

The Dynamic of Assets and Liabilities of Foreignness: The Case of Chinese Management Software Industry

Abstract

Researchers have recognized that foreign firms possess both advantages and costs in operating in host countries. The extant literature suggests that the liability of foreignness can be gradually overcome as a foreign subsidiary learns more about the host country environment and develops better connections to local business networks. Based on a longitudinal case study of the Chinese management software industry, however, we find that even over the long term foreign firms continue to face difficulties in accessing some important potential country-specific advantages to overcome liability of foreignness. We develop a framework to explain why and how local firms more successfully access country-specific advantages at home because of their local complementary knowledge, local relationships, and home-focused strategies and understand the dynamic of assets and liability of foreignness. These findings have important implications for the persistence of liability of foreignness and for established MNEs wishing to compete in emerging markets as well as helping to explain the emergence of strong competition from local firms in emerging economies.

INTRODUCTION

The theory of the MNE suggests that firms investing overseas are assumed to have both superior firm-specific advantages (FSAs) and additional costs compared to domestic firms (Caves, 1996; Hymer, 1976). An MNE is able to achieve a satisfactory economic performance only if it can build and transfer some type of FSAs to foreign markets when facing additional costs. The advantages of foreignness (such as the advanced technology, management skills, and brand name) originate from the proprietary assets which have been analyzed and classified in much more detail by scholars espousing a resource-based view (RBV) of the firm (Barney, 1991; Rugman & Verbeke, 2001; Teece, Pisano, & Shuen, 1997).

MNEs face additional costs that can adversely affect the performance and survival of their foreign subsidiaries compared to domestic firms (Bell, Filatotchev, & Rasheed, 2012; Campbell, Eden, & Miller, 2012; Kronborg & Thomsen, 2009; Mata & Portugal, 2002; Mezas, 2002; Salomon & Wu, 2012; Tallman, 1992). Zaheer (1995:341) termed these costs the “liability of foreignness” (LOF) arising “from the unfamiliarity of the environment, from cultural, political, and economic differences, and from the need for coordination across geographic distance, among other factors”. There are three key sources of LOF (Goerzen, Asmussen, & Nielsen, 2013; Zaheer, 1995): the first is the challenges directly associated with spatial distance and coordination over distance and across time zones, yielding an overall complexity of operations; the second is the firm-specific costs based on a particular company's uncertainty due to lack of familiarity within a local environment; and the final costs resulting from discrimination within the host-country environment stemming from economic nationalism and the lack of legitimacy of foreign firms.

In the meanwhile, the theory of the MNE also states that in addition to the FSAs that distinguish the differential performance between MNEs and local firms, local firms also

possess advantages that arise from their favourable access to country-specific advantages (CSAs) (Hymer, 1976; Nachum, 2003). Hymer is explicit in emphasizing that local firms enjoy favourable access to the CSAs in their home countries, arising from reasonable and unreasonable preferences by employees and investors towards their own country firms. Hennart (2012) also points out that CSAs are not equally available to all firms, and MNEs have higher transaction costs to access CSAs in host countries than local firms. The CSAs that favourably accessed by local firms can strengthen LOF (Nachum, 2003).

The next logical question is whether MNEs can improve their access to the full complement of potential CSAs to overcome initial LOF over time. This is a central question in the LOF literature. It is widely believed among scholars and practitioners that MNEs can gradually overcome their initial LOF as their foreign subsidiaries learn more about the host country environment and develops better connections to local business networks (Johanson & Vahlne, 1977; Kostova & Zaheer, 1999; Miller & Eden, 2006; Nachum, 2003; Zaheer & Mosakowski, 1997). Johanson and Vahlne (1977) explained that the knowledge of international operations can be accumulated through operations abroad, and the acquired knowledge enables the foreign subsidiary to make more informed decisions in a host country. Kostova and Zaheer (1999) suggested that as time passes, a foreign subsidiary is likely to learn about the institutional environment and how to deal with it, and the local environment is also likely to accrue information about the particular subsidiary and begin to judge it more correctly. Miller and Eden (2006) contended that market experience is positively related to foreign subsidiary performance. Nachum (2003) even posited that experienced foreign financial service firms operating in the City of London do not suffer the LOF to the extent suggested by theory.

In this paper we set out to examine one setting that is inconsistent with these theoretical arguments - the management software industry in China. It appears as if in certain

service industry in a large and complex host country such as China, MNEs face persistent LOF even over a long period of time. SAP and Oracle both entered China in the early 1990s, attracted by the market size and potential of its country-specific resources. In the beginning SAP and Oracle dominated the Chinese market. As of 2014, however, Chinese firms Yonyou and Kingdee were the No. 1 and No. 3 in this industry, with SAP and Oracle slipping to No. 2 and No. 4 in terms of market share¹. Once they faced serious competition from local firms it appears that SAP and Oracle suffered from a LOF compared with their Chinese challengers. Moreover, it appears that at least some dimensions of the initial LOF faced by SAP and Oracle in China have not diminished decades later. This has resulted in declining performance relative to their major local competitors in the Chinese market who have successfully accessed critical CSAs.

This evidence suggests that there remain significant gaps in our understanding of the relationship between potential CSAs and extant LOF theory. Specifically, although scholars accept that differential uptake of CSAs does happen, "why" and "how" differential access/uptake of CSAs happens remains poorly understood. Furthermore, the dynamic of assets and liability of foreignness in the long run needs to be further examined. Using our longitudinal study of the Chinese management software industry from the early 1990s to the early 2010s, we aim to examine those questions. We provide a framework to help explain why and how MNEs face persistent LOF in large and complex foreign markets centring on: (1) differences in firms' local complementary knowledge; (2) local relationships differ between firms; and (3) of home-focused strategies adopted by local firms versus HQ-posed strategies adopted by MNEs. Taken together, we hope to provide a more comprehensive understanding of why and how CSAs in emerging markets are not always freely or fully accessible to all firms, and the behaviour of LOF over time.

¹ Source: Macquarie Research, April 2016

Our research makes several contributions. First, our study takes a first step to examine the micro-foundations of the dynamic of assets and liability of foreignness and understand why and how this happens based on a longitudinal case study. We develop a series of propositions as to why local companies outperform MNEs over time and why they are likely to access more CSAs because of their local complementary knowledge, local relationships, and home-focused strategies. These propositions provide a plausible explanation of the evidence for differential sources of advantages between local firms and MNEs in the Chinese management software industry. Using this fine-grained, longitudinal case methodology, our study, therefore, advances the LOF theory and the "location" dimensions of Dunning's (1980; 1998) eclectic model by comparing it with new empirical evidence.

Second, we add a new perspective on the extant literature that postulates that the LOF can be gradually overcome over time. The extant literature argues that the initial LOF is expected to be gradually overcome because a foreign subsidiary learns more about the host country environment and develops better connections to local business networks (Johanson & Vahlne, 1977; Kostova & Zaheer, 1999; Miller & Eden, 2006; Nachum, 2003; Zaheer & Mosakowski, 1997). Our study shows that there are circumstances in which some aspects of the LOF are difficult to overcome even in the long run because MNEs continue to face difficulties in accessing critical CSAs in service industries when direct interaction with clients is required, as opposed to placing goods in stores; and in large and complex host countries where the coverage of the market requires hundreds of local service sites, internal adaptation, and adjustment to strong local and national institutions.

Third, our study also contributes to the global strategy literature (Bartlett, 1991; Bartlett & Ghoshal, 1989; Rugman, Verbeke, & Yuan, 2011). The extant literature argues that to compete in the global market requires finding the appropriate trade-off between global integration and local responsiveness for MNEs to compete in the global market (Bartlett &

Ghoshal, 1989). This means that the potential to access some potentially significant CSA's in local markets is surrendered in order to exploit global FSAs. Our results suggest that the opportunity costs of failing to access these potential CSAs can be high. In order to properly take account of the costs of this lost opportunity it may be more appropriate to focus on trading off local integration (and its benefits in improved access to CSAs) against the costs of greater global responsiveness (adjusting the processes, routines and rule that embody global FSAs to meet the needs of local conditions) as suggested by Santos and Williamson (2015).

The paper is structured as follows. We begin by explaining our qualitative case study research methodology. In the next section we report findings from the case studies of the Chinese management software industry. We then develop six propositions from these longitudinal case studies to explain why local firms in Chinese management software industry might be more capable of accessing strategic CSAs in their home environment than foreign MNEs and whether MNEs can overcome initial LOF over time. These propositions centre on local firms' superior complementary knowledge, the nature of local relationships with suppliers and government, and their home-focused strategies which are different from MNEs' HQ-posed strategies. We conclude by outlining the possible contributions of the present study to existing theory and practice and suggestions for future research.

METHODS AND DATA

In seeking to answer the questions of "why" and "how" firms have differential access to CSAs and the dynamic of assets and liability of foreignness we rely on inductive theory building using case study. We believe the adoption of this approach is particularly appropriate to our research questions. The case study approach has acknowledged advantages in addressing "why" and "how" questions (Yin, 2003), and can "investigate a contemporary

phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2003). A case study can serve as "a talking pig" to allow a reader to see the world, and not just the literature, in a new way (Siggelkow, 2007). Case studies, like experiments, can be generalised to form theoretical propositions. The goal of adopting the explanatory case study research to test theory is to expand and generalise theories (analytic generalisation) and not to enumerate frequencies (statistical generalisation).

We chose multiple case study methodology because it has proven particularly effective in developing new theory from consistent patterns within case data using replication logic in which each case serving to confirm (or disconfirm) the emergent theory (Eisenhardt, 1989, 2007; Gibbert, Ruigrok, & Wicki, 2008; Martin, 2011). Moreover, multiple case studies are more likely to yield more generalized, robust, and parsimonious theory than single-case studies (Langley, 1999; Yin, 2003). Specifically, by comparing MNEs and local firms in China in the same industry and overlapping market segments we are able to examine the LOF as it impacts differential ability to access potential CSAs and its evolution over time.

Data Collection

We conducted a field study using observations, interviews, and archival data such as internal documents, annual reports, websites, and news articles in order to triangulate the data and so improve the accuracy of the picture emerging (Jick, 1979). Research sites were selected to achieve a diverse sample to enable richer theory development (Glaser & Strauss, 1967; Strauss & Corbin, 1990). We aimed to analyse a sufficient number of case studies and range of industries to be fairly confident that the results had some general applicability while limiting the sample so as to enable in-depth interviews within a tractable timescale.

Our sample includes two MNEs with significant activities and experience in China (SAP and Oracle) and two of the leading local Chinese competitors (Yonyou and Kingdee)

who were established in China by local entrepreneurs and have built their market position over several decades (Table 1). The data for these case studies were obtained from several primary and secondary sources. One of the authors has worked in the Chinese management software industry for six years, which allowed observation of in-depth daily business and competition in the industry and the collection of rich first-hand data. He also had access to many colleagues with work experience in Oracle China, SAP China, Yonyou, and Kingdee, including several contacts who worked as senior managers with Kingdee and Yonyou in 1990s. That author attended several management software industry conferences during that period, observing competitor activities and listening to public speeches by corporate executives of Oracle China, SAP China, Yonyou, and Kingdee.

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By the end of the research programme we were successful in conducting two rounds of interviews across all four companies. The first round of interviews was conducted between June 2011 and May 2012 and a second round between December 2013 and March 2014. The second round of interviews complemented the first by asking follow-up and clarification questions. In some cases we were able to secure interviews with multiple individuals; here we tried to gain perspectives from employees drawn from different levels in the corporate hierarchy or multiple business units, making a total of 35 semi-structured interviews. We started the interviews by asking background questions such as the name of the informant, their role in their firm, and how many years have he/she worked with their firm. We encouraged informants to provide more details when their descriptions were brief or when novel strands of narrative emerged (Martin & Eisenhardt, 2010; Strauss & Corbin, 1990). Interviews commonly lasted for between 30 minutes to two hours. Interview notes

were written down immediately after each interview, normally within 24 hours.

Data Analysis

We used within-case and cross-case analyses following recommendations for multiple case studies (Eisenhardt, 1989; Miles & Huberman, 1994). We started by writing up individual cases that triangulated all of our data including observations, interviews, documents (Jick, 1979). The importance of within-case analysis is driven by one of the realities of case study research - an overwhelming volume of data. We began within-case analysis in which customer-oriented process was the unit of analysis, developing preliminary concepts and a rough theoretical explanation for the preconditions of disruptive innovation. Detailed individual case write-ups for each site gave us a deep familiarity with each case which, in turn, accelerated cross-case comparison.

After that we conducted a cross-case analysis using replication logic across firms, treating each firm as a case. During the cross-case analysis we probed for alternative theoretical relationships and constructs that might fit the data better than our initial emergent theory (Eisenhardt, 1989; Gilbert, 2005). We also used tables and graphs to refine the constructs and theoretical relationships (Miles & Huberman, 1994). Some of novel conceptual constructs and new theoretical relationships were revised or deleted if we found they did not replicate across the cases. Using replication logic, we stopped data analysis until we reached a strong match between emergent theory and the empirical data.

CASE STUDY FINDINGS

We first provide a brief overview of the Chinese management software industry over the twenty-year period from early 1990s to early 2010s. Leading MNEs (such as SAP and Oracle) entered the Chinese management software market in the early 1990s, attracted by the market

size and potential of its country-specific resources. In the beginning SAP and Oracle dominated the sector as no local Chinese firms were able to provide integrated management software. In late 1990s, with the surge of market demand for integrated management software, local firms started to develop Enterprise Resource Planning (ERP)² systems. In 2002 local firms first overtook MNEs in terms of gross market share in the Chinese management software sector, according to China Computer World Research³. By 2014, Chinese firms Yonyou and Kingdee were No. 1 (23%) and No. 3 (8%) in this industry, with SAP and Oracle slipping to No. 2 (11%) and No. 4 (5%) respectively in terms of market share⁴.

In terms of technological knowledge, SAP and Oracle are still the global leaders. Starting with almost no technological knowledge, how could local Chinese firms surpass MNEs in the Chinese management software industry? Our case study evidence points to the likelihood of systematic differences between the capabilities and behaviour of MNEs and local firms which can be expected to impact the extent to which they successfully exploit the potential of CSAs available in a particular market. By analysing these differences, we develop a set of propositions about the likely superiority of local firms in accessing potential CSAs in their home market, compared with MNEs operating there. Specifically, we postulate that systematic differences in the capabilities to access CSAs between local firms and MNEs can be explained by three main (non mutually exclusive) variables: differences in local complementary knowledge, differences in local relationships, and different strategies between local firms versus MNEs in a particular location (Table 2). Drawing on our longitudinal observations we further postulate that this LOF faced by MNEs shows little sign

² ERP is a suite of integrated management software applications, including components such as accounting and finance management, human resource management, distribution management, manufacturing management, customer services management, and procurement management.

³ Source: Report on management software sector in China, *China Computer World Research*, 2009. China Computer World, a joint venture magazine between IDG (a leading IT media based in the US) and Chinese Ministry of Science and Technology, is a top IT magazine in China.

⁴ Source: China Internet and Software, *Macquaire Research*, April 2016

of reducing in respect of their ability to access certain types of important potential CSAs.

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The initial assets and liability of foreignness from early 1990s to late 1990s

Established MNEs started to enter the Chinese management software market in early 1990s. Oracle entered the Chinese market in 1991, establishing a wholly-owned subsidiary in Beijing. SAP setup a wholly-owned subsidiary in Beijing in 1995. In the very early stage of entry SAP and Oracle hired some highly skilled Chinese ERP system consultants (a factor condition), albeit at high cost, to provide their products and services to the high-end customers (a demand condition) in the Chinese market. Their first clients in China were subsidiaries or joint ventures of western multinationals, as well as some of the largest Chinese multinationals. For example, Oracle's client list included Motorola China, Ford China, Huawei, and Baidu; while some of SAP's clients were Procter & Gamble China, Kodak China, Lenovo, and Haier. SAP and Oracle dominated the Chinese management software market in early-late 1990s, because no Chinese companies were able to provide suitable management software.

Proposition 1. MNEs outperform local firms in Chinese management software industry in the early stage of entry because the FSAs possessed by MNEs eliminate the LOF.

The dynamic assets and liability of foreignness from late 1990s to early 2010s

Recognizing the fast growing market of management software, Chinese companies started to develop their own management software products in late 1990s. Yonyou began to develop ERP system in 1996, and released their first ERP system called U8 (targeting SMEs) in 1997,

based on Microsoft's .Net architecture. In 1998 Yonyou also began developing another ERP product, its NC (New Century) system targeting large enterprises. Kingdee started to develop their ERP system K/3 in 1997, also based on Microsoft's technology. Surprisingly, in 2002 local management software suppliers surpassed MNEs in terms of market share in the Chinese market. By 2014, the gap between leading Chinese firms and MNEs widened as Yonyou had 23% of market share compared to 11% occupied by SAP.

The relative FSAs possessed by local firms compared to MNEs

Starting from late 1990s, local firms have tried to develop their own FSAs to compete with MNEs through locally appropriate innovation effects and learning from leading IT firms. Yonyou has invested heavily in locally-appropriate innovation activities to develop optimized ERP products for local customers. In 1997 Yonyou released their first ERP system called U8 (targeting SMEs), based on Microsoft's .Net architecture. However some components, such as the Manufacturing Management, were not so well developed. In 2001 Wang acquired Hankang, a leading ERP supplier based in Taiwan. The Manufacturing Management component in Hankang's ERP system absorbed the best practices of the manufacturing industry in Taiwan, one of the most advanced manufacturing centres in the world. The acquisition also obtained a strong R&D team from Hankang based in Nanjing, China. In 2000 Yonyou also formed strategic alliance with Microsoft which provided the .NET framework and technical support. By learning and absorbing best practices and technologies from Hankang and Microsoft, in November 2004 Yonyou released U860, which smoothly combined comprehensive front and back office business management functions including Manufacturing Management, Financial Management, System Platform, and Supply Chain Management. U860 soon became a bestselling ERP system for SMEs in the Chinese market.

Apart from U8, since 1998 Yonyou has also been developing another ERP product

NC (New Century) system targeting large enterprises. The sector at that time was dominated by foreign MNEs such as SAP and Oracle. In the late 1998 the first version of NC was released, based on the J2EE architecture⁵ and supporting Database systems such as DB2, Oracle and SQL Server, which was the first large ERP system developed by a Chinese company. In 2002 Yonyou established a partnership with Baan, a leading ERP supplier from the Netherlands with more than 15,000 customers in 60 countries around the world. The strength of NC at that time was Financial Management and Human Resource Management, while Baan's expertise was in Manufacturing Management and Customer Relation Management. This partnership enabled Yonyou to learn and absorb advanced technologies and best practices from a leading global ERP supplier. Yonyou also established a strategic alliance with IBM. As a leader in J2EE technology⁶, IBM played a key role in encouraging Yonyou to develop the NC system based on the J2EE platform. In 2005, Yonyou officially quit the development its own middleware⁷ and adopted IBM's middleware product WebSphere in the NC product. NC 5.0 was released in 2006 and dramatically improved performance by working side-by-side with IBM's HiPODS (High Performance On Demand Solutions) team and technical experts at IBM's China Development Lab and Innovation Centres. NC 5.0 was able to provide flexibility and options for companies of various sizes and organisational structures. By 2008, after 10 years of continuous research and development, NC had been implemented in more than 2,500 large enterprises, including 60% of the top500 Chinese enterprises.

Kingdee has also focused on locally-appropriate innovation efforts to create optimized ERP system for local customers. Similarly to Yonyou, Kingdee started to develop ERP

⁵Java 2 Platform, Enterprise Edition or J2EE is a widely used platform for server programming in the Java programming language.

⁶IBM, Oracle and BEA were advocates of the J2EE technology, competing with Microsoft's .NET Framework. Oracle acquired BEA and Sun in 2008 and 2009 respectively.

⁷Middleware is the computer software that connects software components with their applications, and consists of a set of services that allows multiple processes running on one or more machines to interact.

system K/3 in 1997. Kingdee encountered huge difficulties since core components such as Manufacturing Management and Supply Chain Management could only be improved step by step, through working with clients and absorbing best practices from various industries. In 2001, soon after Kingdee offered IPO on the Hong Kong Stock Exchange, the company acquired CASE, a leading ERP supplier established in 1990 in Beijing. CASE had accumulated experience in the ERP field for 10 years and their products TEEMS (Total Enterprise Electric Management Solutions) had been implemented in many mid-large enterprises in China. Kingdee also formed a strategic alliance with Microsoft to help solve technological problems. By learning from CASE and Microsoft, the performance of K/3 improved dramatically and it became a leading ERP system in China.

Kingdee has also been developing a large ERP system named EAS (Enterprise Application Suite). Before we explain the development process of the large ERP system EAS, we first need to introduce their middleware product Apusic. Kingdee decided to develop a J2EE-based middleware in house after Mr Yuan, their chief architect, studied hundreds of pages of J2EE standard which was open sourced. Mr Yuan was recognised as one of the “top 20 most influential people in the Chinese software industry”⁸. He thought the available middleware products on the market at that time were not good enough. As no one else in Kingdee was able to understand the latest Java technologies as well as Yuan, he had to work almost alone on the core components. After about two years, Yuan developed the first version of Apusic, containing about 100,000 lines of code. In December 2000, Kingdee released Apusic 1.0. In the next several years, Apusic was the first middleware product developed by a Chinese company to pass the J2EE 1.3 and J2EE 1.4 certification. In 2006, shortly after J2EE 1.5 was announced, Apusic 5.0 was the No. 4 middleware product in the world to pass the certification, only behind leading middleware applications such as IBM’s Websphere and

⁸ The top 20 list includes Mr Kaifu Li (ex-CEO of Google China), Mr Lei Ding (CEO of NetEase; NASDAQ: NTES), and Mr Tianqiao Cheng (CEO of Shanda; NASDAQ: SNDA).

Oracle's Weblogic. In 2010, Kingdee became the first Chinese Platinum member of the Open Group and had a seat on the Open Group's governing board, which was in charge of developing J2EE standards.

Kingdee's large ERP system EAS was developed based on Apusic and TEEMS acquired from CASE. TEEMS was regarded as an excellent ERP system based on two reasons. First, TEEMS was developed based on the latest J2EE technologies. Secondly, TEEMS's components not only included Finance Management, Manufacturing Management, and Supply Chain Management, but also Office Automation, Knowledge Management, and E-Business Management, all of which had been implemented and tested in numerous Chinese firms in their day-to-day business. Kingdee started to develop EAS in 2003, and by 2010 EAS had been implemented in several hundred large Chinese enterprises, many of which were listed in Shanghai Stock Exchange or Shenzhen Stock Exchange.

Of course, in terms of FSAs such as technological knowledge, as global market leaders SAP and Oracle still remained well ahead of Chinese companies such as Yonyou and Kingdee (which remains the case today). Based on our case evidence, however, local firms have managed to narrow the gap of FSAs between themselves and MNEs. These considerations lead us to posit that:

Proposition 2. The gap of FSAs between local firms and MNEs narrowed over time in Chinese management software industry after local firms started to develop their own FSAs through locally appropriate innovation effects and learning from leading firms.

The relative CSAs possessed by local firms compared to MNEs

Local firms have also accessed critical CSAs over time. Potential CSAs include not only Ricardian type endowments - such as land, labour, capital, but also aspects of the legal and

commercial environment in which the firm is based, such as market structure, government legislation and policies (Dunning, 1980). In the seminal book *the Competitive Advantage of Nations*, Porter (1990) argued that CSAs could be classified into six categories: ‘factor conditions’, ‘demand conditions’, ‘related and supporting industries’, ‘firm strategy, structure, and rivalry’, ‘the role of chance’, and ‘the role of government’, a classification that has been widely adopted (Rugman & Collinson, 2009; Rugman, Oh, & Lim, 2012). These CSAs will shape the information that firms have available to perceive opportunities and the pools of inputs, skills and knowledge they can draw on. The national diamond provides an effective and convenient way of classifying CSAs (Rugman & Collinson, 2009), and we will follow Porter’s classification for analytical purposes in this study. Yonyou and Kingdee have accessed all the six types of CSAs, as discussed below.

Factor conditions. Access to an effective and efficient distribution network is an important factor condition for companies to profit from innovation (Hennart, 2009; Teece, 1986). Yonyou and Kingdee had better local complementary knowledge such as where best to locate sales offices and an understanding of the business models of local distributors. Using this complementary knowledge enable them to establish wider and more effective distribution networks than our sample MNEs in China. By 2002, Yonyou and Kingdee had established dozens of offices in major cities in China, compared to several offices (only in 1st tier cities such as Beijing and Shanghai) established by SAP and Oracle. Furthermore, based on their superior knowledge of the geographic distribution of potential customers, both Yonyou and Kingdee extended and strengthened their distribution networks by establishing strategic alliances with hundreds of local firms, covering not only 1st tier cities, but also 2nd and 3rd tier cities in China. In contrast, SAP and Oracle only established partnerships with a few dozen well-known local firms in a limited number of cities. The much larger distribution reach of Yonyou and Kingdee allowed them to better access and leverage potential Chinese

market CSAs through access to a distribution network that connected them more closely to local market demand, allowing them to respond faster to local customer requirements and provide prompt customer service.

SAP China and Oracle China followed global standards when establishing strategic alliances. These included provisions that their partners should have the ability to significantly enhance the value of the products/services (such as developing plug-in components); that their partners had to make a minimum investment in buying their ERP products; and were restricted to serving clients in a prescribed business sector. Yonyou and Kingdee, by contrast, had the knowledge required to adjust to the needs and aspirations of local distributors and applied rules more flexibly when these threatened to impede the formation of potentially valuable distribution relationships. Moreover, Yonyou and Kingdee attracted/motivated local partners by allowing outstanding partners to become their local subsidiaries (with the CEO of the partner becoming the general manager of the subsidiary), something that corporate policies within SAP and Oracle made impossible.

Demand conditions. Local firms also had better local complementary knowledge of the structures of large Chinese companies that allowed them to develop and optimize large ERP systems to meet their specific needs. For example, in 1998 Yonyou began developing its large ERP system named NC (New Century) targeting large enterprises. The main advantage of the NC system compared to SAP or Oracle is its superior performance in managing conglomerate structures (especially conglomerates formed through unrelated diversification). Because many large Chinese companies are very diversified (often across unrelated businesses), they need ERP systems that can manage the processes and finance of their numerous unrelated diversification business units. The ERP systems offered by SAP or Oracle, however, do not have such functionality because conglomerates of unrelated businesses are rare in Western countries.

Related and supporting industries. Close local relationships are important for the local firms to access related and supporting industries. Porter (1990) suggested that the nation's companies benefit most when the suppliers are, themselves, global competitors. For example, it is widely recognized that the Manufacturing Management component in SAP's ERP system is the world's best because it embodies best practices gleaned from working with the world-leading German manufacturing industry. Likewise access to the leading financial industry in the U.S. helped Oracle develop the advanced world's most competitive financial management component in their ERP system. While China has become the world factory in recently years, her competitiveness arises from different strategies and capabilities from firms in developed countries. Chinese firms have developed superior capabilities in offering adequate products at low cost, variety at low cost, and in rapidly moving down the experience curve by scale up new technologies and turn niche manufacturing into volume production (Zeng & Williamson, 2007). Co-development with Chinese manufacturing industry allowed Yonyou and Kingdee to design a unique Manufacturing Management component in their ERP system that precisely met the needs of Chinese customers. As a senior manager in Yonyou put it:

Our CEO, Mr. Wang, has a close "guanxi" with our customers and visit them frequently. In the summer of 1996, Wang visited Dongguan in Guandong province, which was one of the most developed regions in China. As usual Wang met with local customers and partners to discuss the performance of their accounting software, which dominated the Chinese market. However, the conversions shocked Wang as many customers, especially those serving as suppliers for foreign multinationals, preferred to buy ERP systems which manage not only accounting and finance but also the manufacturing processes. Wang realised that the demand for ERP systems would increase dramatically. When he returned to Beijing, Wang reported his findings in the board meeting and decided to start developing an ERP system including the Manufacturing Management component meeting the specific needs of Chinese manufacturing companies.

Because SAP China and Oracle China had close relationships with related and

supporting industries in their home countries rather than in host countries, they lacked the complementary knowledge to optimise their ERP to the needs of the local business network in China.

Firm strategy, structure, and rivalries. Porter (1990) suggested that firm strategy, structure and rivalry is one of the six key CSAs, and that national circumstances and context create strong tendencies in how companies set their strategies, how companies are organized and managed, and the nature of domestic rivalry. The strategies and structures adopted by local firms and MNEs are very different because local firms' strategy is more focused on their domestic market while MNEs' strategies are heavily influenced by their HQ and their experiences in their own home markets.

Initially both SAP and Oracle adopted strategies that emphasised leveraging the capabilities and resources developed in their home markets as their primary source of competitive advantage in China. This reflected both the understandable quest to leverage their perceived international strengths in China adopting organisational models that approximated what Bartlett & Goshal (2002) termed the global firm as the most efficient structure through which to transfer, control and exploit their global capabilities. In consequence, both MNEs chose to a differentiation strategy that involved offering technologically advanced, complex ERP systems at premium prices. These products were customised versions of those sold in advanced markets with the result that they often lacked the functionality to meet the specific needs of Chinese customers. Customisation was limited both by the cost and up-front investment required by an assumption that new ideas and developments all came from the parent. As a senior manager in Oracle China put it:

We are one of the best software companies in the world and we aim to offer similar products and services across the world. We do not compete with Chinese rivals in terms of low price. We aim to employ the best consultants and specialists [at high cost] providing high technology products to our clients.

This strategy was not necessarily wrong: it was arguably the best way for the MNEs to exploit their global competitive advantages. But it did come at a cost of reducing SAP and Oracle's ability to access potential CSAs associated with demand conditions in the Chinese market.

In contrast, although Yonyou and Kingdee started to penetrate foreign markets (mainly in Asia, such as Japan, Thailand, and Hong Kong) in the mid-2000s, China long remained their most important market and their business and organisational models were centred in China. In consequence, their strategy was to offer a broad range of ERP systems including, low-cost ERP solutions for SMEs as well as large ERP systems aimed at large customers in the high-end segment. They also developed specific finance and human-resources components in their ERP systems to meet the distinctive needs of Chinese customers. As a result of these strategies, the local competitors were better able to access and leverage the potentially positive CSAs associated with the large and growing, but diverse demand conditions in the Chinese market.

Differences in strategies between the MNEs and local competitors, reinforced by different organisational structures and responsibilities, therefore, mean that local competitors were more successful in accessing and leveraging the potential CSAs associated with demand condition in the Chinese market.

The role of government. Local firms had better complementary knowledge to understand the local regulations and institutions (the role of government) compared to MNEs. Unlike western accounting standards, Chinese accounting standards are less focused on measuring profit and loss and more directed to measuring the inventory of assets available to a company (reflecting their roots in record keeping during socialist period). A Chinese balance sheet, for example, does not include the debts that a corporation owes, and are more

suitable for management control than for tax purposes. Similarly, management of the labour force external relationships, and social insurance in China also differ greatly from Western practices. For example, the financial reports application in the financial management component of the ERP developed by Yonyou was the first application to be certified by the government, and became the quasi national standard soon thereafter. Yonyou not only understood the regulations and institutions better than MNEs, it also became a rule maker by working closely with government authorities. Conversely, it was difficult for SAP or Oracle to gain such deep understand the local standards as deep as local firms because of their roots in Western countries.

The role of Chance. Close relationships and detailed and frequent interactions with a diverse range of local market participants increase the chances of beneficial insights through serendipity. It is therefore local firms who are more completely embedded into local networks that are best positioned to benefit from the role of chance. Yonyou, for example, came to dominate the accounting software sector partly because of their founder's (Mr. Wang) unique working opportunity in the State Council for several years. As Wang related in an interview with CCTV (China Central Television):

In the early 1980s, most of the work in the finance department of the State Council had to be done manually, including collecting statics data from thousands of state-owned enterprises across China and generating reports from the data. Together with my colleagues, we suggested that the finance department should develop accounting software. The suggestion was soon approved and I was appointed as the leader for this project. In about 3 years, by working with a local software company, we released a high quality accounting software system. The accounting software passed the test performed by the Ministry of Finance and was thereafter implemented in over 100 organisations in the State Council. I realised the huge potential of commercialising the accounting software and suggested that the finance department should sell it publicly; however the finance department did not approve the proposal at that time as the State Council is a government organisation, not a commercial company.

Realizing the huge potential market of accounting software, Wang decided to leave

the State Council to set up Yonyou. In 1989, Yonyou released their first product, accounting software UFO (User Friendly Office). In the next year, the DOS (Disk Operating System) version of UFO passed the test performed by the Ministry of Finance and became the first accounting software in China to receive a certificate from the government. Thereafter UFO was regarded as the official standard and quickly dominated the accounting software sector in China.

In summary, Yonyou and Kingdee leveraged superior local complementary knowledge that enabled them to access CSAs in the form of wide, well-adapted and committed distribution networks, and demand conditions such as latent local customer needs, better knowledge about local regulations and institutions, and closer integration with local networks compared with SAP and Oracle. Those CSAs can only be accessed and exploited by deploying complementary local knowledge about: the local culture and business customs of a region; local consumer demands and tastes; expectations and behaviour of the local labour force, the strategies and structures of local distributors, suppliers and ancillary industries (Makino & Delios, 1996). Most of this knowledge is experiential and context-dependent (Doz, Santos, & Williamson, 2001). It so can only be amassed through the interactions among people with the programmes, operations or objects that are specific to a local context, such as a work practice in an organization (Yanow, 2004), often over an extended period of time. These forms of local knowledge and skills are also both location- and firm-specific in nature (Rugman & Verbeke, 1992). Because local firms and their staff have evolved their knowledge in their local environment (generally since birth), we would expect them to have more of this related local knowledge than MNEs (even compared with MNEs with substantial experience in the host country).

Our case studies also demonstrate that local relationships are critical to access CSAs associated with distribution, related and supporting industries, the role of government and the

role of chance. Based on close working relationships, home-based related and supporting industries provide an advantage in innovation and upgrading (Porter, 1990). Because suppliers and end-users locate close to each other, they can benefit from short lines of communication, quick and constant flow of information and knowledge, and an ongoing exchange of ideas. The business environment can be viewed as a web of relationships with suppliers and end-users, and new knowledge and products are developed in close relationships (Johanson & Vahlne, 2009). MNEs may suffer a “liability of outsidership” because they have a disadvantage relevant network position in host countries (Johanson & Vahlne, 2009).

We also see in our cases evidence that local relationships are also essential to overcome institutional voids that must be bridged in order to access local CSAs (such as Yonyou’s relationship with the government that allowed its design to become the quasi-national standard). These barriers are especially significant in emerging markets that are often characterised by highly imperfect markets, an inefficient judiciary, unpredictable and burdensome regulations, heavy bureaucracy, political instability or discontinuity in government policies (Ghemawat & Khanna, 1998; Khanna & Palepu, 1997). Government policies may favour local firms over MNEs (Aggarwal & Agmon, 1990), placing constraints on MNEs ability to access particular types of CSAs in a host country. In addition, imperfect markets and non-transparent and un-equal application and formulation of government policy may mean that certain CSAs can only be accessed in practice if a firm has relationships built up over a period of time. Likewise The absence of a well-established infrastructure, well-developed market mechanisms, and a well-developed contracting and intellectual property rights regime creates particular difficulties for MNEs from developed countries, which are not experienced in handling such conditions (Prahalad & Lieberthal, 1998).

There are also considerable inter-group variation in the strategies adopted by

individual firms among MNEs and local firms competing in any particular market. None the less, we can expect the modal points of these distributions to differ in systematic ways. Extant literature points to the trade-offs between global integration and local responsiveness as a key driver of MNEs strategies (Prahalad & Doz, 1987). This is because the ability to balance the benefits of internalising the transfer and arbitrage of common resources and capabilities against the costs of poorer fit with local market requirements lies at the core of MNEs competitive advantage (Bartlett & Ghoshal, 2002; Devinney, Midgley, & Venaik, 2000; Prahalad & Doz, 1987). The strategic choices MNEs make will therefore impact the extent to which they seek to leverage the CSAs in a local market.

At one extreme, for MNEs adopting the global strategy and organisational model (Bartlett & Ghoshal, 1989), foreign subsidiaries will simply replicate their headquarters and compete in the local markets on the basis of FSAs transferred in from the headquarters. They do not develop additional FSAs adapting to the local business environments in host countries, and therefore those foreign subsidiaries lack the incentive to access CSAs in host countries. At the other extreme, for MNEs adopting the multi-domestic strategy and organisational model (Bartlett & Ghoshal, 2002), foreign subsidiaries will focus more strongly on opportunities to access host-country CSAs. But their willingness to invest in accessing locally-specific FSAs will still be tempered, both by the costs and potential loss of perceived advantage associated with modifying their FSAs transferred from home and by the opportunity costs of host-country investment at the expense of investing in global or local activities at home. HQ-imposed strategies therefore tend to ignore or reduce MNEs' ability to access local CSAs in host countries.

Strategic choices by local firms (such as Yonyou and Kingdee), by contrast, are largely free of such trade-offs. Their home market will generally be their clear priority. Moreover, in seeking to build competitive advantage local firms will be strongly focused on

the advantages of those available to them locally (CSAs) and especially those which can potentially provide differentiated advantages from those enjoyed by MNEs. These considerations lead us to the following proposition:

Proposition 3: Local firms will generally be more capable than MNEs in accessing CSAs at home because of their local complementary knowledge, local relationships, and home-focused strategies, and these CSAs strengthen the LOF.

In early 2000s, facing the fierce competition from local Chinese firms, SAP and Oracle started to invest more in China in order to access more potential CSAs to compete with local companies. As a result, MNEs to some extent learned to access more CSAs over time. First, both SAP and Oracle established R&D centres in China in early 2000s to access skilled but low cost Chinese software engineers (a factor condition): SAP established a lab in Shanghai in 2003; Oracle also established R&D centres in Beijing and Shenzhen in 2002. In general software engineers would work with a company which pays the highest salary. A firm can employ labour, but cannot prevent it from leaving the firm (Zaheer & Nachum, 2011). Low cost labour in emerging markets is one of the reasons for resource-seeking MNEs to operate abroad (Dunning, 1998; Makino, Lau, & Yeh, 2002). The advantages the MNEs gained by accessing the CSA, however, was limited by the fact that a significant percentage of the software engineers in those R&D centres, however, were part of the global teams developing and testing ERP systems for the international market, rather than the Chinese market in particular.

Second, SAP and Oracle also developed better knowledge of local demand conditions and started to customize their ERP products in early 2000s to meet the needs of SMEs in China. To address the increasing demand in the SME sector, SAP acquired a small ERP

software company based in Israel and tried to sell a customised version (named SAP Business One) to Chinese customers. Similarly, Oracle also customized their ERP system (a simplified version of their large ERP system) for the SME sector. As a result, their market shares in the SME sector have increased to some extent but they have still not come close to matching the strength of local firms in this sector.

Third, recognizing the competitive deficiency both SAP and Oracle tried to access the market by adapting their strategies to emphasize more on local responsiveness. In early 2000s, the country president of SAP China, Mr. Klaus M. Zimmer, initiated a business plan “Fire” to increase their investment in China. Oracle also initiated a business plan called "Golden China" in early 2000s by their country president Mr. Andrew Hu to better engage with local customers and government. As part of these plans, MNEs expanded their distribution networks in China. By 2010 Oracle had expanded to 20 offices in China; while SAP had 7 offices. They had also expanded their partnerships with a few hundred local firms. Also, in early 2000s Oracle started to negotiate with the local government to purchase a land and build their own office in Zhongguancun Software Park in Beijing. As the country president of Oracle China, Mr. Andrew Hu related in 2002:

Building our office in Beijing shows our commitment to the Chinese market, and as a way to establish closer relationship with local government... I believe the [market] opportunities are in China in the next ten years.

These findings are consistent with the extant LOF literature, which argues that MNEs can gradually overcome their initial LOF as their foreign subsidiaries learn more about the host country environment and develops better connections to local business networks (Johanson & Vahlne, 1977; Kostova & Zaheer, 1999; Miller & Eden, 2006; Nachum, 2003; Zaheer & Mosakowski, 1997). SAP and Oracle have learned to access more CSAs in China such as the low cost Chinese software engineers, the market demand of the SME segment,

wider distribution networks, and adapting their strategies to emphasize on local responsiveness. These considerations lead us to posit that:

Proposition 4: MNEs can access more CSAs to overcome some of their initial LOF in Chinese management software industry to some extent as time passes because their foreign subsidiaries learn more about the host country environment and develops better connections to local business networks.

However, our case studies suggest that some LOF cannot be overcome even as time passes, so that SAP and Oracle still face persistent difficulties in accessing some critical CSAs. First, it has been difficult for SAP and Oracle to develop the local complementary knowledge necessary to access wider distribution networks matching to those enjoyed by Yonyou and Kingdee. As we have mentioned, by 2010 Oracle had expanded to 20 offices in China; while SAP had 7 offices. They had also expanded their partnerships with a few hundred local firms. Over the same period, however, Yonyou had established 100 offices in major cities across China; Kingdee had built 90 offices across China. Furthermore, both Yonyou and Kingdee extended and strengthened their distribution networks by establishing strategic alliances with literally thousands of local firms. Hennart (2009) explained that MNEs are prohibited from establishing a local distribution network in some cases. Even when this is permitted, it can be a difficult and lengthy process, as local customers may have formed strong bonds with existing local distributors. Although SAP and Oracle tried to access wider distribution networks overtime they were unable to achieve a speed of expansion comparable to Yonyou and Kingdee.

Second, it is difficult for MNEs to develop local relationships with local government and market participants. SAP and Oracle have faced difficulties in building "guanxi" (the

system of social networks and influential relationships that underpins Chinese society) in China in order to access CSAs such as demand conditions, related and supporting industries as well as the role government because of their outsidership. Guanxi in China can act as a substitute for formal institutional support (Xin & Pearce, 1996). Such personal connections are particularly important to managers in countries without a stable legal and regulatory environment for conducting business (Redding, 1990; Zucker, 1986). However, it seems particularly difficult for outsiders to pass through this gate to become insiders due to the exclusiveness of guanxi networks (Gao, Ballantyne, & Knight, 2010; Wang, 2007). In contrast, as we have explained Yonyou and Kingdee have established very close "guanxi" with local government, customers, and distributors.

In some cases this continued outsidership is reinforced by regulations that prohibit MNEs from accessing certain markets because of local government's discrimination for foreign firms. For reasons of security and the protection of the local computer software industry the Chinese government has a policy to favour local software over that produced by MNEs. In 2004 the Chinese government published a regulation to restrict foreign software purchases. In 2015 the Chinese government dropped some of the world's leading technology brands from its approved state purchase lists, while adding thousands of locally made products, as a response to revelations of widespread western cyber surveillance.

Third, it has been very difficult for SAP and Oracle to completely change their HQ-imposed strategies to optimize their ERP systems to meet the specific needs of Chinese customers (a demand condition). Because of the integrated nature of ERP systems optimizing can be a difficult and resource-intensive task. Finance and human resource routines, for instance, are deeply embedded in the complicated enterprise application software so that changing the functionality in these necessitates changes in many parts of the ERP software. As a senior development manager in Oracle noted:

All the management software developed by Oracle are targeting the global market. The different needs of local customers in different countries are supported by adding functionalities as plugins to the software system [while the main functionalities do not change]. For example, in our ERP system we have plugins connecting Facebook for the US customers as well as Wechat for the Chinese customers. When customers [no matter in which country] buy products from Oracle, they get exactly the same products including all the plugins. If customers do not need certain functionalities, all you need is to turn that functionalities off. For example, Chinese customers often turn off the plugins for Facebook when they implement our ERP system because Facebook is not accessible in China.

It may make sense for MNEs in seeking to preserve the FSAs they transfer from overseas, but the corollary is that they pay a substantial price in terms of constraining their ability to access CSAs in host countries.

Furthermore, in our case studies we found that the willingness of MNEs to invest in fully embracing the different demand conditions in China was limited, despite their shift toward increased local responsiveness. It seemed that in the eyes of senior executives back at headquarters, the Chinese market could not justify shifting investments from major markets such as the USA, Europe, and Japan. Therefore, although their subsidiaries initiated plans to seize the local opportunities and access CSAs in the Chinese market, commitment of necessary resources by the home country was often limited. To address the large and growing demand in the SME segment, for example, SAP acquired a small ERP software company based in Israel and tried to sell a customised version (SAP Business One) to Chinese customers instead of developing a fundamentally new product optimised for the Chinese market. The SAP Business One achieved little penetration. Potential customers stated that this was, in part, because it included modules for the management of large-scale manufacturing and automated customer relationship management – functions that were of limited interest to Chinese SMEs who were involved only in small-scale production or outsourced manufacturing and personalised customer interaction. Yet the product was weak

on the two areas most relevant to Chinese SMEs: finance management and human resource management where it failed to accommodate the huge differences in the finance and human resource systems between China and foreign countries.

Also, the role of country presidents of SAP and Oracle was different from that of CEOs in Chinese firms. In the latter, for example, Chinese CEOs were in charge of everything from R&D to sales and so their strategic responses were informed by an overview of the whole business. When the sales divisions of the local competitors sensed new opportunities in the SME segment and reported to the CEO, the R&D division was promptly directed to develop specific products to address market demand. In Oracle China, by contrast, only the head of their sales unit reported to the president of Oracle China while its R&D centres in China reported directly to the R&D division in their headquarters located in the USA. As a result, he could encourage sales people to give greater emphasis to the SME segment, but was unable to re-focus the R&D priorities towards responding to the needs of this segment. These considerations lead us to the following proposition:

Proposition 5: MNEs still face persistent difficulties in accessing some critical CSAs to overcome some dimensions of LOF over time in Chinese management software industry because it is difficult for MNEs to develop local complementary knowledge, establish close local relationships, and change their HQ-imposed strategies even over an extended period of time.

Taken together, while local firms have narrowed the gap of FSAs between themselves and MNEs, MNEs still face persistent difficulties to access some critical CSAs to overcome LOF in host countries. In terms of FSAs such as technological knowledge, SAP and Oracle are still ahead of local firms as they remain the global leaders today. However, based on the

foregone case studies, in some setting such as the management software industry in China, the differential capabilities to access some critical CSAs seem to have more explanation power for firm performance between local firms and MNEs. The management software industry is a service industry when direct interaction with clients is required, as opposed to placing goods in stores. China is a large and complex country where the coverage of the market requires hundreds of local service sites, internal adaptation, and adjustment to strong local and national institutions. In this setting CSAs have more explanatory power for the relative performance of local firms vs. MNEs than FSAs. These considerations lead us to posit that:

Proposition 6: Local firms outperform MNEs over time in Chinese management software industry because the different CSAs possessed by local firms compared to MNEs have more explanatory power over the different FSAs possessed by local firms compared to MNEs.

CONCLUSION

Based on a detailed study of the Chinese management software sector from over a twenty-year period from the early 1990s to the early 2010s, this research has enabled an in-depth investigation into the differential access to CSAs by MNEs and local firms and the dynamic of assets and liability of foreignness over time. Theoretically, while the extant literature has recognized that some CSAs are not freely and fully available to all firms operating in the same location (Hennart, 2009; Zaheer & Nachum, 2011), this paper offers a more nuanced picture of how and why some CSAs are not equally accessible to all firms. Furthermore, it is widely believed that MNEs can overcome initial LOF to access more potential CSAs over time in host countries (Miller & Eden, 2006; Nachum, 2003). By contrast, our study suggests

that MNEs face persistent LOF to access some critical CSAs even as time passes. As a result, local firms outperform MNEs over time because they have accessed critical CSAs at home and also developed some FSAs to narrow the gap between those of MNEs.

Our study also has some interesting implications for practitioners. The first is that MNEs can benefit by paying more attention to formulating strategies and building complementary capabilities and knowledge to help them access potential CSAs in host countries. Twenty years ago, MNEs such as SAP and Oracle dominated the Chinese market in the ERP industry. But today, Chinese firms Yonyou and Kingdee are leading firms in China. The main reason is that the Chinese firms were able to access CSAs that MNEs were not able to access, such as extensive distribution networks, local latent demand and opportunities to leverage government relationships and institutions. Although MNEs may remain at a disadvantage to local firms in accessing CSAs as a result of less local knowledge, outsidership and the constraints associated with HQ-imposed strategies they can also improve their competitive strength by actions that improve their access to potential CSAs including hiring local executives who better understand local market opportunities, developing (not just customising) new products for local customers, and establishing close partnerships with local firms to access their distribution networks.

At the same time, we believe that the capabilities to access local CSAs are becoming a more important factor in global competition. It is possible that MNEs may outperform the local firms in spite of having the liabilities in accessing CSAs in certain industries. In this case one of the two conditions must hold: 1) the local CSAs do not confer much advantage; or 2) the FSAs that the MNEs bring are so overwhelming that it does not matter that they struggle to access the CSAs. However, with the globalisation of the world economy, it is now easier for local firms to access technologies and know-how through new gateways opening up in the form of: outsourcing, modularisation, codification of knowledge, and creating more

open markets for international talent and corporate control (Santos & Williamson, 2015; Williamson & Yin, 2009). This trend means that the distinctive advantages that MNEs traditionally enjoy by efficiently transferring resources and capabilities across the world are becoming relatively less powerful as local firms access from alternative sources. Improved capabilities to access CSAs that are not freely and fully available to all firms will therefore become more critical to maintain MNEs' relative competitive advantage.

Although we are confident that the theory developed in this research should be general and not confined to service industries in emerging markets, given the relatively small sample size in this paper, further research designed to understand the differential access to CSAs and the dynamic of assets and liability of foreignness in different industries in both developed and developing countries would be worthwhile.

Table 1. Overview of the Focal Firms

Company	Foundation date	Revenue* (Market share)	Interviews	Public speeches
Yonyou	1988	USD 1.09 billion (23%)	9: Corporate executive: 1 Directors and managers: 3 Business unit informant: 5	2 (CEO)
SAP China	1995	USD 522 million (11%)	5: Directors and managers: 2 Business unit informant: 3	1(Country president)
Kingdee	1993	USD 380 million (8%)	10: Corporate executive: 1 Directors and managers: 6 Business unit informant: 3	2 (CEO)
Oracle China	1991	USD 237 million (5%)	11: Corporate executive: 2 Directors and managers: 6 Business unit informant: 3	5(Country president)
Total				35 (10)

*Source: China Internet and Software, Macquaire Research, April 2016

Table 2. Differential access to CSAs in the Chinese management software industry

Differential access Abilities		CSAs accessed in the early stage of entry (early 1990s to early 2000s)	CSAs accessed over a long period of time (early 2000s to early 2010s)
MNEs	<p>Limited local complementary knowledge:</p> <ul style="list-style-type: none"> Limited knowledge of establishing local distribution networks limited knowledge of local customer needs limited knowledge of local regulations and institutions <p>Outsidership:</p> <ul style="list-style-type: none"> Limited relationships with related industries in host countries Limited relationships with local government <p>HQ-posed strategies</p> <ul style="list-style-type: none"> Similar ERP systems for customers across different countries Global standards in selecting local distributors One step implementation model 	<ol style="list-style-type: none"> Some skilled Chinese ERP consultants at high cost Some market share in the high-end segment. Customers including subsidiaries or joint ventures of western MNEs, and some large Chinese firms. Distribution networks with several offices in 1st tier cities such as Beijing and Shanghai, and dozens of local distributors. 	<ol style="list-style-type: none"> A large number of Chinese software engineers at low cost. A significant percentage of them, however, were part of the global teams developing and testing ERP systems for the international market, rather than the Chinese market in particular. R&D centers in cities such as Beijing, Shanghai, and Shenzhen. Limited market share in the low-end SMEs segment, and some market share in the high-end segment Distribution networks with dozens of offices and hundreds of local distributors Some relationships with local government. For example, Oracle built physical offices in China rather than renting offices in order to form closer relationships with local government.
Local firms	<p>Local complementary Knowledge:</p> <ul style="list-style-type: none"> Superior knowledge of establishing local distribution networks A deep understanding of Chinese customer needs Rich knowledge of local regulations and institutions <p>Close local relationships:</p> <ul style="list-style-type: none"> Close relationships ("guanxi") with related industries such as the manufacturing industry Close relationships ("guanxi") with local government <p>Home-focused strategies:</p> <ul style="list-style-type: none"> Developing optimized ERP systems meeting the specific needs of local customers Flexible in selecting local distributors ERP123 implementation model 	<ol style="list-style-type: none"> Wider, effective, and efficient distribution networks with more offices and distributors in China compared to MNEs because of local firms' complementary knowledge such as where to locate sales offices, an understanding of the geographic distribution of potential customers, and the superior knowledge required to adjust to the needs and aspirations of local distributors. Large market share in low-end and high-end segments by the ERP123 implementation model and ERP systems targeting conglomerate corporations because of local firms' complementary knowledge such as a deep understanding of Chinese customers and the knowledge of the structures of large Chinese conglomerate corporations. Benefited from the related and supporting industries at home and developed a unique Manufacturing Management component in their ERP system that precisely met the needs of Chinese customers by co-developing with Chinese manufacturing industry. Home-focused strategies to develop and optimize ERP systems for local customers Understood local regulations and institutions better than MNEs such as the knowledge to understand Chinese accounting standards with their roots in record keeping during socialist period, and better relationships with local government because of insidership. Local firms had the chance to first develop the accounting software which has become the quasi standard in China because local firms are more completely embedded into local networks that are best positioned to benefit from the role of chance. 	

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