for business users, acts as the centralized link between wireless smartphones, enterprise applications and wireless networks. BES integrates with enterprise messaging and collaboration systems to provide mobile users with

access to email, enterprise instant messaging and organizer tools. It also provides security features and offers administrative tools that simplify management and centralize control.

Figure 1 BlackBerry Architecture



Source: Adapted by the author from Craig Johnston, BlackBerry Enterprise Server (BES) - What Is It? Feb2009

The BlackBerry Internet Service (BIS) allows BlackBerry users to access email accounts without connecting through a BlackBerry Enterprise Server (BES). BIS, a service for both business uses and individual users, allows the integration of up to 10 supported email accounts on the same BlackBerry smartphone.

BlackBerry Messenger (BBM) is a proprietary Instant Messenger application included on BlackBerry devices. Messages sent via BlackBerry Messenger are sent over the BlackBerry PIN system; essentially, communication is only possible between two BlackBerry devices. Exchanging messages is also possible via dedicated discussion or chat groups, which allow multiple BlackBerry devices to communicate in a single session. In addition to offering text-based instant messages, BlackBerry Messenger also allows users to send pictures, voicenotes (audio recordings), files, map locations and a wide selection of emoticons over the BlackBerry network.

RIM offers various models of its BlackBerry smartphones as a part of its wireless solution. These products have been designed to accommodate a wide range of technical standards including GPRS, HSPA, HSDPA, GSM/GPRS/EDGE, CDMA/1xRTT/Ev-Do etc. BlackBerry smartphones are communication tools that use wireless, push-based technology to deliver both

business and consumer applications to mobile users. BlackBerry smartphones integrate email, voice, browser, calendar, tasks and other applications.

The company provides an open standards-based development platform that allows third party and enterprise developers to extend the reach of enterprise and individual applications to BlackBerry smartphones.

1.1.2 RIM's Business Model

RIM sells hardware and software to operators, who in turn bundle devices and software with airtime and sell the solution to end customers. The company also sells devices through indirect channels; these devices are resold by a third party, with or without a service plan from its operator partners. Software is licensed directly to end customers, though it may be distributed by operators, resellers or directly through the company. In Canada, the company's primary direct customers for the BlackBerry wireless solution are wireless operators such as Rogers, Bell and TELUS.

RIM's primary revenue is generated by the BlackBerry wireless solution. In 2010, RIM generated 81% revenue from sales of hardware primarily to operators of the BlackBerry wireless solution. Revenue from services of RIM accounted for 14% of total revenue. Services revenue is from billings to its BlackBerry subscriber account base primarily from a monthly infrastructure access fee to an operator or reseller. The revenue from software licenses of RIM represented 2% of total revenue (RIM, 2011). The software is installed at the corporate or small- and medium-sized enterprise server level. Software revenues are mainly from licensing RIM's BES software.

1.2 Global smartphone industry

The development of mobile and internet technologies has ushered in a new era for the handset industry. Mobile phone use has changed exponentially from a "telephone" on the run model to personal "mini" computer on the run. Smartphone is a multifunctional mobile phone that offers more advanced computing ability and connectivity than a contemporary feature phone. A smartphone runs a mobile operating system. Today's models of smartphone typically serve as PDA, portable media players, high-resolution touchscreen camera phones, GPS navigation, Wi-Fi and mobile broadband access.

In 2010, shipments of smartphones totalled 304.3 million worldwide, up 74.9% from the 173.5 million smartphones shipped in 2009. Shipments for 2011 and 2012 are forecasted to total

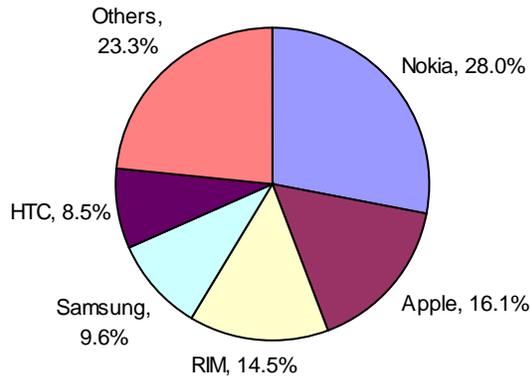
413.5 million and 875.6 million respectively (IDC, 2011). In 2006, smartphones contributed almost 8% of the total handset sales. By 2009 smartphones contributed to 15.3% with an average year on year growth of 30% for the last four years (Neil Shah, 2010). This shows smartphones will fuel the mobile industry growth. The wireless network operators have already started deploying 3G networks to support this huge surge of data.

Smartphone has been widely adopted in the US. According to a 2011 Nielsen report (Neilsonwire, 2011), 31% of US mobile phone owners had a smartphone as of December 2010, and smartphone is expected to become the preference of the majority of US mobile phone owners by the end of 2011. Slightly more conservatively, eMarketer (Mark Brownlow, 2011) ¹predicts that smartphone ownership will reach 43% of the US mobile population by 2015. Smartphone is anticipated to replace personal computers as the preferred device for computing and accessing the Internet. Morgan Stanley Research estimates sales of smartphones will exceed those of personal computers in 2012 (Mark Brownlow, 2011).

In recent years the rivalry within the smartphone market has intensified dramatically. Nokia is still ranked the top smartphone manufacturer in the world. International Data Corporation (IDC) cites the top five smartphone manufacturers by market share for Q4 2010 as Nokia, Apple, RIM, Samsung and HTC. RIM has dropped from second place among global providers to third place. See Figure 2. The launch of Apple's iPhone and other smartphones based on Google's Android OS has driven change within the global smartphone market.

¹ Email-marketing reports (2011) present a summary of smartphone statistics reported by various consulting firms, including Morgan Stanley Research.

Figure 2 Market share of smartphone manufacturers in Q4 2010



Source: Adapted by the author from International Data Corporation (IDC) Worldwide Quarterly Mobile Phone Tracker, Jan 27, 2011

In terms of operating system (OS), Symbian remains at the top of OS ranking due to Nokia's volume and the push into more mass market price points. One obvious trend is that Android –based smartphone is expected to increase rapidly. Currently - except Nokia (Symbian), Apple (iOS) and RIM (BlackBerry OS) - most smartphone manufacturers offer the devices embedding Android OS. According to the forecasts from Gartner (2011), Android will outstrip other OSs by the end of 2014. See Table 1.

Table 1 Forecast: Mobile Communications Device Open OS Sales to End Users by OS (Thousands of Units)

OS	2009	2010	2011	2014
Symbian	80,876.3	107,662.4	141,278.6	264,351.8
Market Share (%)	46.9	40.1	34.2	30.2
Android	6,798.4	47,462.1	91,937.7	259,306.4
Market Share (%)	3.9	17.7	22.2	29.6
Research In Motion	34,346.8	46,922.9	62,198.2	102,579.5
Market Share (%)	19.9	17.5	15.0	11.7
iOS	24,889.8	41,461.8	70,740.0	130,393.0
Market Share (%)	14.4	15.4	17.1	14.9
Windows Phone	15,031.1	12,686.5	21,308.8	34,490.2
Market Share (%)	8.7	4.7	5.2	3.9
Other Operating Systems	10,431.9	12,588.1	26,017.3	84,452.9
Market Share (%)	6.1	4.7	6.3	9.6
Total Market	172,374.3	268,783.7	413,480.5	875,573.8

Source: Adapted by the author from Gartner Group, Forecast: Mobile Communications Devices by Open Operating System, Worldwide, 2007-2014, August 2010

1.3 China's mobile industry

China has built the widest mobile networks utilizing the different technological standards of 2G and 3G. As of 2010, mobile phone subscribers in China number 859 million.

1.3.1 Mobile operators

There are three telecom operators in China: China Mobile, China Unicom and China Telecom. Each provides mobile services. In 2010, the combined total revenue from the mobile business of these three operators reached about USD \$90 billion (CNY 628.2 billion) with a year-on-year growth rate of 11.2%, which translates to 69.9% of total revenues from the operators. As of 2010 China Mobile controls the vast majority of the domestic mobile services market with 70% market share. China Unicom and China Telecom have 20% and 10% shares respectively (Ministry of Industry and Information Technology of China, 2011).

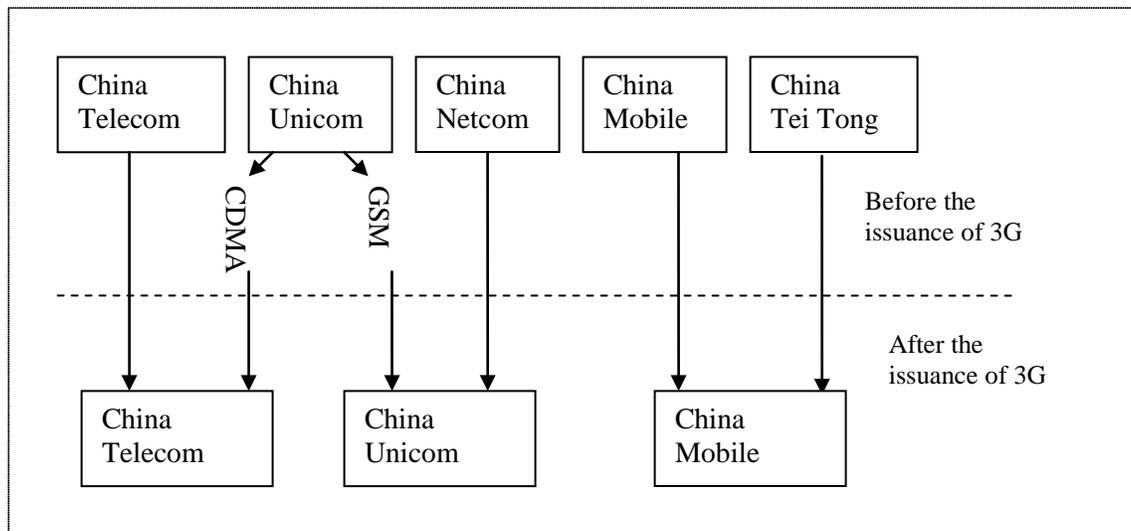
China Mobile provides mobile voice and multimedia services through its nationwide mobile telecommunications network, the largest of its kind in the world. As of March 2011, China Mobile is the world's largest mobile phone operator with over 600 million subscribers (China Mobile, 2011). China Mobile has dominated Chinese mobile services since its inception. On May 23, 2008, China Mobile took over China Tietong, a smallest operator founded in 2000. China Tietong's main areas of business are providing ADSL and dial-up internet services and selling backhaul on their nationwide backbone network, and the company also has a number of fixed-line telephone subscribers. After incorporating with China Tietong, China Mobile expands to fixed-line business.

China Telecom is the largest fixed-line service and the third largest mobile telecommunication provider in China. The company was formerly a state-owned monopoly, but is now divided into largely autonomous provincial branches. Its assets in the country's 10 northern provinces were transferred to China Netcom in 2002, leaving China Telecom with the 21 southern provinces. Although the two companies are free to compete nationally, China Telecom still has an overwhelming market share in the south, while Netcom dominates the north. On June 2, 2008, China Telecom purchased China Unicom's nationwide CDMA business and assets for CNY110 billion, giving it 43 million mobile subscribers. On January 7, 2009, China Telecom was awarded a CDMA 2000 license to expand its business to 3G telecommunication. Currently, China Telecom mainly provides integrated information services including the fixed-line telephone, mobile service, Internet connection and applications services. By the end of 2010, China Telecom

had 179 million fixed-line telephone subscribers, 90.5 million mobile (CDMA) subscribers and 61.75 million broadband customers (China Telecom, 2011).

While it started as a wireless paging and GSM mobile operator, China Unicom currently provides a wide range of services including nationwide GSM and WCDMA mobile network, long-distance, local calling, data communication, Internet services and IP telephony in mainland China. China Unicom is ranked as the world's third-largest mobile provider. As of the end of April 2008, the company had 125 million GSM subscribers and 43 million CDMA subscribers. On June 2, 2008, China Unicom announced it was selling its CDMA business and assets to China Telecom for a combined total of CNY 110 billion and merging the remainder of the company in a share swap valued at USD \$56.3 billion with China Netcom. The CDMA business was officially moved to China Telecom in early November of that year. On January 7, 2009, China Unicom was awarded a WCDMA license to expand its business to 3G telecommunication. By the end of 2010, China Unicom had 167.42 million mobile (GSM and WCDMA) subscribers, 100.11 million fixed-line telephone subscribers and 45.36 million broadband customers (China Unicom, 2011). The restructuring of China's telecom industry after the issuance of 3G licenses in 2009 is shown in Figure 3.

Figure 3 The restructuring of China's telecom industry after the issuance of 3G licences in 2009



Source: Created by the author

1.3.2 3G development in China

3G technology is a mobile communication and stands for "third generation." Compared with 2G, the newer third generation mobile communication features increased bandwidth and transfer rates to accommodate web-based applications and phone-based audio and video files.

In the beginning of 2009, China granted the long-awaited licenses for 3G mobile networks to three telecom operators. China Mobile was awarded a license to deploy 3G networks based on TD-SCDMA, a home-grown 3G standard. Smaller rivals China Unicom and China Telecom were granted licenses for WCDMA and CDMA2000 respectively. 3G licensing in the country has long been postponed due to the government's support of TD-SCDMA, which was believed to be less mature than its foreign rival standards WCDMA and CDMA2000.

In the time since 3G licenses were granted in China, the growth of 3G services has exploded. By the end of 2010, the number of 3G users amounted to 47.05 million with a 544.6% year-on-year growth rate. China Mobile was ranked top with 20.70 million subscribers while China Unicom and China Telecom were ranked second and third with 14.06 million and 12.29 million respectively. It is projected that 3G subscribers will increase by 80 million in 2011 (Ministry of Industry and Information Technology of China, 2011).

Table 2 Overview of Three Mobile Operators in China

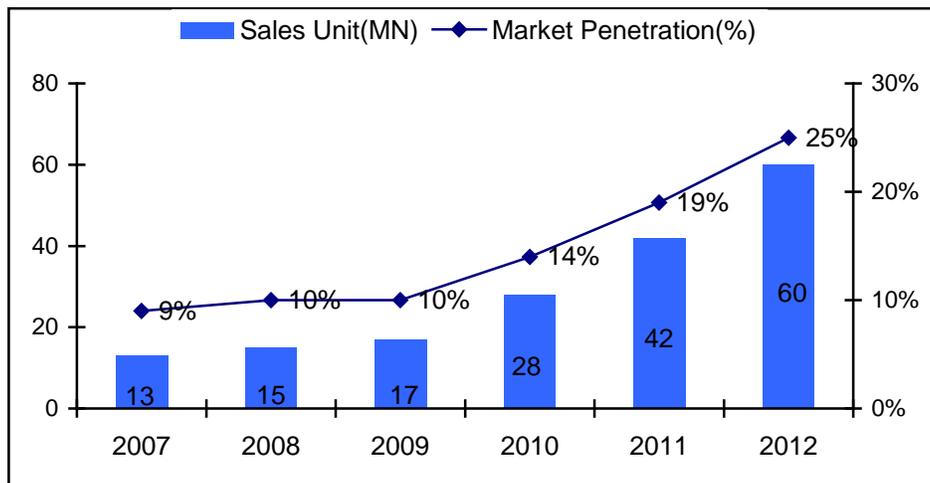
	China Mobile	China Unicom	China Telecom
Number of mobile phone subscribers(in thousand)	584,017	167,426	90,520
2G standard	GSM	GSM	CDMA1000
3G standard	TD-SCDMA	WCDMA	CDMA2000 1X EV-DO
ARPU(CNY)	73	42.9	54.2
Total 3G Users	20702	14,060	12290
Annual revenue in 2010(CNY Billion)	485.2	171.3	219.9
Rev growth rate(year on year)	7.30%	11.30%	5.00%
Net income(CNY Billion)	119.6	3.9	15.8
Net income growth rate(year on year)	3.90%	-59.70%	9.30%
Proprietary outlets (in thousand)	53	19	17

Source: Created by the author from statistics of Ministry of Industry and Information Technology of China and Financial Statement 2011 of the three operators

1.4 China's smartphone market

The 2G-era smartphone cannot support many advanced applications due to the bandwidth and transfer rate, which negatively affected the diffusion of the high-end handset. 3G is the catalyst for the adoption of smartphone in China. In 2010, China's smartphone shipments totalled 28 million units with a year-on-year growth rate of 64.7%. The smartphone market penetration reached 14%, which although three years behind North America is still ahead of most emerging countries. Projected shipments for 2011 and 2012 are 42 million and 60 million respectively. The market penetration will increase to 25% in 2012 (Donald Lu, 2010). See Figure 4. Just as in the current global market, Symbian leads in Chinese market share while Android's share is growing larger.

Figure 4 2006-2010 China smartphone sales volume and penetration



Source: Adapted by author from Exhibit 1, Donald Lu, *Analyzing China's smartphone market: Six main forces at work*, Published in 2010

Since 3G services were launched in China, many handset makers have concentrated on 3G smartphone models. Consequently, the proportion of 2G smartphone in their smartphone portfolios decreased dramatically. In the first quarter of 2010, only one year after 3G licenses were officially granted, the subscribers of smartphones based on 2G and 3G took even market share. Under these circumstances, the following analysis focuses on the 3G smartphone market.

1.5 RIM's challenges in China

As a leading provider of smartphones, RIM initially focused on the business user market and gained a dominant position in that market. However, in recent years, RIM has faced increasingly intense competition from new entrants, such as Apple and other smartphone makers adopting Google Android. Meanwhile, smartphone market for individual users has expanded dramatically, with the proportion of individual users accounting for more than a half of all RIM users. To cope with the eroded market share for business users and ever-increasing demands from individual customers, RIM is expanding its business within the individual user market and some emerging global markets. China's enormous market of potential business and individual customers is crucial for RIM.

In 2006, RIM entered China's market by teaming up with China Mobile to initially support multinational corporations with operations in China. China Mobile used its GPRS network to enable enterprise customers to get BlackBerry wireless solutions, mainly BlackBerry Enterprise Service. In 2009, China's 3G network fuelled the growth of China's smartphone market. RIM initiated the partnership with another two operators, China Telecom and China Unicom sequentially. By this time, RIM had established partnerships with all three operators in China and offered BES and BIS to all business users and BIS to individual users.

While China boasts one of the world's biggest and fastest-growing ICT markets and is important to RIM's global expansion, the company faces many challenges to gaining market share. Its global competitors, including Nokia, Samsung and Apple, have served China's mobile phone market for many years and have developed and evolved their marketing capabilities in China. As a new entrant, it is imperative for RIM to develop its brand, build its distribution channel and partner with operators to outperform others in the market. In addition, China's market differs from other geographic markets, requiring RIM adapt its strategy to China's market. For example, because Chinese customers are inclined to text message rather than email, different customer behaviour based on cultural differences may impede the adoption of BES and BIS, its push mail services. Furthermore, the strong bargaining power of China's operators is a challenge unlike what RIM has encountered previously. Additionally, RIM's innovative BBM (BlackBerry Messenger) faces tough competition from some dominant local products, such as QQ and Fetion (China Mobile's product).

Globally, RIM is undergoing strategic change to cope with the merging trends of telecommunication and internet technologies. Smartphone is an important part of mobile

computing. In China, the smartphone market is huge and complicated, demanding RIM develop a unique position within China's smartphone market. This analysis examines the external factors crucial to RIM's business strategies in China before evaluating how RIM's business strategies are executed in China. It concludes with recommendations for RIM to shape competitive advantages within the Chinese market.

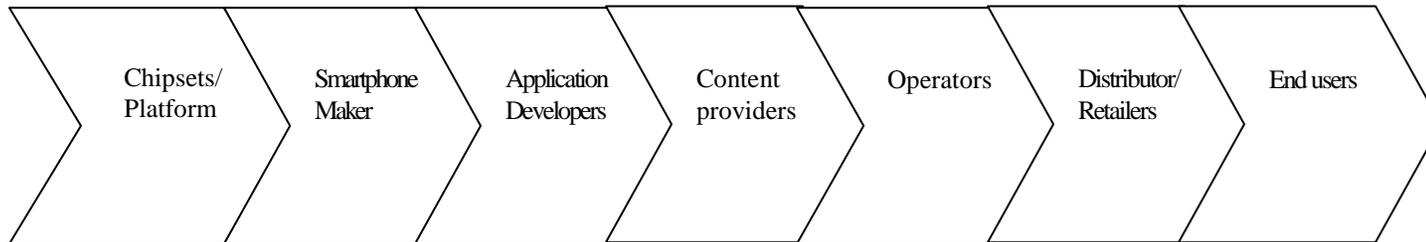
2. China's Smartphone Industry and Competitive Analysis

In general, the smartphone industry value chain is composed of seven parts: chipsets and platform (including OS), smartphone makers, application developers, content providers, mobile operators, distributors/retailers and end-users. The suppliers of components, parts and platform are the up-stream participants in the whole industry value chain. Smartphone makers integrate the components, parts, OS and some applications into a handset. Based on different OS and platforms, a variety of applications are developed. Applications are crucial for consumer adoption of smartphone. Content providers store and retrieve the data and make it accessible for all applications. A significant number of internet content providers fall under this category. Mobile operators build high-capacity network infrastructures and sometimes backward integrate applications and contents and forward integrate distribution and retail. The end users of smartphone consist of individual users and business users. China's smartphone industry value chain and major providers in each part are demonstrated in Figure 5.

The following discussion first employs the adoption curve theory to identify the adoption phase of smartphone and early adopters and early majority in China's smartphone market. In China's smartphone industry, operators, OS and applications are key factors that determine the ranking of industry rivals. Also, for most smartphone makers, these considerations are crucial complementary assets for the adoption of their products.² Consequently, we will evaluate their impact on smartphone industry. Then, based on the former judgements, we will employ five forces framework to assess the rivalry of different forces in the industry, concentrating on smartphone makers. Finally, combined with trends analysis, we will present the key success factors for RIM in China.

² Only Apple and RIM have their proprietary OS and other smartphone makers use third-party OS.

Figure 5 Smartphone value chain in China

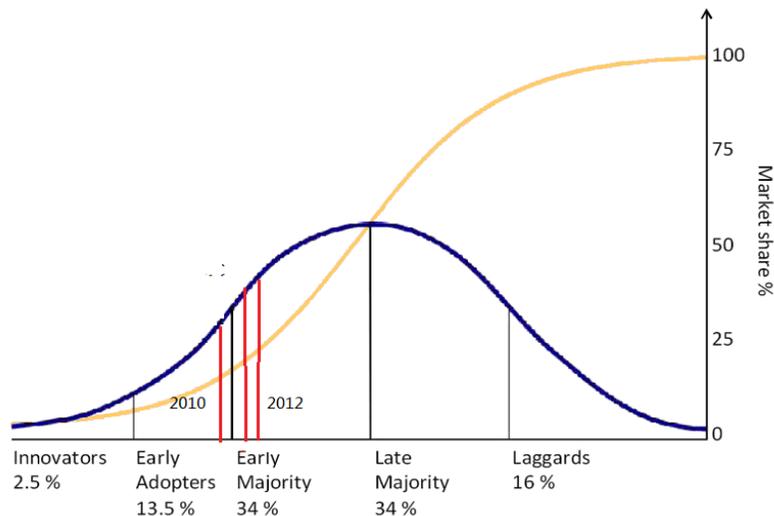


<u>Chipset</u>	<u>Global handset maker</u>	<u>Independent Software Vendors (ISVs) and System Integrators (SIs)</u>	<u>Internet content providers (ICPs)</u>	<u>China Mobile</u> <u>China Unicom</u> <u>China Telecom</u>	<u>National distributor</u>	<u>Individual users</u> <u>Business users</u>
Qualcomm	Nokia				Telling	
ARM	Samsung				Communication	
Intel	Motorola, etc				PTAC	
SamSung					Putian Taili	
MediaTek	<u>Global smartphone maker</u>				etc	
<u>OS platform</u>					<u>Retail chain</u>	
Symbian	Apple	<u>Smartphone makers</u>			Gome	
Android	HTC				SUNING	
Windows	RIM				Funtalk	
iOS	<u>Domestic smartphone maker</u>	<u>Operators</u>			etc	
BlackBerry	ZTE	China Mobile			<u>Operators</u>	
Ophone	Huaiwei	China Unicom			China Mobile	
(China Mobile)	Lenovo	China Telecom			China Unicom	
	Coolpad				China Telecom	
	Dopod					
	etc					
	<u>PC maker</u>					
	Dell					
	Acer					
	Asus, etc					

2.1 Early adopter and early majority

By the end of 2010, China's total mobile phone subscribers amounted to 859 million. The entire subscriber base is assumed to be the potential smartphone market. In 2010, the shipments of smartphones in China totalled 28 million. It is forecasted that the shipments of smartphones in China will increase to 42 million in 2011 and 80 million in 2012. The market penetration of smartphones in China was less than 14% in 2010 and is forecasted to be 19% and 25% in 2011 and 2012 respectively. According to the diffusion of innovations theory of Everett Rogers (1962), with successive groups of consumers adopting the new technology (shown in blue in Figure 6), an innovation's market share (yellow in Figure 6) will eventually reach the saturation level. The early adopter group emerges where the market penetration reaches 2.5% and the early majority group follows at the point of 16% market penetration. Based on the theory, the diffusion of smartphone in China is in the phase of early adoption and will enter early majority phase in one year (shown in red in Figure 6).

Figure 6 The diffusion of smartphone in China



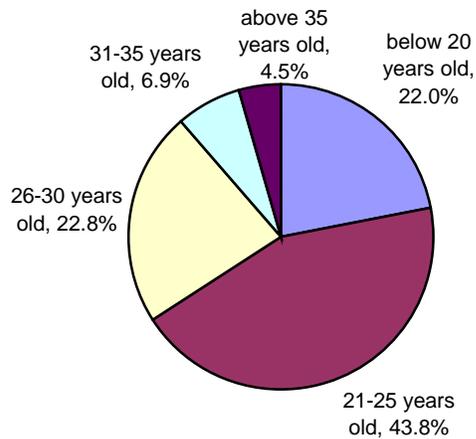
Source: Created by the author

Some early adopters in China are people with high social status who are affluent and well-educated. These same people are also the buyers of high-end smartphones. For example, the shipments of WCDMA iPhone, priced over \$800, are estimated at least 1,200,000 in China (Maxiaofang, 2011). The target audience of iPhone is both ultra high-end users and the corporate

gift market. These early adopters are avid mobile application users who seek enhanced user experience and improved personal productivity. Of course, some high-end smartphone buyers are just attracted to the phone itself and view it as a symbol of status and affluence. Business users are another part of early adopters who use smartphones supplied by employers to improve productivity and efficiency at work. The typical early adopters of this group are RIM's customers. They consist of the branches of MNCs in China, government and enterprise users and SMBs who use smartphones to access RIM's push mail service.

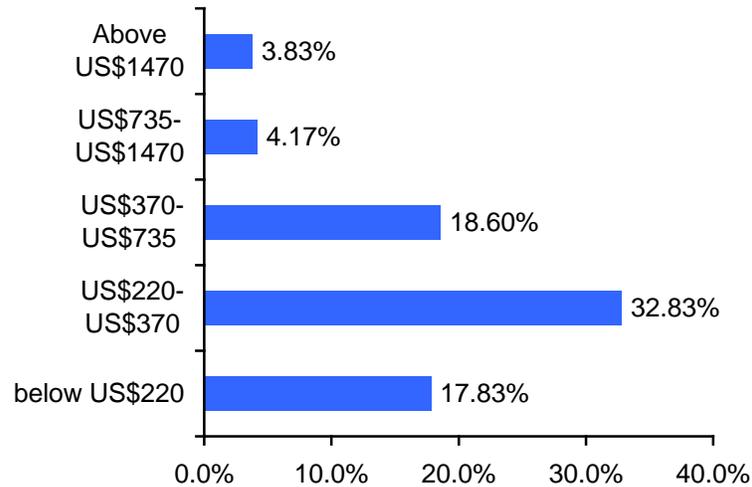
Young people are the cornerstone of early adopters and early majority. They are enthusiastic about the enhanced user experience and applications on smartphone but they are more price-sensitive. A survey of 860,000 mobile phone users by Sina in 2010 shows that most 3G users are young and have relatively low incomes. Over 90% of 3G users surveyed are below 30 years old and over 73% of them have monthly incomes below US \$37. Arguably this survey may not be comprehensive enough to cover the high income population, but, to some extent, it illustrates how young and relatively low-income consumers are an important part of early adopters and will be the early majority of smartphone as they can afford low-end smartphones.

Figure 7 Age of 3G users in China



Source: Adapted by the author from Exhibit 19, Donald Lu, Analyzing China's smartphone market: Six main forces at work, 2010

Figure 8 Monthly disposable incomes of 3G users in China



Source: Adapted by the author from Exhibit 20, Donald Lu, *Analyzing China's smartphone market: Six main forces at work*, Published in 2010

2.2 Operators

With 3G licenses granted, three operators intend to leverage 3G to gain a competitive position and thereby restructure the industry in China. The three types of 3G technology standards are enormously varied in terms of popularity and maturity. At present the operators have uneven capabilities in networks infrastructure and organizational and marketing capabilities. These factors interact, influencing competition within the smartphone industry.

2.2.1 The influence of 3G on operators

In 2009, China Mobile, the world's largest mobile operator, was given a licence for TD-SCDMA. Smaller rivals China Unicom and China Telecom were allowed to develop WCDMA and EV-DO networks, respectively. WCDMA is the most widely used 3G technology in the world and has shaped a mature industry chain based on it. EV-DO is another main-stream 3G standard; however, the adoption of EV-DO has shrunk since many telecom equipment makers have withdrawn support from the standard. TD-SCDMA, home-grown and heavily backed by China's government, is the least mature.

3G licenses have impacted 3G network coverage. China Unicom and China Telecom have grown faster than China Mobile after securing licences for the world's two mature technologies. Largely because of a technologically smooth upgrade from CDMA 1000 to EV-DO that did not require construction of new base stations, China Telecom has achieved the widest EV-DO network coverage. China Unicom's WCDMA network coverage is better than TD-SCDMA.

Notably, the number of available smartphones supporting the three 3G standard is sharply varied. There are a great number of smartphones available that use WCDMA. In contrast, smartphone makers have to invest in R&D to develop terminals for TD-SCDMA because it is a newly commercialized technology. This has resulted in significant price gaps among smartphones based on different standards. See Appendix A. TD-SCDMA and EVDO phones have much higher average sales prices than WCDMA standards because of the high royalty costs and less well-developed supply chain.

The different 3G standards have received varying subsidies from the operators to promote the adoption of smartphone. In 2010, Chinese carriers invested about \$7 billion of subsidies in 3G handsets. To solve the bottleneck of available smartphones, China Mobile increased its total subsidies to about \$3.3 billion and China Telecom provided \$2.2 billion in subsidies. It is the mature WCDMA industry chain and many available handsets that allow China Unicom to spend the smallest amount of subsidies, about \$0.8 billion. See Appendix B. The subsidies reduce handset sales prices for consumers and price gaps among different standards. More importantly, they motivate handset vendors to develop TD and EV-DO smartphones.

2.2.2 Network coverage and subscriber base

Before the issuance of 3G licenses in 2009, China mobile owned the most extensive GSM network coverage with about 500 million subscribers. China Unicom had GSM networks with over 100 million subscribers and China Telecom purchased CDMA networks with 40 million subscribers from China Unicom. Currently, the 3G network coverage of China Mobile has lagged behind its two rivals. However, in terms of the combined networks coverage with 2G, China Mobile's network will still be the best over the next two to three years.

Interestingly, the explosive data traffic increase has caused congestion in 3G networks in some regions. China Mobile and China Telecom have accelerated the growth of Wi-Fi hot spots to alleviate the problem. See Appendix C. China Unicom has initiated HSPA+ network upgrades

in 56 cities. Meanwhile, China Mobile has begun building TD-LTE trial networks in seven cities to deploy 4G services. Although the timetable for the launch of 4G in China is unavailable, China Mobile is the only carrier allowed to test TD-LTE, which demonstrates its ambition to be the leader in 4G services.

TD-SCDMA has put China Mobile at a disadvantage in 3G network coverage and the number of available smartphones. However, along with the extensive 2G networks, the handset subsidies and the growth of Wi-Fi have mitigated these negative effects. As a result, the 3G subscriber base of each operator is expanding by an even amount. However, the proportion of 3G subscribers to total subscribers of China Mobile is smallest. This means its subscriber base increased primarily from 2G networks. See Table 3.

Table 3 Comparison of the subscriber base change of three operators 2009-2010 (in thousand)

	China Mobile	China Unicom	China Telecom
Total added subscribers	127,017	34,426	47,520
Total added 3G Users	20,702	14,060	12,290
The proportion of 3G subscribers	16.3%	40.8%	25.9%
Projected increase in 3G subscribers in 2011	30,000	25,000	25,000

Source: Created by the author

2.2.3 Organizational and marketing capabilities

As well as technological and institutional factors, organizational and marketing capabilities influence the performance of the three operators, which in turn impacts the adoption of smartphones. China Mobile has been dedicated to mobile communication during the more than 20 years since its inception, benefiting from and gaining competitive advantages from economies of learning. From Table 4, we can see China Mobile outperforms its rival operators in terms of financial strength, profitability ratio, efficiency and management effectiveness.

Table 4 Financial comparison of three operators in 2010

	China Mobile	China Unicom	China Telecom
Growth Rates			
Sales (TTM) vs TTM 1 Yr. Ago	7.33	14.92	--
Sales – 5 Yr. Growth Rate	14.83	14.24	5.3
Financial Strength			
Quick Ratio (MRQ)	1.24	0.22	--
Current Ratio (MRQ)	1.26	0.24	--
Profitability Ratios			
Gross Margin (TTM)	94.44	77.04	78.57
Gross Margin – 5 Yr. Avg.	93.97	79.37	78.29
Efficiency			
Revenue/Employee (TTM)	3,562,679	89,919	112,041
Net Income/Employee (TTM)	881,244	1,443	8,048
Management Effectiveness			
Return on Assets (TTM)	14.88	0.68	--
Return on Investment (TTM)	20.95	1.25	--

Source: Adapted by the author from [www. Reuters.com](http://www.reuters.com), June, 2011. Retrieved from <http://www.reuters.com/finance/stocks/financialHighlights?symbol=CHL.N>, <http://www.reuters.com/finance/stocks/financialHighlights?symbol=CHA.N> <http://www.reuters.com/finance/stocks/financialHighlights?symbol=CHU.N>

Arguably, China Mobile has better marketing capabilities than its two rivals. China Mobile owns 53 thousand proprietary outlets, which also outstrips the other two competitors. Additionally, China Mobile also has more influence over its channel partners. It leverages its large sales volume to pay a lower commission than China Telecom and China Unicom. As a dedicated mobile operator, China Mobile has gained brand recognition and acquired 70% of high-end subscribers who have higher average revenue per user (ARPU). Since Chinese subscribers are not allowed to keep their original phone number if they move to another carrier, the lock-in effect also increases the customer switching cost. Consequently, when subscribers want to upgrade from feature phone to smartphone, they prefer to choose the current operator. This would confer more benefits to the operator with more subscribers.

Despite these benefits, China Mobile has obvious disadvantages in the business market. In business market, while China Telecom generated 60% revenue from data services through providing diversified industry-specific mobile solutions, China Mobile's revenue from data services accounts for only 20% (Jili, 2011).

2.2.4 Summary

3G is a game changer for China's mobile industry. By tapping into mature 3G air standards, China Unicom and China Telecom have grown quickly. In the early phase of 3G, TD-SCDMA has put China Mobile at a disadvantage due to unavailable smartphones, higher average selling price and limited network coverage and capacity. However, these negative effects have been mitigated through handset subsidies and Wi-Fi. As a result, the subscribers of three different 3G air standards have been increasing evenly.

On the other hand, the momentum China Mobile gained in the 2G market would facilitate the operator to outperform in 3G era. Its combined network coverage with 2G and 3G will be the best in the short term. The lock-in effects stemming from regulatory barriers confer more benefits to the operator with more subscribers. In addition, China Mobile has built its superior organizational and marketing capabilities to outperform the two rivals. Therefore, the leadership of China Mobile cannot be changed in the near future and it is the most influential operator in the adoption of smartphone. However, the growth of China Mobile has lagged behind its two rivals in terms of revenue and subscriber base since the launch of 3G. China Unicom and China Telecom have been playing a more and more important role in the smartphone industry.

2.3 Operating system and applications

2.3.1 The rise of Android

Mobile operating system (OS) is the core of smartphone. It is OS that enables smartphone users to have advanced applications running on the device. OS is the key differentiator for smartphone. Except for Apple and RIM which have their proprietary OS, other smartphone makers adopt third-party OS platforms. There are four major third-party OS in China: Symbian, Windows, Android and Ophone. Like in the global market, Symbian is the market share leader in China while it is losing its market share to other OSs dramatically. Android, Google's open-sourced free OS, has been growing fast. Currently, most smartphone makers in China have launched their own Android-based products. Android attracts many smartphone makers in China for two reasons: First, Android lowers the entry barriers for new entrants and allows smartphone makers to customize OS to differentiate their products. Second, the free OS Android is conducive to making budget smartphones, targeted to the young generation considered the cornerstone of early adopters and early majority. In fact, the three operators have determined to focus on

promoting low-end smartphones. Android combined with a wide range of applications would effectively squeeze other OSs out of the market.

China Mobile, the biggest mobile operator in China, also developed Ophone in-house to strengthen its control in the whole value chain. Ophone is an OS platform based on Android and built-in applications of China Mobile. The operator's core position in the industry chain and significant 3G subsidies has caused many smartphone makers to support Ophone OS. See Appendix D.

2.3.2 Application store

For the consumer market, an online store is the common platform that smartphone makers and operators create to allow application developers to market their software. Encouraged by the success of Apple's App Store, other smartphone makers have launched their own application stores. Android Market of Google, OVI of Nokia, Shop4Applications of Motorola, Samsung Applications of Samsung and App World of RIM are the application stores of smartphone makers. All these stores have gone live in China. Meanwhile, China's three mobile operators launched their own applications stores. China Mobile's Mobile Market is the biggest application store in China. As of June 2011, there are around 60,000 applications available in Mobile Market. China Telecom's 189Store has 26,647 applications and China Unicom's WoStore has 10,240 applications.

Although most global smartphone makers launched their application stores in China, many of them were not localized. Very few applications supporting Chinese, and the barriers resulting from language and payment issues negatively affect users. On the other hand, the influential position of global operators in the industry enables them to integrate resources to attract developers and users to their application stores. The more users who patronize the operators' applications stores, the more application developers will market their products in these stores, and the more valuable these stores become.

2.3.3 Application type

Within the consumer market, gaming, entertainment, instant messaging (IM) and Social Network Service (SNS) are the most popular applications. In the business market, email, mobile OA, mobile ERP, mobile CRM and a small amount of customized applications for certain industries are developed through the cooperation of smartphone makers and their partners. For

example, mobile applications for government users, such as police officers, administration of commerce and cities are the typical mobile applications for the vertical market. However, the potential demands for smartphone mobile applications in many industries have not been triggered yet due to the lack of mature applications and solutions.

2.4 Five forces analysis

Porter's Five Forces is a framework for industry analysis and business strategy development formed by Michael E. Porter of Harvard Business School in 1979. The framework views the profitability of an industry as determined by five sources of competitive pressure: competition from entrants, substitutes and established rivals, and the power of suppliers and the power of buyers.

2.4.1 Threat of entry – Moderately Low

On the one hand, the trend of specialization along the value chain of smartphone innovation leads to low entry barriers in terms of technology and capital. A proprietary operating system is a key technical barrier to new entrants. However, the launch of Android, a free and open-source OS, lowers the threshold of entry and speeds up the emergence of new entrants. Ophone, an Android-based free platform developed by China Mobile, is also beneficial to new entrants. Adoption of Ophone not only reduces capital barriers in significant R&D costs or proprietary OS licensing fees, but also facilitates support for manufacturers through handset subsidies and access to its distribution network from the most powerful operator.

Electronics manufacturing services (EMS) is conducive to solving the bottleneck in manufacturing for new entrants who lack manufacturing capacities. For example, RIM partners with Foxconn, a comprehensive Taiwan-based OEM smartphone maker, to ramp up its output to meet increasing market demand and to further expand its market share in Asia Pacific.

On the other hand, there are still some barriers hindering new entrants. Learning-by-doing disadvantages new entrants. For example, the large incumbent firms in China's mobile phone industry have outstripped the new entrants originating from the PC industry (such as Dell, Acer, etc.) because the former have moved down the learning curve in both technology and market development. The top smartphone makers in China, like Nokia, Samsung, HTC and ZTE, are either mobile phone makers or network equipment makers. Another entry barrier stems from high switching costs. In the smartphone ecosystem, applications based on the smartphone OS

augment consumer switching costs once consumers get used to the OS and its applications. In addition, new players need to operate on a large scale to attain operational efficiency because of significant up-front costs in advertising and R&D.

As a result, the threat from new entrant is moderately low. Though open-sourced OS and EMS can lower the barriers, there are still significant barriers from economies of learning that incumbents have gained, higher consumer switching costs from OS and applications on it, and economies of scale required to attain operational efficiency.

2.4.2 Threat of substitutes - Medium

Feature phone, currently commonly used by most subscribers, is a primary direct substitute of smartphone. Because feature phone runs unique software rather than a mobile operating system, it only supports very limited simple applications, for example, ringtone downloading. Compared with smartphone, feature phone is more easily affordable. In China, 53% of feature phones are priced below \$80 while a low-end smartphone is at best priced around \$125 (Donald Lu, 2010). However, to accelerate the market penetration of smartphone, the operators and smartphone makers are motivated to develop and market low-end smartphones that cost around \$100-200. Also, the operators have provided significant subsidies to 3G smartphone subscribers, which definitely improve the affordability of smartphones and have served to close the price gap between feature phone and smartphone. Indubitably some popular applications of smartphone that cannot run on feature phone, for example, mobile TV and social networking service (SNS), will attract more and more users to upgrade their feature phones to smartphones.

Tablet PC is the other direct substitute of smartphone. Tablet PC and smartphone overlap in many features and functionalities. However, the basic purpose of smartphone is to provide users with a means to communicate with others in multiple ways. Voice, text messaging, instant messaging, email and video calling are more suitable on smartphone. Tablet PC has better computing capacity and user experiences due to the bigger screen. Most tablet PCs are focused on the entertainment field through its killer applications, such as gaming and e-reader. Users would prefer smartphone than tablet PC to communicate with each other due to the better portability and mobility of smartphone. But tablet PC may replace smartphone in many applications due to its more powerful computing capacity and enhanced user experiences due to the screen size. China's tablet PC market is taking off. In 2010, the shipments of tablet PC in China totalled 1.73 million and the forecasted shipments are 34 million in 2014 (Research in China, 2011) - both of which are much less than shipments of smartphones in China. The price of a tablet PC in China ranges

from \$350 to \$800, which is significantly higher than smartphone. Therefore, the threat from Tablet PC is not considered very great in the short-term.

Consequently, the threat from substitutes is medium. The threat from feature phone will lessen as the price of smartphone decreases. Tablet PC will replace smartphone in some fields because of the overlaps of their features and applications, for example online gaming.

2.4.3 Industry rivalry-High

With the biggest population of mobile phone subscribers in the world, China has become a major market for global smartphone vendors. In terms of OS, Symbian dominated China's smartphone market and accounted for over 55% of market share in 2010 (Donald Lu, Page 6, 2011). However, its market share has actually been declining since 2009, as a result of the rise of Android-based OS smartphones, and phones made by Apple and RIM. Fragmented market by many vendors, diversified origins and core competencies, different air standards and price competition make the rivalry in China's smartphone industry fiercer. In the following, we will discuss how these factors affect the competition and profitability of the industry. .

1) Fragmented market by many vendors

Android and 3G have intensified the rivalry among competitors. In the global market, Nokia, Apple and RIM hold about 60% of the total market. In contrast, the smartphone market in China is fragmented. Nokia, Samsung and ZTE are in the top tier of vendors with over 10% market share. Coolpad, Huaiwei, K-touch, Lenovo, LG, Motorola, Sony Ericsson and Apple are in the second tier with market share ranging from 3% to 9%. Other vendors share the small market leftover. See Table 5. The vendors in the top tier do not have absolutely advantages over those in second tier. The market share of Nokia has shrunk. As new entrants, Apple, RIM and HTC have not outperformed in China yet although they have obtained considerable global market share. Such domestic vendors as ZTE, Huawei, Lenovo and K-touch have grown to important players by virtue of relations with operators and understanding of China's market.

Table 5 Market breakdown of smartphone market by vendors in China

Market share	Smartphone Markers
>10%	Nokia, Samsung, ZTE
3%< <9%	Coolpad, Huawei, K-touch, Lenovo, LG, Motorola, Sony Ericsson, Apple

Source: Created by author

2) Diversified vendors

There are diverse smartphone manufacturers in China. Different origins, objectives, cost structures and strategies intensify the competition in the industry. There are four types of smartphone vendors. Traditional cell phone providers, who have served China's mobile phone users for a long time, are the biggest group among the four categories. The representatives are Nokia, Samsung, Motorola, Sony Ericsson, LG and a small group of domestic cell phone vendors. They leverage their brand name, distribution channels and long-term relations with telecom operators to garner a dominant position in China's smartphone market. However, many of them did not recognize the importance of 3G to the smartphone market and lagged behind new smartphone providers in operation system and applications. In the past, Nokia, Samsung and Motorola primarily adopted Symbian. With the decline of Symbian, they lost their market share to new entrants. By transferring to the Android platform, Samsung and Motorola have recently regained their market share.

Another category is composed of global smartphone leaders, such as Apple, RIM and HTC, who are new entrants in China's market and leverage their global brand to penetrate medium- and high-end markets quickly. They partner with China's operators and only offer smartphones customized for operators to end-users. To promote the adoption of these handset superstars among subscribers, the three operators provide subsidies. The obvious disadvantages for these global leaders include their limited distribution channels, remarkably few smartphone models and little brand recognition in China's mass market.

PC manufactures, such as Lenovo, Asus, Acer, and Dell, are other salient participants who transformed when facing the trend that PC would be replaced with smartphone for ubiquitous computing needs. Compared with competitors in other categories, traditional giant PC manufacturers also have built up their technology, manufacturing and marketing capabilities in the PC market, which may facilitate transference of their capabilities to the handset market. But the smartphone and PC markets are governed by different rules. PC vendors have to learn to deal with a distribution channel affected largely by mobile operators and compete against more experienced and established handset vendors.

Another emerging force in China's smartphone market is domestic network equipment providers such as ZTE, Huawei and Coolpad. They entered the smartphone market due to the relevant extension of product pipeline and attractive smartphone market potential. By virtue of technological competence and relations with operators, they chose the low- and mid-end smartphone market as their initial market and have secured a significant market share. Presently,

they are expanding to the high-end smartphone market. However, it is imperative for them to hone their marketing capabilities in the consumer market, including brand name, distribution channels and understanding of user's behaviour.

Currently, global vendors, such as Nokia, Samsung, Apple, HTC and RIM, dominate in high-end smartphone segment. Domestic vendors, ZTE, Huawei, Coolpad and Lenovo concentrate on mid- and low-end segment. However, the rivalry of the two groups is heating up as they break into the market of each other. For example, Apple is planning on offering entry-level smartphone to penetrate in global mass market. ZTE has demonstrated its aspiration to enter high-end segment by launching high-performance handsets.

3) Different air standards

Three operators with different 3G air standards intensify the competitions in the industry. Every operator wants to acquire subscribers as more as possible to secure its 3G market share. Due to uneven resources and capabilities, three operators make the industry rivalry extend to all fronts. The momentum of China Mobile in 2G era alleviated the negative effects of less mature TD-SCDMA. WCDMA and EV-DO advantage China Unicom and China Telecom, but the two operators' subscriber base and influence on the distribution channels are much smaller than China Mobile. Meanwhile, China Mobile and China Telecom have spent substantial subsidies to promote the adoption of smartphones based on their 3G standards. Therefore, the smartphone makers compete not only for products, but also for operators to gain advantages in air standards, distribution channels and subsidies.

4) Price competition

In China, homogeneous products and limited applications also lead to price wars in the low-end smartphone market. China's operators and smartphone makers actively promote the low-end smartphones. However, the available low-end smartphones are less differentiated. Most of them are based on the Android platform and offer the similar functionalities. In addition, significant up-front costs in R&D (hardware design, OS) and advertising require scale economies, which encourage smartphone makers to compete aggressively on price in order to gain the cost benefits of great volume.

In summary, the rivalry in China's smartphone industry is high. China's smartphone market is fragmented by many vendors who have diversified origins and core competencies. This leads to fierce competition among them. Three different air standards make the smartphone

makers compete not only for products, but also for operators. In addition, price competition is inevitable due to homogenous products and the requirement from scale economies.

2.4.4 Buyers' bargaining power- Moderately high

There are three types of buyers in China's market. One category is individual users. The considerable expenditure on purchasing a smartphone and monthly data plan make them more price-sensitive. The second group consists of a variety of business users who would use smartphone as terminals to deploy wireless applications. Compared with individual users, business users are less price-sensitive. Their critical element for purchase decision is whether the solution based on smartphone is cost-efficient to improve productivity and profitability of organizations. For these two groups, the user switching cost is higher. Once end users gain the know-how about using a smartphone OS and applications based on it, they are unwilling to change and learn a new process.

Three operators, China Mobile, China Telecom and China Unicom, are classified as another distinct group of buyers. They procure 3G handsets in bulk and garner significant bargaining powers over smartphone manufacturers. However, the three operators have to defer to some superstar smartphone makers. In the early phase of 3G development, these operators need to tap into the brand name and superior performance of these smartphones to enhance user experience to expedite the adoption of 3G smartphone. For example, Apple exclusively cooperates with China Unicom to market iPhone, a partnership that has seen this operator outperform its rivals. At the same time, it is worth noting that Unicom needs to spend about \$200 subsidizing the sale of each iPhone and underwrite the sales of at least 1-2 million iPhones every year.

The growth of China's smartphone industry accelerated after China's 3G was launched across the country in 2009. The available smartphones are homogenous in terms of functionalities and applications, which intensifies the price competition and enhances the buyers' bargaining power.

In summary, among the three groups of buyers, the bargaining power of business and individual users is moderate whereas the bargaining power of mobile phone operators is moderately high. However, the relative bargaining power varies among smartphone makers.

2.4.5 Suppliers' bargaining power- Moderately high

In China's smartphone market, the chipset, OS and other key components of smartphones are dominated by the global giants in the respective fields. Qualcomm, Intel, Samsung and ARM are also dominant providers of chipset. 3G chipset market in China is fairly concentrated because Qualcomm is the market leader in CDMA technology including WCDMA, TD-SCDMA and CDMA 2000 EV-DO. In China, there are several new entrants who would pose threat to the competitive position of these global suppliers. For example, MediaTek, a primary chipset supplier of non-branded cell phones, has started to develop chipsets for TD-SCDMA. The bargaining power of chipsets suppliers is moderately high despite the fact that new entrants would reduce the bargaining power of incumbents. On the other hand, the possibility of vertical integration for chipset and component suppliers is low because they lack relevant technology and marketing capabilities to be smartphone makers. This lessens the bargaining power of chipsets and components suppliers.

For OS, the suppliers' bargaining power is moderately high because China's smartphone OS is highly concentrated and China Mobile possesses the superior capability of integrating the value chain. Free, open-sourced Android lowers the entry barriers and stimulates the emergence of many new entrants. In turn, Android accompanied by a wide range of applications would exert great network effects to squeeze other OSs out of the market. OPhone, an OS platform developed by China Mobile, is strongly backed by the operators. Many smartphone vendors have claimed to launch OPhone handsets to build a strong relationship with the biggest operator.

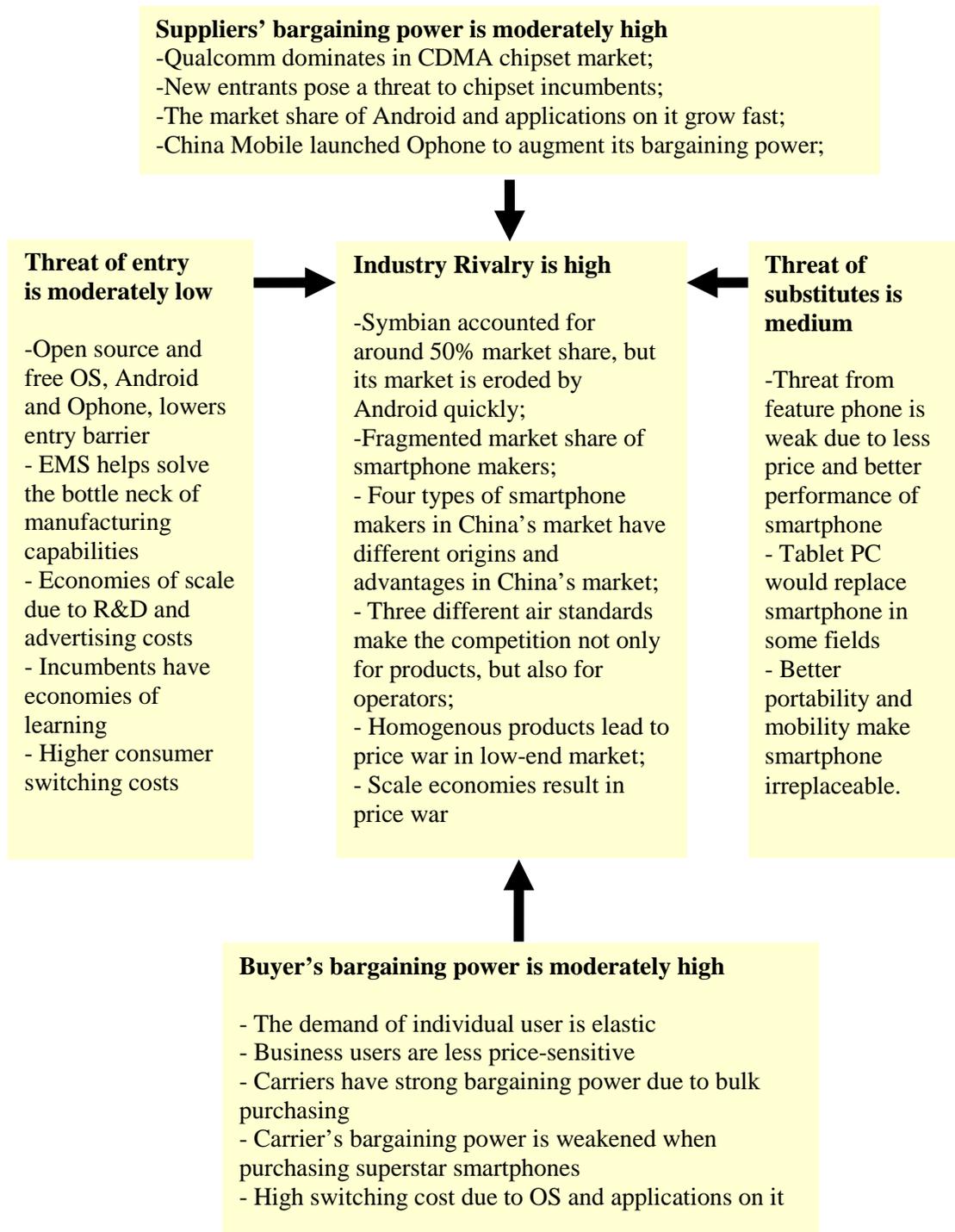
As a consequence, the suppliers' bargaining power is moderately high because chipset and OS market is dominated by several suppliers. Qualcomm leads CDMA chipset market and Android and applications on it grow fast. China Mobile launched Ophone to augment its control in the whole value chain. These strengthen their bargaining power in the industry.

2.4.6 Summary of five forces analysis

In China's smartphone industry, fiercer competitions, relatively high bargaining power of buyers and suppliers would squeeze the profitability of smartphone makers. Therefore, smartphone makers need to devise strategies to mitigate the negative effects. Product differentiation through innovation can facilitate smartphone makers to navigate in price competition. Close cooperation with chipset, OS providers and application developers is also important to differentiate handsets. Partnership with operators is salient because the varied

resources and capabilities of three operators exert considerable impact on the profitability of phone makers. Distribution channel is also a key factor as diversified vendors have different distribution capabilities which affect their presence across the country and the sharing of profit with distribution partners. See Figure 9 below for a summary of five forces analysis.

Figure 9 Five Forces Analysis of China's Smartphone Industry



2.5 Market Trends

Based on the complementary assets analysis of operators, OS and applications, and five forces analysis of smartphone maker industry, the trends of air standards, OS and applications, and distributions are crucial for the smartphone makers to compete in China. In the following section, we will discuss their development in the near future.

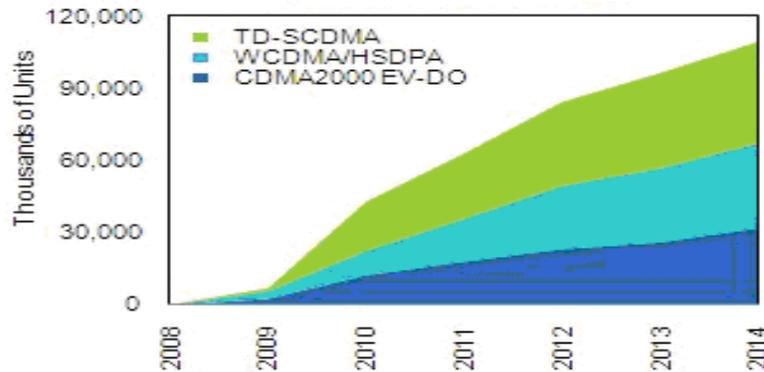
2.5.1 Product trends

1) TD-SCDMA will outstrip three standards

For most subscribers, especially high-end subscribers, retaining an original phone number is the most salient factor for them when they upgrade their feature phones to smartphones. Therefore, high consumer switching cost allows China Mobile to enjoy the benefits of its huge subscriber base. In 2010, China Mobile provided a significant amount of subsidies and fuelled the rapid growth of TD-SCDMA handsets. China Mobile raised the subsidies in 2011 to ensure the continued diffusion of TD-SCDMA handsets. In addition, a popular feature for handsets is Mobile TV. China is expected to adopt its own Mobile TV standard, known as China Multimedia Mobile Broadcasting (CMMB), which is exclusively issued to TD-SCDMA smartphones.

Therefore, although TD-SCDMA is the least mature air standard, the shipments of TD-SCDMA handsets still account for the biggest percentage of total shipments of 3G handsets. According to the research results from iSuppli, the shipments of TD handsets consistently surpass those of WCDMA and EV-DO. See Figure 10.

Figure 10 China domestic 3G handset shipment by 3G standard



Source: Adapted by the author from Kevin Wang, *iSuppli, Subsidies to Boost China's 3G Handset Market in 2010*

2) Low-end Android-based smartphone is most promising

The growth of China's smartphone market is expected to be driven by high-end and mid-end smartphones in 2010-2011 and then by low-end android smartphones. Based on the identification of the diffusion phase of smartphones in China and early adopter and early majority, young people are critical for China's smartphone diffusion to mass market. They have less disposable income and are price-sensitive; therefore they are the target audience of low-end smartphones.

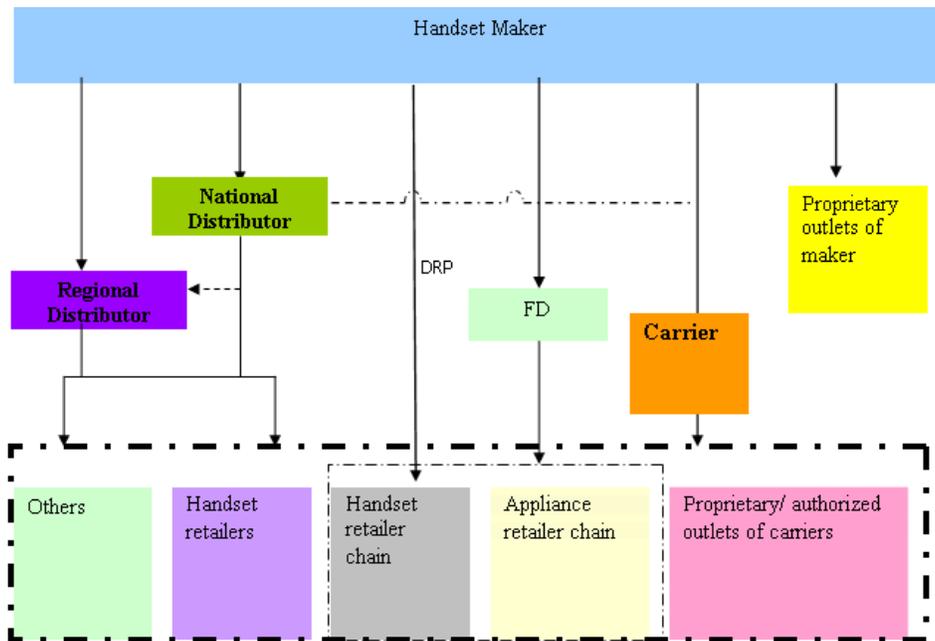
Three operators have focused on the promotion of low-end smartphones through subsidies. China Mobile's new handset strategy focused on low-cost CMMB TD smartphones. CMMB is a Chinese standard for mobile TV. The Chinese government currently allows only TD handsets to carry the CMMB feature. China Unicom spent over half of subsidies on iPhone, but it has shifted to low-end Android smartphones. Now, China Telecom plans on providing subsidies to medium- and low-end smartphones priced \$100-\$350.

Because the Android system is free and most Asia semiconductor companies are focusing on Android solutions, the Android-based smartphone is the most feasible option to lower the smartphone costs. These factors are conducive to the emergence of low-end android smartphones. The WCDMA Android phone may be the first to bring down the cost of smartphones in China among the three air standards.

2.5.2 Distribution trends

Due to China's wide geographical coverage and vast population, the distribution network of handsets in China is more complicated and diversified. Handset makers design their different channel structures based on their business strategies. There are three major distribution channels in China's handset market: distributor, direct retail partner and operators. Generally, distributors sell handsets to resellers or retailers. Direct retail partners (DRP) comprise national or regional retail chains who directly buy handsets from makers. Operators order customized handsets and sell them to users through their proprietary outlets and authorized outlets. In some circumstances, the distributor also provides logistics and some other services to direct retail partner and operators. At the retail level, handset retailers, appliance retailers, proprietary outlets of operators and handset makers, as well as the online stores of handset makers all sell handsets to users. The channel structure of China's handset market is illustrated in Figure 3.5. Distributors can be divided to three groups: national distributors, regional distributors and fulfillment distributors. National distributors and regional distributors sell handsets to resellers or retailers directly but their geographical coverage is different. Fulfillment distributors only provide finance and logistic services to handset makers but they do not sell handsets to resellers and retailers. Currently, handsets distributed by national distributors represent over 30% of the whole market. Regional distributors, direct retail partners and carriers take around 20% market respectively. In retail level, the handsets sold through retail chain accounts for over 50% of the total market.

Figure 11 Channel structure of China's handset marketing



Source: Created by the author

Initially, the distribution channels within the smartphone market are very different from those in the whole handset market. Because smartphones need to bundle with data plans and most of them are customized for operators, operators naturally play a key role in distribution. In the early adoption phase, the operators' distribution channels encompass most of the target audience and therefore most smartphones are sold through operators' proprietary outlets. But with the further penetration of smartphones in China, the operators have encountered the bottleneck of their capabilities of finance, logistics and services to promote the diffusion of smartphones. Therefore, the distribution channels in the handset market became important to the smartphone market again. The operators initiated alliances with national distributors, handset retailer chains and electric appliance retailer chains since many customers are used to purchasing handset through handset retailers and electric appliance retailers where they can get more selection and better service than from operators.

In addition, the characteristics of smartphones necessitate more value-added services throughout the sales process. This drives the distribution network of smartphone makers to be flatter, more diversified and more value-added. Compared with comprehensive handset makers (such as Nokia, Samsung, etc.) dedicated smartphone makers (such as Lenovo, Dopod and Sharp)

prefer DRP and regional distributors to make the distribution network flatter. For example, DRP and regional distributors represented 80% shipments of Dopod, a brand owned by HTC in mainland China. In addition, with the boom of mobile business applications, value-added resellers (VARs) who develop the mobile solutions based on smartphone are another emerging distribution channel in China. For example, Digital China, a national distributor in the enterprise IT market, is the partner of Dopod and RIM. Furthermore, smartphone makers' mortar-brick stores and online stores can effectively deliver the value proposition, receive feedback and benchmark performance. Therefore, an anticipated trend is for handset makers to launch their own stores.

2.5.3 Application trends

In the consumer market, Mobile TV, video calling, location based service (LBS) and gaming are expected to be the most sought-after mobile applications in China. China Mobile is motivated to promote low-end smartphones featuring Mobile TV because China plans on adopting its own Mobile TV standard, known as China Multimedia Mobile Broadcasting (CMMB) which is exclusively issued to TD-SCDMA smartphones.

Mobile IM is the popular mobile application in China. China's mobile IM subscribers amounted to 416.7 million in 2010. IM is acting as a platform to incorporate gaming, LBS, online community and other mobile applications. This would improve its importance among the applications in consumer market.

China's business mobile application is still in the early phase. In China, the vertical industries with higher adoption of ICT are finance, telecommunications, government and manufacturing. Among these industries the proportion of enterprise mobility spending is less than 10% of their ICT annual budget (Ovum Research, 2010). Currently, enterprises in these industries, in varying degrees, have potential demand for industry-specific mobility. For example, some banks have shown interest in mobile banking and mobile payments and some pilot cases have been initiated. Central and local governments began to deploy mobile applications on E-government systems. With the diffusion of 3G, enterprise users will extend their mobility requirements from the push email and mobile OA to mobile ERP and other enterprise applications. Over 10 million SMBs in China are expected to raise IT budgets for mobile applications and they have potential demands for push mail and mobile multimedia applications.

2.6 Key Success Factors for RIM in China

Combining the analyses of complementary assets, industry rivalry and market trends, five key success factors are identified. They are: cooperation with three mobile operators with varied mobile networks and subscriber base, enhanced applications for enterprise users and consumers respectively, affordable price for mass market, and efficient distribution channels.

1) Cooperation on all fronts with three operators

As discussed previously, each mobile operator in China excels in different fields. TD-SCDMA has put China Mobile at a disadvantage in the early phase of 3G. Its growth has lagged behind two rivals. However, China Mobile has overwhelming advantages in terms of 2G network coverage, subscriber base, organizational and marketing capabilities. China Unicom and China Telecom, by virtue of the mature 3G standards, gained the first-mover advantages and grew quickly. The two small operators are playing a more and more important role in China's mobile industry. Therefore, cooperation with all three operators would enable RIM to leverage the favourable resources and capabilities of three operators to present BlackBerry handsets and services to all potential users.

In the meantime, the three operators do not only act as network infrastructure providers. Instead, they have begun to backward integrate OS platform, applications and contents and forward integrate distribution and retail. Their influence in these areas cannot be neglected. This means RIM needs to take all the factors into account when formulating its strategies in China. As a new entrant in China's market, comprehensive cooperation with operators would assist RIM in accessing to the complementary assets in applications, contents and distribution to fuel its growth in China.

2) Mobile applications for enterprise users

Compared with other end users, enterprise users have large IT budgets and are less price-sensitive. In China, they spend the biggest amount of expenditures on ICT products and services. They have substantial demands for mobile business solutions, especially for industry-specific applications. In addition, the significant investment in "the internet of things" and cloudy computing from Chinese government will stimulate the demands of enterprise users for mobile applications.

3) Prosperous applications for consumer market

OS is the differentiating factor of smartphone. The prosperity of applications on an OS is crucial for the success of smartphones based on the OS. Except Apple and RIM, which have their proprietary OS, other smartphone makers have adopted the third-party OS. With the rise of Android's success, most smartphone makers in China have joined Android Alliance and the applications on Android have boomed. This threatens the adoption of RIM in the consumer market. Therefore, RIM needs to nurture its applications by forging alliances with application developers and content providers in the consumer market.

4) Competitive position in low-end smartphone market

In China, the adoption of smartphone is crossing the early adopter phase to early majority phase and the young generation is the cornerstone. Due to their limited disposable income, budget smartphones are more affordable for them. And because the demands of individual users for smartphone are elastic, the low-end smartphone will be the most promising in China. The three operators have accelerated the development of low-end smartphones through subsidies. Consequently, a focus on low-end smartphones is key to sustaining RIM's long-term success in China.

5) Flat and value-added distribution networks

In China's smartphone market, the distribution networks will change towards flat and value-added trends. Decreasing profitability from price wars requires flat channel structure. In addition, the sales process of smartphones necessitates the fairly strong service capabilities of channels due to the complication of OS. Handset retail chains and electric appliance retail chains are playing an increasingly important role in distribution channels because they can meet the needs of vendors for flat channel structure and service ability. For business users, especially for enterprise users, SI and ISV act as value-added resellers (VAR) to provide the users with industry-specific applications.

3. RIM's Business Strategy in China

As a new entrant, the competition environment of China's mobile industry and RIM's competitive advantages in the global market interact to formulate RIM's strategy in the market. In Chapter 2, we discussed the rivalry and complement among the forces in the industry and identified the key external factors for RIM's expansion in China. In this chapter, we will briefly analyze the competitive advantages of RIM in global market, which act as foundation to develop its strategy in China. Then, while reviewing its practices in China's market, we will discuss the strategies it is executing in operator partnership, product, R&D and application development, distribution and manufacturing.

3.1 Competitive Advantages of RIM in global market

1) Brand name

Currently, BlackBerry is the fourth most popular platform after Nokia's Symbian OS, Google's Android, and Apple's iOS. As a global smartphone leader, RIM has had over 41 million subscribers and cooperated with over 550 mobile operators in 175 countries.

2) The dominant position in business market

Smartphone market was populated almost entirely by RIM's business customers. The company consistently focuses on how to give business and government clients a fast and secure means of sending and receiving sensitive information. It has attained obvious advantages in the business market through push-mail technologies.

3) Operator-friendly business model and technologies

RIM provides operators with not only handsets but also wireless solutions which can generate data service revenues to operators. In addition, wireless carriers are beginning to fret about all the bandwidth that devices such as Apple's iPhones will eat up. BlackBerry gives them fewer headaches by virtue of its compressed data technologies.

4) Innovations in consumer market

BlackBerry Messenger is a popular application on Blackberry which is widely used in America and other countries. It enables real-time online and bandwidth-efficiency. RIM plans on installing a proxy server on individual devices. This would give Blackberry phones the ability to load Web pages and other wireless data much faster and decrease the overall amount of wireless traffic. These innovations are appealing to individual users.

5) Security

The security features of BlackBerry make its handset an ideal tool for sending confidential e-mail messages. Also, increased security concerns among consumers make RIM's phone a more desirable device for tasks such as online banking and online shopping.

3.2 Roadmap for RIM in China

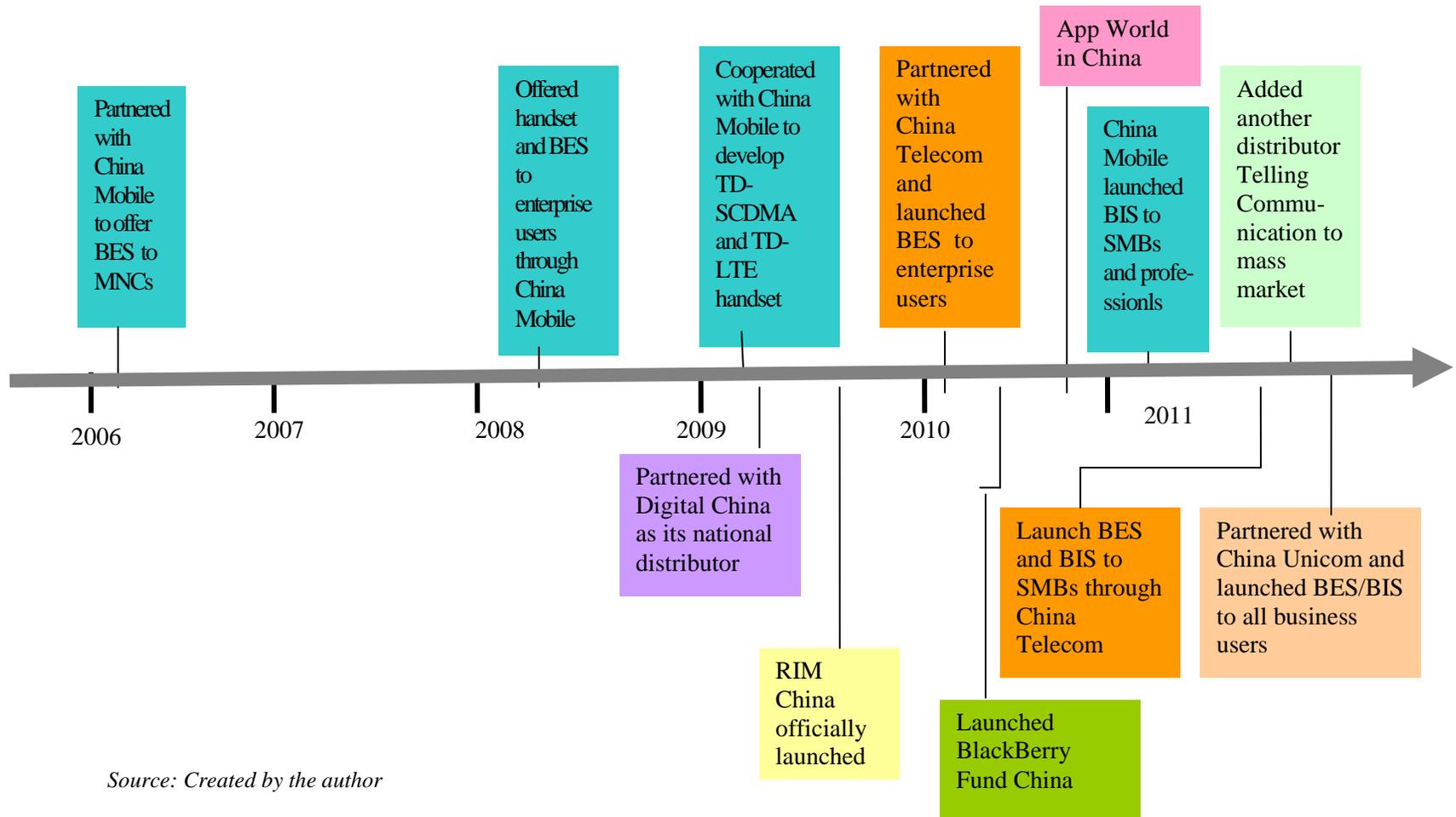
In 2006, RIM entered China's market through partnering with China Mobile. Since then, RIM has offered BES to enterprise users in China. After 3G launched, RIM established a partnership with China Telecom and China Unicom. Currently, RIM provides BES and BIS to all business users and high-end individual users in the country. It has developed its distribution networks and cooperation with application developers and content providers to support its sustained development in China.

In 2009, 3G services initiated in China. Correspondingly, RIM comprehensively upgraded its operations in China to meet the needs for its ambitious expansion to China's smartphone market. RIM China officially launched, replacing the representative office in China initially founded in 2006. In RIM's global organization structure, RIM China directly reports to headquarter in Waterloo rather than RIM North Asia. RIM's development in China is illustrated in Figure 10.. As a global company, RIM has been formulating and executing its national differentiation strategies for China's market in operator partnership, distribution, product and service, mobile application and manufacturing.

China has its own gestation cycle and you work with it and you respect it.

-Jim Balsillie, Co-CEO

Figure 12 Road map of RIM in China



Source: Created by the author

3.3 Business model

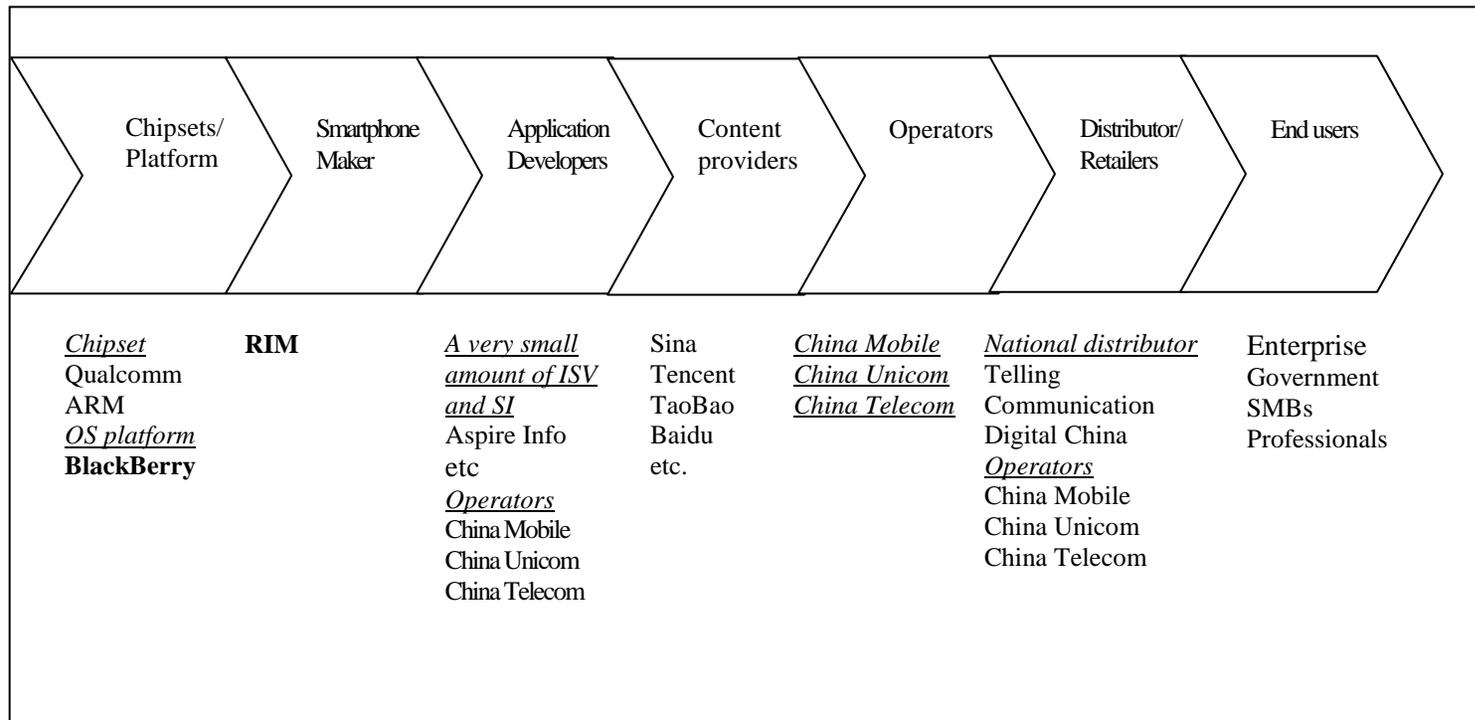
Globally, RIM generates most revenues from the sales of handsets to operators of the BlackBerry wireless solution. Its service revenues primarily come from billings to its BlackBerry subscriber account base from a monthly infrastructure access fee to an operator or reseller.

In China, RIM applies the same business model to generating revenues. Through built-to-order, RIM customizes handsets for all three operators. The operators are responsible for the sales of BlackBerry handsets and wireless solutions and determine the sales price of BlackBerry handsets and monthly fees of BES and BIS. RIM is responsible for marketing and distribution networks to support the sales of operators. BlackBerry handsets are distributed by national distributors and sold through the proprietary outlets of operators and other retail stores.

RIM provides a development platform to application developers to extend the reach of enterprise and individual applications on BlackBerry smartphones. In the consumer market, App World, its online store with about 3,000 applications, went live in China in 2010. RIM and application developers share the revenues from the sales of applications in this online store by 20/80. In the business market, RIM partnered with a few independent software developers (ISVs) and system integrators (SIs) to provide mobile applications based on BES.

RIM has segmented its target horizontal market to enterprise, SMBs and high-end consumers and has acquired users from these segmentations. As a new entrant to China, RIM has developed BlackBerry value chain and continuously expanded it with more and more partnerships. The value chain and its major partners of RIM in China can be seen in Figure 13.

Figure 13 Value chain of RIM in China



3.4 Market segmentation

In the horizontal market, RIM routinely chose enterprise users to be the first target market and then expanded to SMBs and the consumer market in China just as it did in other geographical markets. The initial target market of BlackBerry wireless solutions and handsets is the branches of multinational corporations (MNCs). Their operations in China triggered the demand for BES, which has been deployed in headquarters or other branches outside China.

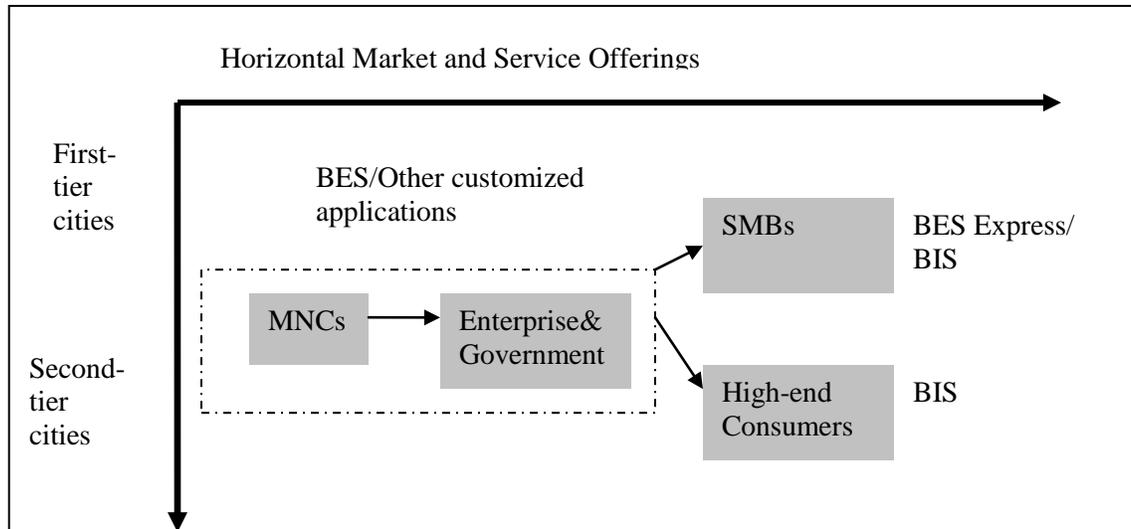
RIM segmented its target market to domestic enterprise and government users, SMBs and high-end consumers. In China, enterprise and government users have considerable IT budgets and have deployed enterprise email, OA and other applications, which is the prerequisite of the adoption of BES. They tend to be less price-sensitive and the early adopters of new ICT technologies. RIM's advantages in the business market naturally caused enterprise and government market to be the second market segment after MNCs. RIM offers BES and other mobile applications based on BlackBerry OS to this market segment. In China, 99% of organizations are small and medium businesses (SMBs). SMBs have limited IT budgets and are more price sensitive. But some of them eagerly demand mobile applications to improve their productivity and efficiency in the facing of fierce competition. Most SMBs have not deployed their email systems. RIM offers BES Express and BIS to this market. For SMBs who have email systems, BES Express Server (software enabling clients to use BES) is free to reduce the up-front costs involved in push-mail services and encourage more SMBs to deploy BES. In the consumer market, RIM currently focuses on high-end consumers, which is primarily composed of professionals and the owners of small businesses. RIM provides BIS/BBM to small businesses and high-end consumers.

In the vertical market, RIM has acquired enterprise customers from security, accounting agencies, insurance and manufacturing industries. In general, RIM has not formulated the marketing strategies for diversified industries.

In geographical markets, RIM focuses on first-tier cities and southern regions in China. There are distinguished economic differences among different regions in China. The prosperous regions are concentrated in South China. The first-tier cities, such as Beijing, Shanghai, Guangdong, etc., are the initial geographical target markets where many top enterprises and government institutions are headquartered and most affluent consumers live. Currently, Blackberry application solutions are offered to the enterprise and government users in second-

tiers cities.³ RIM also repeatedly emphasized its ambition to expand company presence in the small- and medium-sized business market in South China.

Figure 14 Market segmentation of RIM in China



Source: Created by the author

In the future, RIM needs to further segment its vertical market and consumer market as well as differentiate marketing to stimulate the user demand. There are potentially industry-specific mobile solutions needed. In the consumer market, China’s huge population leads to diversified demands for smartphone by age, career and gender. The fast growing consumer market is critical for RIM to garner a dominant global position. As a result, it is imperative for RIM to study the consumer behaviors in the different industries and demographic groups of individual users.

3.5 Operator Partnership

In 1986, David Teece presented Teece model to predict who will profit from an innovation and to understand what company will have higher incentives to invest in certain

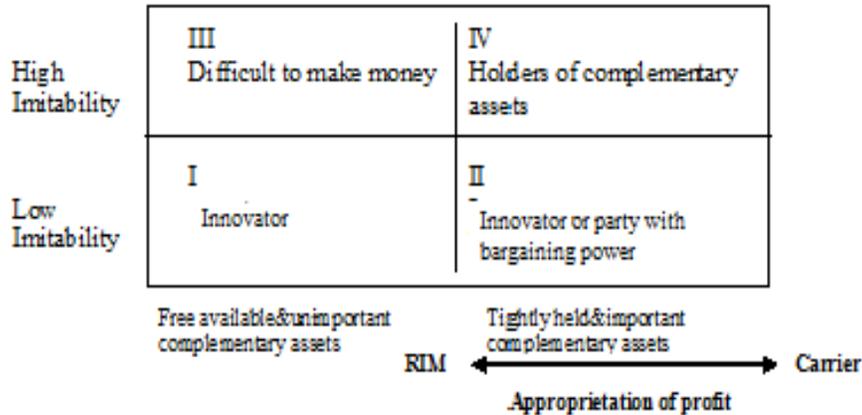
³ Second tier city is a descriptive factor in China in terms of business opportunities and investments outside the principal cities of Beijing, Shanghai, Guangzhou and Hong Kong. Cities, such as Chengdu, Dalian, Nanjing, Qingdao, Shenzhen, Suzhou and Tianjin are in the category.

innovations. Teece Model (Allan, 2003) clarified that two factors – *imitability* and *complementary assets* – have a strong influence in determining who will ultimately profit from an innovation. Imitability refers to how easily competitors can copy or duplicate the technology or process underpinning the innovation. Imitability barriers include intellectual property rights, complex internal routines or tacit knowledge. Complementary assets include any activity that gravitates around the core innovation such as distribution channels, reputation, marketing capabilities, strategic alliances, customer relationships and licensing agreements. Figure 4.1 suggests when an innovator is likely to profit from an innovation. If imitability is high and complementary assets are freely available or unimportant it will be difficult to make money out of the innovation (Quadrant 3). If instead complementary assets are tightly held and important and imitability is once again high, the holder of such assets will be the one profiting from the innovation (Quadrant 4). If imitability is low and complementary assets are not controlled by other economic actors, the innovator will be able to collect most of the profits being generated (Quadrant 1). When, on the other hand, complementary assets are important and tightly held, negotiation will take place and profits will be shared in proportion to bargaining power of the parties involved (Quadrant 2).

Rim's business model is heavily dependent on operators. RIM generates most revenue from sales of handsets to operators of BlackBerry wireless solution and the rest of revenue primarily from billings to its BlackBerry subscriber account base from service fees to an operator. Therefore, operator resources and capabilities, including network coverage and capacity, subscriber base, marketing capabilities and organizational capabilities are the most important complementary assets for RIM to commercialize its blackberry smartphones in China. Before the launch of 3G services and restructuring of China's telecom industry, China Mobile tightly controlled these complementary assets. However, the changing structure of China's mobile industry led to reallocation of these complementary assets among three mobile operators.

BlackBerry smartphone is based on RIM's proprietary BlackBerry OS which is the only platform running its services and applications, including BES, BIS, BBM and other applications to end users. RIM's core competence comes from its dominance in push mail service and its strict control in almost all Blackberry-related products, including terminal handsets, server, client software and solutions. Therefore, blackberry wireless solutions are of low imitability. The reallocation of these complementary assets among three mobile operators has facilitated RIM to raise its bargaining power and partner with three operators to accelerate its growth in the market.

Figure 15 Teece Model of Rim's partnership with operators in China



Source: Created by the author

Among three operators, China Mobile is the first and the most important operator partner of RIM in China. The competitive advantages in the enterprise market of China Telecom make the operator a good fit for business-centric RIM. China Unicom is a promising partner of RIM due to its brand name in 3G services for high-end individual users and its ambitions to promote BlackBerry to reinforce its advantages in the high-end market.

3.5.1 China Mobile

Since its inception, China mobile has been dedicated to mobile services in China. It has the most extensive 2G network and the biggest mobile subscriber base in China, which accounts for 80% of total mobile subscribers and 70% of total high-end subscribers in China. TD-SCDMA put China Mobile at a disadvantage in the initial phase of 3G. However, as discussed in Chapter 2, the huge momentum from its network coverage and subscriber base and its unmatched financial and marketing capabilities would make the dominant position of China Mobile unchangeable in the near future. China is the biggest mobile market in the world and the most important for RIM to reinforce its global dominant position and improve its profitability. RIM needs to partner with the most powerful operator to promote the adoption of BlackBerry products and services in China. Therefore, China Mobile is consistently the most important operator partner of RIM in China.

Another consideration is that the head-to-head competition among three operators resulted in the enhanced bargaining power of RIM to China Mobile. Since the issuance of 3G

licenses, China Unicom has cooperated with Apple to erode the market share of the high-end subscribers of China Mobile and China Telecom has progressed in business mobile market. China Mobile needs to leverage the brand name and the mature wireless solutions of RIM to garner and attract high-end subscribers and business users. Under these circumstances, their partnership has been deepened with the changing bargaining powers. In the following, we will discuss their partnership evolves in push mail services, price, applications and 3G technology standards.

1) From competition to cooperation in push mail service

When RIM entered China's market through China Mobile, the target audience of BES was the multinational corporations (MNCs) with operations in China. China Mobile did not offer BES to the domestic enterprises for several reasons. One barrier is from the consideration of security since the emails need to transfer from the relay centers in America. However, the major barrier stemmed from China Mobile's own push-mail service, Mobile Mailbox. The potential of enterprise push mail market attracted China Mobile to develop its own push-mail product and penetrate the market by leveraging its key position in mobile industry in China. Mobile Mailbox targeted domestic enterprise or governmental users, while BlackBerry mainly aimed to court multinational enterprise users who frequently used their mobile phone roaming in China. In the very early phase of China's push mail market, China Mobile planned to tap into its tightly held complementary assets to market its push mail service whose performance is inferior to BES.

With the increasing demands of enterprises for push mail services, the technological advantages of BES and its low imitability contributed to the enhanced bargaining power of RIM. In 2008, China Mobile started to offer BlackBerry handsets and BES to the enterprise market. After 3G launched, China Mobile accelerated its cooperation with RIM. Currently, it is the first operator to provide BES and BIS to all users.

2) Lowering the monthly fee of BES and BIS

Before 2010, China Mobile offered two types of BES data plans priced at \$85 and \$55 for per subscriber. The expensive data plans partly resulted from the monopoly of China Mobile. Compared with the ARPU of \$12 for China Mobile, the higher price of BES did hamper the adoption of BlackBerry. In 2010, China Mobile offered three other BES data plans charging a lower price as a reaction against the BES launched by China Telecom. Currently, the monthly fees of BES and BIS are more competitive and the price gaps of BES and BIS among the three operators are inconsequential. See Table 6. Since subscribers are price-sensitive, this would fuel the adoption of BlackBerry.

Table 6 Monthly fee of BES and BIS from three operators

	China Telecom	China Mobile	China Unicom
Services and launch time	BES for government and enterprises(2010) BIS for Individual(Jan,2011) BES+BIS/BBM for SMB (May, 2011)	BES for enterprise users(2008) BES for Individual (July, 2010) BIS/BBM for SMB and Individual (Dec,2010)	BES, BIS
Fee CNY: US\$ =6.5:1	Government \$Enterprise users: CNY189/289/389/589 per subscriber/month SMB: CNY 89/108 per subscriber/month	Government \$Enterprise users: CNY198/298/398/498/598 per subscriber/month BIS/BBM for SMB and Individual: CNY98, CNY108	License of BES: CNY 36,000(\$ 5500) for 20 subscribers; CNY 899 (\$138) for an extra subscriber BES CNY 98 (\$15) per subscriber/month BIS: CNY 60 (\$9) per subscriber/month BIS+BES : CNY 128 (\$18) per subscriber/month

Source: Created by the author based on the price lists from the websites of the operators

3) Incorporating applications and services of China Mobile

BlackBerry Internet Service (BIS) from China Mobile incorporates the applications and services of China Mobile, including Mobile Market (Online applications store), FETION (IM) and other Web-based services. China Mobile can expand the footprint of its applications through BlackBerry handsets. As a new entrant, RIM would take advantage of these applications and services to attract more end users and alleviate the insufficiency of applications on BlackBerry.

4) Cooperating to develop TD-SCDMA and TD-LTE handsets

In 2009, China Mobile and RIM collaborated to develop TD-SCDMA and TD-LTE technologies on the BlackBerry smartphone platform. This would sustain RIM's development in the long term. As discussed before, TD-SCDMA smartphones will outstrip those of WCDMA and EV-DO. In addition, although 4G licenses have not been granted yet, China Mobile is the only operator allowed to build trial networks of TD-LTE (4G) in some cities. This shows its ambitions to be leader in 4G services. Through developing TD-LTE handsets, RIM would gain the first-mover advantages in China's mobile market.

3.5.2 China Telecom

China Telecom is an important partner of RIM in the business market. The major foundation of their partnership is the competitive advantages both parties offer to the business market.

China Telecom is the smallest wireless operator in the country, with 90.5 million subscribers on its CDMA network. It evolved from a fixed-line provider to a provider of integrated services including the fixed-line telephone, mobile service, internet access and applications. Its evolution has shaped its competitive edge in the business market through long-term dedication to the ICT applications of business users, especially in the enterprise and government market that make it a good fit for the enterprise-centric BlackBerry.

China Telecom leveraged the merits of CDMA 20001X EV-DO to secure extensive 3G network coverage in the shortest time and tapped into the first-mover advantages to expand its mobile subscriber base by twice in less than two years. As China Unicom became the exclusive 3G operator of Apple's iPhone in 2009, China Telecom needed a superstar smartphone to leverage its brand name and mature solutions to attain its competitive position in the 3G market, especially in the enterprise market. By virtue of its BES and BIS, RIM is the best candidate. Until now, the cooperation of RIM and China Telecom still focused on the business market. It has begun to penetrate BES and BIS from enterprise and government to a significant number of SMBs. RIM customized the BlackBerry smartphone of EVDO for China Telecom. And BIS from China Telecom also integrated the operator's applications and services.

In the short-term, RIM will continuously position China Telecom to be an important partner in the business market rather than the consumer market. China Telecom is the smallest and youngest mobile operator in China and it lacks resources and marketing capabilities in the mobile market and especially in the consumer market, such as brand name and distribution channels.

3.5.3 China Unicom

China Unicom is the last operator to partner with RIM. As the second-biggest mobile operator in China, China Unicom secured the most mature 3G air standard WCDMA. The wide availability of terminals based on WCDMA helped China Unicom to expand its 3G smartphone subscriber base in the high-end consumer market quickly.

With about 200 million subscribers and extensive GSM networks, China Unicom is ranked as the world's third-biggest mobile provider. The most mature WCDMA air standard has boosted its growth. In addition, as the exclusive 3G operator of Apple iPhone in China, China Unicom has tapped into the iPhone's reputation to attract a great number of high-end subscribers and build up its brand recognition in 3G service market. However, significant subsidies for Apple caused the dramatic slump of Unicom's net income in 2010 (Owen Fletcher and Chester Yung, 2011). Since the expiration of their exclusive cooperation is approaching, China Unicom has switched its terminal strategy from relying on iPhone to promoting multiple smartphone models made by different manufacturers. Therefore, partnership with China Unicom would allow RIM to take advantage of its brand in 3G, considerable subscriber base and most mature WCDMA air standard to promote the adoption of BlackBerry.

Although the cooperation with RIM was only just initiated in May 2011, China Unicom has showed its ambition to promote BlackBerry handsets and services. The BES and BIS data plans of China Unicom are most price-competitive and the geographical coverage is the widest among those of its rivals.

China Unicom would be the most promising operator partner of RIM in China. Compared with China Mobile, the mature WCDMA industry chain contributes to its first-mover advantage in developing 3G smartphone customers and building its brand name in 3G services. China Unicom owns extensive network coverage and a huge subscriber base, both of which - although they are smaller than China Mobile - are critical for RIM to expand in China.

3.6 Product strategy

RIM consistently practises the multiple air standards strategy to take advantage of the three operators to penetrate BlackBerry as widely as possible. There are several different air standards in China. China Mobile has networks based on GSM (2G), TD-SCDMA (3G) and TD-LTE (4G). China Unicom owns GSM networks and WCDMA networks while China Telecom owns CDMA1000 and CDMA 2000 networks. To alleviate the congestion of 3G networks, the three operators are also engaged in growing Wi-Fi. With the exception of TD-SCDMA and TD-LTE, RIM has launched BlackBerry smartphones supporting all available standards in China. A BlackBerry smartphone adapted for TD-SCDMA has been developed recently but the exact launch time is unknown.

In terms of the functionality and price, BlackBerry smartphones are positioned to be middle-end and high-end products. In the short-term, RIM seems to continuously focus on the middle-end and high-end smartphone market in China, which stems from its competitiveness in business users and professionals segments. However, because the low-end smartphone market will be most promising in the coming years in China, this focus on the middle and high-end could negatively affect RIM's further expansion across the country.

RIM customized over 10 models of BlackBerry smartphones for three operators accompanying the launch of BES and BIS. Due to the problem of localization, these models lag behind the originals launched when the technology is customized for a niche area, rendering them roughly a year out of date by the time they hit the market and evoking discontent among end users. The fast upgrading smartphone technology rendered these models out of date and thus reduced the desire of end users to adopt BlackBerry. To be successful, RIM needs to strengthen its localization capabilities to shorten the lead time of customized models.

3.7 Distribution strategy

With the diffusion of the BlackBerry smartphone in China's market, its distribution networks have evolved. Currently, RIM has partnered with two national distributors on all fronts including logistics, transaction and service. Each of them is concentrated on enterprise market and mass market respectively. From a global distributor who just focused on supporting logistics in China, RIM's distribution networks are changing to be more hybrid and value-added.

When RIM entered China's market through launching BES with China Mobile in 2006, it chose its global distribution partner, Alcatel-Lucent, to be its distributor in China. The proprietary outlets of China Mobile are the only channels for Blackberry handsets and Alcatel-lucent was responsible for logistics and other business supports.

To expand blackberry handsets in China's enterprise market and meet the demands for value-added services of enterprise users, RIM ceased the cooperation with Alcatel-lucent in China and selected Digital China to be its national distributor. Digital China is not only one of the biggest distributors in IT product distribution but also one of the top IT service providers. Digital China offers a wide range of ICT solutions to enterprise users in finance, telecom and government. Its extensive distribution network in enterprise market, service capabilities and strong knowledge about the demands of enterprise users for ICT products have benefited RIM's expansion in the business market.

Because BES and BIS have been offered to SMBs and individual users, RIM added its distribution channels to expand its reach in the mass market; this was necessary because Digital China is competent in enterprise market rather than mass market. To compensate for this, in May 2011 RIM partnered with Telling Telecom, a national distributor in mobile and handset distribution. Telling Telecom, one of the largest telecom distributors in China, is a major partner of China Mobile and China Unicom. It also has a close relationship with China Telecom.

RIM launched its first proprietary store in Beijing to act more as a show room than a direct sales channel. RIM has not established its own service system yet and its distribution partners are responsible for providing services to end users.

In summary, the distribution structure of RIM is primarily composed of two national distributors. As discussed earlier, regional distributors and retail chains are playing more and more important roles in consumer market to make the distribution networks flat and meet the higher requirements of service capabilities for channels. In addition, to foster its competency in the business market, RIM should seek independent software developers and system integrators to be its value-added resellers to provide more mobile applications to business users, especially for enterprise users. Furthermore, RIM needs to increase the proprietary outlets to keep in close contact with end users, collect their feedbacks and benchmark the performance of retailers.

3.8 R&D and application development strategy

RIM consistently concentrates its core R&D forces in the headquarters in Waterloo, Ontario. This is also where the customization of handsets for China's operators is carried out. RIM's technical forces are mainly responsible for supporting application and content partners.

To solve the bottleneck of insufficient applications, RIM has begun to collaborate with ISV and SI who have strong mobile background, and indigenous giant internet content providers in search engine, Social Network Service (SNS), gaming and online shopping fields. It also launched BlackBerry Partners Fund China to promote the innovations and commercialization of applications on BlackBerry. In the following, we will discuss in detail its strategies in cooperating with these providers and motivating application developers through launching venture fund.

1) Collaboration with independent software vendors with strong mobile background

In the business market, RIM has developed a small number of independent software vendors and system integrators to offer mobile business applications. Many of these partners have strong backgrounds in mobile industry. For example, Aspire Info is a subsidiary of China Mobile.

It is also the software developer of Fetion and other applications for China Mobile. Currently, these vendors primarily are developing generic applications based on the framework of BES, such as mobile OA. However, they are not competent in industry-specific mobile solutions. To significantly expand in the business market, RIM needs to nurture the ISVs and SIs dedicating to industry-centric ICT applications.

2) Alliance with application and content providers in the consumer market

Insufficient applications impede RIM's expansion in the consumer market. Cooperation with application and content providers to develop popular applications is the key to solving the bottleneck effectively. Search engine, online gaming and blogs are popular applications in China. See Table 7 below. Due to the language and cultural differences, the domestic players are the Internet market leaders. Therefore, RIM is actively collaborating with the domestic leading players to develop applications on BlackBerry. These leading players include the biggest web portal Sina, search engine leader Baidu, online gaming company Tencent, and online shopping pioneer Taobao (Alibaba). Sina is a giant Chinese web portal similar to Yahoo! and they have a microblogging service similar to Twitter. RIM manages to provide Chinese BlackBerry users with these common applications.

Table 7 Usage of Internet applications in China (2010)

	User base(Thousand)	Usage(%)
Search Engine	374530	81.9
Music	362180	79.2
Browsing news	353040	77.2
Instant messaging	352580	77.1
Online gaming	304100	66.5
Blog	294500	64.4
Video	283980	62.1
Email	249690	54.6

Source: Adapted by the author from China's internet industry in 2010, China Internet Network Information Center (CNNIC), published in 2011

3) Bringing BBM to Android platform

RIM will bring BBM to iOS and Android platform globally. Because many smartphone vendors in China develop handsets based on Android and Ophone, this would contribute to the adoption of BBM, which is striving to gain a competitive edge in the highly concentrated mobile IM market in China.

4) Launching venture fund

Application and content are key parts in this ecosystem. To encourage application developers, it is common practice for OS providers to financially support application developers. In 2010, the BlackBerry® Partners Fund started to expand its investment activities with the launch of a US \$100 million affiliate fund focused on mobile investment opportunities in China. BlackBerry Partners Fund China is a new joint venture between China Broadband Capital Partners (CBC) and BlackBerry Partners Fund. CBC is a China-based private equity firm focused on media and communications investments. Since the firm was founded in 2006, CBC has been recognized as one of the most influential investors in telecom, Internet, broadband, media and technology sectors in China. RIM intends to promote the prosperity of innovative technologies and applications based on BlackBerry platform to secure long-term, sustained success in China.

3.9 Manufacturing strategy

Currently, BlackBerry smartphones marketed in China are manufactured outside China. Globally, RIM BlackBerry manufactures smartphones through Elcoteq and Celestica, two EMSs headquartered in Finland and Canada respectively. In 2010, RIM initiated its partnership with Foxconn Electronics, a Taiwanese company that is the world's largest maker of electronic components. Partnering with Foxconn will enable RIM to localize manufacturing closer to China and reduce the manufacturing costs of BlackBerry.

Foxconn is the most comprehensive OEM smartphone maker, since it produces devices running under all major mobile operating systems available. RIM's teaming with Foxconn serves two aims: First, RIM needs to ramp up its output to meet the increasing demands from emerging markets, especially in Asia Pacific. Second, RIM must seek a low-cost manufacturer to deal with the pressures from price wars and degrading profitability. Foxconn has more factories in China than any other country. It has about 15 manufacturing facilities in nine cities in mainland China.

3.10 Summary

Since 2009, RIM has aggressively expanded across China. RIM has cooperated with all operators in China to fuel its growth. It consistently treats China Mobile to be its most important operator partner in China. For RIM, China Telecom is an important operator in the business market and the new partnership with China Unicom is promising.

The business market is still the current focus of RIM in China because of its worldwide competitive advantages in mobile business applications. Enterprise and government users are key accounts of RIM by the extensive use of BlackBerry Enterprise Service (BES). RIM has initiated its entry in SMBs market through launching BlackBerry Internet Service (BIS).

Meanwhile, RIM is actively expanding its presence in the consumer market. RIM has deeply collaborated with selected application and content providers to enable the popular internet applications running on BlackBerry. It also plans on bringing BBM to Android platform. It launched App World to offer available applications on BlackBerry to China's users.

RIM primarily relies on its distribution partners to distribute and sell new handsets and to provide services to end users. Partnership with Foxconn will facilitate RIM to localize handset manufacturing for China's market.

4. Conclusions and Recommendations

In Chapter 3, we reviewed the business practices of RIM in China and analyzed its current strategies in operator partnership, product, channel, R&D, application and content development and manufacturing. The launch of 3G in 2009 proved critical to RIM's development in China. Since RIM has been a player in China's market for only five years and comprehensively updated its operations in the last two years, its current strategies primarily depend on its global competitive advantages. To succeed in China's market, RIM needs to take more external factors into account and further build its resources and capabilities in China. In this chapter, we will conduct SWOT analysis of RIM based on the external factors and its current performance. Following this, some recommendations will be presented to improve RIM's competitiveness in China.

4.1 SWOT analysis of RIM in China

4.1.1 Strengths

1) Globally strong brand reputation and wide coverage

As a global smartphone leader, RIM has had over 41 million subscribers and cooperated with over 550 mobile operators in 175 countries. Although its global market share is eroded by Apple and Android-based competitors, it is still ranked within the top three with over 10% of the smartphone market and an influential brand in the global market. Its flagship services and applications, BES, BIS and BBM are widely used in the global market, especially in America.

In China, its strong brand recognition and a substantial subscriber base have been contributing to its expansion in China's market. The initial market of RIM in China is the branches of MNCs. In China, MNCs have the leadership in the adoption of advanced ICT technologies. The successful market cases of MNCs in turn assisted RIM's expansion into the domestic business market and individual market. In addition, its partnership with many operators in the world also fostered cooperation from China's mobile operators. Until now, RIM has teams with all the three operators in China. Moreover, RIM's global leadership would facilitate the company to ally with China's independent software developers (ISVs), application developers

and content providers. The richness of applications and content based on BlackBerry OS is crucial to determine its competitiveness in China's market. Currently, RIM has collaborated with several of China's most influential content services providers such as Tencent, Sina and Taobao to develop popular applications on BlackBerry.

2) Technological advantages of BES, BIS and BBM

RIM offers end users mobile applications that are composed of hardware, software and service. In essence, the handset is the device to deploy its blackberry wireless applications, which generate the revenue from wireless data services to operators. BES and BIS, the push-mail services of RIM, have obvious technological advantages over other push-mail services in China. BES and BIS outperform in terms of stability, functionality, encryption and bandwidth efficiency. BBM is a new standout of RIM's wireless application and has its distinguished features and better performance to outperform its rivals. BBM allows users to carry on a real-time conversation in several different locations or carry on several conversations simultaneously. BBM also allows users to send pictures, voicenotes (audio recordings), files and locations on a map. BBM is preferred by users because of its superior encryption and bandwidth efficiency, both attributable to RIM's core technology.

3) Established cooperation with three operators

As we discussed in Chapter 2, the restructuring of China's telecom industry has stimulated head-to-head competition among the three operators. They have different strengths and weaknesses in terms of network coverage, subscriber base, technical standards and marketing capabilities. With the improved bargaining power over the operators, RIM's partnership with three operators allows RIM to reach the widest target audience possible. The diffusion of mass market is critical for RIM to succeed in China's market. The more subscribers, the more value RIM's OS, the more applications developed on it, and the more attractive RIM's products and services are.

4) Advantages and experiences in business mobile application market

BlackBerry enterprise wireless solutions are user-friendly and relatively cost-efficient for business users. They are designed to be easy for the enterprise to deploy, offering simple enterprise server or desktop software integration solutions. These allow users an easy upgrade path as their requirements grow, without placing heavy financial and resource burdens on the enterprise. The solution is also designed to remove the need for any additional software, which is something that customers have come to appreciate. In addition, the push mail technology

underpinning BES and BIS, is applicable to other mobile business applications. Therefore, RIM has collaborated with some global software providers dedicated to enterprise and SMB market to offer other mobile solutions. For example, SAP and RIM partner to provide business users with mobile ERP and mobile CRM applications. RIM's wireless solutions still stand out within the business market.

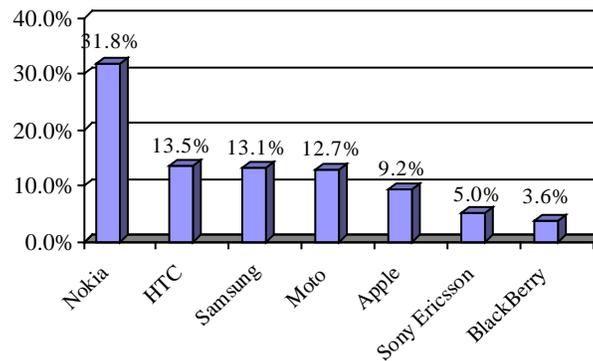
4.1.2 Weaknesses

1) Undeveloped marketing capabilities

RIM, a young company with 20 years history, has participated in China's market for five years. Compared with its competitors in China, RIM is an apprentice. Many global providers such as Nokia, Samsung, Motorola, Apple, Acer and Dell, have been dedicated for the long term to China's mobile phone or PC market and have well-established brand, distribution channels and have moved down the learning curve of China's market. For example, Nokia has strong brand image in first- and second-tier of cities in China. The company has built massive sales network of over 60,000 direct sales outlets all over the country.

RIM has a long way to go in China's market. In terms of distribution channels, RIM still needs to expand its reach through developing more partnerships. In addition, RIM needs to augment its brand name recognition in the mass market. Although it has been playing in China's market for five years, most business users and individual users are not quite familiar with RIM and its products and services. The result from market tracking in China showed that brand awareness of BlackBerry has increased continuously, but it was still quite low at 3.6% while brand awareness of Apple was 9.2% in May 2011. How to effectively deliver RIM's value proposition to a target audience is another issue RIM needs to solve.

Figure 16 The brand awareness of smartphone in China (May, 2011)



Source: Created by the author from the data from the Research Center of zol.com.cn

Another challenge is that to date RIM has not had its own service system in China. Currently, it depends on distribution partners to provide pro-sale services to end users. The intense rivalry in the smartphone market will cause the competition focus to switch from product to service. As a result, RIM should invest in building a sound service system through establishing its own service forces and help partners improve service capabilities.

2) Security issues would hamper its expansion and increase uncertainty in China's market

The network operating centre (NOC) through which all information sent and received by BlackBerry subscribers transmits in an encrypted form is a security issue. China is worried that the high-level encryption technology in BlackBerry could make it difficult for security authorities there to gain access to e-mail messages. Although China did not reject RIM for this security reason like India and other countries did, the security issues would negatively affect its sales to security-conscious organisations in key sectors such as government and finance. The side effect may be substantial in China because many enterprise giants are state-owned.

3) Smaller subscriber base than rivals

In 2006, RIM entered China's market with its BES through partnering with China Mobile. However, the growth of BES subscribers was unsuccessful before three operators launched 3G services in 2009. To compete in the 3G services market, China Telecom and China Unicom introduced BES, BIS and BBM in 2009 and 2011 respectively, and China Mobile also provided BIS to its customers in 2010. The subscriber base of BlackBerry is estimated to grow faster but remains small. There is no official data about the total subscribers of BlackBerry in China. China Telecom announced it has over 70,000 subscribers from the enterprise and government markets

(Sina Tech a, 2011). And a press release reveals there are 30,000 BlackBerry subscribers, accounting for a very small percentage of the total 15 million customers of China Mobile in Shanghai (Miaoxiali, 2011). Since China Unicom has provided BlackBerry for only several months, the subscribers may have not grown fast. Based on the available information, the number of total subscribers of BlackBerry in China should be small. Compared with its rival, whose iPhone shipments in China are estimated over 1,200,000 in less than three years, RIM has lagged far behind though it entered China's market earlier. Generally, if the users of one smartphone model reach 500,000 in China, it is economically feasible for application developers to develop an application on it. However a small subscriber base would lower the incentives of application developers. As the differentiating factor of smartphone, OS exerts network effects through applications. That is, the more subscribers use an OS, the more applications will be developed on it, and the more valuable the OS. BlackBerry OS is proprietary, therefore the small subscriber base would lead to a small amount of applications and thus may further lower the desire of end users to adopt BlackBerry smartphones.

4) Relatively closed ecosystem retards the diffusion of its wireless applications

BlackBerry OS is proprietary OS and RIM provides API to developers. BES, BIS and BBM must run on BlackBerry OS. BBM is the killer application for RIM to expand in the consumer market. However, the user cannot communicate with others who do not use BlackBerry smartphones. Because the subscriber base of BlackBerry is small in China, the adoption of BBM is hampered by the closed ecosystem. Though RIM has stated to the public that it will bring BBM to iOS and Android, the progress is slower than expected.

5) Less competent in China's consumer market

The rapidly growing consumer market made RIM reposition BlackBerry to be consumer-centric phones. However, the company is facing more challenges in China's consumer market than that elsewhere in the world. First, based on the analysis of the diffusion of smartphone in China, young people are the cornerstone for smartphone to penetrate in the mass market. However, RIM is not attracting this group of people because of its limited applications and higher price. BlackBerry Messenger (BBM), a popular application for young people in America and some regions of Asia, is less compelling compared with two other domestic mobile instant messaging products; Tencent's mobile QQ and China Mobile's Fetion have garnered a significant number of users. Although three operators provide subsidies to BlackBerry smartphones, the package of handset and data plan, priced ranging from \$500-\$800 for a two-year term, is far beyond the willingness to pay (WTP) of China's mass market. Meanwhile, in terms of product

design, BlackBerry handsets are characteristic of business features rather than the entertainment features important to the younger generation. In addition, the small number of applications based on BlackBerry also hampers RIM to expand in China's consumer market. RIM offers only 3,000 applications in App World and the applications supporting Chinese are quite few. Furthermore, its advantages in the business market could hinder its efforts in consumer market. For example, RIM's multiple security features make it an ideal tool for sending sensitive e-mails. But as consumers look for phones that offer a wide selection of applications, some developers have complained that stringent security makes it difficult to develop software for BlackBerry.

4.1.3 Opportunities

1) Vast potential of China's smartphone market

China has over 800 million mobile subscribers and the subscriber base is still increasing as the populace becomes more affluent. The increasingly extensive 3G and Wi-Fi networks are the solid infrastructures to the diffusion of smartphone in the country. Telecom operators are motivated to promote smartphone to improve their revenues from data services. Meanwhile, the fiercer competition among the operators and smartphone makers leads to competitive prices for smartphone and data plans. This encourages users to upgrade their feature phones to smart phones. China smartphone shipments totalled 28 million units and the smartphone penetration in China reached 14% in 2010, which is three years behind North America, but ahead of most emerging countries. The projected shipments in 2011 and 2012 will approach 42 million and 60 million respectively. The market penetration will increase to 25% in 2012.

2) Rapid growth of China's mobile internet industry

By the end of 2010, China's mobile Internet users reached 303 million, which accounted for 66.2% of total Internet users. That is, among 850 million mobile phone subscribers, 40% use their phones for advanced data services. This percentage increases to 85% when it comes to China's youth between the ages of 15 to 24(CNNIC, 2011). The growth of mobile Internet would drive the adoption of smartphone among this demographic.

3) Operators are eager to leverage BlackBerry to increase profitability from data services

The development of mobile Internet challenges the dominant position of operators in the value chain. Handsets and applications are the indispensable factors to determine the profitability of wireless data services for operators. Chinese operators' wireless data revenues comprise a lower percentage of wireless service revenues. In the first half of 2010, the wireless data revenue

of China Mobile accounts for 25% of its total revenue while the percentages of its two rivals are even smaller. These wireless data revenues are also mostly from value-added services (SMS, MMS, etc.) rather than mobile Internet. This indicates that smartphone applications are still not primarily responsible for mobile Internet traffic.

Since 2009, the growth rate of 3G users for the three operators is not as fast as planned. 3G users increased by 47 million in 2010, below expectation of the three operators. Lack of high-performance handsets and killer applications are the primary reasons for the situation. RIM's business model is intended to solve the problems facing operators. RIM offers not only BlackBerry handsets but also mature wireless solutions which can generate revenues from data services to operators. Under these circumstances, the three operators initiated or deepened partnerships with RIM to leverage its brand name and applications to stimulate the adoption of smartphone. This should improve RIM's bargaining power over the operators and contribute to RIM's expansion in China.

4) Booming demands of business users for wireless applications

Since 2009, the Chinese government has initiated construction of a computing data center and the market has shaped focus. Also, Chinese government plan to invest in "the Internet of things" through smart power grid, smart transportation, smart logistics, smart home, etc. Smartphone undoubtedly is a major end device for these applications. The built-in RFID technology will further improve smartphone's competency. The mobile business application market is expected to steadily grow, exceeding \$4.1 billion by 2014 (Ovum Research, 2010). The adopters are mainly from the vertical industries of transport, healthcare, power grid and other fields.

4.1.4 Threats

1) China's instant messaging (IM) market is highly concentrated

The popularity of IM is attributed to its cost-efficiency compared with text messaging and SMS. BBM is the unique killer application of BlackBerry. It is BBM that contributes to RIM's success in the consumer market in America and some countries in Asia. IM is a product that has strong network effects. The more users who chat with others through an IM, the more attractive it is to potential users and more valuable this IM is. IM is strategically important for the application and content providers because there is an obvious trend that IM acts as a platform to integrate many applications on it, for example, gaming and e-commerce.

However, BBM is threatened by domestic competitors in China. IM is one of the most popular mobile applications in China. China's mobile IM subscribers amounted to 416.7 million in 2010. The mobile IM market is dominated by three players: Mobile QQ of Tencent, Fetion of China Mobile and Mobile MSN. The total market share of the three players reached 96.4% while Mobile QQ held 62.2% market share (Wangxiaoxing, 2011).

Tencent is the third-largest Internet company in the world behind Google and Amazon. Tencent's diverse services include social networks, web portals, e-commerce and multiplayer online games. It operates the well-known instant messenger Tencent QQ. As of December 31, 2010, there were 647.6 million active Tencent QQ IM user accounts, making Tencent QQ the world's largest online community. Mobile QQ is the IM for mobile devices. Recently, Tencent launched new mobile IM, Weixin, to reinforce its dominant position. Weixin can support multiple platforms including Symbian, iOS and Android and allow users to pictures and voicenotes (audio recording). The core competency of Weixin stems from the synergy with Tencent QQ based on desktop. Weixin and Tencent QQ can communicate with each other. That is, the users of Tencent QQ can send IM to the users of Weixin and vice versa. Weixin would take the advantage of the network effects from huge user base of Tencent QQ to garner or even expand its market share.

Fetion is an instant messaging (IM) client developed by China Mobile. It is currently the second most popular mobile IM in China. The success of Fetion is attributed to its feature that allows users to send and receive SMS free of charge between PCs and mobile phones. So far, the active users of Fetion are about 200 million. The huge user base of Fetion also makes network effect present because more users subscribe this IM service, more attractive this IM service is and higher possible it is that potential users choose this IM. China Mobile intends to develop Fetion into a platform to incorporate other mobile internet services by providing API to third-party developers. Fetion is heavily backed by China Mobile and will gain synergies with other applications.

Although BBM has technological advantage over QQ and Fetion, BBM is less competent in the consumer market due to the presence of network effects from the user base of the two rivals. In addition, BBM cannot run on other platforms except BlackBerry and hence would impede its diffusion in consumer market. Therefore, it is difficult for BBM to offer killer applications to attract individual users.

3) Unclear prospects and latent competition in push email service market

Although push mail is a popular service to smartphone users in some countries, the adoption of push mail is challenged by text messaging and SMS in China. In China, business users prefer email to communicate while many individual users do not have email accounts. Instead, they prefer text messaging and SMS which are simple and casual.

In 2010, about 250 million internet users use email and the usage rate is only 54.6%. See Table 7. According to a survey from AC Nielsen in 2010, 86% of subscribers used their devices for text messaging/SMS while the percentage in the USA is 64%. Only 8% of Chinese subscribers use a mobile phone to check email while the percentage in the USA is 25%. This reflects that the user behaviour is quite different between Chinese and Americans. See Table 8.

Table 8 Mobile Media Usage in past 30 days, Q1 2010, China and US

Mobile Application	China	US
Text messaging/SMS	86%	64%
Picture messaging/MMS	22%	37%
Email	8%	25%
Instant messaging	23%	16%

Source: Adapted by the author from Shan Phillips, AC Nielsen Company, Mobile Internet More Popular in China than in U.S, 2010

In 2006, when RIM partnered with China Mobile to launch BES, China Mobile and China Unicom also began to offer their own push mail services targeting the enterprise users. Currently, the two operators seldom market their own push services to business users partly because they lack R&D capabilities and the performance of their push mail services cannot meet the requirements of enterprise users. It is also partly because the demands for push mail services are unclear. Their push mail service, therefore, turns to the consumer market as a feature to operators' email services. For example, China Mobile provides the subscribers of 139 email, its own email system, a very basic push mail service charging a monthly fee of \$1 for each 139 email account.

In addition, UFIDA, China's biggest management software provider, has partnered with SEVEN to offer UMail to its 500,000 customers. SEVEN is a global innovator in push mail service. Its mobile email solution can support the majority of platforms (Android, Windows, iOS etc.) and major international network standards. Although UFIDA is a new entrant in mobile market, it would incorporate its dominant position in enterprise market of ERP, CRM and customized software in the push mail technologies of SEVEN to pose a threat to RIM in the business push mail market.

Among these players, RIM gains the technologically competitive edge due to the stability, encryption and integration of its solutions. However, compared with its rivals in China's market, the price of BlackBerry push mail service is higher. For many SMBs and individual users who do not value push mail service, their limited ICT budgets and disposable income make price outweigh performance. The unclear market potential of push mail service and latent competitions from operators and other vendors would bring out more challenges to RIM in the market.

4) Competition from domestic smartphone makers in enterprise mobile application market

In China, enterprise users spend a significant amount of budgets purchasing ICT products and services. They are also the early adopters and early majority of mobile applications. Due to the diversified requirements based on their business process and ICT system, most of them need customized mobile solutions. This lucrative market has appealed to many domestic providers. For example, Coolpad and Dopod have cooperated with partners to launch a broad array of wireless solutions for business users in government, transportation and logistics. Compared with RIM, they have strong knowledge of the IT applications relating to these enterprises. Also, due to the security concerns, some business users in banking, government and other industries prefer the domestic vendors.

5) Domestic smartphone makers in mid-to-low end handset market

Based on the identification of China's smartphone adoption curve before, China's smartphone diffusion is crossing the chasm between early adopters phase and early majority phase. The young generation is the cornerstone in between. Due to their limited disposable income, a mid-to-low end smartphone option is more affordable for them. As for operators, they motivate smartphone makers to develop low-end handsets. Recently, China Unicom placed an order to ZTE of about one million BladeV800, low-end smartphones priced at \$150.

In the medium- to low-end smartphone market, RIM faces tremendous competition from domestic vendors. ZTE and Huawei are two global handset makers native to China. They are the two major players in the global budget Android smartphone makers. ZTE and Huawei will continue to expand their low-price Android phone business throughout 2011. At the same time, the legions of China-based local mobile brands will invest substantially in R&D for such products or actively seek out contract manufacturers.

4.2 Main findings

Although RIM has been in the arena of China's smartphone market for five years, the launch of 3G and restructuring of China's telecom industry in 2009 is a milestone for its development in China. 3G triggered the demand for smartphones. The triopoly mobile operator structure is beneficial to RIM, improving its bargaining power to sell its solutions to operators. RIM's global brand and mature business model and wireless applications would facilitate solving the bottleneck in mature handsets and applications in the early stage of 3G services. RIM has leveraged the changing external environment in China to cooperate with three operators to accelerate the penetration of BlackBerry handsets in China.

As in the global market, business users are the early adopters of BlackBerry in China. Currently, BES and BIS has been offered to enterprise users and SMBs. RIM has shaped its competitive advantages in the business market. However, because email is not a very popular application in China, RIM has initiated developing and offering mobile OA, mobile ERP and CRM to expand in business market.

Although BlackBerry in the consumer market just took off, RIM is facing more challenges in China's consumer market than in that of other countries. Instant Messaging is a highly concentrated market in China, where domestic IM providers have captured over 90% of market share in terms of subscriber base. This would hamper the adoption of BBM, the killer application of BlackBerry for individual users. In addition, lack of available applications, a barrier hampering RIM's expansion in the global market, is the same in China. Currently, RIM has attempted to solve these problems by cooperating with top domestic Internet content providers to develop the popular applications, such as SNS, online gaming or online shopping. It also launched a venture capital fund with a domestic partner to support the innovation and commercialization of applications on BlackBerry in China.

In China, the adoption of smartphone is in the phase between early adopter and early majority. The young generation with less disposable income is more price-sensitive and is regarded as the cornerstone for the further diffusion of smartphone. Therefore, developing the low-end smartphone is most promising because they are affordable for young people. However, this would challenge RIM to sustain its further development in China since it is positioned as a high-end handset and service and there are intensive competitions from domestic smartphone makers in the low-end market.

The marketing capabilities of RIM China have not been fully developed yet. The brand recognition of RIM in the mass market is low. The distribution channels of RIM need to be more diversified, flatter and value-added to enhance its presence and improve the service to end users.

The technical forces in RIM China is only limited to providing supports to application developers. To sustain its long-term development in China, RIM would have to invest in R&D forces in China to localize its products and services to better serve end users and partners. In terms of manufacturing, partnership with Foxconn would facilitate localization in China.

4.3 Recommendations for RIM in China

1) Partner with domestic ISVs and SIs to proliferate industry-specific business mobile applications

Based on its competitive advantages in China, the business market is the arena where RIM is more competent. Enterprise users are early adopters and early majority of mobile applications. Their latent demands for mobile application are vast. Other than push mail services, mobile OA, mobile ERP and CRM are generic mobile applications they need. More importantly, there are significant demands for diversified wireless solutions based on the operational characteristics of specific industries. In fact, the revenues from customized applications for industries represent a large part of whole ICT market size in China. Therefore, RIM should partner with domestic independent software vendors (ISVs) and system integrators (SIs) to be its value-added resellers (VAR) to proliferate business mobile applications. By leveraging their strong knowledge of ICT applications and relations with business user in China, RIM can explore the new revenue sources in mobile business market.

2) Develop direct retail partners (DRP) to flatten the distribution channel

In China, the handsets retailer chains and electric appliance retailer chains play an important role. At the level of retail, over 50% smartphones are sold to end users through these channels. DRPs have extensive distribution networks, brand name, skilled and strong sales force and sound service system, which would promote the sales of smartphones. Also, flatter distribution structure would facilitate RIM to reduce the price of handset to mitigate the negative effect of high price to the desire of users to adopt BlackBerry. If RIM wants to outperform in consumer market, DRP is critical to enhance the presence and the price competitiveness of BlackBerry.

3) Strengthen R&D force in China

Until now, RIM still concentrated its core R&D in its headquarters in Waterloo, Ontario. This has impeded RIM harnessing global talent resources to expand globally. In China, the downsides are even more severe. TD-SCDMA and TD-LTE, two standards licensed to China Mobile, are two home-grown air standards. China Mobile is the most important operator partner of RIM, therefore localization of R&D forces relevant to these two air standards would improve the performance of handsets supporting these standards, reduce the lead time of customized handsets and provide better technical supports to operators, application developers and end users. Furthermore, although RIM has launched its online store (App World) in China, the applications that can be used are limited due to different use environments and languages. Applications are critical for RIM to compete in consumer market and hence the technical support to application developers is very important. Also, in terms of product design, the different use behaviors and aesthetics are required to modify product design to better meet the needs of Chinese users. In addition, building R&D force in China would reduce the R&D costs to improve its profitability in China. Currently, many IT giants have built their R&D center in China to leverage the advantages of low-cost and proximity to market, such as Microsoft, Google, Sun/Oracle, etc.

4) Invest in the development of low-end smartphone

Currently, many smartphone makers develop budget smartphones based on the Android platform. However, this brings out homogenous products and security problems that have attracted the attentions of the industry. In addition, as an open source platform developed by Google, there are many uncertainties about the future of Android. These would create the opportunities to the handsets based on other OS.

Low-end smartphone sales are expected to drive the growth of China's smartphone market in the coming years. BlackBerry handsets are viewed as medium-end and high-end products in China's market in terms of price. To sustain its long-term success in China, RIM could not cede the low-end smartphone market to its rivals. Therefore, RIM should invest in the development of the low-end smartphone. Also, RIM can consider partnering with domestic handset makers through licensing. This would mitigate the risks because RIM is unfamiliar with China's complicated mass market. Also, it would reduce the costs of R&D and marketing.

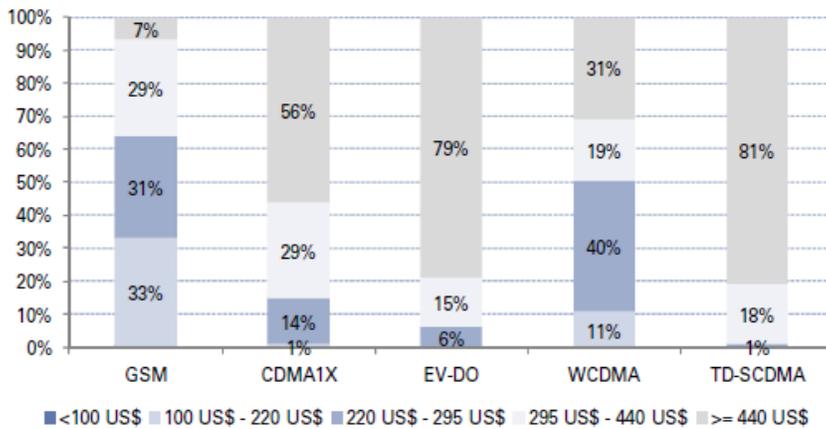
5) Invest in building marketing capabilities

As a new entrant in China's handset market, RIM has to build its brand name, distribution networks, service system and relationships with partners from the ground up. The brand awareness of RIM in mass market is still low. RIM needs to effectively deliver its value

proposition to target market through marketing campaigns. With its expansion within mass market and the competition focus from product to service, RIM should consider to build its own service system and to hone the service abilities of its distribution partners. Also, compared with operators in other countries, China's three operators do not have strong marketing capabilities since they are state-owned and grew in a less competitive industry environment. But RIM's business model is dependent on operators. Therefore, to ensure its success in China, RIM should invest significantly in building its own marketing capabilities to compensate for the weakness of operators.

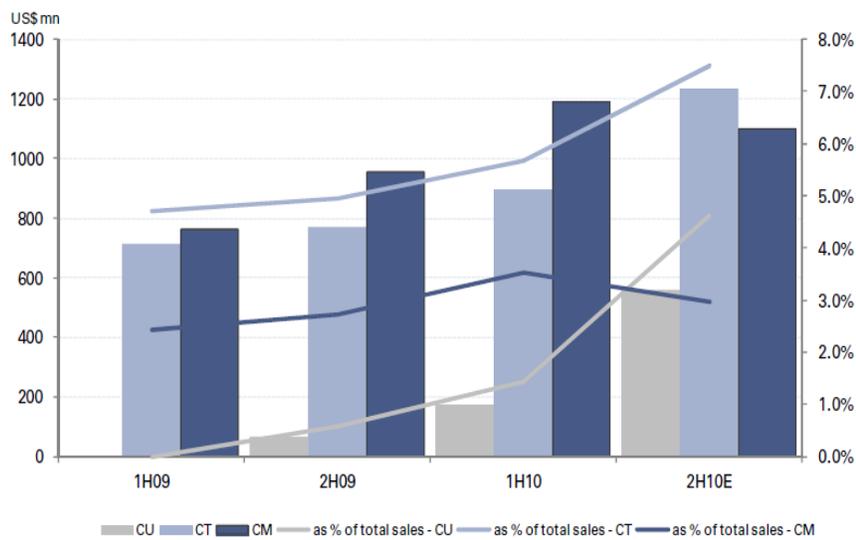
Appendices

Appendix A Average Sales Price of the smartphones using different air standards



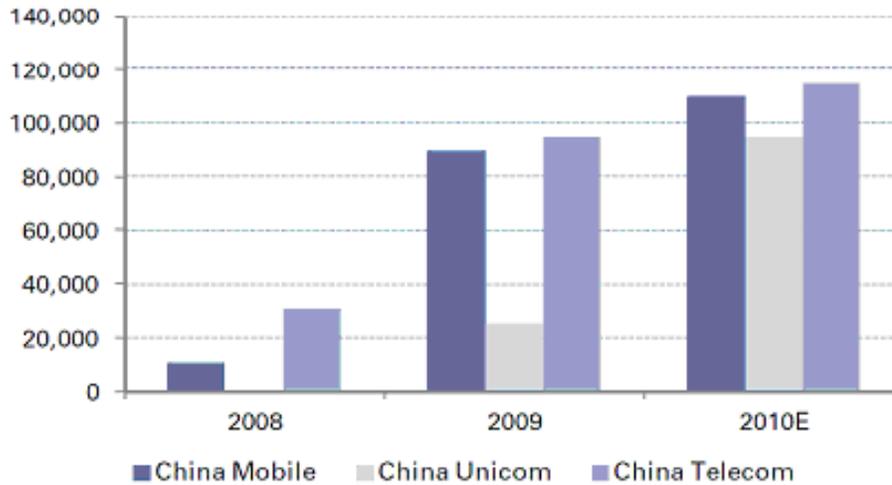
Source: ThinkBank.

Appendix B Comparison of subsidies of three carriers and as percentage of total revenue



Source: Think Tank

Appendix C Numbers of Wi-Fi hotspots by three Chinese operators



Source: iSuppli, Goldman Sachs Research estimates.

Appendix D Overview of smartphone OS in China

<i>Operating System</i>	<i>Sponsor</i>	<i>First shipped</i>	<i>Type</i>	<i>Device Customers</i>
Symbian	Symbian Foundation ; Nokia		Open Source	Nokia, Sony Ericsson, Samsung, etc
Windows CE Windows Mobile Windows 7	Microsoft	2002	Proprietary licensed	Lenovo, HTC, Samsung, Coolpad, K-touch, Sony Ericsson, etc.
Android	Open Handset Alliance Google	2008	Open Source	HTC, Samsung, Motorola, Sony Ericsson, LG, Lenovo, ZTE, Huaiwei, Acer, Asus, Dopod, Coolpad, etc.
Ophone	Ophone	2009	Open Source	Lenovo, LG, Philips, Dopod, Hisense, Dell, Coolpad, Sony Ericsson, Asus, Samsung, TCL etc.
iOS	Apple		Proprietary	Apple
BlackBerry	RIM		Proprietary	RIM

Source: Created by the author

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