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Mobile payments in Japan, South Korea and China: Cross-border convergence or divergence of business models?

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ABSTRACT

Competitive pressures created by the global market, and the demonstration of market potential in one country influences the incentives to adopt successful technologies and business models in similar countries. In this paper, we explore how mobile payment operation models might evolve in China, using the more mature Japanese and South Korean markets for comparison. Comparing existing business models in the three countries, we argue that regulation has affected both the industry structure and the vertical linkages of the different participants in the mobile payments ecosystem. We predict that rather than converging onto the mobile payment models of Japan or South Korea, the Chinese mobile payment industry is likely to see the coexistence of competing business models in the intermediate term. We attribute this to the contradictory incentives created by Chinese financial sector regulation for the participants in the mobile payments industry.

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1. Introduction

As of the first quarter of 2015, the number of global mobile subscribers was reported to have reached 7.1 billion, and the number of mobile lines in service was expected to surpass the world's population later that year (Telegeography, 2015). Mobile devices such as smartphones, Personal Digital Assistants (PDAs), tablets, and e-books readers are gradually replacing traditional personal computers as the main means of accessing the Internet, leveraging the widely deployed 3G/4G telecommunication technologies. This proliferation of mobile devices has created unparalleled opportunities for mobile commerce (Chen, 2012), and mobile phones have been serving a variety of customers as a multi-sided platform (Campbell-Kelly, Garcia-Swartz, Lam, & Yang, 2014).

Secure, reliable and economical modes of payment play a critical role in the successful implementation of mobile commerce (Lu, Yang, Chau, & Cao, 2011). Mobile payments, also known as “mobile phone payments” or “m-payments”, are payments for goods, services, and bills/invoices with a mobile device, such as a mobile phone, smart-phone, or PDA, by taking advantage of mobile telecommunications networks or proximity technologies (Dahlberg, Mallat, Ondrus, & Zmijewska, 2008). Typically, the user decides to make a mobile payment, is then connected to a server via the mobile device for authentication and authorization, and once the transaction is executed, provided a statement of confirmation.

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Mobile payment systems show wide disparities in rates of penetration in different national markets. In general, they have been slow to diffuse in Europe, the United States and other countries where the credit system is mature and well-established and the credit card payment system is very popular (Ghezzi, Renga, Balocco, & Pescetto, 2010; Kapoor, Dwivedi, & Williams, 2013; Nickerson, 2013; Perez, Rosa, Medeiros, & Comar, 2013). With access to comparatively less developed consumer banking and credit card systems, consumers in Japan and South Korea were very quick to adopt mobile payments, with the result that mobile payment markets in those countries are more mature (Okazaki, 2006).

In this paper we compare three Asia countries: Japan, South Korea and China in terms industry structure of their mobile payment industries, strategic alliances between firms, and government regulation. All three are major mobile markets. As of 2015, there were about 1.29 billion mobile subscribers in China (MIIT, 2015), 148 million in Japan (TCA, 2014) and 56 million in South Korea (Heraldcorp, 2014). While Japan and South Korea are global leaders in mobile payments, China's market is currently relatively less-developed, showing patchy development—with some regions far ahead of the others—in many technologies and applications, such as bill payment, mobile ticketing and remittances (Choi & Collins, 2007). With the country still building up its national credit system and the credit card market still very small compared to cash transactions, there are great opportunities in China for the deployment of mobile payment. At the same time, the competition among mobile operators, banks (and bank unions) and third-party payment platforms has accelerated the development of mobile payment in China. Consequently, the market has shown striking growth rates in recent years: transaction volume increased from 1219.7 billion yuan in 2013 to 5992.5 billion yuan in 2014, and is expected to be 18,000 billion yuan in 2018, making China the biggest market in the world (People, 2015). It is therefore important to investigate the current models for mobile payments in China, and its possible evolutionary trajectory as the industry continues to grow.

Milner (2003) proposed that the adoption of a new technology in one country affects adoption in other countries, by demonstrating market potential as well as by providing improved models from which the early bugs and kinks have been removed. Competitive pressures created by the globalized market would affect the success rates of technology adoption in similar countries (Putsis, Balasubramanian, Kaplan, & Sen, 1997). Eliashberg and Helsen (1995) measured the effect of early and rapid product diffusion in one country and its subsequent effect on diffusion in another country. In this paper, we explore the possible evolutionary paths of operational models for mobile payments in China, comparing it to the longer-established and more advanced models in Japan and South Korea. Specifically, we examine whether the Chinese mobile payment model would converge to that of either Japan or South Korea, as it continues to develop, or whether we might expect a unique pattern of development. We contend that a critically important factor is regulation, specifically the type of restrictions placed on industry structure and market entry. Accordingly, we also examine the differences in the regulatory environment for banking and mobile payments in the three countries.

Selecting Japan and South Korea as cases of comparison to China was based on the following considerations: First, Japan and South Korea were early leaders in mobile payment implementation (Okazaki, 2006). Second, Japan, South Korea and China share similar socio-cultural characteristics such as trust in institutions, acceptance of technology, and comparable attitudes regarding privacy and security—all possible influences on adoption of mobile payment. Third, the three countries also have comparable penetration of mobile subscribers and mobile Internet consumers (Akematsu, Shinohara, & Tsuji, 2012; Lim et al., 2012; Lu et al., 2011). Finally, an extensive literature exists on the mobile payment industry in Japan and Korea (see survey of literature in Dahlberg et al., 2008), while China has attracted much less attention (for examples, see Wu, 2008; Wang, 2008; Shi & Shuai, 2009). Nevertheless, many authors also point to the enormous growth potential of the mobile payment industry in China and the importance of developments in the early stages to influence the future trajectory of the industry (Zmijewska & Lawrence, 2006; Men & Song, 2007; Zhou, 2009a, 2009b). Only a few scholars have compared China with other nations (Liu, Yang, & Lv, 2008; Wang, 2009).

This paper is organized as following. Section 2 reviews the previous literature on the mobile payment industry, also identifying a typology of mobile payment operational models. Section 3 examines the laws and regulations relevant to the operation of the banking sector and the mobile payment industry. Section 4 analyzes the mobile payment models in South Korea, Japan and China with a selection of two cases for each, illustrative of specific features of the mobile payment markets in that country. Section 5 discusses the possible future evolutionary paths for the mobile payment operational model in China, especially in the context of recently-announced regulatory policies on major players in the mobile payment value chain. Section 6 presents the critical differences that may explain why the operational models for mobile payment have not converged in China. Finally, Section 7 concludes the paper.

2. Literature review

2.1. Major themes in the mobile payments literature

An extensive literature, both theoretical and empirical, exists on the mobile payment industry. An excellent overview of the early literature from 1999 to 2006 is provided by Dahlberg et al (2008). Building on this literature, scholars have conducted studies of factors predicting consumer acceptance (Schierz, Schilke, & Wirtz, 2010; Yang, Lu, Gupta, Cao, & Zhang, 2012); the value chain in mobile payments (Lu, Dong, & Wang, 2007; Yang & Yang, 2007; Zhou, 2009a, 2009b; Zhao, 2010), emerging business models (Pousttchi, Schiessler, & Wiedemann, 2009; Pousttchi & Hufenbach, 2012) and the role of

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