



Developing focal capabilities for e-commerce adoption: A resource orchestration perspective



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ARTICLE INFO

Article history:

Received 26 December 2013

Received in revised form 19 June 2014

Accepted 23 August 2014

Available online 1 September 2014

Keywords:

E-commerce

Resource-based theory

Resource orchestration

Process model

Case study

ABSTRACT

Although an increasing number of manufacturing enterprises have engaged in e-commerce activities in recent years, there are few successful examples. We utilize the notion of resource orchestration as a theoretical lens through which to investigate the nature of the e-commerce adoption process. The findings generate a process model that can be used to explain how resources are orchestrated in the successful adoption of e-commerce by manufacturers: the predominant competitive environment of each phase gives rise to a specific focal capability that is developed through resource-focused actions. This research benefits both academics and practitioners by contributing to cumulative theoretical developments and by offering practical insights.

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1. Introduction

E-commerce is essential for enterprises because it improves their understanding of customer needs and of the products and services available in the market [6,55,69]. Since 2011, an increasing number of traditional manufacturers have engaged in such initiatives. By conducting e-commerce, manufacturers can eliminate distributors and wholesalers; optimize internal processes; reduce the production period, inventory and circulation [8]; and thus obtain higher margins [33]. However, although some manufacturers, such as Dell, General Electric and Estee Lauder [25,67], have achieved tangible improvements in their operational efficiency and revenue generation by adopting e-commerce, some firms have been less successful. Researchers and practitioners have struggled to determine the optimal conditions for the adoption of e-commerce by manufacturers [25,26,42].

Existing studies have focused considerable attention on the factors that facilitate or inhibit e-commerce adoption [18,25,41]. The findings generally fall into two categories – the strategic value of certain information technologies to top managers and the factors that influence the adoption of information technology (IT) [19], emphasizing the importance of the perceived benefits, strategic

commitment to e-commerce, external pressures, organizational readiness, information system (IS) characteristics and e-commerce capabilities, among others [19,20,25]. Such studies reveal why enterprises adopt e-commerce and recognize the fundamental role of resources. For example, Grandon and Pearson [19] note the importance of financial and technological resources, Zhu et al. [70] find that large firms enjoy “resource advantages” in e-commerce adoption, and Huy et al. [28] observe that the scarcity of necessary resources is the major challenge in the implementation of e-commerce.

Although the “why” question has been investigated in many studies, the “how” question (i.e., “How do manufacturers adopt e-commerce?”) has yet to be fully explored because of a lack of attention to the e-commerce adoption process [27,41]. Process theories focus on sequences of activities to explain how particular outcomes evolve over time [49]. Process models can enable scholars and practitioners to understand the underlying mechanisms involved in such processes [22].

Several scholars have recognized this problem and have adopted the process perspective to investigate e-commerce adoption [36,40,41]. Such studies have adopted two alternative perspectives: a factor-oriented perspective [31,40,61] and a stage-oriented perspective [12,48,66]. Factor-oriented studies segment the adoption process into several stages, such as the initiation, decision and implementation stages, and investigate the facilitators and inhibitors in each stage. Stage-oriented studies, by contrast, focus on the adoption stages per se, such as the presence, transaction portal integration and enterprise integration stages,

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and investigate the features of each stage, such as communication channels and e-commerce functions. Both types of studies acknowledge the fundamental role of resources in the adoption process [31,40,41] and help answer the “how” question to some extent. Nonetheless, the precise manner in which manufacturers adopt e-commerce remains unknown.

Although resource-based theory (RBT)² provides a foundation for investigations of how manufacturers adopt e-commerce [47,50,58], the most recent developments in RBT suggest a new direction. Specifically, recent studies observe that managers’ resource-focused actions are more important than resources per se in achieving competitive advantages [24,32,52], given that enterprises exhibit different levels of performance even when they own similar resources [53]. Thus, Sirmon et al. [52] use the term “resource orchestration” to describe how managers achieve resource-based competitive advantages.

In this paper, we adopt both RBT and a resource orchestration perspective to explore how manufacturers adopt e-commerce. RBT is recognized as the fundamental theory in e-commerce research [47,69,72], whereas the resource orchestration concept provides an additional theoretical lens through which to discuss resource management actions that reflect the dynamic nature of resources [2]. By investigating the e-commerce adoption processes of manufacturers, this study not only helps reveal the nature of manufacturers’ e-commerce adoption but also adds to the cumulative theoretical development of the resource orchestration perspective. We address this research goal by analyzing the successful e-commerce adoption process of China’s Haier Group, one of the largest white goods manufacturers in the world.

2. Theoretical foundations

2.1. RBT: from resources to capabilities

A firm is basically a collection of resources that prompt or constrain firm growth [46]. Generally, a firm’s salient resources consist of physical, human and organizational capital, and those that are valuable, rare, inimitable and non-substitutable create competitive advantages [3]. Hence, resources are one of the most important themes for both enterprises and scholars, and RBT is formed and adapted to dozens of research fields.

Nonetheless, the static nature of RBT is highly controversial, as the dynamic nature of the environment and its effect on resources have attracted increasing attention. Consequently, RBT has been supplemented by a dynamic capability perspective to address the realities of a high-velocity market, rapid technological change and other environmental changes [57,59,71]. Dynamic capability refers to the ability of a firm to achieve new forms of competitive advantage by renewing technological, organizational and managerial resources to achieve congruence within the changing business environment [14,45,59]. This capability emphasizes the importance of the continuous reconfiguration of resources based on environmental changes and emphasizes that resource reconfiguration enables distinct capabilities within a firm [44,59]. Notably, the transformation from RBT to dynamic capability allows for an enhanced explanation of how improved organizational performance may be achieved by firms that can perform an activity more effectively than their competitors with otherwise similar resources [5]. For example, Samsung began with few resources with which to develop semiconductor products. However, through the license of a 64K DRAM design from Micron and the purchase of a design from Zytex, Samsung assimilated and imitated the technology and ultimately gained the ability to develop innovative products

[34]. By contrast, Sony, a former technology giant, lost its leading position because of its choice of BETA rather than VHS technology.

Given the importance of dynamic capabilities, some studies have further discussed its structure and agreed that there are different levels of dynamic capabilities [1]. The focal dynamic capability is the firm-level value-creating exploratory capability that leads to superior performance from a radical innovation perspective [35]. Additionally, complementary dynamic capabilities are basic-level capabilities, such as the resource base itself and the creation and extension of the resource base [10,35].

2.2. Toward a resource orchestration view of e-commerce adoption

In addition to its failure to consider the dynamic environment, RBT is criticized for overlooking resource management actions. RBT posits the static possession of resources, whereas some recent studies focus on managers’ actions with respect to resources and suggest that only when resources are managed effectively can competitive advantages materialize [23,52,65]. Consistent with this logic, the work of Sirmon et al. [52] develops the concept of “resource orchestration,” which refers to how managers achieve resource-based competitive advantages. Sirmon et al. [54] also propose a framework to describe resource orchestration actions: structuring, bundling and leveraging. Structuring refers to the structuring of a resource portfolio, including acquiring, accumulating and divesting; bundling is the process of using resources to build capabilities, including stabilizing, enriching and pioneering; and leveraging emphasizes leveraging capabilities in the marketplace to create value, including mobilizing, coordinating and deploying. Thus, resource orchestration provides a bridge between uncertain environments and capabilities (Fig. 1).

The external environment is continuously changing. To cope with this dynamic environment, enterprises must reconfigure their resources [44,59], i.e., orchestrate their resources by acquiring, renewing, structuring, bundling and conducting other resource-focused actions [41,52,59]. Enterprises can thus generate new capabilities [44,59]. These changes in resources, resource orchestration and capabilities in prominent enterprises, especially when the number of the enterprises reaches a certain level, will result in changes in the environment. Thus, enterprises are forced to become involved in the subsequent round of resource reconfiguration and capability building.

Indeed, the resource orchestration concept has already been incorporated into the study of e-commerce [41] and e-government [56]. Although relevant studies remain scarce, extant studies cover all three salient aspects of resource orchestration: resources, the environment and action. Taher [56] identifies three types of organizational resources involved in resource orchestration – precedence resources, dependent resources and upshot resources – and investigates the relationships among them in accordance with the impressionability perspective. Wang et al. [64] find that resource structuring plays a more important role in the business value of information technology creation in a stable environmental context, whereas capability building is more important in dynamic environments. Montealegre [41] identify specific resource orchestration actions in the three phases of capability development in support of an e-commerce strategy: (1) developing the capability to strategize through global benchmarking and training, learning from past experience and history, and absorbing knowledge as a unified group at the top of the organization; (2) developing greater flexibility through the integration of resources into core activities and experimentation as well as the investment in, leveraging and co-option of resources; and (3) integrating and engendering trust through internal commitment, investment in complementary infrastructure and the strengthening of external relationships. However, although these studies discussed the relationships

² Barney et al. [2] suggest that after a 20-year development period, RBT, which is based on the resource-based perspective, has reached maturity as a theory.

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