

A research about the enterprise's value system construction based on enterprise information

Yu xiao-sheng

1Management school,2 business department
1Henan polytechnic university,2Henan business school
Jiaozuo, China
Yuxiaosheng0416@163.com

Zeng qi

Management school
Henan polytechnic university
Jiaozuo, China

Abstract—In the strategic context of enterprise information technology, a reasonable and scientific assessment of the enterprise value-added has become the key issue of the enterprise development. Taking the cooperative effect as the core,the implementation of enterprise information changes the value of the enterprise system to a certain extent. From the perspective of the value chain, information-based business-to-business value mainly lies in the impact which come from the value chain nodes, such as, the enterprise itself, the suppliers, the customers, the competitors, the service provider, and thus to bring the value of the enterprise value-added . As a result, based on enterprise information and value chain theory,this paper proposes that the value of enterprise informationization can be designed as the core value,delivered value, customer value, comparative value and additional value in five aspects.According to data analysis by Structural Equation Modeling,this paper constructs the value system of enterprise based on the impact of enterprise informationization.

Keywords-enterprise informationization ; value chain ; value system

1 THE ANALYSIS OF THE VALUE SYSTEM OF ENTERPRISE INFORMATIONIZATION

Under the supply chain, enterprise information especially emphasize the synergy whose effect mainly shows the influence on the enterprise itself, the supplier, the client, the competitor and the value chain of the service provider and the value the information brings to the enterprise. Combining the value chain theory to the information, we can find that, by changing the value chain, the information technology affects the competitiveness. The progressive developing information technology gives a very huge platform to the operation of the enterprise so that the enterprise makes the whole information shared and makes the organization management from purchasing, manufacturing, marketing, service to accounting, finance, personnel management and research come true. It also lets logistics and information flow together to promote the development of the unification, the continuous and the intergration management. The information technology has being filtered the every node of the value chain and affecting the whole value activities.

However , with the level of enterprise information enhancing, the frame of enterprise value chain has changed revolutionarily. The influence that information leads enterprise more profitable has not been limited to the value created by enterprise. It should extend to the whole trade value chain. We should pay attention to the additional value that the information on the supplier value chain, customer value chain, competitor value chain and the added value brought by the influence on the value net of service provider. So the enterprise value system based on informationization should include five aspects: the core value, the delivered value, the customer value, the comparative value and the additional value (fig.1) .

2 THE SPECIFIC PERFORMANS ABOUT THE ENTERPRISE INFORMATIONIZATION VALUE

2.1 The core value

Core value comes from the value created by the core enterprise in the trade value chain. With the informationization applicable level enhancing, the frame of the enterprise value chain based on the BPR changed essentially. The information dealing in the basic activities including the information about the products, the communication with clients and the orders dealing and paying, those activities can be done on line. The logistics activities in nodes such as the purchasing, the shipping can be made by the third logistics. Therefore the core value from the reduction from the progressive profit, the cost of the operation, the cost of the management can be gained. The adding effect from the core value is not only the value-added business activities,but also the reduce of the enterprise cost.

2.2 Delivered value

In the supply chain, every firm is the client to the upstream firm. When the client purchases products, they want to put the min-input and get the max-output to get their most satisfaction. The delivered value is the balance between the enterprise get and the cost they paid in the whole value. The value is mutual, suppliers give it to the core manufacturing enterprise and the manufacturing enterprises pass it to the customer. To the core enterprise, the delivered value is especially defined the value from the supplier. The core enterprise can effectively nozzle with the supplier's value to join the business ecosphere through information. And that can enhance the coordination of business activities to make the core get the delivered value.

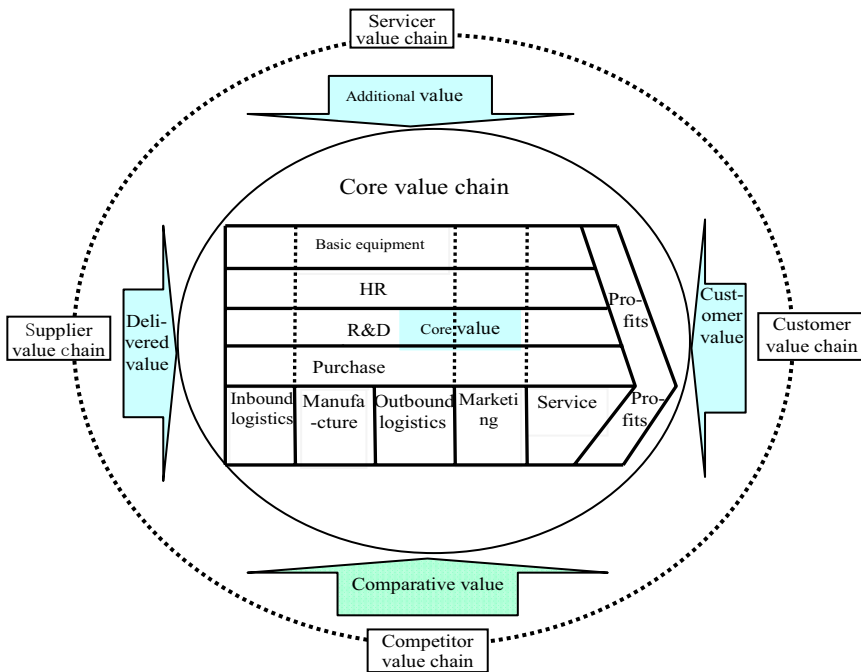


Figure1. The value system of enterprise informationization

2.2 Delivered value

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2.3 Customer value

The key that enterprise can win in the buyer's market is to improve the customer's satisfaction and own a large number of real and potential customers through all kinds of activities in the enterprise value chain. And we can call it customer value. Enterprise's information has deeply changed the customer's value chain. It enables the enterprise respond to customer's demand and to make the perfect customer value, own more customer. For example, in the marketing part, with the help of the e-commerce application, we can reduce the intermediate links and achieve the operation at any time and any place. And so we can decrease the time on sales. The enterprise can get the reach of the sales more effectively. And with the e-commerce, the relation with customer can be better, the service to customer can be enhanced, the shopping experience of customer can be more expressively. All of the information

should take the customer first into the consideration and put their needs on a strategic position. By constructing the CRM, the information resource about customer can be reorganized and shared in the enterprise that provides the one-to-one service to the customer. With the measure, the customer's value, satisfaction and loyalty can be firmed. The enterprise also can improve the ability to profit and can handle and respond to the needs of customer to keep and attract more and more customers and make the enterprise value maximization.

2.4 Comparative value

Informationization can make the core enterprise of the value chain more competitive than competitors. Compared with competitors, it can bring the comparative. The porter's competitive is said, the enterprise can supply the different products to meet the varying demands of the customer.

So they can get the monopoly in some areas to hold the advantage in competition. The competition of the different products in the market can be to manufacture the products which have different features of the same quality or to class them by quality to meet different needs. There are three kinds of competitive advantage: the cost, the difference and the target concentration. According to Porter's theory about the competitive advantage of cost, Wise men, Charles does a research about the information and he finds that competitive advantages is in the heterogeneous areas. The information can enable the planned and controllability more rational by reorganizing the logistics, information and value stream. So the enterprise operation will be in the best state to make the resource distributed with reason. Therefore enterprise will be in the process of self-improvement, which means, in the process of studying and creating, the enterprise can make value added and get the unique advantage in competition eventually.

2.5 Additional value

The enterprise's successful operation not only depends on suppliers, clients. It also depends on the establishment of good relationship with these service providers such as advertisers, consultants, technology suppliers and logistics to ensure the cooperation of enterprise's management. Gillsted and Stebier proposed the concept of the value network to analyze the value creation of the enterprise with value network. The core enterprise and the service providers construct a highly-related value network. The network can effectively improve the synergy with service providers, can reduce the trade cost, can improve the efficiency of trade, which can make the brand value, the technological level, the logistics performance and the management level much better, so we can get the additional value and increase the enterprise value.

3 ENTERPRISE VALUE SYSTEM AND ASSUMPTION BASED ON INFORMATIONIZATION TECHNOLOGY

In order to objectively analyze the role of enterprise value-added in processing informationization, a index system must be designed to measure the enterprise value. According to the content of enterprise value system and reference to "the basic indicators of enterprise informationization program (trial)", the paper is designed enterprise value evaluation index system based on informationization and made the corresponding assumptions.

Y0: there is a positive correlation between enterprise value and core value, customer value, comparative value, additional value, delivered value.

Y1: there is a positive correlation between core value and the occupancy rate of stock capital, capital operation efficiency, improving management efficiency, growth index of corporate sale, reducing the level of operating costs.

Y1.1-Y1.5: there is a positive correlation between the five indicators and enterprise value.

Y2: customer value and market response capability, customer loyalty, customer satisfaction are positively correlated.

Y2.1-Y2.2: customer loyalty, customer satisfaction and value-added enterprise value are positively correlated.

Y3: there is a positive correlation between comparative value and market share, customer penetration. Thereinto, customer permeability is the proportion between the customers of buying the enterprise products and all customers of buying similar products.

Y3.1-Y3.2: market share, customer penetration and value-added enterprise value are positively correlated.

Y4: delivered value, supplier stability, fit degree of supplier and supplier reputation are positively correlated.

Y4.1-Y4.3: there is a positive correlation between the three indicators and value-added enterprise value.

Y5: additional value and relationship among service providers has a positive correlation with brand value.

Y5.1-Y5.2: relationship among service providers and brand value has a positive correlation with value-added enterprise value.

4 ANALYSIS THE STRUCTURAL EQUATION OF THE ENTERPRISE VALUE SYSTEM

4.1 Data and measurement scalet

The data used in this study is from the questionnaire survey of the enterprises which are implementing informationization strategy.

The survey is completed by directly interviewing the related business executives and mailing the questionnaires. 90 questionnaires were distributed and 80 questionnaires were returned during the investigation. There were 64 valid questionnaires, so the rate of recovery was 88.9% and the effective rate was 71.1%.

The basic variable which is reflected the level of informationization and enterprise value is calculated by the survey data or directly measured through seven measurement

scale, so that the dimension of the variable will be different. As the observation of dependent variable and independent variable, it can be made a non-dimensional processing. On the basis, we can obtain the observations of five categories indicators of enterprise value by the linear weighting method, as the latent variable observation of the dependent variable and independent variable, to establish the structural equation model.

4.2 Establish initial model

There are 64 samples whose dependent variables are reflected the 15 evaluation indicators of the enterprise value. Then we can establish the latent variable structure of the dependent variable initial model M1.

To analyze this conceptual model for confirmatory factor (Confirmatory Factor Analysis, CFA), the results of fitted model M1 are : $df = 80, 2(80) = 94.78$, $RMSEA = 0.066$, $NNFI = 0.87$, $CFI = 0.90$. Generally speaking, if the $RMSEA$ is under 0.08 (the smaller the better), or $NNFI$ and CFI are higher than 0.9 (the bigger the better), the fitting model is a "good" model. In model M1 the $NNFI$ is under 0.9, so the fitted index showed that the model was not good enough.

Table1 parameter estimation table

	KSI1	KSI 1	KSI 3	KSI4	KSI5
VAR1	0.07(0.20)0.38				
VAR2	-0.03(0.20)-0.18				
VAR3	0.89(0.20)4.48				
VAR4	0.30(0.20)1.55				
VAR5	0.76(0.19)3.92				
VAR6		1.30(0.44)2.94			
VAR7		-0.20(0.20)-1.00			
VAR8		-0.36(0.21)-1.70			
VAR9			0.89(0.20)4.44		
VAR10			0.95(0.20)4.68		
VAR11				0.26(0.23)1.15	
VAR12				0.76(0.23)3.24	
VAR13				0.85(0.24)3.46	
VAR14					0.67(0.24)2.86
VAR15					0.62(0.23)2.73

Note: The number of each form in the table followed by the first value for the estimated value of the standardized parameter, the value in the brackets for standard error and the final value for t.

4.3 Modify initial model

The parameter estimation table (Table 1) shows that the index 1,2,7,8 of t-value is small. Under Kit-Tai Hau's(2005) studies, simply taking $t > 2$ is generally significant. Performance based on the revised index, the revised index of the index 1,7 in the other factors is not high. It shows that the

index 1,7 is not affiliated with any one factor and it should be removed. The revised index of the index 2 in factor 3 is high, therefore including it in factor 3 (compare value) is more appropriate. The index 8 reflecting customer satisfaction should be retained. The revised model M2 is figure 2.

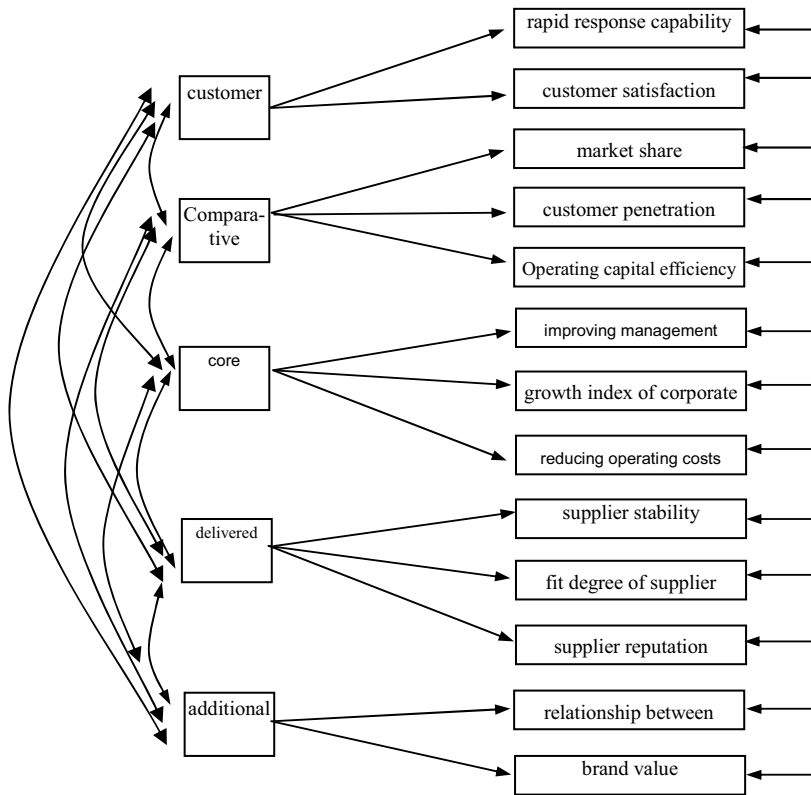


Figure2 enterprise value system model M2

To analyze model M2 for confirmatory factor, the results of fitted model M2 are: $df = 55, 2(55) = 59.98$, $RMSEA = 0.031$, $NNFI = 0.95$, $CFI = 0.96$. It showed that the fitted index of the model M2 was coformed to a "good" model and the model M2 was fitted quite well. The major concern of confirmatory factor analysis is the correlation between factors rather than a causal effect between factors, so the fitted results of model M2 are basicly confirmed the theories and assumptions of this article.

5 CONCLUSIONS

Combining the analysis of the structural equation, this paper concludes that there is a positive correlation between enterprise value and core value, customer value, comparative value, additional value, delivered value. From the perspective of the value system, the operating efficiency of enterprise capital don't make a big difference to enterprise core value. After modifying the model, it is classified into comparative value in the end. It shows that besides mastering the core technology, capital is also an important aspect in the competitive advantage of the enterprises. Customer loyalty don't exert a profound impact on customer value, it may be

due to the rapid development of strategic alliances and win-win thinking and making the loyalty between customers and enterprises become a consensus.

It turned out that the core value had no significant impact on the other value effect. On the one hand, the enterprises pay more attention to the construction of enterprise informationization technology itself in the implementation of enterprise informationization, the core enterprise informationization has little influence on other nodes of the supply chain. On the other hand, while Chinese enterprises have certain development on informationization and e-commerce, the existing B2B e-commerce business model is still largely confined to providing an information search and distribution space for the enterprises. For a conservative trade secret and other considerations, the information that the enterprises released is limited to commodity prices, quality and quantity of transaction which are directly related to the simple information of the transaction. But it hardly achieves a high degree of sharing and integration on each node in the supply chain, such as product demand information, production scheduling information, order routing information, delivery and inventory status information and product in-transit information, which reduces the value of the enterprise informationization.

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