12-13-2010

The Nature of IT Services from a Management and IS Research Point of View

Roman Beck
J.W. Goethe University, beck@itu.dk

芽|Sprouts Working Papers on Information Systems ISSN 1535-6078

The Nature of IT Services from a Management and IS Research Point of View

Roman Beck
J.W. Goethe University, Germany

Abstract
Theory building is not only underdeveloped in IT services management research, but in general in IS. Given the paradigm shift that comes from the development away from a networked economy towards a network economy, the lack of spending enough attention to theorizing in IS becomes even more obvious. In the light of other "megatrends" in IS research, such as the increasing professionalization and use of statistical methods and the exploitation of extremely large sets of data (often harvested from social media sites), we might lose interest in theorizing in the presence of the tremendous amount of available empirical data. In this position paper, the author advocates that services science researchers should focus on rigor and relevance in their research approaches.

Keywords: IT service management, network economy, theorizing in IS

Permanent URL: http://sprouts.aisnet.org/10-128

Reference: Beck, R. (2010). "The Nature of IT Services from a Management and IS Research Point of View," Proceedings > Proceedings of SIGSVC Workshop . *Sprouts: Working Papers on Information Systems*, 10(128). http://sprouts.aisnet.org/10-128

A PARADIGM SHIFT

While the importance of the services sector for developed countries is widely accepted, the academic research and theoretical foundations of services are still in its infancy. Research in economics and business administration focused on the post-agricultural society starting with the industrialization around the 1850s. Coined by their focus on machine-driven innovations and synergy effects in the industry society, influential work, such as "The nature of the firm" by Coase (1937), focused on negotiable property rights which are represented by goods which can be traded on markets. At that time, it was less obvious that not only physical goods generated value but also the manual handling, the work or, as we would now frame it, the services that are needed to provide value to clients. Sometimes, these services are attached to a product, but increasingly, services are detached from any physical representation, especially since we as society have entered the Internet area.

Apart from the formation of hierarchically organized and well defined firms to produce services, other possible market-oriented souring solutions are conceivable, e.g., by establishing and sourcing through decentralized virtual teams on the market. In the early 20th century, Coase already argued that firms and markets are alternative organizational forms which can be used for organizing transactions (Coase 1937). The central question is why firms emerge at all in a specialized exchange economy where the sourcing can be provided by markets. The answer can be found in his famous transaction costs approach: firms only exist because there are costs of using the market and its price mechanisms, such as costs for searching, negotiating, monitoring, and enforcing goods and services. These costs occur when goods or services are transferred across separate interfaces between organizations. It is a matter of common knowledge that organizations emerge when the coordination of transactions through hierarchies is more advantageous than coordination through markets (Coase 1937; Williamson 1985). As a result, economic benefits from vertical integration (collaboration among firms) arise when internalization (or partial internalization) dominates transaction difficulties associated with market exchanges (Lee and Vonortas 2002). Such an organizational disintegration (Picot et al. 1996) is cost-efficient if the sourcing by market or hierarchical mechanisms is more cost-intensive and no monopolies exist (Economides 1999).

In general, the more specific an asset or service is, the more efficient is the sourcing through hybrid or hierarchically organized settings. Referring to Williamson (1991), Figure 1 illustrates the three possible forms of coordination mechanisms. Instead of using the term "hybrid" for variants of terms such as collaborative or alliance-based services sourcing (Malone et al. 1987; Picot et al. 1996; Williamson 1991), the more general term "networked" is used, emphasizing the potentials offered by services sourcing and management in a joint, coordinated network approach to reduce transaction costs. Since the asset specificity is the main determinant for transaction costs, an increasing specificity is always related to an increase in transaction costs. Sourcing through the market is cost-efficient when the specificity is low since competition on the market, in general, leads to low prices (asset specificity between 0 and s1). A hierarchical sourcing or self-provided production of an asset with low specificity is less attractive because necessary skills and machines are not easily replicable on demand. With increasing specificity and heterogeneity of assets to be sourced, the necessary amount of coordination is also rising. The hierarchy performs best (asset specificity > s2) in the case of sourcing highly specific or heterogeneous assets or goods because strict control instruments and internal contracts can be applied.

However, these two coordinating mechanisms are not the only observable ones. Variants or networked solutions of the two "pure" sourcing concepts can be identified, e.g., to coordinate value or supply chains. This indicates that there is an area (asset specificity between s1 and s2) where, on the one hand, the specificity is high and therefore the market coordination is too expensive. On the other hand, the hierarchical sourcing is also not applicable, e.g., due to low frequency of sourcing or due to small numbers of services requested. Because of the advent of modern information systems (IS) that have reduced the coordination complexity and therefore transaction costs significantly, the ability to collaborate with other market participants is becoming more and more attractive. In such a networked economy, apart from the cost reduction due to standardized communication frameworks, additional network effect benefits can be achieved.

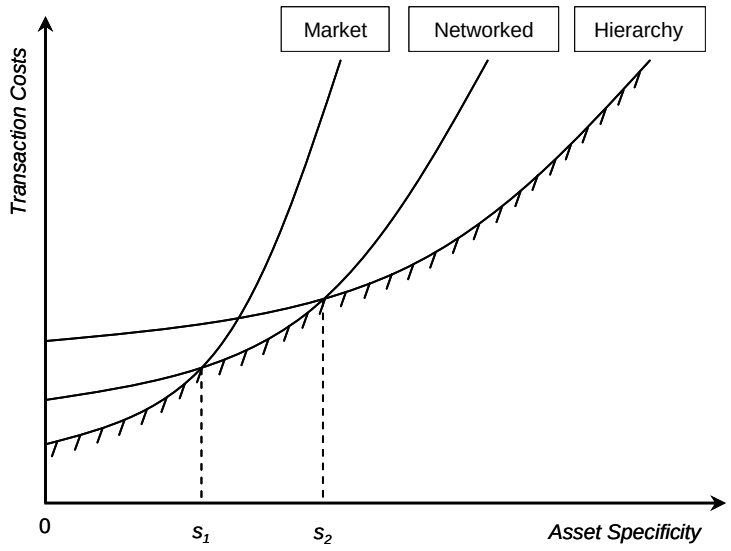

Figure 1: Service Sourcing Mechanism-related Transaction Costs

As mentioned above, transaction costs are mainly the costs of coordinating comprising costs of information and communication. Such costs can be interpreted as the "economic equivalent of friction in physical systems" (Williamson 1985), p. 19). With technical progress and the ongoing diffusion of IS, this "friction" will be reduced continuously, making network-based services sourcing increasingly attractive and cost-efficient while enjoying some properties of markets and some of hierarchies (Jarillo 1988). Figure 2 depicts the "natural" borders of such an economically efficient development. The situation, now described as network economy, will never be better than the market for assets with a very low specificity and, contrariwise, will never exceed the efficient sourcing of highly complex, heterogeneous, and specific assets, which will always be provided by centrally coordinated hierarchies. Although coordination by market and hierarchy will also benefit from new information systems lowering the transaction costs. The overall net effect will be in favor of networked coordination for the whole continuum between these two poles. We are in the middle of this process witnessing the globalization and decentralization of services creation and services management in IT. However the increased collaboration within such network economies has not been reflected in general by the way we use theories for our research or how we theorize in IS research.

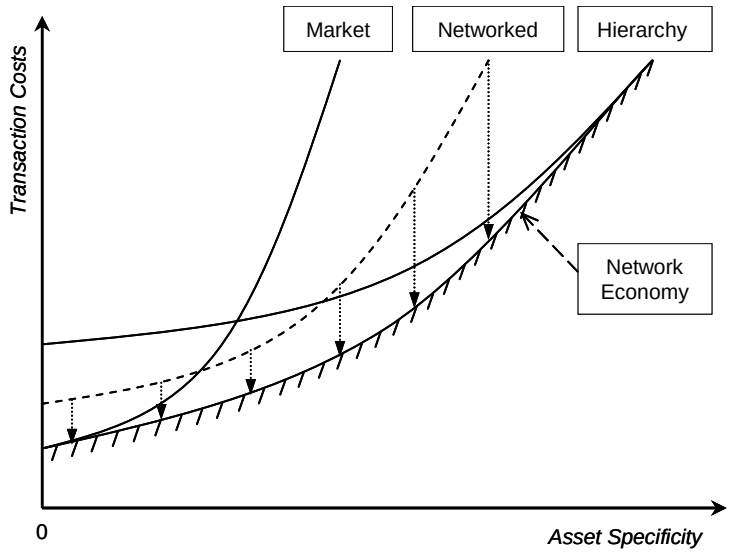

Figure 2: Services Sourcing Mechanisms: From a Networked to a Network Economy

IMPACT ON IT SERVICE MANAGEMENT AND RESEARCH

While the Internet is certainly the most important driver of the aforementioned development as channel to provide services and subsequent value to clients, the Internet has also altered fundamentally our view on services and had a tremendous impact on existing value chains, such as within the music or print media industry. The Internet has not only replaced existing sales channels but also detached the products from their physical representation. We do no longer buy CDs or books but rather download them from the Internet. While these two simple examples illustrate how IT services have changed the consumption side and costumer behavior, similar developments can be found within industries. In previous times, it was necessary to own a computer in order to use its calculation capabilities. Now, one can rent them as a service, e.g., by using Cloud services. But not only machine-based services can be sourced virtually from everywhere in the world. Since human beings, their skills, capabilities, tenure in a field, and so on are increasingly as good specified as the properties of web services, individuals and the services they offer can be connected and hooked into virtual value chains as well. A look into LinkedIn or Facebook reveals that most members not only list their achievements but also the services they are offering. This allows the emergence of virtual teams of knowledge workers which plan, develop, maintain, and deliver services independently from where they are located in a loosely coupled, networked fashion based on machine- and human being-generated services which are distributed via the Internet. This became already "the new nature of the firm" which holds a couple of practical challenges (such as defining and achieving a common understanding of quality of services in virtual teams). At the same time, it raises a couple of theoretical issues: We simply lack a comprehensive understanding and theoretical framework that has explanatory power to illustrate what is going on. We are even farther away from having predictive theories which allow us to understand the future development of IT service management.

The crux is: theory building is not only underdeveloped in IT services management research, but in general in IS. Given the paradigm shift that comes from the development away from a network*ed* economy towards a network economy, the lack of spending enough attention to theorizing in IS becomes even more obvious. In the light of other "megatrends" in IS research,

such as the increasing professionalization and use of statistical methods and the exploitation of extremely large sets of data (often harvested from social media sites), we might lose interest in theorizing in the presence of the tremendous amount of available empirical data. “Let the data speak” could be dangerous if we match the empirical findings against theoretical insights which have been developed in the industry age. As long as we have not made sure that the theories, models, frameworks, etc. we are used to are still valid in a world where the nature of a firm has changed, the meaning of being befriended with someone has obviously changed in social media environments, and where one does not have to adopt IT in order to benefit from its services, we have to make sure that the theoretical lenses we use to investigate IT services management are still properly adjusted. We as researchers in services management can only have an impact if we try to be rigor and relevant at the same time.

So do not let us be overwhelmed by the easy availability of data, the ability to run ever more complex simulations, or to survey thousands of members in forums or online communities at once. What IS research in the context of IT services management can contribute to in the future is a holistic analysis of all phenomena accompanied by servitization of economies. The question is: are we ready to theorize about services 2.0 building an updated view of the nature of the firm?

REFERENCES

Coase, R.H. "The nature of the firm," *Economica* (4:16) 1937, pp 386-405.

Economides, N. "Quality Choice and Vertical Integration," *International Journal of Industrial Organization* (17:6) 1999, pp 903-914.

Jarillo, J.C. "On Strategic Networks," *Strategic Management Journal* (9:1) 1988, pp 31-41.

Lee, C.-S., and Vonortas, N.S. "Toward an integrated model of strategy formulation for strategic technical alliances," *International Journal of Technology Transfer and Commercialisation* (1:3) 2002, pp 292-312.

Malone, T.W., Yates, J., and Benjamin, R.I. "Electronic Markets and Electronic Hierarchies," *Communications of the ACM* (30:6) 1987, pp 484-497.

Picot, A., Ripperger, T., and Wolff, B. "The Fading Boundaries of the Firm: The Role of Information and Communication Technology," *Journal of Institutional and Theoretical Economics* (152:1) 1996, pp 65-88.

Williamson, O.E. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting* The Free Press, New York, 1985.

Williamson, O.E. "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," *Administrative Science Quarterly* (36:2) 1991, pp 269-296.

芽|Sprouts

Working Papers on Information Systems | ISSN 1535-6078

Office:
Sprouts
University of Amsterdam
Roetersstraat 11, Room E 2.74
1018 WB Amsterdam, Netherlands
Email: admin@sprouts.aisnet.org

芽|Sprouts