Key Issues in Expansion of End-User Mobile Communication in China

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ABSTRACT AND KEYWORDS	
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Abstract

China's mobile communications market presents unique market challenges. With a high subscriber growth rate but polarized and stratified consumer adoption trends, an investigation into the current status of this market will improve our understanding on how adoption of mobile communications is evolving. In this descriptive paper we analyze key issues relating to market characteristics of mobile communications with an objective to better comprehend the dynamics of this largest mobile subscribers market. Using secondary data we identify mobile industry and end-user related trends to infer our conclusions for the industry.

1. Introduction

The China mobile communications market, including mobile handsets and mobile phone mediated communication and data services, has experienced large growth over the last decade. To begin with, the number of mobile phone subscribers in China has reached nearly 520 million with a market penetration rate of about 40 percent [See Table 1, 42h]. The number of mobile subscribers is expected to exceed 600 million by 2010 [4]. This subscriber's number makes China the world's largest mobile phone market. Indeed the mobile phone adoption rate and user numbers have surpassed the fixed-line subscribers [42h]. Equally the rate of adoption is high in mobile industry than in the fixed line. The number of mobile users increased by 78.32 million in 2007 as compared to the fixed-phone users increase of 1.5 million [42h]. The market continues to present a potential for business and marketing opportunities for both international and local manufacturers, telecommunication operators.

This magnitude and momentum of developments motivates us to investigate and understand the mobile communications market in depth. The objective of this paper is to provide a survey and analysis of the major market characteristics of mobile communications in China. In global markets there is increased interaction between firms and customers, suppliers, and alliance partners for mutually beneficial exchange transactions in markets [25]. In such a global environment, an in-depth analysis on key issues that contribute to the expansion of an industry by impacting its domestic business environment and the end-user markets is important examine [26]. Such analysis grants understandings to provide stability for business decision making and to facilitate and sustain the growth momentum of companies in fast growing markets like China [25]. We use secondary data to identify mobile industry and end-user related trends to infer our conclusions. Our analysis will provide insights for better understanding of market related key issues to marketing strategy makers. The paper is organized as follows: in the following section we study market characteristics at industry level to understand the macro marketing dynamics. Here we investigate the market developments at the telecommunications industry level that contributes to the growth of this sector. The next section analyzes the end–user level market characteristics, and in the final section we investigate challenges faced by mobile marketers and we conclude with some insights for the future growth of the mobile communications market in China.

2. Industry Level Market Characteristics

Previous research has advocated that understanding industry-specific characteristics can drive market outcomes of companies [25,26]. A scan of the industry level market characteristics formulates a key issue for business strategic planning process [26].

Market characteristics factors, external to the firms can help classify opportunities or threats that companies face and comparative strengths or weaknesses the companies have [25,19]. As such it is important in marketing strategy formulation and selection for companies, to pursue and expand the more opportunities for profit and growth. For mobile industry these include issues relating to access to international markets for new technologies by loosening of regulations or releasing from international trade barriers, and evolving structure of a market for competitive marketing environment [19,31]. Following these argument, at first we examine key market characteristics at industry level to understand the macro marketing dynamics that influence expansion of mobile communication.

2.1. Impact of Reorganization and Deregulation of the Telecom Industry

For more than a decade, the telecommunications industry in China has continually been subject to deregulatory measures and managerial reorganizations. The main objective of these restructuring efforts has been to develop the industry and to meet the high-growth demand in the domestic market [31]. Deregulation also addressed the deficiency in central government investment funds by inviting foreign direct investment and lag of technological development by facilitating access to international sources [18]. It also addresses the appropriateness of regulatory measures and management structure in the domestic market [27,18]. These strategies have motivated domestic industry to be competitive, efficient and enabled it to participate in the global market through joint ventures and other networks mechanisms [22,18].

Initially, two mobile operating organizations, the China Unicom and the China Telecom were formed to meet the industry and market objectives. In subsequent developments, Ministry of Information Industry (MII) was established [42h].

China's global participation efforts were also operationalized primarily through joining the World Trade Organization (WTO) [18]. Impact of China's formal accession to WTO in 2001, can be observed in consecutive market developments [18]. This accession committed China to allow foreign organizations to provide a wide range of telecommunication services through joint ventures with ownership of 49 percent [42i]. However, the market entry is subject to several regulatory steps and gives a preferential treatment to domestic companies. The measures require a mandatory technology transfer, and R&D activities from foreign organizations willing to enter the market [34]. Nonetheless, these expansion strategies have allowed a number of foreign telecom operators to enter the China market and in successive years its primary industries including the Telecom sector received large investments and experienced high growth rate [42f]. Lower custom tariffs for high tech products permitted cheaper imports of components, and motivated domestic manufacturers to innovate and produce affordable mobile handsets for local consumers [42e]. Subsequently, prices of mobile phone products and services also declined [42c]. Overall telecom charges in the year 2007 are perceived to be decreased by 13.6 percent [42h]. Mobile services have become more affordable and operators no longer charge both the caller and the receiver for their services and offer price competitive packages and free incoming calls.

The government's initiatives to promote the development of knowledge industries and fostering innovation including in the mobile communications sector has also contributed to some of its success. By making transfer of new technology a precondition under various joint ventures, China has attracted large FDI in R&D from international markets [22,18]. China however has yet to match the success of Japan and Korea in developing indigenous innovations. Most major foreign entrants in the mobile market have invested in R&D of 3Generation technologies. Alcatel has invested more than €100 million and Nokia, Ericsson and Siemens have also set up R&D units in 3G products and services development [24].

The government continues to be a predominant stakeholder in the development and profits of this industry. All providers of basic telecommunications services and mobile telephony are also state-owned enterprises. The government has effective control of system and content generation and distribution of mobile communications [39,41]

2.2. Dual Oligopolistic Market

China mobile communication market presents dual oligopolistic characteristics with the continuous dominance of the market by the two state owned mobile operators; the China Mobile Communications (China Mobile) and the China United Telecommunications (China Unicom). Irrespective of the deregulation of the industry, the market position of the two large state owned organizations has not shifted. The China Mobile is currently the largest GSM (Global System for Mobile Communications) operator in the world with 369.34 million mobile phone subscribers by December 2007 [See Table 1, 42h], followed by the China Unicom which operates both GSM and CDMA has nearly 150.28 million subscribers during the same period [42d].

Table 1 shows a comparison between the positioning of China Mobile and China Unicom on the basis of the number of their subscribers and their respective revenue generation. Although, market expansion efforts and strategies have created a competitive environment, and both foreign and domestic organizations are in competition for growth opportunities, the market continues to be dual oligopolistic [39]. It is to be noted that the two fixed-line operators, the China Telecom and the China Netcom introduced a Personal Hand-phone System (PHS), a low-cost 2G wireless standard phone often referred to as "Xiaolingtong" ("little smart" phone) as a substitute to mobile phone. Xiaolingtong is perceived by many consumers as a less appealing version of the mobile phone, with very basic voice and text messaging functions, a weaker signal and no roaming ability [40]. The Xiaolingtong subscriber growth has been decreasing and in 2006 there was a negative growth rate. By August 2007, there were 89.58 million Xiaolingtong registered subscribers [1]. These services now can be connected to 3G services but it remains to be seen how this segment could benefit from technological advances [40]. The emergence of Internet communication can also be observed as a competitive force to the two mobile operators specially for their voice services. But internet communication is not supported by the government and it does not constitute a decisive competitors impact on China's mobile market, which still can be characterized as a typical dual-oligopolistic market.

Table 1 Market Share of China Mobile and China Unicom

		2002	2003	2004	2005	2006	Dec. 2007
China Mobile	Revenue (RMB)	163730	171870	198300	235800	286300	na
	(US $)	20991	22035	25423	30231	36705	
	Share (%)	76.49	72.04	73.20	75.24	77.71	
	Subscribers*	1.38	178	221	264	317	369.34
	Share (%)	66.99	65.93	66.17	67.18	68.76	
China Unicom	Revenue (RMB)	50330	66705	72620	77700	82140	na
	(US $)	6453	8552	9310	9962	10531	
	Share (%)	23.51	27.96	26.80	24.78	22.29	
	Subscribers*	68	92	113	129	144	150.28
	Share (%)	33.01	34.07	33.83	32.82	31.24	
Total	Revenue (RMB)	214060	238575	270920	313500	368440	na
	(US $)	27444	30587	34733	40193	47236	
	Subscribers*	206	270	334	393	461	519.26

Source:[42h] * figures in millions

The data presented in Table 1 further shows that China Mobile's revenue share on average constitutes 75 percent of the total market with an average of 66 percent of the total number of subscribers. This suggests that China Mobile generates higher average revenue per user (ARPU) than its nearest competitor China Unicom. It also suggests that it is more innovative in its marketing strategies than its competitors. This is supported by the variety of value-added services (VAS) offered by it. This innovativeness contributed to its high VAS revenue (RMB 69.31 billion or $9 billion) in 2006, that accounted for near 23.5 percent of its total revenue. On the other hand, China Unicom earned RMB 11.543 billion ($988 million) from VAS or 12.2 percent of its total revenues in the same period [20]. These figures also illustrate that the intensity of mobile communication and demand for VAS is on increase.

3. User Level Market Characteristics

Innovative policy and marketing strategies have facilitated an increase in mobile communication adoption across various segments. Consumers however, are not alike and this provides a challenge for continuous successful marketing for products and services. Urban et al [33] contend that not every offering will be right for every customer, nor will every customer be equally responsive to the efforts to bring marketers' offering to their awareness and acceptance. Success in these regards requires a targeted approach of market segmentation to ensure efficient use of marketing efforts [23]. In this section we aim to understand these issues by applying well accepted research approach to study this sector using market segmentation perspective [8,12]. An investigation of various market segments is important for superior deployment and utilization of corporate performance capabilities in meeting the needs and expectations of the customer population [10, 23]. By understanding key issues at end-user level, organizations, including mobile operators can expand their market growth and market share and better attain their goals of superior customer satisfaction [8].

Increasing regional disparities in China [9] and consumers demand for heterogeneity and personalization product and services [32] present significant challenges for marketing efforts of mobile companies in China. Without understanding the diversity and disparity of China's mobile users, it would be difficult to assess correct trajectory of demand and of proposed strategies for effective marketing. With this understanding, we examine key trends among various segments of mobile consumers to derive marketing implications for mobile operators in China's market.

3.1. Income Based Market Segments

With an average GDP growth rate of eight percent during the last decade [42g], consumers in China have experienced a high increase in their purchasing power. The distribution of income structure shows that average annual disposable income per capita in 2006 was 11,759 Yuan, (1469.9US$) a 10 percent increase from the year before [42g]. According to a Gallup study based on the sample of 15,000 adults across China, the average household income has increased by nearly 250percent over the last decade [16]. Cumulated with overall lower manufacturing costs, it is estimated that a consumer in China can, on average, buy nearly four to five times in goods and services per dollar as compared to his counterpart in USA [15]. High and middle-income households constitute the most rapidly growing segments of the population [9]. These developments have directly contributed to the higher, frequent change, multi-brand and multiple unit adoption of mobile telephony [1,2,3]. These trends also show the probability of increased ARPU and higher revenue generation in the industry through value added services [27].

This high income segment is however largely urban and the current consumption of mobile value added services is also concentrated in urban areas [9,3]. It was estimated that in 2004, the average consumption of an urban household in Shanghai is almost three times the national average [28]. Geographically, the eastern and southern provinces of China are economically more developed [9], and are major drivers for revenue growth in the mobile telephony sector with the purchase of branded product and higher use of value added services [29,41]. With mobile phone functionalities continually being upgraded and average product and service prices on decrease, there is a higher likelihood for urban consumers to continue to show preference for branded and high-end units irrespective of the higher prices [9, 15, 29]. This decision to product renewal and brand hopping cycle has become shorter creating demand for new handsets [18,11].

The per-capita income of the rural population is estimated to be only one third of the per-capita disposable income of urban China [28, 12]. But irrespective of these income disparities, the rural market segment is becoming the driver and sustaining factor for the mobile industry [3]. This is supported by the fact that more than half of China Mobile's new subscribers in the year 2006 and 2007 were from rural areas [16,1]. As urban markets become saturated, China Mobile and China Unicom are also expanding their network in the rural areas. It is interesting to note that domestic manufacturers have largely focused on the rural market share form the early stages of their marketing efforts. Their business model incorporates exploiting lower labor costs based products; lower purchasing power based market segment, and low profit margin but large market share strategy [11,29]. These domestic handset manufacturers have successfully realized the significance of low-end R&D to meet the global competition and to serve the bottom market segments [29]. In the first half of 2007, around 72 million homemade mobile phone sets were sold in China [1,7]. The new number of subscribers during that period was 84 million and this accounts for 86 percent of market share [42h]. This shows that large market segments including the rural and the bottom market segment, have evidently benefited from local manufacturing of handsets and other accessories.

This growth of the mobile communications market in China can be explained by market characteristics of any typical developing country where first-time buyers constitute a large part of the consumer market. With 40 percent mobile subscription penetration rate (see Table 1), the market has yet to arrive at a saturation and this projects growth in market potential in this market.

3.2. High ARPU: Lifestyle based Market Segment

Across demographic segments, young working adult segment is crucial in China's mobile market, both in market size and market penetration rate [9,35]. It is estimated that 55 percent of mobile users in China are young working adults between the ages of 25 and 35 years [32,35]. In urban areas like Guangzhou, mobile subscription penetration rate for the young population between 21 to 30 years is about 92 percent as compared to the national average of 40 percent [35]. For the young working adult segment comprising of young entrepreneurs and professionals mobility constitutes a life style element [32,29], which also explains why this segment spends most on value added services [38]. But price sensitivity of these services has also contributed to the polarization of the content services market in favor of high earning young adult market [41]. The demand of VAS is also reflected by the expected growth in total revenue by mobile value-added service providers to around US$1.9 billion in 2008 [4]. The China Mobile earned about 25 percent of its revenue from value added services in 2007, and its voice business revenue has declined [6]. This shows the importance of value of content services in the mobile communications market [38].

Expansion of mobile market is also reflected by the decision of the category and brand of mobile handset purchased by various user segments [12]. For the young adult market segment, a mobile handset with an advance communication and entertainment center is also a lifestyle statement. The demand from this

segment emanates from the desire to upgrade or replace the current hand set [35]. In 2007 nearly 25 million units of high-end smart phones were sold and this sale contributed to 16 percent of total handset market in China [1]. This preference for high-end units may also be explicated by an increase in demand for value added services like entertainment content, collaborative gaming and communication, and other VAS that affects users' decisions to purchase specific mobile units. Additionally, technological innovations for high data transfer contribute toward older technologies to become obsolete and require consumers to constantly upgrade [12]. Based on sales data of 2007 user preferred Nokia (32 %) and Motorola (21%) as most preferred brands followed by Samsung and Lenovo[8*] one of the main factors that contribute to sustaining the growth in this industry [34].

Growth of mobile value added services market in terms of the variety of services offered also signifies expansion of mobile communications [38]. Although the variety, accessibility and availability of VAS and 3G applications are limited when compared to US and European markets [41,38]. Nonetheless existing services serve both functional and hedonic needs of the users. Data on availability and acceptance of these services shows users preference for hedonic over functional usage of VAS. These services include downloading pictures, accessing Internet, using MMS, surfing on WAP websites, and downloading mobile phone games [21 5, 4]. Guessing games, news alerts and information inquiries are other value added services on growth. Amongst value added services, ringtone downloading is the most widely accepted service [21]. This demand for VAS and investments in 3G technologies suggest a rapid development momentum for services like mobile music and mobile videos [1].

In addition to entertainment based VAS, demand for functional utilitarian non-voice business is also projected to grow [2,4]. These services include mobile newspaper, mobile payment, and mobile tracking reports. These growth projection present mobile operators with challenges of managing the future growth of mobile content [42g,4,2]. Services like message-on-demand and stock trading are increasingly being used [38]. For example, subscribers can visit the website of SOHU and subscribe to customized news on sports and entertainment [27]. This allows them to receive the latest news via their handsets on a regular basis. China Mobile charges of mobile news depend on service providers (SP), but on average RMB2.00 (US$0.2) per news piece of 160 characters or RMB 30.00 (US$3.75) per month [37]. Service providers are thus differentiating themselves by integrating mobile content and value-added services on SMS (short messaging services), MMS (Multi-media Messaging Services), WAP (Wireless Application Protocol), and IVR (Interactive Voice Response) [8,39]. Alliances and networks with third party content and service providers are on increase and market is orienting itself to greater customer satisfaction by providing more choices. Service providers are innovative in introducing services conducive this high ARPU market segment.

This market size and market scale enables China's portals and other stakeholders like service providers to earn large profits on their value-added service [6,4]. But current set of regulations also support mobile operators to earn large revenues by allowing them to retain 15 percent of the message fee. The two large mobile operators also have exclusive rights for operating SMS services [4,6].

Growth of mobile communications is further manifested in its ability to learn form international successes. Chinese mobile operators have learnt valuable experience in developing a business models along the successes of NTT DoCoMo in Japan. These experiences showed the value of market consolidation through alliances between mobile operators and third-party content providers [39,27]. Subsequently, China Mobile introduced the Monternet program, and service providers can now access the carrier's mobile network at any place to provide nation-wide service[38]. This is also known as the "one-stop shop, China-wide service" arrangement. China Mobile keeps between nine and twenty percent of the traffic revenue and the content service providers receive remainder of the revenue [39, 6]. These measures aim at more competitive and consumer oriented growth in future.

3.3. Low ARPU Market: Short Messaging Services (SMS) Usage

China operates both GSM (Global System for Mobile Communications) and CDMA networks but 3G is in its initial stages and so far there is insufficient demand for limited and costly 3G application services available on the market. The mobile telecommunication services market can so far, largely, be treated as a homogeneous market with limited demand for value added services and low ARPU [27,38]. Future growth of mobile value added data services in China also depends on the growth patterns of SMS [26]. A Chinese user sends on average about 12 SMS per day as compared to 2 SMS in US, 2.2 in the UK and 6 SMS per day in Japan. This magnitude of SMS usage translated in total revenue of about RMB27.9 billion (US$3.48billion) in first half of 2007, comparing to a revenue of about RMB 42.9 billion

(US$5.4billion) in the year 2006 [42h]. This generated about seven percent of the total revenue form mobile communications, excluding the revenue generated by content providers (see Table 1). On average, each user spends RMB9.95 (US$1.24) on SMS per month.

Some possible explanations for this growth rate include this service to be economical and cost effective way to communicate [30,31]. For example, an SMS can take up to 160 characters in China as compared to 140 in India, and costs RMB0.10 (US$0.01) [42h] against a regular one-minute telephone call for RMB0.40 or 0.25 (US$0.05 or 0.02) [42h, 38]. While the success of SMS is largely a result of its low cost and convenience [30], it is also attributed to a relatively reserve attitude of Chinese toward open communication and self-expression [30,2]. An absence of direct competition may also account for SMS success. Internet portals like SINA.com and Sohu.com allow users to send SMS via their PCs to the handsets of mobile phone users, but given the low PC penetration rate of around 15 percent this is not a viable option and does not constitute direct competition to SMS [41].

SMS has also contributed to expansion of this industry. It has facilitated the adoption of mobile commerce and mobile marketing [31]. New SMS mediated m-commerce models provide personalized services such as SMS novels, have potential to be successful in the Chinese market[4]. This service enables mobile phone users to read a novel by receiving an 'episode' in a SMS message every day, costing about RMB 0.50 (US$0.06) for each episode [4].

Success of SMS has also profited operators and service providers in developing messaging based marketing models. Several businesses now provide SMS based information services to customers and consumers and this provides further impetus to the industry[3]. A joint SMS centre, called MOBNIC (Mobile Network Information Centre), was jointly launched China Mobile, China Unicom, the China Mobile Communication Association and other service providers. Its services enable users to visit corporations' "SMS-based websites". Users can send a specific number or code via an SMS message to access the "SMS website" of a business to receive free interactive information services. A 160 character message with 40% space for sponsored advertisements is then sent to the user [7]. This advertising offers small and medium-sized enterprises (SMEs) an opportunity for low cost marketing [4]. Thus the growth in mobile messaging has had an impact on the development of m-commerce and mobile advertising [7,41]. Mobile advertisements are predominantly SMS based but other services such as color ringtones, WAP browsers, voice services are also accepted by end-users [42j]. By 2010 mobile advertising is projected to generate near RMB two billion in revenue (US$ 0.25 billion)[21]. Thus the low ARPU market segment is being gradually integrated into main stream data services and being successfully exploited by creative SMS and mobile marketing strategies.

3.4. Preference for Prepayment Price Mechanism and Low ARPU

Prepaid price mechanism is the prevalent mode of transaction necessitated by China's current telecom business environment. The pre-paid mechanism has significantly contributed to the diffusion of mobile telephony all over the world [17]. China's new subscribers are from low income, low usage and lower ARPU market segment. It is reported that China Mobile's ARPU has declined from RMB431 (US$52) in 1997 to RMB96 (US$12) in 2007 [42a]. This can partially be explained by declining costs of the mobile services but largely the growth in low-use subscribers who use pre-paid services mode account for this decline. Around 67 percent of China Mobile's total subscribers are on prepaid plans [42a].

Preference and adoption of prepaid mechanism can be explained by several factors. In low income segments it allows users better control over their spending. As prepaid users do not have to register their address with the operator it extends more privacy to the user than with subscription plans [14,17]. Pre-paid services are also favored by China's Telecom operators because of market and procedural irregularities associated with the back-end-billing or post-paid payments [14]. The monetary and banking sector is not yet established in its transaction regulations and their implementation [39]. As a consequence post-paid strategy has caused operators loses from unpaid bills [17]. Back-end billing and collection systems are evolving, and all stakeholders are in the process of learning and adoption of various payment mechanisms.

The mobile communications diffusion impacts several other industries too. It is pressurizing banking sector to expedite reform and develop new and efficient mechanisms to meet user and industry's demand. Most consumers do not own or use credit or debit cards and China continues to be largely a cash culture economy [36]. Because of this undeveloped billing system, mobile operators are also not able to sell third-party financial services. Even if the technological advancement has increased operational capacities, and lowered operational costs, banks in China have their own individual credit and debit card

billing system [36,39]. Their transactions cannot be routed through a centralized computer system until systems are standardized or replaced by a collective system. Marketing efforts to encourage customers to switch to subscription plans and use third-party services, have therefore achieved limited success.

4. Conclusions

It is evident that the mobile communications market in China is undergoing reforms and expanding at a high growth rate. Our analysis provides information that should be helpful to mobile operators in their general market perceptions and the growing competitive environment in which they operate in China. However the mobile communications industry also faces several challenges that are negatively affecting revenue and profits generation and has slowed down the growth of the mobile industry. These include market irregularities relating to illegal and unwanted content; forced subscription of services without users prior consent; underdeveloped billing methods; and declining ARPU and other revenues [31,29].

In an attempt to rectify some of the marketing irregularities, China mobile suspended MMS licenses of some of its operators for providing MMS services to users without prior permission. Better policy measures and managerial implementation can diminish such market irregularities.

Market is consolidating where several small service providers are either being eliminated or being merged with larger organizations [4]. China's Mobile operators are forming their own value-added service (VAS) consortium to avoid dependence on the third party content and service providers. This strategy also displaces existing service providers and helps in sustaining the dual oligopolistic structure of the market where the two mobile operators, China Mobile and China Unicom, continue to dominate the market. This structure allows them to exercise significant negotiating power over third-party service providers. The Public-Private Partnership (PPP) model can further intensify competition and extend higher user satisfaction. It is to be noted here that findings of a national survey undertaken by third party researchers on a sample of 90,000 mobile users across China showed 76 percent of total respondents were satisfied with two large mobile operators [42 a,d, 20]but dissatisfied with higher service charges and poor signal quality. Introduction of competition through policy and managerial interventions can accelerate growth in the industry and motivate introduction of new products and services

The 2.5G based value added service acceptance is growing and recently China has allowed market test of indigenous TD-SCDMA 3G standard services. These offers higher quality graphics, richer content and interactivity and are premium priced than the established SMS-based services. But success of China's 3G policy will relate to users acceptance of value added content and not just the drive by operators intent to yield higher ARPU. It is also expected that with 3Gs launch, every operator will receive license to use European WCDMA and US CDMA. Indigenous TD- SCDMA will no longer be the only standard available on the market. However it is expected that China will continue to protect its domestic standard TD by giving it market priority for about two years. Therefore, implementation of international 3G services has been delayed until the Olympic games of the summer 2008. Future success of the mobile industry may thus depend upon balancing a combination of factors relating to policy, management structure and effective marketing strategies.

5. References

[1] Annual Report on China's Mobile Phone Market 2005-2006, 2006-2007; CCID Consulting www.ccidconsulting.com/. Accessed 25th Jan., 2008.

[2] Bina, Maria; Giaglis, George M.. "Perceived Value and Usage Patterns of Mobile Data Services: A Cross-Cultural Study". *Electronic Markets*, Dec2007, Vol. 17 Issue 4, pp241-252

[3] Bout, Bram J.; Chang, Vincent; Lin, Sarena. "China's market for mobile phones". *McKinsey Quarterly*, 2004 Issue 2, p25-27.

[4] China Daily. : Several Issues

[5] China Mobile Value-added Services Report, 2006, Research In China, Jan 2007, Pages: 220

[6] China Mobile (2008) Excellent Financial Performance Favorable Profitability, China Mobile Limited Announces 2007 Interim Results, 16 August 2007 http://www.chinamobileltd.com/doc/pr/2007/20070816.htm Accessed 25th Jan., 2008

[7] Chowdhury, Humayun Kabir; Parvin, Nargis; Weitenberner, Christian; Becker, Michael "Consumer Attitude toward Mobile Advertising in an Emerging Market: an Empirical Study", *International Journal of Mobile Marketing*, Dec2006, Vol. 1 Issue 2, pp33-42.

[8] Constantiou, Ioanna D.; Damsgaard, Jan; Knutsen, Lars "The Four Incremental Steps Toward Advanced Mobile Service Adoption". *Communications of the ACM*, Jun2007, Vol. 50 Issue 6, pp. 51-55.

[9] Cui, G. and Q. Liu "Emerging Market Segments in a Transitional Economy: A Study of Urban Consumers in China" , *Journal of International Marketing* , 2001,9(1): pp. 83-106.

[10] Day, George S Strategic Market Analysis and Definition: An Integrated Approach. *Strategic Management Journal*, Jul-Sep81, Vol. 2 Issue 3, pp. 281-299.

[11] Dean, T. "The fight for China's handset market", *The China Business Review*,2003, 30 (6), pp. 28–31.

[12] Dittrich, Koen, Duysters, Geert. " Networking as a Means to Strategy Change: The Case of Open Innovation in Mobile Telephony". *Journal of Product Innovation Management*, 2007, 24(6), pp. 510-521.

[13] Embedded Research Network 2007 Nokia's cell phone sales skyrocket in China

[14] Fan, Z. "China Unicom fights against delinquent accounts". Qilu Night. April 5, 2000.

[15] Fishman, Ted C. "The Chinese Century". The New York Times Magazine. July 4, 2004.

[16] Gallup (2007) A Weak Driver of a Strong Economy Challenges in China's Move Toward Consumption-Oriented Economic Growth Gallup Chinese Consumer Study: 1994 -2006 http://media.gallup.com/WorldPoll/PDF/WPChinaTFExecSummary.pdf, The Gallup Organization, Princeton, NJ.

[17] Gow Gordon A. and Ihnat Mark "Prepaid Mobile Phone Service and the Anonymous Caller" *Surveillance & Society*, 2004, 1(4), 555-572.

[18] Groombridge, Mark A. "The Case for China's Accession to the WTO". Harvard Asia Quarterly. Spring 2000.

[19] He, Zi-Lin; Lim, Kwanghui; Wong, Poh-Kam. "Entry and competitive dynamics in the mobile telecommunications market". *Research Policy*, Oct2006, Vol. 35 Issue 8, pp. 1147-1165.

[20] Interfax-China Telecom Weekly Provider, 2007

[21] iResearch (2007) What were China's 450 million mobile users "Searching" for 2007/01/23 http://english.iresearch.com.cn/search_engine/detail_news.asp?id=8145

[22] Jiang Yu and Kim Hua Tan "The evolution of China's mobile telecommunications industry: past, present and future".2005, *International Journal of Mobile Communications*, Vol. 3 Issue 2, pp. 1-1.

[23] Kotler, Philip (2006) Marketing Management . Prentice Hall

[24] Kwong, 2000 Kwong, Regis (2000) Tomorrow's Telecoms: Who Will Win China's Phone Wars? Asia week, December 1, Hong Kong, 1-1.

[25] Mason, Roger B "The external environment's effect on management and strategy /A complexity theory approach." *Management Decision*, 2007, Vol. 45 Issue 1, pp.10-28

[26] Menon, A. et al. "Antecedents and Consequences of Marketing Strategy Making". *Journal of Marketing* 1999, 63: pp.18-40.

[27] Mylonopoulos, Nikolaos A.; Sideris, Ioannis A.. "Growth of Value Added Mobile Services Under Different Scenarios of Industry Evolution." *Electronic Markets*, Feb2006, Vol. 16 Issue 1, p28-40.

[28] PricewaterhouseCoopers. "2004/2005 Global Retail & Consumer Study from Beijing to Budapest". Pg.5-6.

[29] Qing and Lee, 2005 M. Qing and K. Lee, "Knowledge diffusion, market segmentation and technological catch-up: The case of the telecommunications industry in China", *Research Policy* 34 (2005) (6), p. 759

[30] Reid Fraser J.M., Reid Donna J. Text appeal: the psychology of SMS texting and its implications for the design of mobile phone interfaces, *Campus-Wide Information Systems*, 200421(5), pp. 196 – 200.

[31] Sangwan, Sunanda Louis-Francois Pau, "Diffusion of Mobile Phones in China", *European Management Journal*, 2005, Vol. 26, No. 5.

[32] Schmitt, B. "Who is the Chinese consumer? Segmentation in the People's Republic of China", *European Management Journal*, 1997, Vol. 13 No.2, pp.191-194.

[33] Urban, Glen L.; Weinberg, Bruce D.and Hauser, John R.. "Premarket Forecasting of Really-New Products", Journal of Marketing, 1996, Vol. 60 Issue 1, p47-60.

[34] Weaver, G. "The Mobile Phone Industry: A Strategic Overview," *Reed Electronics Research*, June 2005.

[35] Weichao Nancy (2007) Everyday necessity of Teens: The use of mobile phones for young people in Macau and Guangzhou. China East Asia Media New Media Conference 2007 http://cea.cci.edu.au/?q=node/154

[36] Worthington, Steve; Stewart, David. "The adoption and usage of credit cards by urban-affluent consumers in China". *International Journal of Bank Marketing*, 2007, Vol. 25 Issue 4, p238-252.

[37] Xinhua News Agency, 2007

[38] Xu, Yan. "Mobile Data Communications in China". *Communications of the ACM*. December 2003. Vol. 46. No. 12.

[39] Yaobin Lu, Yuanyuan Dong, Bin Wang (2007) "The mobile business value chain in China: a case study". *International Journal of Electronic Business*, Vol. 5, Iss. 5; pp. 460

[40] Yuan, Yufei; Zheng, Wuping; Wang, Youwei; Xu, Zhengchuan; Yang, Qing; Gao, Yufei "Xiaolingtong versus 3G in China: Which will be the winner?" T*elecommunications Policy*, 2006, Vol. 30 Issue 5/6, pp. 297-313.

[41] Zhang, Xiaoni & Prybutok, Victor R. "How the Mobile Communication Markets Differ in China, the U.S., and Europe". *Communications of the ACM*. March 2005. Vol. 48, No. 3.

[42] Web sources:

a chinamobile.com
b chinamobileltd.com
c chinaprice.org.cn
d customs.gov.cn
e ChinaUni-com.com
f fdi.gov.cn
g indexmundi.com
h mii.gov.cn Ministry of Information Industry in China
I mofcom.gov.cn, Ministry of Commerce in China
j securities.com

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