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Business ecosystem strategies of mobile network operators in the 3G era: The case of China Mobile

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ABSTRACT

In order to define the mobile network operators' strategies of building value network in the 3G era, this paper applies the ecosystem principles to the mobile industry through a China Mobile case study. Based on an analytical framework of such principles, this paper reviews China Mobile's ecosystem, and identifies its success factors and problems. The results indicate that a complete ecosystem, where mobile network operators collaborate closely with value-added service providers, content/application providers, equipment and device manufacturers, and other involved organizations, can promote the development of mobile data services substantially. Therefore, mobile network operators should play a central role in the ecosystem by managing the entire value-chain and setting up proper value-sharing mechanisms. However, while doing so, problems may arise because of regulatory issues and information asymmetry. High-value common assets, a centralized management system, partner selection schemes and continuous innovations are important success factors.

1. Introduction

The mobile communication industry is fast evolving towards 3G (the third-generation mobile communications), which is characterized by mobile broadband networks and high-quality multi-media services (Dekleva, Shim, Varshney, & Knoerzer, 2007). During this transition, the business model of mobile network operators has changed significantly (Kuo & Yu, 2006; Tilson & Lyytinen, 2006). The expansion of mobile services brings more participants into the industry, while new technology and services requires much more cooperation among them than ever. In such an environment, every participant has to deal with complicated business networks that may traverse multiple industries (Kuo & Yu, 2006). Therefore, the concept of "business ecosystem", which was first presented by Moore (1993) and was then developed and broadly adopted by companies in the 1990s (Adner, 2006), has great significance for business strategy planning. This vivid terminology and associated methods provide a broader view than the value chain perspective, and thus help understand the modern business networks rather than focus on products and services (Anggraeni, Hartigh, & Zegveld, 2007; Iansiti & Levien, 2004a). The ecosystem theory shows that, whether a firm operates in a healthy ecosystem and adopts an appropriate strategy in this system are essential success factors.

The research on business ecosystem theory as a strategy formulation tool is still in its early phase of development. Most studies are at the conceptual level as case studies (Anggraeni et al., 2007). More attention is paid to particular industries and technologies such as the IT industry, Internet and biological technologies (Gunasekaran & Harmantzis, 2008; Iansiti & Levien,

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2004a; Iansiti & Richards, 2006). This paper applies the business ecosystem theory to the mobile communications industry, and studies the typical ecosystem strategy of a mobile network operator—China Mobile.

This is an exploratory study using a developing theory to analyze the emerging 3G business networks. In particular, China Mobile, as a dominant mobile operator in China, is operating in a fast-changing environment. Thus, the case study of China Mobile will provide not only insights into its operation, but also valuable experience for building and managing similar business ecosystems in dynamic new markets.

The objectives of this case study are: (a) to analyze the structure of the mobile communications industry in the 3G era from the perspective of business ecosystem; (b) to assess the keystone strategy of China Mobile based on a theoretical framework; (c) to explore the success factors and problems of China Mobile's strategy; and (d) to extract general implications and conclusions. Accordingly, as a background of this study, the next section presents the global 3G transition and an overview of the mobile service market in China, while Section 3 provides the theoretical foundation and develops an analytical framework based on previous research. In Section 4, China Mobile's strategy is assessed following this framework. And in Section 5, the success factors and problems in the implementation of China Mobile's strategy are identified. Finally, conclusions are summarized and implications are discussed.

2. Background

2.1. The 3G transition of the mobile communications industry

3G technologies, aiming to meet the demands of advanced mobile data services for multimedia applications, began to be deployed in 2000 (Dekleva et al., 2007). By June 2007, 207 3G licenses have been granted in different parts of the world, and the total subscribers of 3G services has reached 202 million (CATR, 2007). Japan was the first nation to have more than 50% of its mobile subscribers using 3G, followed closely by South Korea (RNCOS, 2007). The leading 3G applications are music download, video download, game, mobile Internet access and video telephony (Park, Kim, & Paik, 2004; RNCOS, 2007).

In this paper, "mobile network operator" refers to a company that possesses a mobile communications network and provides mobile communications and information services to customers. In the 2G (the second-generation mobile communications) era, mobile network operators were undoubtedly at the center of the mobile communications industry. But in the 3G era, contents and applications are indispensable for developing data services, which is drastically different from voice-centric services (Kim & Yi, 2005). Meanwhile, the mobility and portability of mobile devices determine that mobile data services are different from those based on the wired Internet. Therefore, the 3G transition is more than a technology upgrade. Instead, it is an economic transformation that requires a reconstruction of the industry's value network and the creation of a new market (Kuo & Yu, 2006; Tilson & Lyytinen, 2006). New players providing contents, applications, system integration, and special software, middleware and hardware have entered the industry, created diversified new data services, and connected the industry with many other sectors.

As the mobile subscription growth is slowing down and voice services are becoming commoditized, it is becoming increasingly difficult for operators to charge a premium for voice services. Data services will become the new source of profitability for network operators. Media convergence and content differentiation are the trends of the global information industry. From a broader perspective, the information industry, with mobile communications becoming an integral part, is becoming the hub of the entire economy. The boundary of the industry is expanding and blurring, and accordingly the role of network operators is changing (Kuo & Yu, 2006; Nicopolitidis, Papadimitriou, Obaidat, & Pomportsis, 2004).

2.2. The mobile service market in China and China Mobile

China launched 1G (the first generation mobile communications) mobile services in 1987, then adopted the GSM (Global System for Mobile Communications) standard and moved to 2G in the early 1990s. The subscriber number has grown from only 3 million in 1990 to over 641 million by the end of 2008 (MIIT, 2009). The huge market and its potentials have gained worldwide attention.

In the 3G transition, China seems to have fallen behind because the Chinese government did not grant any 3G licenses until January 2009. 3G services have been available in China for only a few months. But the mobile network operators and related companies have prepared for mobile data services for years (Zhang & Liang, 2007). Based on the 2G networks and upgrading technologies, many data services with diversified contents have been developed.

Currently, there are only three mobile network operators in China: China Mobile, China Unicom and China Telecom, and they are all largely state-owned companies. This market structure was shaped through the telecom reforms and reconstructions in the past two decades (Liang & Zhang, 2001; Lin, Liang, & Wan, 2001). The founding of China Unicom in 1994 was a milestone for bringing competition to the basic telecom services market. China Unicom initially deployed a GSM network and subsequently built a code division multiple access (CDMA) network in 2002. China Mobile was set up in 1999 by spinning off the mobile operation from China Telecom, which used to be the only operator in China (Lin et al., 2001). Under the regulations of the Chinese government, from 2000 to 2007, China Mobile and China Unicom are the only competitors in mobile services, while the other two large network operators, China Telecom and China Netcom, were restricted to operating fixed line communications services. Being the incumbent inherited from a monopoly, China Mobile had great advantages over China Unicom from the very beginning. At the end of 2007, the market share of China Mobile in