Summer 6-30-2018

Inter-organizational Information Technology and Joint Competitive Advantages: An Integrative Model of Co-creating IT value

Lu Sun
Business College, Jiangxi Normal University, China

Chengyi Yue
Department of Statistics, East China Jiaotong University, China

Inter-organizational Information Technology and Joint Competitive Advantages: An Integrative Model of Co-creating IT value

Lu Sun[1*], *Chengyi Yue*[2]
[1] Business College, Jiangxi Normal University, China
[2] Department of Statistics, East China Jiaotong University, China

Abstract: The purpose of this paper is to facilitate knowledge accumulation and creation concerning IS research by summarizing an extension of the resource-based view and IT value literature. We define several constructs, including, inter-organizational IT resources & capabilities, and IT co-creating rents and illustrate a typology of inter-organizational IT resources and their attributes. Finally, we develop a conceptual model of co-creating IT value that integrates the above constructs. Our analysis provides a blueprint to examine the relational rents impacts of inter-organizational IT and motivates research incorporating the RBV and the extended RBV in the field of IS.

Keywords: Co-creating IT Value, Resource-based View, Rents, Inter-organizational IT Resources, Inter-organizational IT Capabilities

1. INTRODUCTION

Over the past twenty years，scholars always want to understand that the relationship between information technology (IT) and firm performance, and how to achieve competitive advantages. Most researches indicated that IT indeed creates value [1-5]. Besides, more and more firms build and share inter-organizational IT resources, co-create value in collaboration. For example, both HP (Hewlett Packard) and UPS (United Parcel Service) co-create sustainable relational value through collectively developing inter-organizational logistics system. Thus, with internetworking technologies, there is a fundamental transformation taking place in the creation of business value. That is, Value Cocreation based on emerging IT business system became increasingly. Comparing IT resources and capabilities, inter-organizational IT resources and capabilities are more socially complex and difficult to imitate. A question is raised: how to leverage IT to co-create value in multi-firm environments? There is very little discussion on the co-creating IT Value. This paper provides inter-organizational IT resources and capabilities, and IT co-creating rents based on relational view, which is helpful to explain "co-creating IT Value" in multi-firm environments.

The paper is organized as following: (1) discuss "co-creating IT Value" based in IT value literature and define "co-creating IT Value"; (2) classify inter-organizational IT resources based on the resource-based view, analyze IT co-creating rents based on an extension of the resource-based view, and expound inter-organizational IT capabilities; and (3) develop a model of co-creating IT Value.

2. DEFINING CO-CREATING IT VALUE

Co-creating IT Value occur in co-opetition, IT-based environment, which is made by multiple companies in cooperative. Co-creating IT Value represents the idea that (1) the value is co-created by multiple parties involving a symbiotic relationship between a firm and its primary stakeholders[6], (2) the value cannot be generated by either firm in isolation, which is more than sum of value generated by either firm in isolation[7,8], (3) the main goal is to increase market demand and enlarge market space, rather than fighting with rivals over the market share, in other words, the aim is to promote overall industrial profits, including collaborators and competitors[9], and (4) compared with IT value research examining the organizational performance impacts of

* Corresponding author. Email: lusun_jxnu@qq.com (Lu Sun)

information technology, co-creating IT value research examine the relational value impacts of inter-organizational IT resources and capabilities in multi-firms environments. The relational value is defined as a collaborative advantage made by multi-firms in cooperation that is a joint competitive advantage hold by partners. For example, customer satisfaction, share of wallet and loyalty[10], abnormal return[9], alliance innovation performance[5], and so on.

3. INTER-ORGANIZATIONAL IT RESOURCES AND THE EXTENDED RESOURCE-BASED VIEW

The resource-based view (RBV) argues that competitive advantage derive from resources and capabilities of the firm that emphasizes heterogeneity and imperfectly mobile of resources[11]. However, the value resources have spanned boundary of firm and have be embedded into inter-organization. This specific inter-organizational relationship may be sources of competitive advantages or the relational rents[7]. Some researchers have broken the resource-based view of firm in isolation and extended to multi-firms environments. Dyer & Singh (1998) suggest that critical resources of a firm may span boundaries of firm and may be embedded into routines and processes of inter-organization. Therefore, the firm is to earn not only Ricardian rents and quasi-rents, but also relational rents. Moreover, the specific inter-organizational relationship has been sources of competitive advantages and relational rents. The common of all above studies are obviously: based on the RBV and spanning the boundaries of a firm, which are extensions of the RBV.

3.1 A Typology of Inter-organizational IT Resources

IT relation-specific assets IT infrastructure is invested by single firm that can be imitated. Hence, it is hard to acquire competitive advantage. However, when the firm invests in interfirm relation-specific assets with partners, it can gain competitive advantage [12]. Firms gain advantages by creating specific assets in collaboration. Relation-specific assets are necessarily for "rent" and naturally are strategic assets [13]. Early results show that the relational rents are generated by investing specific relation. The greater the alliance members' investment is in relation-specific assets, the greater the potential will be for relational rents [7]. Hence, firms in networked environments produce digital or physical products & services and gain competitive advantage through creating IT relation-specific assets in collaboration. IT can strengthen the safeguard by amplifying openness of use of assets and lowering transaction cost between partners. Besides, IT can enhance trust between partners through amplifying openness and increase the volume of transaction.

IT knowledge-sharing routines "IT knowledge-sharing routines" can be defined as standardization in inter-firms that can improve knowledge sharing and absorptive capacities, can improve partnership in collaboration, collectively create new product and service, and achieve co-create value. For example, Wal-Mart Stores, Inc. operates retail stores in various formats around the world. The use of information technology has been an essential part of Wal-Mart's growth. Wal-Mart have made achievement in saving cost taking advantage of IT and designing logistics systems that attain competitive advantage from information technology. Such as, both Wal-Mart and Procter & Gamble co-create supply chain collaboration mode that is CPFR (collaborative planning, forecasting, and replenishment, CPFR) based on IT. CPFR naturally is an IT knowledge-sharing routine. Furthermore, the data center of Wal-Mart has developed knowledge-sharing routines with thousands of suppliers and realized rapid response VMI (Vendor Managed Inventory, VMI). The supplies can directly access into the data center of Wal-Mart by VMI and timely know about dynamic processes of distribution, which are bases of producing and distributing. In summary, both CPRF and VMI based on IT take great benefits for Wal-Mart, suppliers, and manufacturers.

Complementary resources and capabilities by IT Complementary resources and capabilities are defined as specific resources of an alliance partner that co-create "rents" are more than add of "rent" created by each alliance member in isolation. The resources creating "rents" in collaboration cannot be purchased by

partners in market[7]. Therefore, complementary resources and capabilities is a source of relational rents. Not all of resources and capabilities in alliances are complementary. To acquire complementary resources and capabilities, the firm should identity these firstly. IT is a valid instrument of recognizing and assimilating complementary resources and capabilities[7,14]. For by IT/IS, it is easier to form a collaborative trust in relationship between suppliers, rivals, and customers [12]. Based on these collaborative trusts, it is easier for firm to identify complementary resources and capabilities and to generate higher value of cooperative resources and competitive advantages.

Based on the above mentioned, we define "Complementary resources and capabilities by IT" as the firm identify and utilize complementary resources and capabilities of other partners depending on IT in collaboration. The value that is co-created by "Complementary resources and capabilities by IT" cannot be created by resources and capabilities of the firm in isolation. Hence, "Complementary resources and capabilities by IT" is also a source of relational value. For example, both General Mills Inc. and O'Lakes Inc. are suppliers of food retails in America. And, both of them are partners of Nistevo. Nistevo is the leading Collaborative Logistics Network for transportation management and is a hosted software service that enables manufacturers, retailers, distributors and logistics service providers to view, plan, execute, settle and analyze their inbound and outbound transportation. In 2000, General Mills and Land O'Lakes established an Innovative Supply Chain Alliance. The aim of the Alliance is to synergy purchasing process and improves customer service by the collaborative logistics network provided by Nistevo. Through sharing complementary ordering and distributing information of both General Mills and Land O'Lakes between distributors and retailers, the costs of inventory are reduced, customer services are improved, and synergy is generated. The collaborative logistics network provided by Nistevo between General Mills and Land O'Lakes is a "Complementary resources and capabilities by IT". In the process, IT plays an important role in recognizing and utilizing complementary resources and capabilities of partners.

IT governance resources The effective governance can reduce transaction cost and derive value co-creation. Therefore, governance is important to relational rents[7]. In this paper, "IT governance resources" is effective governance that can reduce transaction cost and promote information integration and information exchange based on IOS (Inter-organizational Information Systems, IOS) that is invested by partners in collaboration. In essence, the joint investment in information technology becomes the informal contract. The contract is neither in the form of text identifying responsibility and rights of both, is nor technological contract in technology innovation. The contract is similar to psychological contract in organizational behavior, which is the invisible contract between partners in collaboration. Comparing to the formal contract, the informal contract is characteristic of high sunk cost. Some research argued that the informal contract can protect investment in lowest cost and improve exchange between partners[11]. For example, compared to the formal governance mechanism (e.g., financial hostages) based on contract, the informal governance (e.g., trust) can also play an important role in co-creating value. Furthermore, the lower the contract costs are, the greater the potential will be for relational rents. Actually, "IT governance resources" in collaboration is hard to imitate because the informal contract that jointly developed by partners investing in information technology is more complex in social relationship and more specific in communication. For example, Taobao.com which is the digital platform integrates thousands of retailers and opens in aspects of IT resources, operational services, financial services, logistic services, customer services. The digital platform provides the one-stop solution between retailers and customers and develops the e-commerce ecosystem with partners. In fact, Taobao.com is an "IT governance resources" that is invested by Alibaba. Taobao.com significantly reduces transaction cost and develops long-term trust with customer by providing commodity transaction records and customer evaluation records, and improving information integration and information exchange in this digital platform. The digital platform

achieves co-create value based on IT that other traditional assets cannot create.

Overall, "IT governance resources" is an integration of digital platform, involving IT relation-specific assets, IT knowledge-sharing routines, and complementary resources and capabilities by IT. Firms can improve information integration and information communication, and efficiently manage cooperation between partners through integrating IT governance resources and utilizing the digital platform.

3.2 Inter-organizational IT Resources Attributes

Value A resource has value when it enables a firm to implement strategies and improve firm performance in view of the RBV [11]. If the resource has not value or a little value, the firm is hard to achieve competitive advantage. The extended RBV argued that the value of resource is important for firms to achieve competitive advantages in network environments. Some researchers have examined change of market value when firms entry into alliances and found that significant positive abnormal returns of the allying firms [9]. So the value of resources is not only limited in internal but also in collaboration. Furthermore, outside-in and spanning resources seem to have potentially higher value than internal resources to firms. As noted earlier, IT resources are value for firms both in internal, in competitive environment including partners and competitors, and in macro environment[3]. Inter-organizational IT resources that are derived from in complex organization and society tend to be socially complex. In network environments, inter-organizational IT resources have value and are more value than IT resources.

Rarity If resources that are valuable have been available to a large number of firms and are in abundant supply, the valuable resources cannot become sources of competitive advantages in an RBV context. According to Amit & Schoemaker (1993), the valuable resources have rarity when they are not available to many firms. Although inter-organizational IT resources are more open than IT resources, they have rarity. For example, Amazon opening platform that is an IT governance resource has significant value to Amazon.com and its partners. Although the platform co-create value for partners, it is rare for a large number of firms. That is, for many firms, if they want to achieve e-commerce service efficiently and rapidly, the opening platform is the only choice. Also, the opening platform is controlled and appropriated by only Amazon.com and it is most likely to confer a strategic benefit to Amazon.com. In network environments, inter-organizational IT resources have rarity.

Appropriability Resources and capabilities that lead to competitive advantage must be owned and controlled by a single firm in the proprietary assumption of the RBV. Furthermore, the advantage may not be competitive if the firm is unable to appropriate the returns accruing from the advantage in conventional RBV studies[15]. According to Wade & Hulland (2004), the appropriability of the spanning IT resources tends to be lower than that of internal IT resources. Besides, the advantages created by inter-organizational IT resources and capabilities are shared with cooperators and competitors. Therefore, inter-organizational IT resources have not appropriability in an RBV context. However, in recent years, many studies show that a firm's critical resources may span firm boundaries. Network resources can also lead to competitive advantages for firms in collaboration. The advantages of an individual firm are increasingly linked to the advantages of the network of relationship in which the firm is embedded[7]. Therefore, Lavie (2006) argued that the proprietary assumption of the RBV hinders an exact evaluation and understand of a firm's competitive advantage in network environments. According to Lavie (2006), the extended RBV in network environments relaxed appropriability assumption that enriches an exact understand of a joint competitive advantage. As noted earlier, inter-organizational IT resources that are owned by partners and embedded in interfirm routines and processes are typically network resources. In brief, relaxing the proprietary assumption of the RBV in network environments allow for the inter-organizational IT resources to create a joint competitive advantage in collaboration.

Above three attributes are belonged to ex ante limits to competition, which means that before any firm's

developing a competitive advantage, these must be limited competition for that advantage[15]. Then, another type of resource attributes, ex post limits to competition, will be analyzed. Ex post limits to competition suggest that after a firm's gaining a competitive advantage and earning rents, these must be limited competition for keeping rents[15]. Attributes in this category include inimitability, non-substitutability, and imperfect mobility.

Inimitability If the advantage is imitated by competitors, there is typically short-lived and is unable to sustain. According to Barney (1991), there are three factors that can lead to inimitability: unique firm history, causal ambiguity, and social complexity. Inter-organizational IT resources are typically establishing between large firms and their partners. There firms have unique firm history that other firms are unable to imitate. For example, Google Inc. purchased Android OS in 2005 that subsequently becomes very valuable. Inter-organizational IT resources are more complex than IT resources and these are ambiguity that exists in how an inter-organizational IT resource leads to the sustained competitive advantage. So it is hard for competitors to imitate these resources or copy the way in which these are deployed[15]. Inter-organizational IT resources are likely to be socially complex, which are derived from embedding of firms in networks. Thus, in network environments, firms and their partners defend their advantage against imitation by competitors outside network through segregation mechanism, such as causal ambiguity. Inter-organizational IT resources are likely to be more difficult to imitate than IT resource of a single firm. In addition, inter-organizational IT resources have opening. For example, Android OS have several third-party application service platforms, such as Google Play Store, Wandoujia, and Mi App. Therefore, the opening may reduce inimitability of inter-organizational IT resources. In a word, inter-organizational IT resources have inimitability, however, in some opening environments, which would be lowed.

Non-Substitutability A resource has non-substitutability if it has rarity and inimitability [13]. Non-substitutability of a resource may depend on whether it has strategically alternative resources and it can lead to an equivalent performance. According to Wade & Hulland (2004), strategic substitutes for the outside-in and spanning resources are also likely to be rare. In the case of inter-organizational IT resources, it probably impossible that strategic equivalent resources exist that leads to the same competitive advantage. Therefore, inter-organizational IT resources have low substitutability. As noted in the above paragraph, it is likely to reduce inimitability in opening environments. Equally substitutability of these resources would be increased. Thus, inter-organizational IT resources have non-substitutability, however, in some opening environments, which would be lowed.

Imperfect Mobility In the context of the RBV, if firms are able to acquire and utilize the resources to imitate a rival's competitive advantage at zero cost, the rival's competitive advantage will be short-lived and the resources are mobile or tradable. On the contrary, if firms are difficult to obtain the resources to imitate a rival's competitive advantage, the advantage is sustained and the resources are imperfect mobile or non-tradable. For example, compared to technological assets of a single firm, inter-organizational IT resources in collaboration, such as IT knowledge-sharing routines, are hard to acquire and are imperfect mobile. Besides, as noted earlier, inter-organizational IT resources have opening. For example, an IT governance resource that is typically appropriated by a firm can be utilized by other partners in network environments at very low cost or at zero cost. However, Lavie (2006) have weakened the imperfect mobility condition in an extension of the RBV view: the network environments, such as alliances, are able to transfer of benefits associated with the resources that cannot be mobilized. Thus, even though the imperfect mobility condition may be weakened in some opening environments, inter-organizational IT resources have imperfect mobility.

As noted earlier, inter-organizational IT resources have interdependence, and path dependence. According to Grover & Kohli (2012), interdependence refers to an inter-organizational IT resource enable to advance investing another inter-organizational IT resource. For example, an IT governance resource can stimulate

knowledge sharing between partners, lead to greater investment in IT relation-specific assets, enhance synergy in collaboration, and provide incentives for value co-creation initiatives. Path dependence involved that value creation of one type of resource can create the option for further value[14]. For example, these are typically great costs in the processes of knowledge sharing between partners[7]. If firms enable to utilize inter-firms IT resource and capabilities, such as, an effective IT governance mechanism, these can stimulate alliance members to increase the degree of openness, preclude opportunistic bargaining, prevent against free-riding, and reduce transaction costs.

Table 1. Attributes of Inter-organizational IT Resources

Inter-organizational IT Resources	Advantage Creation			Advantage Sustainability		
	Value	Rarity	Appropriability	Imitability	Substitutability	Mobility
IT relation-specific assets	high	high	medium	medium	low-medium	medium-high
IT knowledge-sharing routines	high	high	medium	low-medium	low	low
complementary resources and capabilities by IT	high	high	medium	low-medium	low	low
IT governance resources	high	high	medium	medium	low-medium	medium-high

4. AN INTEGRATIVE MODEL OF CO-CREATING IT VALUE

4.1 IT Co-creating Rents

IT-Based Co-Creation of Value occurs in IT-based alliances or network environments. Lavie (2006) illustrated four different types of rents in network environments. However, the process of Co-creating IT Value is different from the commonly process of Value Co-creation in network environments. We define "IT Co-creating Rents" as the specific rents occur in the process of Co-creating IT Value that are derived from inter-organizational IT resources, which include IT relational rent and IT-based outbound spillover rent. Borrowing from framework and terminology used by Lavie (2006), composition of rents extracted by the focal firms in process of co-creating IT value is illustrated in figure 1: (1) internal rent is composed of Ricardian rents and quasi-rents of focal firm; (2) Regarding IT relational rent, alliance members jointly utilize inter-organizational IT resources and acquire a joint competitive advantage. IT relational rent that is part of appropriated relational rent cannot be created by a firm in isolation and can be co-created in alliance layer; (3) inbound spillover rent is derived from shared resources and non-shared resources of partners; (4) IT-based outbound spillover rent is derived from competitive advantage taken away by nonparticipating rivals. The first three rents have positive effects on competitive advantage. In contrast, IT-based outbound spillover rent has a negative effect on competitive advantage. However, it has a positive effect for nonparticipating firms. Besides, only IT relational rent involves distribution of the value. Both IT relational rent and IT-based outbound spillover rent compose IT co-creating rents. The former that is derived from inter-organizational IT resources is easy to understand, while the latter relatively complex and will be illustrated in the following.

Whether intended or unintended, Knowledge spillover typically occurs in the process of Co-creating IT Value in network environments. Some researchers have suggested that substantial knowledge spillover when firms or rivals outside alliances exploit the technological innovations created from the IT-based alliances at lower cost and without having to reinvent the wheel[9]. Rent of the knowledge spillover that occurs in the IT-based alliances is different from outbound spillover rent of common network environments, which is defines as IT-based outbound spillover rent. IT-based outbound spillover rent is derived from nonparticipating firms utilizing and exploiting shared IT resources between partners. Nonparticipating firms and rivals outside alliances can replicate the innovation and improve performance without incurring significant additional costs or at zero cost through knowledge spillover. Knowledge spillover contributes to promote profits of an industry and

develop a business ecosystem. In turn, promotion of competitive advantage of an industry can lead to additional profits for alliance members. The profits are more than the rents that are taken away by nonparticipating rivals exploiting the shared inter-organizational IT resources.

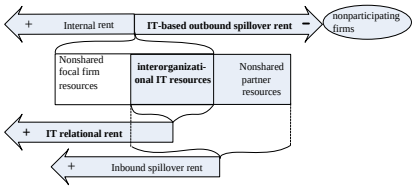

Figure 1. Composition of Rents Extracted by the Focal Firms in Process of Co-creating IT Value

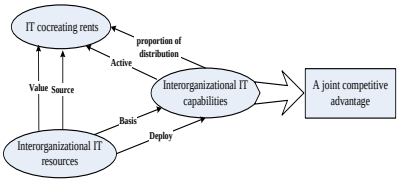

Figure 2. An Integrative Model of Co-creating IT Value

4.2 Definition of Inter-organizational IT Capabilities

As we noted earlier, we identify the relationship between inter-organizational IT resources and IT co-creating rents. However, these are questions in practice: why does the same IT investment lead to different performance for firms and alliances? high profits, low profits, and loss. The resource is a static factor of value in conventional RBV studies. Thus, IT resources are hard to have a direct impact on a sustained competitive advantage and are unable to explain proportion of distribution of rents[12].

Recent years, inter-organizational IT capabilities are increasingly being studied [5,10]. Compared with IT resource, it is the extension of IT resources and more difficult to imitate, substitute, and mobilize than IT resource. Borrowing from definition proposed by Bharadwaj (2000), inter-organizational IT capabilities refer to an organization's abilities to assemble, integrate, and deploy inter-organizational IT resources, and synergy with other complementary assets and capabilities in collaboration. Inter-organizational IT capabilities lead to increase cooperation performance, achieve relational value, and enhance the industry's total profitability.

4.3 An Integrative Model

In this section, we use inter-organizational IT resources, IT co-creating rents, and inter-organizational IT capabilities illustrated above to develop an integrative model of co-creating IT value (seeing in figure 2). The relationships between above three factors are summarized in the following.

Firstly, inter-organizational IT resources are basis of inter-organizational IT capabilities. Inter-organizational IT capabilities can achieve relational value and lead to competitive advantage, which are abilities embedded in organization process to integrate and deploy inter-organizational IT resources. Secondly, inter-organizational IT resources are basis of IT co-creating rents. IT co-creating rents is expression of value of inter-organizational IT resources. That is to say, IT co-creating rents is expression of relational value and competitive advantage in the sense of economics. Finally, inter-organizational IT capabilities utilize inter-organizational IT resources and other complementary assets to active value of these resources. Therefore, inter-organizational IT capabilities can generate IT co-creating rents and competitive advantage. In addition, inter-organizational IT capabilities are specific organization's abilities and every firm in network environments has different inter-organizational IT capabilities.

5. Conclusion

With internetworking technologies and the key resource of firms beyond the boundaries, co-creation of value in multiple-firm environments has been a typically way of value creation. In Particular, multiple firms collectively leverage IT to co-create IT-enabled products and services. Thus, there is a fundamental transformation arising in the conventional IT value research and co-creating IT value have been a critical theme in IS research. The extended RBV provide the way for IS researchers to understand the role of inter-organizational IT resources and capabilities in cooperative, platform-based, opening, and hypercompetitive

environments. Borrowing from definition and theory used by Dyer & Singh (1998) and Lavie (2006), we define inter-organizational IT resources and capabilities, IT co-creating rents, illustrate each inter-organizational IT resource with example of firms that co-created value by exploiting IT in this paper. Finally, we develop a conceptual model of co-creating IT value that integrates above three key constructs and their interrelationship.

Co-creating IT value research is a key new theme in IS discipline, our knowledge of which remains underdeveloped and unsystematic. In sum, Co-creating IT value offers a set of research questions that should be urgently addressed. It is our hope that the issues, definitions, and discussions illustrate in the paper will motivate interest and research incorporating the RBV and the extended RBV in the field of IS. Case and empirical studies are required to build a foundation for understanding the relational value and a joint competitive advantage impact of inter-organizational IT resource and capabilities in future.

ACKNOWLEDGEMENT

This research was supported by the National Natural Science Foundation of China under Grant 71761012 and the Jiangxi Normal University doctorate fund "Research on the formation mechanism of information interaction capability of enterprise ".

REFERENCES

[1] Lim MK, Tseng ML, Tan KH. (2017). Knowledge management in sustainable supply chain management: Improving performance through an interpretive structural modelling approach. Journal of Cleaner Production, 162: 806-816

[2] Lioukas CS, Reuer JJ, Zollo M. (2016). Effects of Information Technology Capabilities on Strategic Alliances: Implications for the Resource-Based View. Journal of Management Studies, 53(2): 161-183

[3] Melville N, Kraemer K, Gurbaxani V. (2004). Review: Information Technology and Organizational Performance: An Integrative Model of IT Business. MIS Quarterly, 28(2): 283-322

[4] Revilla E, Knoppen D. (2015). Building knowledge integration in buyer-supplier relationships. International Journal of Operations & Production Management, 35(10):1408-1436

[5] Xue XF, Huo BF, Xu W. (2013). Research on Effect of IT Capability on Strategic Alliance Performance. Science Research Management, 34(12):326-333 (In Chinese)

[6] Kohli R, Grover V. (2008). Business Value of IT: An Essay on Expanding Research Directions to Keep up with the Times. Journal of the Association for Information Systems, 9(1):23-39

[7] Dyer JH, Singh H. (1998). The Relational View: Cooperative Strategy and Sources of Inter-organizational Competitive Advantage. Academy of Management Review, 23(4): 660-679

[8] Lavie D. (2006). The Competitive Advantage of Interconnected Firms: An Extension of the Resource-Based View. Academy of Management Review, 31(3):638-658

[9] Han K, Oh W, Kun SI, et al. (2012). Value Cocreation and Wealth Spillover in Open Innovation Alliances. MIS Quarterly, 36(1):291-325

[10] Rai AA, Pavlou P, Im G, et al. (2012). Interfirm IT Capability Profiles and Communications for Cocreating Relational Value: Evidence from the Logistics Industry. MIS Quarterly, 36 (1):233-262

[11] Barney JB. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1):99-120

[12] Zhang J, Huang JH, Gao H. (2010) .An Integrated Model for Evaluating IT Value in Firms from Resource-based View. Science of Science and Management of S&T, (2):130-136 (In Chinese)

[13] Amit R, Schoemaker PJH. (1993). Strategic Assets and Organizational Rent. Strategic Management Journal, 14: 33-46

[14] Grover V, Kohli R. (2012). Co-creating IT Value: New Capabilities and Metrics for Multifirm Environments. MIS Quarterly, 36(1):225-232

[15] Wade M, Hulland J. (2004). Review: The Resource-Based View and Information Systems Research: Review, Extension, and Suggestions for Future Research. MIS Quarterly, 28(1): 107-142