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Typology and Portfolio of Net-enabled Organizational Capabilities and Competitive Advantages: The Case Study of Travel and Hospitality Industry

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Abstract: Electronic business (e-business) is evolving from its technological tool towards a strategic role, supporting new business strategies. Prior studies explained e-business value creation from net-enabled organizational capabilities perspective, and delivered many insights at firm level with individual-level analysis of capability. In this paper, we posit that competitive advantages under e-business environment will be dependent upon the deployment of multiple types of net-enabled organizational capabilities and their appropriate portfolios. Further, we use Wade and Hulland (2004)'s capabilities taxonomies and multiple cases-based data in Chinese travel and hospitality industry to understand the effect of appropriate portfolios of net-enabled organizational capabilities on competitive advantages.

Keywords: Net-enabled organizational capability, typology, portfolio, competitive advantages, travel and hospitality industry

1. INTRODUCTION

In recent fifteen years, electronic business (e-business) is evolving from its technological tool towards a strategic role, supporting new business strategies. A large number of companies continue to deploy IT resources and other organizational resources in their enterprise value chains and develop Internet-enabled initiatives to strengthen online integration with distributors and partners, to design and customize products and services, and to attempt to serve customers more effectively^[1,2]. However, some companies engage in e-business initiatives without deriving any business value^[3,4].

Grounded in the Resource-based view (RBV) and Dynamic Capabilities view(DCV), most scholars suggest that commonly available IT technology (e.g., simply hardware and software tools) cannot by themselves create sustained performance gains for a firm, but must be a part of a e-business value creating process with complementarity factors operating in a synergistic manner. In order to sustain a competitive advantage, firms should leverage synergistic combinations of IT resources with other organizational resources to create unique Net-enabled organizational capabilities(e.g., e-business capabilities, and digital operations & service capabilities),which determine a firm's competitive advantages in e-business environment.

Despite the critical role of net-enabled organizational capabilities on competitive advantages, prior studies have delivered many insights at firm level with individual-level analysis of capability^[5-7], might lead to very misleading conclusions. Organizations usually need to be simultaneously involved in multiple types of organizational capabilities, from strategic changing capability^[8], to collaborative capability^[9, 10] and inter-organizational relationship management capability^[4, 11]. Therefore they need to maintain an capability portfolio, for gaining a specific business purpose. Diversification of net-enabled organizational capabilities calls for an portfolio method to ensure that they are better able to leverage and develop IS and complementary organizational resources^[12]. But to date, this call has not been heeded.

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In e-business initiatives, how to identify the types of net-enabled organizational capabilities and develop appropriate portfolios to facilitate the delivery of competitive advantages? We posit that Internet-enabled competitive advantages will be dependent upon the deployment of appropriate portfolios of net-enabled organizational capabilities. Heeding the call of Doherty and Terry^[12], we use Wade and Hulland's^[13] capabilities taxonomies and multiple cases-based data in Chinese travel and hospitality industry, in an attempt to understand the effect of appropriate portfolios on competitive advantages.

2. LITERATURE REVIEW

2.1 Net-enabled organizational capabilities

The Resource-based view (RBV) has been widely used to understand the sources of sustained competitive advantages. RBV asserts that firm resources with value, rare, imperfectly imitable and none-substitutable attributes have the potential to generate competitive advantage^[14]. However, resources are static, and the process through which particular resources provide competitive advantage is not clear. Organizational capabilities theory was derived to address this deficiency. Researchers have suggested that the combination of a set of resources and complementary organizational components can form organizational capabilities, which empower a firm to gain competitive advantage^[15, 16].

Net-enabled organizational capability is suggested as a capability driven by various IT and web technology. In this paper, based upon Makadok's distinction between resources and capabilities, we have termed these capabilities upon which the value of the physical and intangible resources can be leveraged. IS researchers have spent considerable time exploring the potential of the sustained competitive advantage offered by information technology from organizational capabilities perspective. Much of this work have focused on multi-dimensional measurement of capabilities for deeply understanding the relationship between net-enabled organizational capabilities and firm competitive advantages^[4, 11, 17]. Recent empirical researchers used hierarchy structure to explain the relationship among net-enabled organizational capabilities, and suggested that IT operational capabilities (e.g., IT-leveraging capabilities, structural IT capabilities) are necessary enablers of dynamic capabilities. For example, Rai and Tang argued that key structural IT capabilities (IT integration and IT reconfiguration) improve firm competitive advantages through competitive process capabilities (process alignment, partnering flexibility, and offering flexibility) operate as systems of complements^[4].

2.2 Typology of net-enabled organizational capabilities

While hierarchy perspective focused on the cause relationships between the capabilities (e.g., dynamic capabilities reconfigure operational capabilities, IT capabilities enable competitive process capabilities), typology structure represented the portfolios of IT operational capabilities for dynamic capabilities^[12, 18]. Wade & Hulland (2004) have theoretical established a comprehensive and coherent framework to explain organization's capabilities how to deploy and leverage internal and external IT resources to create competitive advantages, and sort them into three types: *inside-out*, *outside-in*, and *spanning*^[13].

Inside-out capabilities are deployed from inside of the firm in response to market requirements and opportunities, and tend to be internally focused^[18]. This type capability involves IS infrastructure integration, technological skill or knowledge and effective internal operations¹. Although IS infrastructure has generally not been found to be a source of sustained competitive advantage by themselves^[19, 20], firms can integrated it's IS technology and application knowledge or experiences to support new collaborative business actives for superior firm performance^[21-23].

¹ We dropped IS development from *Inside-out* capabilities, as more and more researchers consider this type capability as a part of IS infrastructure with reconstructing and coevolving process (Cobboy, 2009; Agerfalk et al., 2010).

In contrast, *outside-in* capabilities are externally oriented, placing an emphasis on anticipating market requirements, creating durable customer relationships, and understanding competitors^[18]. This type capability focuses on management external relationship and market responsiveness. External relationship management presents the ability to work with external partners to develop new operations process^[24, 25], or to manage customer relationships by providing customer service^[14, 26]. Market responsiveness involves the collection of information from sources external to the firm and allows the firm to undertake strategic change for getting business opportunities^[8, 27]. The main characteristics of *outside-in* capabilities are marked by net-enabled enterprise agility which is defined as the ability of firms to sense environmental change and respond readily supported by IS usage^[8, 28].

Finally, *spanning* capabilities involve both internal and external resources, are needed to integrate the firm's inside-out and outside-in capabilities through strategic planning, such as IS -business partnerships, IS change management^[18] and operations &service ability². IS-business partnerships means IS resources alignment with business resources^[29], which variously been referred as *synergy*^[18] and *assimilation*^[30]. IS change management is a kind of capacity to manage IT change. It gives IS managers to understand how IS can and should be used, as well as how to motivate and manage IS personnel through the change process^[19]. In addition, business innovations or net-enabled business transformation of a firm depend up digital operations &service for partners and customers in e-business environment.

Drawing upon the empirical evidence combined with the literature review, we believe that the existing e-business literature mainly focused on the cause relationships between capabilities and competitive advantages. However, past studies omit a systematic consideration between portfolios of net-enabled organizational capabilities and competitive advantages. Although a few studies found that *spanning* and *outside-in* capabilities will have a stronger impact than *inside-out* capabilities on competitive position^[12], recently research did not provide a clear rationale for specifying the links that may exist, especially in service industry. Given the relative paucity of research related to the types of net-enabled organizational capabilities in travel and hospitality industry, this paper aims to explore the portfolios of capabilities that are necessary to facilitate the delivery of Internet-enabled competitive advantages.

3. Methodology

We selected the travel and hospitality industry in China as the case setting for the study for a number of reasons. First, this industry has achieved a level of sophistication in terms of e-business use and intensive market competition in the last two decades. Moreover, that is more important is that e-business has driven the revolution to the structure of the travel and hospitality industry in China. In especial, travel distribution represents a newly vulnerable market—newly easy to enter, and difficult to defend^[31].

Only successful firms are selected as our research cases, because not all firms have gained competitive advantages after adopting e-business in China. Multiple methods were used for measuring firm competitive advantages in Chinese travel and hospitality industry. Following the suggestions by Zhu and Zhao^[32], successful *travel agencies* that have adopted e-business are chosen from the list of top 100 travel agencies in China. Meanwhile, *online travel service providers* are chosen according to their market share. Further, we identified successful *Inns & hotels* based on the ranks from China airline & hotel Internet sales channels research report published by iResearch^[33].

The three data sources collected for this study include questionnaires, structured interviews, and the second

² We add operations &service ability as a part of spanning capabilities. Due to e-business linked with partners, firm should develop *spanning* operations &service ability support business innovations and net-enabled business transformation. This capability is considered as a key factor for achieving competitive advantages in most e-business researches (Zhao et al., 2008; Devaraj et al. 2007; Zhu, 2004).

data. We identified 134 top managers from a workshop of travel e-business applications & practices. We sent interview invitations to them, and only ten managers agreed which belong to four companies. The interviewees from top management levels include chairmen, chief information officers (CIOs), and top project managers. Structured interviews were carried out by personal visits by two or more researchers at each company location. Interviews were also sometimes conducted by telephone when schedules conflicted or when follow-up was needed. The duration of interviews ranged from 30 to 180 minutes. The interviews were guided by an interview protocol. Comments from interviewees were consistently coded, and most frequently reported portfolios of net-enabled organizational capabilities were identified. In the end, we also collected secondary information of the four case companies from a variety of sources as complementary analysis, including company websites, industry news, consulting reports, and other items in the industry press.

4. FINDINGS AND DISCUSSION

4.1 Shanghai Spring International Travel (SSIT)

Established in 1981, SSIT is now listed as top one of travel agencies in China by the China National Tourism Administration, and has over four thousand employees and annual sales of 6 billion RMB. Today the scope of business includes all areas of the tourism industry from air tickets and hotels through to conference and exhibitions as well as business, sporting and personal travel. SSIT is the first Chinese travel agency to become a member of the International Congress and Convention Association (IACA).

As a travel wholesaler, SSIT developed its business network through e-business adoption. In 1998, SSIT introduced Internet-based sales Information systems linked it's retailers both for tickets booking, and travel scheduling on customer services side, and digital contracts management and service quality management on retailers side. With a global network of 41 wholly-owned subsidiaries, Spring's network has a presence in 34 cities across China and a growing presence in the Asia-Pacific region and beyond such as Thailand, the United States and Canada. In order to multiple businesses, SSIT founded Spring airlines in 2005, and now built up a modern and advanced fleet flying over 50 routes across China and Asia. Through an integrated e-business platform, SSIT provided B2C channel for individual or group travel services with low price and high quality service, such as flight booking, hotel reservation, and travel consultation for scheduling.

Regarding with the firm competitive advantages, Zhenghua Wang, the chairman of SSIT explained:

“ We have excellent e-business (information) systems to support multiple businesses. From first generation of [information]systems to integrated e-business platform, we have focused on technological enabled business transformation abilities all long, such as operations capabilities, knowledge sharing between subsidiaries…… For me, how to plan and implement e-business strategy is critical issue. As a travel agency, we must deal with traditional [business] resistance using various strategic and operational methods. E-business is a good choice.”

4.2 Wuhan Spring International Travel (WSIT)

As one of the top international travel agencies in China, WSIT received successful e-business applications for end-customer services and inter-firm collaborations integrated B2C and B2B model. From 2002, WSIT begins its e-business integrated front-end sales and back-end operations. In front-end, WSIT provided various personalized travel products and services according to customers web browsing experiences. For example, “shop around” function (compare prices across websites) helps customers to identify the best price and service of WIST. In back-end, WSIT redesigned business processes to optimize cross department digital collaboration through integrated ERP systems. In business channel choice, it simultaneously adopted B2C and B2B business models. WSIT built a new wholesale web platform (OK176.com) for other retail travel agencies. Outstanding product and low price has attracted more than 400 distribution partners around China. Every year, about 60%

profit of *WSIT* comes from wholesale web platform.

Now, *WSIT* has become an emerging e-business travel agency. Xin Qi, the chairman of *WSIT*, stated:

“After some year’s development, WSIT gained competitive advantage through B2B and B2C e-business applications. …… Nowadays, travel agencies have to compete with the Internet for business since people can find information and cheap ticket prices on-line. We focus on e-marketing, e-operations, and e-service. CQ66[.com] and OK176[.com] help us touch end-customers and manage distribution partners effectively and efficiency. Now we have closed all of our stores, and devoted on developing collaborative operations and service based on e-business capability, such as service capability, sales capability, and internal management capability……”

4.3 7days inn (7days)

Listed on NYSE Stock Exchange in 2009, budget hotel chain 7days inn is now the second largest national economy hotel chain with 619 hotels and 61,795 rooms in operation. It has largest membership program with over 18.5 million members. 7days inn has built a great sales chain based on its integrated e-business systems. Websites provided online booking for all of its room stores around China. Recently, 7days inn has announced the trial operation of a social networking site "Happy 7 Days" on its official website. The community is expected to enhance the brand loyalty of six million 7 Days Inn members, and to attract more new members by the existing members' praise and virtual games. Besides the virtual reality online game, the SNS (Social Networking Services) community also features helpful tools such as weather forecasts, maps, and city life information. Unlike any other SNS websites focusing on entertainment, the Happy 7 Days will also provide travel service solutions and other travel-related services such as car rental, air ticketing, and insurance^[34].

How to use e-business conduct business innovations for customers is key issue for 7 Days. One IT project manager stated it as follows:

“E-business is our basic business strategy, while mobile business extends customer booking choice, and offers more convenient services such as location services, personalization and notification. Now SNS (Social Networking Services) community provides a low price loyalty management tools …… Internet-enabled competitive advantages rely on various IT technology and business process integrated usage for business innovations. We focus on customers experience and loyalty. That is the most important issue in e-business development”.

4.4 Ctrip.com

Listed on NASDAQ on December 9, 2003, Ctrip.com is a leading online travel services, and provides over 50 million registered members with comprehensive services including hotel reservations, flight ticketing, packaged tours and corporate travel management. Ctrip.com initiates its business linked by travel product suppliers (such as hotels, airlines and tourist attractions) and end-customers. Ctrip’s hotel reservation network includes over 39,000 hotels worldwide. Over 36 million travelers book hotels online through Ctrip yearly. It is also China's leading flight ticketing service, booking over 30 million tickets yearly with all Chinese and major international airlines. Ctrip.com cooperates with a number of partner restaurants in Beijing, Shanghai and other major cities throughout China, providing free restaurant and dining information and reviews as well as reservation services.

The relational management and service operations emerged as the important ability to promote its competitive advantages. CIO of Ctrip.com stated:

“You know, our goal is to create long-term shareholder value by enhancing e-business position in market as a leading hotel and airline ticket consolidator in China. ……our strategy practically enables hotels and airlines to expand their sales channel through the Internet. So win-win cooperation with our partners and customer satisfaction come our critical strategic issue for e-business operations. Various organizational resources and partners resources should be integrated for business model to get excellent operations capabilities and service

capabilities.”

Based on above within-case analysis, a series of key IT capabilities in four cases firms was summarized in table 4. It takes place at three types: *Outside-in* capabilities, *Spanning* capabilities, and *Inside-out* capabilities. All of four firms achieved Internet-enabled competitive advantages through these differentiable Net-enabled organizational capabilities. For example, *WSIT* focus on the portfolio of inter-organizational relationships management capability(*Outside-in*), planning and change capability(*Spanning*), and IT integration capability and knowledge sharing capability(*Inside-out*), while *7days* depends upon the portfolio of marketing capability(*Outside-in*), operations & service capabilities(*Spanning*), and IT integration capability(*Inside-out*).

Table 1 Summary of key Net-enabled organizational capabilities in four cases firms

	Categorization of capabilities		
	<i>Outside-in</i> capabilities	<i>Spanning</i> capabilities	<i>Inside-out</i> capabilities
<i>SSIT</i>	<i>Inter-organizational relationships management capability</i> <ul style="list-style-type: none"> ● Online customer needs responsiveness 	<i>Planning and change capability</i> <ul style="list-style-type: none"> ● Technological enabled business transformation capability 	<i>IT integration capability and knowledge sharing capability</i> <ul style="list-style-type: none"> ● Internet-based sales systems ● Integrated B2C platform ● Knowledge sharing between subsidiaries
<i>WSIT</i>	<i>New product development capability</i> <ul style="list-style-type: none"> ● Personalized travel products design and launch by website 	<i>Operations & service capabilities</i> <ul style="list-style-type: none"> ● IT-enables collaborative operations and services capability ● Front-end sales and back-end operations integration capability 	<i>IT integration capability</i> <ul style="list-style-type: none"> ● B2C and B2B wholesales platform integration applications ● Touch end-customers and manage distribution partners by e-business technology
<i>7days</i>	<i>Marketing capability</i> <ul style="list-style-type: none"> ● Online Brand management capability ● Customers experience and loyalty management capability 	<i>Operations & service capabilities</i> <ul style="list-style-type: none"> ● Integrated usage ability for business innovations 	<i>IT integration capability</i> <ul style="list-style-type: none"> ● Sales chain management ● e-Business platform applications ● M-commerce applications ● SNS community applications
<i>Ctrip.com</i>	<i>Inter-organizational relationships management capability</i> <ul style="list-style-type: none"> ● Online customer needs responsiveness ● Partners relationship management capability 	<i>Change management capability</i> <ul style="list-style-type: none"> ● Online cooperation capability ● Win-win e-business strategy 	<i>IT integration capability</i> <ul style="list-style-type: none"> ● Digital collaborative system applications ● Organizational intangible resources and partners resources integrated capability

5. CONCLUSIONS

Net-enabled organizational capability is suggested as a capability driven by various IT and web technology to gain firm competitive advantages. Using Wade and Hulland (2004)'s capabilities taxonomies and multiple cases-based data in Chinese travel and hospitality industry, this paper explains the effect of appropriate portfolios of net-enabled organizational capabilities on competitive advantages. Results shows that Internet-enabled competitive advantages of travel and hospitality firms will be dependent upon the deployment of multiple types of Net-enabled organizational capabilities, such as outside-in capabilities, spanning

capabilities, and inside-out capabilities. Results also shows that firm need to maintain an capability portfolio for gaining a specific business purpose instead of only focusing on certain IT capabilities.

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