

Identifying e-Business Models: A Value Chain-Based Analysis^{*}

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Abstract *E-business will change the ways that all companies do business, and most traditional businesses will evolve from their current business model to a combination of place and space via e-business model. To choose the proper e-business model becomes the important strategic concern for company to succeed. The main objective of this paper is to investigate the analysis framework for identifying e-business model. Based on the e-business process, from the value chain to the value net perspective. This paper provides a theoretical framework for identifying e-business models, and results in 11 e-business models. The strategic intend of every e-business model is discussed in the end of this paper. An enterprise e-business model design and implementation can be specified by the combination of one or more among 11 e-business models.*

Key words *e-business mode; value chain; e-business strategy*

Electronic business (e-business for short) is a high effective integration of enterprise business process, application system and organization structure. It completes whole business activities by means of electronic way in order to improve business efficiency^[1]. A more abroad definition of e-business is that enterprise executes business process over open networks (mainly Internet) so as to substitute information for original handwork business transactions^[2]. As a new business platform, e-business is the result of ICT development and the economy globalization. How can enterprise win out in the dramatic changing e-business era and respond to new competitive business environment quickly? It's becoming the focus of today's discussion.

Bill Gates once said that Microsoft had only two years to fail^[3], because he quite realized that today's competition is not only the competition of technology and products, but rather the competition of Business Model. Therefore, the competition between enterprises in e-business era is the competition of e-business model that enterprises choose. Dell, Cisco, Amazon and Eachnet (China) can serve as good examples that proper e-business models make them preeminent in the new economy.

Along with the e-business evolution, the identification of e-business model becomes a main issue in the e-business research field^[1, 4, 5]. Even in some countries, e-business model can be patented^[6]. So understanding e-business models and helping to design them are important research issues. Naturally many scholars have done a great deal of work about e-business models, but it isn't so well covered until now. In this paper, from the value chain and value net perspective, we construct a new theoretical framework to analyze e-business models, so as to provide a new method for enterprise analyzing and deploying e-business model.

1 A Review of E-Business Model

There is no uniform definition of business model so far. Different scholars have different opinion. Paul proposes the definition of business model in Internet era. He said that business model is a system consist of product flow, service flow and information flow, in which all the business actors involved, what their role is, source of revenue and which potential benefits they get are described at the same time^[7].

E-business model plays the role bridging the enterprise strategy and business process as well as

information systems. This is illustrated in Fig.1.

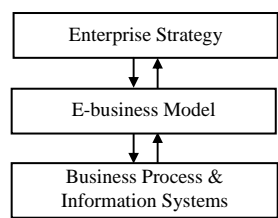


Fig.1 The relationship of e-business model in enterprise

Many scholars are trying to recognize different e-business models under different frameworks. The most widely acceptable e-business models are the classification from the perspective of business actors, such as B2B, B2C, and C2C. Obviously, this simple kind of model identification is far less than enough to guide enterprise to deploy e-business. From the two perspectives of innovation and function integration, Paul Timmers identified 11 e-business models, including e-shop, e-procurement, e-auction, e-mail,

virtual communities, value chain service provider, value chain integrator and so on^[7]. However these e-business models he figured out are usually concerned with the model of pure dot-com firms, and little on how traditional enterprise to do e-business.

Armir identified 5 e-business models that can change the way of value creation. They are e-shop, trust intermediary and so on^[8]. Successful e-business firms usually adopt one or more of these models. The identification is largely from the perspective of value creation of e-business model. But this classification is confined by the narrow concept of e-business.

Rappa identified 9 categories totally 25 kinds of e-business models from the perspective of profit means in Internet^[9]. Even though the models recognized by Rappa covers wide area, the identification framework he adopted is not very clear, the dimension is too simple and so it is difficult for enterprise to decide which e-business model to be chosen.

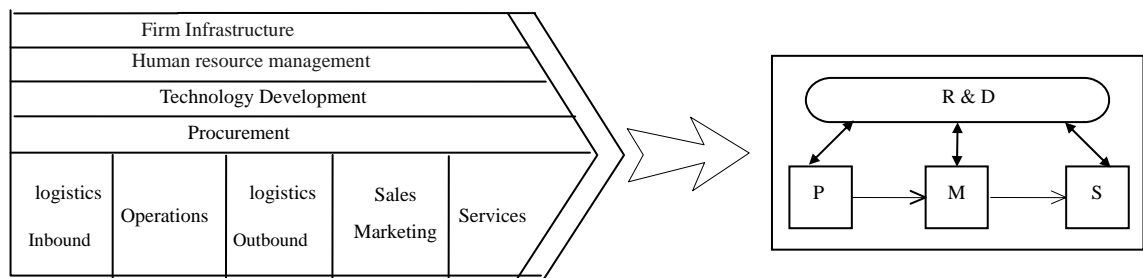


Fig.2 Enterprise e-business core processes from single-firm value chain perspective

Some other scholars also get various e-business models according to different identification framework. Such as Peter Weill identified 8 e-business models based on broad investigation in diverse industries^[2]. Lynda identified three categories totally 13 e-business models from the perspective of market roles^[10].

From the analysis above, three problems of the research on e-business model identification can be concluded. Firstly, most of all lack a theoretical ground of e-business model identification framework. Secondly, there is little research on e-business model identification framework for traditional enterprise, mainly on the pure dotcom company. Thirdly, the e-business models recognized are not persuasive enough to instruct firms, which leads firms feel no way to follow. Thereby, we propose a new theoretical framework for identifying enterprise e-business models,

based on which 11 e-business models are identified and their strategic intents are discussed respectively.

2 Core Business Processes for Enterprise E-Business Application

2.1 Core Business Process Based on the Value Chain

The application of enterprise e-business model is primarily represented in several core business processes. Core business processes are the process of enterprise value creation.

From single-firm perspective to discuss the e-business process, the enterprise “Value Chain” theory provides a good foundation to determine enterprise business activities. Porter divides the enterprise business activities into primary and support activities^[11,12]. The two categories can be further sorted into 9 generic categories, Under the premise of none

impact to enterprise basic value creation process, we make the proper generalization, extraction and abstraction of enterprise activities, so that the most primary enterprise business processes can be represented in a more concise way. Four primary enterprise business processes are proposed: procurement (P), manufacturing (M), sales (S), and research & development (R&D). Among them, the Procurement, Manufacturing and Sales belong to the activities in enterprise core value chain, whereas the R&D belongs to the support activity to fully enhance the value of these core activities. Fig.2 illustrates the core processes for enterprise e-business from single-firm perspective based on the value chain.

The Fig.3 demonstrates the relationship in a single value chain between enterprise and upstream value chain (suppliers) as well as downstream value chain (distributors/customers).

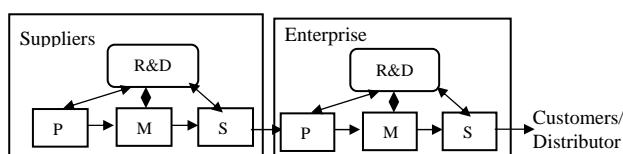


Fig.3 Enterprise in the value chain

2.2 Core Business Process Based on the Value Net

As information technology and globalization developed, Lynda and Meredith deem that it is not suitable any more to use conventional value chain concept to analyze enterprise business model in the network economy era^[10]. Because in the integrated economic environment, an e-business enterprise does not only play a unique role, but more possible act as diverse roles in the whole value system to realize the maximum of value creation. Therefore, we should use the “Value Web” or “Value net”, instead of “Value Chain”, to analyze enterprise business model. Value net is a dynamic network composed of customers, suppliers, collaborators and the information flow among them^[13, 14]. The concept of Value net extends out the concept of supply chain so as to form a virtual value web according to customer demands by various collaborating enterprises in a much larger scope.

Under the e-business environment, enterprise is able to span over its conventional value chain and expands its business into the scope of Value Net.

Enterprise can possibly establish alliance relationship with more partners, even affiliates with competitors in the same industry by the combined means of competition and collaboration. Thus, modern enterprise e-business environment is a complex system comprising firm internal business processes as well as the external business processes with partners. All the probable relationships between enterprise and other actors must be studied to analyze in depth the enterprise e-business models. Fig.4 illustrates the core business processes of enterprise based on value net.

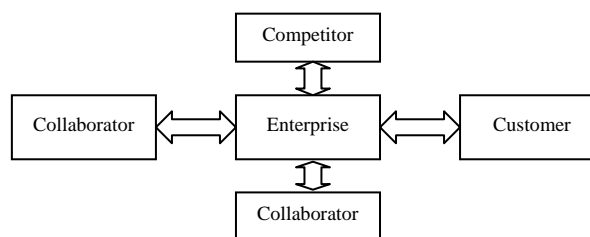


Fig.4 Enterprise e-business core processes from virtual value-net perspective

3 Identifying E-Business Models Based on the Core Business Processes

3.1 Identifying E-Business Models Based on the Value Chain

From single-firm value chain perspective the core e-business processes for enterprise are primarily composed of procurement (P), manufacturing (M), sales (S), research and development (R&D). Enterprise performs various transactions with others in a single value chain. Fig.5 demonstrates the e-business models identified from value chain perspective.

In Sales process, Enterprise is likely to take the most advantage of networks to skip over downstream distributors and sell its products or service directly to end customers. If enterprises sell products directly to customers through Internet bypass tradition distributors, thus the 1st e-business model is identified: Direct to Customer. If enterprises provide service information directly to the customers through the Internet, then the 2nd e-business model is identified: Content provider. The same to explore new e-business models for Procurement process, enterprise can also leverage Internet technology to simplify its traditional purchase process and bypass multi-level suppliers to link itself

with raw materials producer directly. Thus the 3rd e-business model is identified: Direct to Supplier.

Enterprise may utilize network technology to manage and integrate the internal operation process, integrate multiple business units, optimize resource allocation, and more important to provide a single contact point at enterprise level to let customer achieve services they desire more conveniently. Thus the 4th

e-business model is identified: Whole of Enterprise.

As the Internet emerge, if enterprise wants to act as intermediary getting suppliers and customers information together, enterprise can be moved to the Internet and provides information service for them. Thus the 5th e-business model is identified: Informediary.

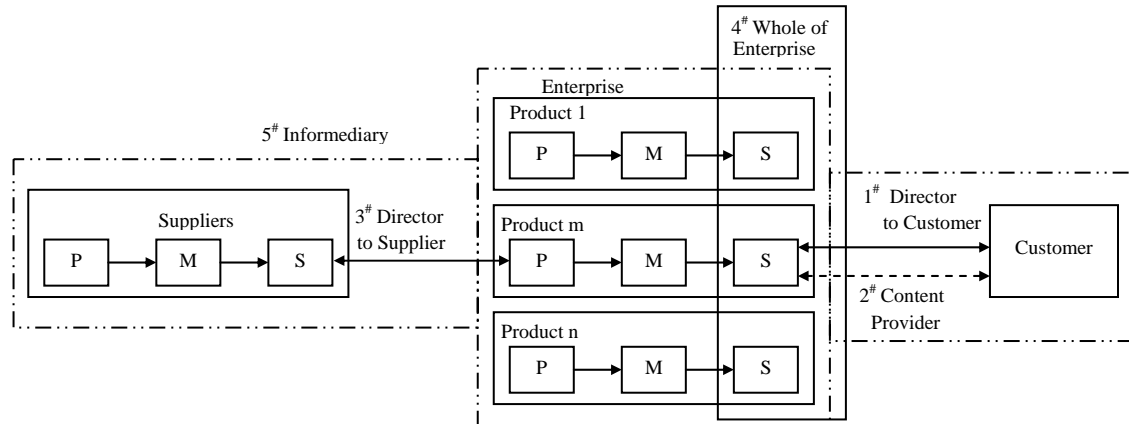


Fig.5 Enterprise e-business models identified from single-firm value chain perspective

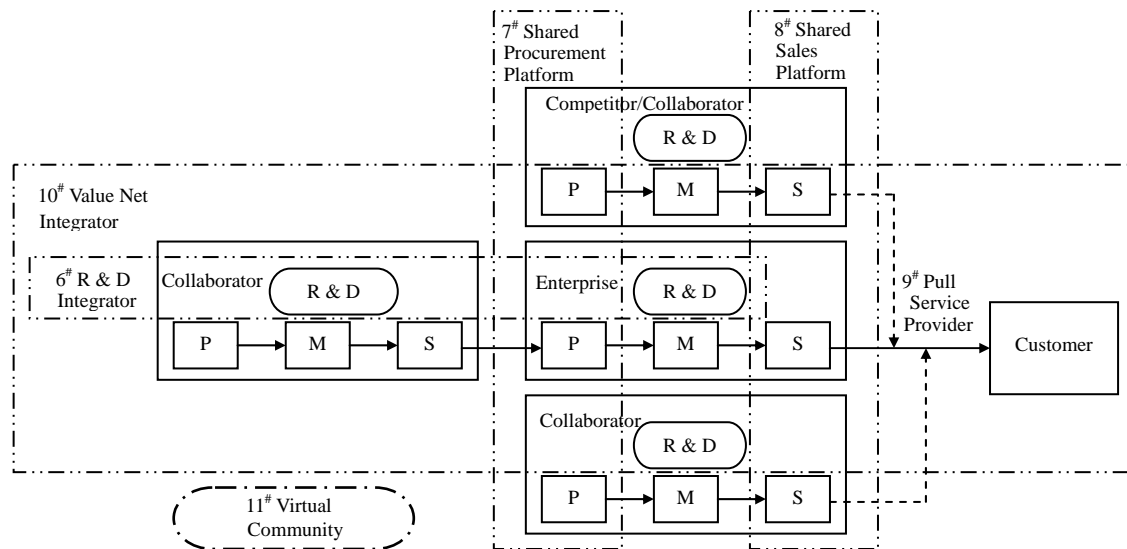


Fig.6 Enterprise e-business models identified from value net perspective

3.2 Identifying E-Business Models Based on the Value Net

From value net perspective the core e-business processes for enterprise are chiefly the various business relationships between the enterprise and its collaborators, competitors and customers as well. Fig.6 demonstrates the e-business models identified from value net perspective.

Internet brings enterprise the probability of integration and share. In the information era, R&D of

an enterprise might require more partners to participate mutually. Enterprise could leverage IT to act as R&D management center and set up collaborations with partners to facilitate the R&D activities effectively. Thus the 6th e-business model is R&D Net Integrator.

The competition strategy in the new economy is no longer like what it was before. Enterprise is in search of an entirely new strategy combining both competition and collaboration. For the Procurement process, enterprise can ally with its competitors or

partners of the same industry to share the e-procurement platform by means of Internet. Thus, the 7th e-business model is identified: Shared Procurement Platform. Symmetrically, for the Sales process, enterprise can build the shared sales platform with its competitors. Thus the 8th e-business model is identified: Shared Sales Platform.

Affront the customer increasing demand of total solutions, enterprise can use Internet to associate with third parties in a certain realm to provide total solution

to customers around its core product. Thus, the 9th e-business model is identified: Full Service Provider.

In the value net, there is information flow throughout. E-business environment makes it possible for enterprise to play as an integrator of value net. By collecting, synthesizing and distributing information to facilitates their activities and realize the control over the value net of the industry. Thus the 10th e-business model is identified: Value Net Integrator.

Tab.1 11 e-business models for enterprise

e-Business Model	Definition	Strategic Intent	Example
Direct to Customer	Provides goods or services directly to the customer, often bypassing traditional channel members.	<ul style="list-style-type: none"> - Bypass distribution channel. - Higher margins, expanded markets and greater information of customers. 	www.dell.com is a famous corporation using Direct to Customer e-business.
Content provider	Provides content (information, digital products and service) via Internet.	<ul style="list-style-type: none"> - Providing content is useful and low cost - Greater choice, lower price and more customized service to customers. 	www.China-review.com is a corporation providing famous economist papers .
Direct to Supplier	Provides goods or services directly to the supplier, often bypassing traditional channel members.	<ul style="list-style-type: none"> - Bypass multi supplier level and face raw materials producer directly. - Abundant information between enterprise and suppliers to achieve customized procurement. 	www.ihaier.com is a famous Chinese company using Direct to Supplier e-business to procurement.
Whole of Enterprise	Provides a firm-wide single point of contact, consolidating all services provided by a large multiunit organization.	<ul style="list-style-type: none"> - Multi-unit enterprise provides a single point of contact for customers. - Make customers better understand the whole services provided. 	www.ford.com it gives customers one point to contact Ford.
Intermediary	Bring together buyers and sellers by concentrating information.	<ul style="list-style-type: none"> - Shorten value chain and directly getting buyers and sellers. - Broaden the market quickly through integrating suppliers and customers. 	www.eachnet.com is a Chinese famous corporation for C2C e-business.
R&D Net Integrator	Integrate the information of every participant in R&D net and enhance the ability of integrator to control over R&D activities.	<ul style="list-style-type: none"> - Speed up R&D by integrating information in each level of R&D net. - Own strong brand. - Better control over collaborators. 	www.boeing.com boeing corporation develops and designs products through the network with his partners.
Shared Procurement Platform	In the procurement process, integrate several competitions to share procurement information and platform infrastructure.	<ul style="list-style-type: none"> - By enlarging purchase scale, strengthen bargain ability and reduce procurement cost. - Satisfy supplier demand of one contact point to multi customers. 	www.covisint.com is a shared procurement platform for the GE, Ford and Daimlerchrysler.
Shared Sales Platform	Integrate several competitors' sales platform in order to share sales platform infrastructure.	<ul style="list-style-type: none"> - Increase sales opportunity, reduce sales cost. - Satisfy customer demand of one contact point to multi suppliers. 	www.shmec.com.cn is a Chinese corporation providing sales platform .
Full Service Provider	Provides a full range of services in one domain (e.g., financial, health, industrial chemicals) directly and via allies.	<ul style="list-style-type: none"> - Meet complete needs of targeted customers in one domain by integrating enterprise's own products and services with those of selected third-party providers. 	www.ctrip.com is a Chinese tour corporation providing full service for the tourists.
Value Net Integrator	Integrating the operation information of upstream and downstream in the value chain, so as to enhance the control over the value net and facilitate the coordination between partners.	<ul style="list-style-type: none"> - Integrate information in value net, improve the transparency of information, and increase the capability to control over the value net. - Know partners' operation status, better facilitate the business activities in the whole value net, and improve the marketing responding speed. 	www.cisco.com is a famous corporation acts as a Value Net Integrator providing product to customers.
Virtual Community	Creates and facilitates an online community of people with a common interest, enabling interaction and service provision.	<ul style="list-style-type: none"> - Build a community around common interests. - Capture increasing returns as community grows. - Make virtual community as the supplement to other models 	www.xinwang.com is a virtual community for an aluminum corporation.

Finally, the 11th e-business model is identified: Virtual Community. It is also an e-business model that enterprise can adopt in order to take full benefit of share and intercommunion. The participants might be any one in the value net relationship and the topics of the community could be miscellaneous. Through virtual community, enterprise could collect valuable information from it.

4 Summary of 11 E-Business Models for Enterprise

According to what analyzed above, 11 e-business models for enterprise are identified respectively from the value chain and value net theory. In order to explain the theoretical framework more clearly, we give the summary of the 11 e-business models including model definition, strategic intents and an example for every kind of e-business model in Tab.1.

5 Conclusions

In the network economy era, the proper choice of e-business model is the critical factor determining enterprise to succeed. Therefore, it is of high significance to study the identification framework of e-business model. By analyzing typical enterprise core processes, this paper studies the e-business model identification framework. 11 e-business models are identified and discussed, which provide valuable reference for enterprise to determine and implement e-business models. So an enterprise e-business model design can be specified by the combination of one or more among 11 e-business models. Of course, the 11 e-business models identified in this paper might not cover all the possible enterprise e-business models. With the evolution of technology and business environment, more e-business models would emerge and hence further researches are needed.

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