ISSN : 0974 - 7435 Volume 8 Issue 4

BioTechnology
An Indian Journal

FULL PAPER

BTAIJ, 8(4), 2013 [435-441]

The relative research of information technology construction and core competence formation in Chinese star hotels

Zhang Tongjian[1]*, Hu Yahui[2], Li Mingxing[1], Zeng Xin[3], Jiang Kai[4]

[1]School of Management, JiangsuUniversity, Zhenjiang, 212013, (P.R.CHINA)

[2]School of Tourismand Economic Management, Leshan Normal University, Leshan, 614004, (P.R.CHINA)

[3]Economics & Management School, Jiangsu University of Science and Technology , Zhenjiang, 212003, (P.R.CHINA)

[4]Department of Electrical Engineering and Automation, Jingjiang College of Jiangsu University, Zhenjiang, 212013, (P.R.CHINA)

ABSTRACT

Abstract: In order to research information technology and organizational learning in China's star hotels, structural equation model (SEM) is used in this paper. By model design, data collection, reliability and validity testing, and model validation, SEM can effectively reveal the correlation between knowledge conversion and the formation of core competence. For illustration, 234 questionnaires are sent to star hotels, and 161 valid questionnaires are returned, the ratio of numbers of samples to numbers of observed indicators is about 8:1, which meets the basic requirements for structural equation verification. The minimum value of Cronbach α coefficient is 0.8818, and the survey results have higher reliability. The empirical research has revealed that information technology construction of China's hotel industry has a significant role in promoting the services capacity, management capacity of star hotels, but it has no significant effect on market capacity. The research conclusions provide a realistic theory reference to enhance the information technology construction level, which can optimize the organizational learning ability, and improve organizational performance and competitive advantage.

KEYWORDS

Core competence;
Information construction;
Organizational learning;
Star hotels;
Structural equation mode.

INTRODUCTION

American 2000 Year Education Strategystated thatif a personwanted to live better in the United States, it was not enough for him to have onlyjob skills. He must keep learning and become better family members, neighbors, citizens as well as friends. Learning was not only to make living, but also to create life today.

In 1965, Paul Lengrand raised a lifelong education and lifelong learning revolution at the UNESCO's Paris meeting[1]. The concept of organizational learning was put forward by Argyris and Schon in the 20th century the mid-60s[2,3]. In 1977, Argyris published the paper "Double Loop Learning in Organizations" in the Harvard Business Review. In next year he had another paper "organizational learning: a behavioral perspective concept". In 1990, Peter M. Senge published "The fifth discipline - the art of learning organization and Practice", which pushed the study of organizational learning theory to a climax[4]. Peter M. Senge said that organizational learning was more complex than individual learning, and the resulting learning disorder was also more

evident. Organizational learning was not only a management philosophy, but also a corporate culture, which was known as the most successful management model in the twenty-first century. When Peter M. Senge's "Fifth Discipline" came out, the world raised a practical wave of organizational learning. Learning organization was even considered to be the end of management, to be management's highest level, to be the "management without management", and to be the real "action through inaction".

The informationconstruction makes communications technology, computer networks and database become the centric content of the profound technological revolution in global enterprises, which greatly improves work efficiency and business performance, and makes productive forces an unprecedented development. Since the 90s of last century, China's service industry has been subject to different levels of impact of information technology. Although the labour productivity in service industries is generally slower than in manufacturing productivity, the application of information technology has permeated the financial, transport, tourism and other service industries in every corner, and caused deep business process reengineering.

The application of information technology model in the tourism is called tourism e-commerce, which is already an important development direction of tourism and an important means of competition of the tourism industry to take part in the international market. As one of the main body of tourism market, the hotel industry also has used the information system to take a series of innovations and recycle in operational processes, organizational structure, management model so that it has achieved great results in practice & research field.

The implementation and use of hotel front desk management system, room reservation system, and travel site hotel channel, CRM system and ERP system have made an apparent efficiency promotion to the hotel industry.

The concept of core competence was advanced by C.K.Prahalad& G.Hamel in 1990. In their key 1990 paper "The Core Competence of the Corporation, " C.K.Prahalad and Gary Hamel argue that "Core Competences" are some of the most important sources of uniqueness: These are the things that a company can do uniquely well, and that no-one else can copy quickly enough to affect competition. Prahalad and Hamel went on to outline three tests to be applied to determine whether something is a core competence. First, a core competence provides potential access to a wide variety of markets. Second, a core competence makes a significant contribution to the perceived customer benefits of the end product. Third, a core competence is difficult for competitors to imitate because it is a complex harmonisation of individual technologies and production skills. The core competence idea was useful to managers not only for focusing them on the essentials, but also for identifying those things that were not "at the core". Core competence enables enterprises to maintain sustainable competitive advantage, and it comes from the internal of enterprise, which is the source of the heterogeneity of enterprises. Core competitiveness is not just one item advantage ofenterprises, but a composition of forces and a composition of all the competence asthe outstanding and main advantages.

The origin of the core competence theory of economics was Smith's enterprise division of labour theory, Marshall's classical enterprise theory, and Schumpeter's innovation theory. The origin of the core competence of the management was enterprise capabilities theory, enterprise growth theory, and enterprise resource theory. The multiplicity of the origins led to the diversity of core competitiveness ways.

The ultimate performance capabilities of enterprises focus on technology, production, marketing, management, etc. So core competence can be divided into several elements including core production technology capabilities, core management and core market ability.

Michael Porter put forward "five forces" such as industry competition norms, potential entrants, supplier bargaining power and threats of product substitutes on the basis of the main content of structure - conduct - performance (SCP). But core competence theory believed that the enterprises competitiveness were far beyond the scope of porter's five forces model, so the enterprise can more perfectly combine internal and external factors into ones.

Therefore, the origin of the core competence theory of economics is AdamSmith's enterprise labour division theory, Marshall's classical enterprise theory, and Schumpeter's innovation theory. The origin of the core competence of the management is the enterprise ca-

pabilities theory, the enterprise growth theory, the enterprise resource theory.

Information technology construction of China's hotel industry has already been more than ten years. As the "information technology paradox" effect, information technology construction really promotes the formation of core competence and performance improvements of hotel industry in China.

Therefore, the purpose of this paper is combined with the organizational learning process of China's hotel industry, so as to make an empirical analysis of its information technology construction and the formation of core competence's microscopic mechanism, which can provide useful theory reference for China's hotel industry vigorously and develop information technology so as to foster the core competence.

RESEARCH MODEL

Model theory

The promotion of information technology construction can promote the formation of company's core technology capabilities, core production capacity, core management capacity, core market capacity, and core comprehensive ability. Information technology provides advanced tools, causing a reorganization of the production process, reducing the technical member's complexity of the non-creative work, inspiring the technical staffs and eliminating many technical barriers in innovations. There are new management ideas and concepts such as electronic accounting, financial information, customer relationship, ERP, decision support systems, artificial intelligence, and data mining.

Organizational learning theory and core competence theory were two advanced managements stringed up in the early 90s in 20th century. However, the mainstream research lines of organizational learning and core competence theory were in parallel in fact, and the intersection point was few. Jiebao Wu of China's scholar believed (2003) that since the nature of core competence was knowledge, and knowledge acquisition, accumulation, dissemination, application and innovation must depend on the learning process[5]. He also pointed out that four aspects included organizational learning, work practices, capabilities, and core competencies.

Information technology construction has a substantial role in promoting the conduct of organizational learning, and the direct effect of such a role is the elimination of the organizational learning. Similarly, organizational learning also promotes the development, implementation and use of information technology construction, accelerates the promotion and deepening of the use of information systems, expands the applications of information technology, making information technology platform from highly specialized technology to the mass gradually technology transition. Thus it substantially increases the value transformation efficiency of information technology construction.

Model assumption

Suppose that organizational learning is $\xi 1$, information technology construction is $\xi 2$, core service capacity is $\eta 1$, core management capacity is $\eta 2$, and core market capacity is $\eta 3$. Based on the above theoretical analysis, the theoretical assumptions can be put forward in TABLE 1.

Model construction

Argyris and Schon proposed four-stage model of

TABLE 1 : Theoretical assumptions

Assumed name	Path show	Assumed content
H1	$\xi_1 \rightarrow \eta_1$	Organizational learning has a positive influence on the formation of core services capacity.
H2	$\xi_1 \rightarrow \eta_1$	Organizational learning has a positive influence on the formation of core management capacity.
H3	$\xi_1 \rightarrow \eta_3$	Organizational learning has a positive influence on the formation of the core market capacity.
H4	$\xi_2 \rightarrow \eta_1$	Information technology construction has a positive influence on the formation of core service capacity.
H5	$\xi_2 \rightarrow \eta_2$	Information technology construction has a positive influence on the formation of the core management capacity.
H6	$\xi_2 \rightarrow \eta_3$	Information technology construction has a positive influence on the formation of core market capacity.
H7	$\xi_1 \rightarrow \xi_2$	Information technology construction and organizational learning has a strong correlation.

FULL PAPER

organizational learning in 1978, namely discovery, invention, implementation and promotion. This structure was based on the organizational learning model. The hotel industry's organizational learning (ξ1) can be divided into four dimensions (factors). Firstly, decision-makers know how to discover the problems within the hotel and can also seize opportunities in external markets (X1). Secondly, once new internal problems or external opportunities emergence, decision-makers can take out a solution effectively in a short time (X2). Thirdly, the hotel's management has a strong program performance measures (X3). Fourthly, the hotel's organizational structure and corporate culture have a strong absorptive capacity to the management measures (X4).

Information evaluation index system (EIS) of Korea was constituted and practiced by computer calculating institute of Korea in 1995. This system evaluated and analyzed the information degree of more than 50 countries and announced the result with the information index every year. The EIS was composed by two-stage evaluation elements and included 4 primary elements and seven secondary elements. In March, 2002, Britain Information Age Alliance established Electronic Economy Evaluation System, which included 4 primary, 12 secondary, 35 third-grade and 118 fourth-grade elements. This EIS synthetically evaluated and comparatively analyzed the electronic economy development status of the Group of Seven, Australia and Sweden and published the evaluation results by the special report in November, 2003. In 2002, Harvard University cooperated with World Economic Forum in the first time. They evaluated and comparatively analyzed the application status and the development potential of information and communication technology of 75 countries in the world. This evaluation system was consisted of two primary, 9 secondary, 10 third-grade and 60 fourth-grade indexes. The evaluation results were published in the form of Networked Readiness Index.

Wang Yong put forward EIS inConstruction of Enterprise Information Evaluation Indexes, where was composed by 3 primary and 16 secondary indexes from the angle of enterprise information system, enterprise management system and enterprise business system. These three kinds of system were interrelated, and formatted the synergetic effect, and finally comprehensively reflected the enterprise information status.

In addition, Da Qingli (2004) put forward the evaluation index system of enterprise information technology management ability in the bookVirtual Enterprise Structural Model and Operating Mechanism

ÿAn Analysis from the Perspective of Biological, which included 4 primary and 16 secondary indexes. It mainly evaluated the IT management ability of the virtual enterprise from the following angles, information status, IT application and development ability, IT inputs and outputs[6]. Professor Robert S Kaplan of Harvard Business University and the CEO of Renaissance Solutions, Mr. David Norton, invented BSC as a performance management mode in 1992. It became a strategy management tools later. At present, the BSC was one of the most popular management tools in the world. According to the research by Gartner Group in America, there are 55 percent of the top 1000 enterprises used this tools[7].

Yonggang Zhang (2007) thought that the construction of the information technology evaluation index system (EIS) had to grasp the following principles: scientific, operational, combination of level and ability, combination of quantity and quality, combination of qualitative and quantitative[8]. According to these principles, the hotel industry measurement system (ξ2) can be divided into four dimensions (factors). Firstly, there existed information technology construction input dynamics (X5). Secondly, there existed the level of information system application (X6). Thirdly, there existed the proportion of professionals with some knowledge of information to the total staff of employees (X7). Fourthly, there existed the attention degree of hotel leadership on network marketing (X8).

The formation of hotel industry's core competence measurement system can be divided into three dimensions including the formation of service capacity (η1), the formation of management capacity (η2) and the formation of market capacity (η3). The formation of service capabilities (η1) dimensions was divided into four indicators such as the promotion of room service capabilities (Y1), the promotion of food service capabilities (Y2), the promotion of recreational services capabilities (Y3), and the promotion of lobby service capabilities (Y4)shown in Figure 1.

The formation of management capacity (η2) dimen-

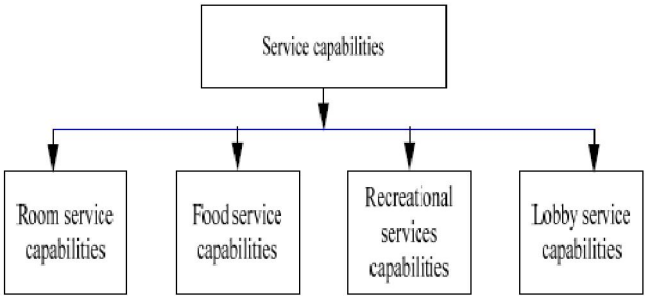

Figure 1 : The formation of service capabilities

sions can be divided into four indicators including decision-making efficiency improvements (Y5), organizational structure optimization (Y6), the optimization of human resources incentives (Y7), and improvements of organizational culture construction (Y8) shown in Figure 2.

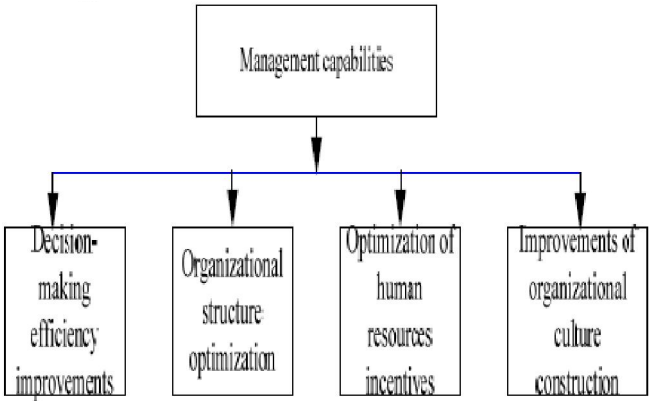

Figure 2 : The formation of management capabilities

The market ability is related to numerous factors such as product innovation, market innovation, technology, environment, service, brand, R&D as well as differentiation. According to literatures[9-13], the formation of market ability (η3) dimensions can be divided into four indicators including the promotion of personalized service capabilities (Y9), the promotion of green business capabilities (Y10), the expansion of brand awareness (Y11), the development and improvement of relationship marketing (Y12).

According to the analysis above, the structural equation model can be constructed as shown Figure 3.

MODEL VALIDATION

Data collection

Likert seven-point scale system was used to investigate 20 indicators in this paper. Taking advantage of

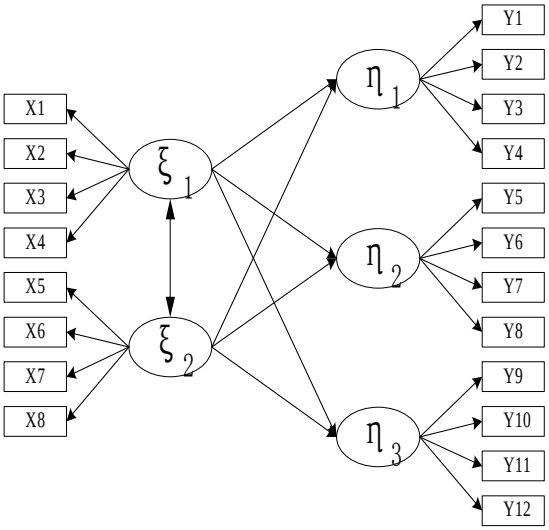

Figure 3 : Structural equation model

the internship opportunities of the students graduated from Tourism Department of Leshan Teachers College, Tourism Department of Yunnan University, Tourism Department of Beijing Technology and Business University, authors forwarded the survey via commissioning interns. 234 questionnaires were sent to the star hotels, 161 valid questionnaires were returned, and the ratio of numbers of samples to numbers of observed indicators was about 8:1, which met the basic requirements for verification of structural equation. Senior executives of star hotels were investigated for the survey. The minimum value of Cronbach α coefficient was 0.8818, and the survey results had higher reliability. These samples distributed in Beijing, Yunnan, Sichuan, Guangdong, Jiangsu, Zhejiang and Hunan etc seven provinces and cities, where can be identified to effectively express China's whole overview of the star hotels.

Confirmation and analysis

This paper uses SPSS11.5 and LISREL8.7 to make a confirmatory factor analysis (fixed variance method). Authors can get the effective matrix (ã) of exogenous variables on the endogenous variables as shown in TABLE 2.

The shaded parts are the path coefficient parameters eliminated in the process of model updating.

After the revised model, the covariance of organizational learning (ξ1) and information technology (ξ2) is 0.32, the minimum of 20 load factor is 0.51, and the minimum T value is 2.01. And the paper can also get a

FULL PAPER

TABLE 2 : Effective matrix

Parameter value	Organizational learning (ξ_1)			Information technology construction (ξ_2)		
	Load factor	Error	T	Load factor	Error	T
Formation of service capacity (η1)	0.23	0.07	3.21	0.37	0.07	5.2
Formation of management capacity (η2)	0.56	0.08	7.0	0.32	0.07	4.6
Formation of market capacity (η3)	0.11	0.08	1.37	0.09	0.08	1.10

TABLE 3 : Fit index

Fit Index	Df	CHI-Square	RMSEA	NNFI	CFI
Present value index	158	262	0.031	0.912	0.922
Tendency of optimal value	—	The smaller is Better	<0.08	>0.9	>0.9

model fit index list (Revised) shown in TABLE 3.

CONCLUSION

According to TABLE 2-3, the model is well fitted[14-16]. Core competence is market competitive force through a variety of combination elements[17]. According to the above results, the paper draws the following conclusions.

The information technology construction of China's hotel industry has a significant role in promoting the services capacity, management capacity rather than market capacity. Information technology capacity can improve the ability of mastering information for top management and increase the organizational control ability and flexibility[18-20]. However, this cannot assert the existence of "information technology paradox" in the hotel industry, because this index system of market capacity measure belongs to the emerging management concept areas, and has not yet been a wide range of implementation and promotion in the hotel industry in China. Therefore, the lower degree of information technology is reasonable.

The learning organizational construction plays a significant role in promoting the services capacity and management capacity for China's hotels rather than market capacity, which means the organizational learning of the hotel industry in China has not been fully carried out, and the internal organizational capacity has not fully reflected in the external market.

The relationship between the organizational learning and information technology construction is at a low level in China's hotel industry. Therefore, the core competence of the hotel industry also has a substantial growth potential. The conclusion of the paper provides a realistic theory of strong reference to enhance the information technology construction level, to optimize the organizational learning ability, and to improve organizational performance and competitive advantage.

REFERENCES

[1] Nonaka, Takeuchi; The Knoeledge-Creating Company[M]. New York:Oxford University Press,26 **(1995)**.
[2] Peter M.Senge; Leading in a Time of Change[M]. John Wiley & Sons Inc, 190–191 **(2008)**.
[3] Edgar H.Schein; Organizational Learning and Leadership[M].John Wiley&Sons, 178-181 **(2006)**.
[4] Peter M.Senge; The fifth Discipline:The Art and Practice of the Learning Organization[M]. Lodon:Century Business, 76-78 **(1990)**.
[5] Lanyun Xie; Research of Information Technology and Learning Organisition Construction[J]. Modern Management Science, **9**, 48-49 **(2005)**.
[6] Da Qingli, Wang Yu, Wan Lunlai; Virtual enterprise structural model and operating mechanism-an analysis from the perspective of biological[M]. Beijing TsingHua University Press, 80-185 **(2004)**.
[7] Peter F.Drucker; Management in the future[M]. Chengdou Sichuan People Press, 87-95 **(2000)**.
[8] Tongjian Zhang; Research about the core competence formation mechanism based on organizational learning, information construction of star hotels[J]. Journal of Guilin Institute of Tourism, **6**, 875-878 **(2007)**.
[9] Chen Lan; The added-value probe on tourist service under the electronic commerce environment [J]. Market Modernization, **4**, 69-70 **(2008)**.
[10] D.W.Rook; The Buying Impluse[J].Journal of Consumer Research, 14, 189-199 **(1987)**.
[11] D.J.Baumann, R.B.Cialdini, D.T.Kenrick; Altruism as Hedonism:Helping andSelf-Gratification as

Equivalent Response[J].Journal of Personality and SocialPsychology, **40**, 1039-1046 **(1981)**.

[12] Jones Kristy, E.Reynolds, Mark J.Arnold; Hedonic and utilitarian shopping value:Investigating differential effects on retail outcomes[J]. Journal of Business Research, **59**, 974-981 **(2006)**.

[13] Gagnon Jean Paul, T.Osterhaus Jane; Research Note: Effectiveness of Floor Displays on the Sales of Retail Products[J]. Journal of Retailing, (Spring), **61**, 104-116 **(1985)**.

[14] Jietai Hou, Zijuan Cheng, Caiwen Zhong; The concept of structure equation goodness of fit and the comparative study of indexes [J]. Educational Research Journal, **11**, 73-81 **(1996)**.

[15] Li Mingxing, Zhang Tongjian; Research on BSC-based KPI System of Core Competencies in China's Coal Enterprises[J]. Accounting Communications, **10**, 36-37 **(2010)**.

[16] Jietai Hou, Zhonglin Wen, Zijuan Cheng; The structural equation model and its application[M]. Beijing: Education Science Press, 7 **(2004)**.

[17]]Yonggang Zhang; The measurement theory and method reserch of the enterprise[J]. Science Management, **1**, 107-113 **(2006)**.

[18] Wang Xiaojian, Lan Hailin; Research on the Impact of Information Technology Capacity on Top Management Decision [J]. Science of Science and Management of S.& T., **30(11)**, 66-71 **(2009)**.

[19] T.Yap; CEO characteristics, organizational characteristics and information technology adoption in small businesses[J]. OMEGA:The International Journal of Management Science, **4**, 11-17 **(1995)**.

[20] Namchul Shin; The impact of information technology on the financial performance of diversified firms [J]. Decision Support System, **41**, 698-707 **(2006)**.