

# The empirical research of the relationship between knowledge integration and service capability in service outsourcing

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## Abstract

A relationship model among knowledge integration influence factors, knowledge integration and enterprise service was built in this paper based on the fundamental theories of organizational learning, knowledge management, learning organization, intellectual capital and ability. Corresponding hypothesis has been put forward on account of this model to do the empirical test using survey data from questionnaires and site interviews, the assumptions of which in the model have been all passed the inspection further proved that knowledge integration factors have important effects on enterprise knowledge integration capability, and simultaneously the ability and degree of knowledge integration have important influence on enterprise service ability.

*Keywords:* Knowledge Integration; Service Outsourcing; Service Capability.

## 1 Introduction

Since the Late 80s to the Early 90s in the 20<sup>th</sup> Century, under the action of the growing strong competition of information economy, network economy and knowledge economy, in favor of borders, rules and control of the environmental stability factors are tend to collapse, enterprise management environment is changing from relatively stable static environment to increasingly complicated and dynamic environment full of uncertainty. At the end of the twentieth century, outsourcing has been developing rapidly all over the world, especially the service outsourcing has become the main engine of a global transnational direct investment. At the same time, with the practice developing continuously and deeply, people gradually realize the cost reduction is no longer the primary problem that needs to be solved for the outsourcing. Now the fundamental problem is to strengthen the enterprise's core business. In service outsourcing, because of the differences of professional knowledge between two companies, the outsourcee in order to ensure the progress of outsourcing goes smoothly and achieve the desired effect, inevitably must carry on the knowledge transfer, then to absorb and integrate, to improve their service capability. Therefore, the outsourcee, is facing many difficulties, how to rely on knowledge integration to improve their service capability to keep the continuous competitive advantage, is a very important problem in theory and practice.

## 2 Review of the literature

This study explores how the outsourcee, in service outsourcing using knowledge integration to improve its service ability, review the past views of the literature on organizational study and knowledge management, and organize the learning of knowledge transfer research, then we can find the blind spots in the past literature to fulfill the further study in the future.

1) Organize the learning of the view of the knowledge management

To explore the literature from the learning and more discussion on the learning, such as Daft&Huber take the organized learning as the combination of information operation and interpretation [1]. March's exploration and in learning and Crossanetal 4I model, all emphasize neither the internal information nor the knowledge processing, are paying attention to where the knowledge during the organized learning is derived. Especially on how to introduce or acquire the external knowledge from learning is relatively few [2]. On the knowledge management literature, such as Nonaka and Hedlund, the knowledge creation and the progressing model are focusing on the transformation and the transfer of internal knowledge. As the enterprises are facing more and more turbulent condition of the technology or knowledge environment, they need introduce the external knowledge or learn the technology, especially for organizational learning.

2) The view of learning organization and intellectual capital

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Learning organization is mainly devoted to form a learning and evolutionary with values, cultural and principles. Study about the process of learning ring type dynamic relative shortage. How the enterprise to use knowledge integration and recreate the increasing improvement of the reciprocating cycle cannot solve the problem. Thomas. A.S tewart defines intellectual capital as "the sum of all the company members know what can let the enterprises gain the competitive advantages".The intellectual capital school take the knowledge base in the organization as the research object,but they does not cover the knowledge flow in the process of research.

### 3) The base view of Resource / capability

Although resource-based view takes the enterprise unique resources influence on competitive advantage seriously,but it did not mention how the enterprise create the unique resources;On the basis of the view of ability,although the emphasis the importance of the developing and updating is still maintaining competitive advantages for enterprise,still the discussion on the research of the evolution or the development remains limited, it also needs further research for enterprises about how to improve or strengthen their own ability still need for further discussion.

### 4) The study of organizational learning and knowledge transfer in outsourcing

Most discussed the study of organizational learning and knowledge transfer in outsourcing, not a ability to strengthen the point of view, discusses how outsourcing enterprise to get your opponent's knowledge and skills, strengthen its own ability; But the knowledge transfer or create arguments on both sides, this paper discusses how to make knowledge flow, transfer and create together. There is little research about how outsourcing to carry on the knowledge transfer between enterprises and enterprises to acquire knowledge, how to absorb the integration of external knowledge, and the process of strengthening its service ability[11]. Especially the outsourcing in the circulation of knowledge and access to what is the relationship with their own service ability strengthen is? This needs further integration and discussion.

### 5) The research methods of inter-organizational learning in research on outsourcing

Although there are many literature, in view of how the enterprise to carry on the case studies, learning in the outsourcing conceptual or theoretical discussion, but in the empirical research is still relatively lack. So it is necessary to research concept in the theoretical framework and feasible measure, the testing of the relationship by using large sample theory, to promote the research progress in this area. In this study intends to outsourcing companies as the object of empirical study in China, hope to further understand knowledge about the development of knowledge and ability between the outsourcing enterprises.

This study take the new knowledge acquisition caused by external organizations as discussed the focus of

the learning process, studies how enterprises through cooperation between the organization and integration of external knowledge or technology for internal study. As a result, we can enrich the organization learning and knowledge management point of view that discuss the deficiency of the literature in the external learning process. And use the view of strengthen ability process to explain to outsourcee how to acquire knowledge through outsourcing, raise the service ability of process, especially emphasizes the staff involved in the outsourcing activities of personal knowledge, within the organization transformation, digestion, transfer, diffusion, and combines the knowledge internalization, and integration on the basis of the original ability, can really improve enterprise service ability.

## 3 The concept model and hypothesis of knowledge integration and service ability relations is put forward

This study based on knowledge view and capacity view as the theoretical basis for how outsourcee to learn knowledge and to improve its service ability is discussed in this paper on the outside of the service outsourcing. On the basis of summarizing the predecessors' research at the same time,take the enterprise's ability as the effective combination of different functional areas of the management of the value activities of the professional knowledge or organizational processes. But the meaning of knowledge, this study has no obvious distinguish with the information as long as the information for the decision-making on operating activities has value and can also be seen as information into a format is simple, easy to communicate knowledge. This study based on the perspectives of knowledge, the ability of the enterprise, we can find that ability is the expression of enterprise integration, create, update its knowledge base [3].

### 3.1 INFLUENCING FACTORS OF KNOWLEDGE INTEGRATION IN OUTSOURCING ENTERPRISES

According to the review of organizational learning literature review,the influencing factors of knowledge transfer can be divided into the following four categories:(1)Knowledge matching, such as learning intention, leading level of knowledge, knowledge of the degree of protection;(2)The characteristics of knowledge, such as implicit knowledge degree, complexity degree etc;(3)Knowledge of communication, such as the level of trust between the two sides, the relationship between the degree of embedded, both sides of the interaction strength, etc;(4)Outsourcing environment, such as the cultural differences of the two sides, differences of organization system, etc [4]. Thus this study proposed the influencing factor of enterprise knowledge integration theory in outsourcing model, as shown in Figure 1.

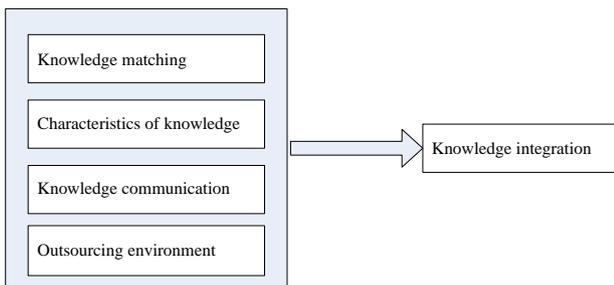


FIGURE1 Influence Factors of knowledge integration model

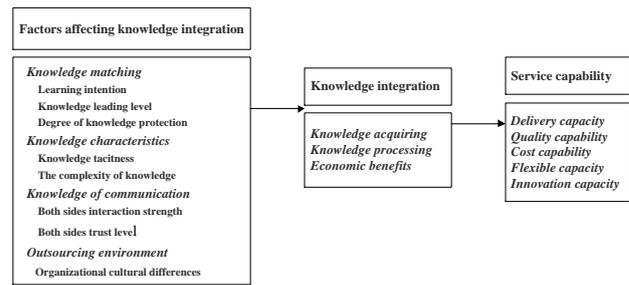


FIGURE 2 Factors affecting the integration of knowledge, knowledge integration and service capabilities relational model

### 3.2 THE CONCEPT MODEL OF KNOWLEDGE INTEGRATION AND SERVICE ABILITY RELATIONSHIP

The measure of enterprise service ability on the basis of Fawcett, Stanley, Smith scholars(1997) which based on the time of service and the additional value of delivery, quality, ability, flexible ability, cost and innovation ability five aspects as measure. The process of strengthening the outsourcee’s service ability can be thought of as the knowledge acquisition, knowledge processing and knowledge application process [5].

The outsourcee integrates the external knowledge in the process of outsourcing services for internal learning stage, on the basis of organizational learning, knowledge management process etc, put forward the relevant factors that affect enterprise service ability to ascend. External knowledge acquisition in the process of enterprise knowledge integration stage, believe that through the interaction of joint activities, in order to achieve a common goal of both sides are intentionally or unintentionally knowledge exchange or transfer, increase knowledge stock of enterprise, which is the ability of the enterprise service to get sufficient conditions for promotion. In the internal knowledge processing stage, the project team in knowledge processing, knowledge sharing between professionals and organizations across the project/product line/business unit boundaries of knowledge transfer can helps to strengthen and improve enterprise service ability. In the stage of the enterprise internal knowledge application, then put forward the institutionalization of the extent of the new knowledge, on the extent of the use of project organization structure, internal horizontally coordinating ability and the degree of the core competence of the concentration policy factors, will all help improve the ability of the enterprise service.

Therefore, this study thinks, service outsourcing enterprise knowledge integration between influencing factors and knowledge integration ability and service ability is the link between theory, based on the three groups of elements of the relationship between induction, put forward a conceptual model is shown in Figure 2.

### 3.3 DERIVATION OF HYPOTHESES

#### 3.3.1 The influence of the influencing factors in the ability to integrate

Hamel et al. pointed out that if the enterprise has the intention to learn, will lead to more hard-studying, and can help with learning opponent's knowledge and skills. In addition, some scholars have also pointed out in the outsourcing enterprise can promote the learning intention of knowledge acquisition. And in the study also found that outsourcing enterprise in the process of outsourcing, if it has strong learning intention, in the process of outsourcing, enterprises will have a systemic study, which is in favor of the integration of knowledge [6]. Based on the above reasoning, the paper puts forward assumptions:

H1: For outsourcee, the stronger the intention of customer knowledge learning, the easier integration of customer knowledge.

If enterprise cognition to the knowledge of the outsourcing partners is worth learning, namely, both sides is a big gap between the professional knowledge, it can help enterprise learning partners. In the process of our outsourcing enterprises to undertake international outsourcing business, enterprise is generally believed that the customer's product development knowledge or ability in a leading position, through the chance of service outsourcing, learn each other's advanced knowledge or experience of the project. However, the gap is too big and makes our country enterprise more difficult to obtain the relevant knowledge of the other party, it is also quite a few multinational companies face a dilemma in the process of localization [7]. This study concluded that the higher the outsourcing of customer knowledge leading degree is, the greater the difficulties in outsourcing vendor integration in the process of outsourcing outsourcing customer knowledge.

H2: The higher the level of knowledge leading customers is the less likely to integrate customer knowledge.

In addition to the leading level of knowledge, foreign studies have also pointed out that the customer to the protection of knowledge itself, will be conducive to enterprise integration of knowledge. Outsourcing customer itself on knowledge sharing openness and transparency, help to answer the package get or learn knowledge in the process of cooperation. Therefore, this

study concluded that: if the outsourcing customers, the higher the degree of protection knowledge, the more knowledge sharing or technical exchange restrictions or regulations will be, the more and the more difficult it is to pick up packages party integration of customer knowledge in outsourcing activities.

H3: The higher level of customer protection knowledge the more difficult to integrate customer knowledge.

Knowledge-based view is pointed out that the characteristics of knowledge itself will affect the transfer of knowledge. Two kinds of characteristics of knowledge: knowledge tacitness and the complexity of knowledge, will affect the enterprise knowledge acquisition in the outsourcing. Among them the higher knowledge tacitness, transfer is not easy [8]. This study concluded that: if the customer's own knowledge hidden in the higher, the more knowledge is likely by the individual mental model, it is difficult to specify skills or by the coordination between the groups, such as internal culture knowledge, outsourcing factory can not easily obtained from the outsourcing process, imitate or copy customer knowledge. H4: The lower the tacit knowledge of the customer the more easily to integrate customer knowledge.

In addition, Grant pointed out that the complexity of knowledge itself, also will have an effect on knowledge transfer. If outsourcing customer knowledge is composed of many technologies, applications, personal skills and resources etc. have the interdependence of knowledge composition, the complexity of knowledge is higher, so it is not easy to parse and study [9].

H5: The higher complexity customer knowledge the more difficult to integrate customer knowledge.

Some scholars at home and abroad have take knowledge or technology transfer as an interactive process, so the degree of interaction between organization and determines decides the level of knowledge transfer. Between enterprises in the outsourcing of interactive activities for both sides to communicate. Through the interaction degree or joint activities, the organization will produce knowledge communication or transfer. Existing research indicates that the outsourcee and customer interaction more frequently, the outsourcee can obtain knowledge more. Such as in the process of outsourcing, if customers and pick up packages between developers for more technology sharing, personnel exchange, exchange of visits and common development of new products, regular discussion groups such as interaction between the processes and activities, is on the bag side also can learn from the process of close interaction to the customer's knowledge. On this basis, this study proposed the following hypothesis.

H6: Access package interaction between the customer and the higher the intensity, the easier integration of customer knowledge.

Existing research at home and abroad show that organizational trust will help the two sides exchange and share knowledge with each other. Outsourcing process, between the client and the outsourcee the higher the

degree of trust, the more able to form a positive expectation and trust of each other's behavior, which is beneficial to both sides personnel information and knowledge exchange and sharing, for example, the customer will be actively involved in the docking of package knowledge transfer activity and do not have too much scruples. And the outsourcee is also willing to invest more manpower and resources to create value for customers, and even form a mutually beneficial, the two sides will further interdependence, close cooperation relations.

H7: The higher level of trust between the customer and the outsourcee, the more easily integrate customer knowledge.

System set view points out the difference of system, is not conducive to the transfer or exchange of knowledge. Between enterprises in the enterprise culture, organization pattern, the higher the similarity in aspects of management system, is in the process of outsourcing, the two sides on internal organizational activities and the processing of values and ideology difference is small, which is beneficial to learn or obtain knowledge of the other.

H8: The bigger the organizational and cultural differences between the customer and the outsourcee, and the harder to integrate customer knowledge.

### 3.3.2 Knowledge Integration and services capabilities relationship in business

Organizational learning view, view of knowledge management and learning organization view and intellectual capital point of view will be given to knowledge acquisition and intellectual capital point of view as a necessary process of organizational learning, in the process of service outsourcing enterprises only acquiring new knowledge, the enterprises can through the internal learning process to strengthen and improve their ability. If the customer in the process of outsourcing, not transfer their related knowledge, the outsourcee is hard to promote its own ability by providing customers with related product or service outsourcing of activities.

H9: If the outsourcee can acquire knowledge from outsourcing, they could improve their service capabilities.

In-group layer of organizational learning is necessary to update and improve enterprise's ability to process, and organize a team to acquire new knowledge through the study of the interpretation, discussion and sharing of knowledge and other knowledge processing activities, absorb, digest the new knowledge, in turn, affect the enterprise. This research points out: the higher the degree of internal knowledge processing more able to digest the acquired knowledge, which can improve enterprise's ability to service.

H10: The higher the degree of knowledge processing the more the outsourcees can enhance their service capabilities.

If the new knowledge that enterprises can obtain are institutionalized, put it into the organization's operation

process, work ethic, or the organizational processes such as management system, to ensure that individual or group levels of learning outcomes, in the overall level of organization are effectively implemented. Leading to horizontal coordination within the enterprise and enhancement of the core competence, in the end, through these activities can affect the service ability of the enterprise knowledge application [10].

H11: The higher the degree of knowledge application, the more the outsourcees are able to enhance their service capabilities.

#### 4 Questionnaire design and research methods

##### 4.1 THE DESIGN OF THE QUESTIONNAIRE

This research adopts the questionnaire for data collection. The basis of questionnaire design is established under the premise of the design target based on the domestic and foreign research results, reference a large number of literature, and combined with the special background of this study and research about the enterprise communication, summarizes the typical index to describe the service outsourcing in the factors affecting knowledge acquisition, knowledge integration capability, enterprise service ability, develop the service outsourcing in the influence factors of knowledge acquisition, knowledge integration and enterprise service related to the initial scale, and then through the initial scale questionnaire on a small scale at primary stage repeated testing and correction, analysis the validity and reliability of the questionnaire, for some meaning repetition or not reflect the measure of project be deleted, eventually form questionnaire survey is used for a wide range.

In the questionnaire, the design of the service outsourcing in the influence factors of knowledge acquisition, knowledge integration capability and relationship scale enterprise service ability, adopt Likert seven subscales from "very disagree" to "very positive" is divided into seven levels, respectively, the values 1, 2, 3, 4, 5, 6, 7. Similarly, from the "extremely rare" to "very often" is divided into seven levels measured, respondents according to their own enterprise's real situation of each item scores.

##### 4.2 DATA COLLECTION AND INVESTIGATION

The object of this study is to survey and mid-level managers and involve service outsourcing enterprises to participate in the outsourcing of the rest of the staff, they know about the service outsourcing business comprehensive, have the rich experience and knowledge, the answer is more concerned with the questionnaire objectively.

This paper mainly uses two types of distribution and recycling questionnaire:

The first is a service outsourcing base cities Nanjing China, selecting enterprises engaged in service

outsourcing business for the issuance of the questionnaire and investigation. Please fill out the relevant questionnaire survey respondents, issued a total of 50 questionnaires, withdrew 36, including 32 accords with a requirement, corresponding recovery was 72%, the questionnaire effective rate was 64%.

The second way of a questionnaire is distributed by the author himself and recycling questionnaire. According to China's service outsourcing companies listed online catalogue by E-mail handed out 214 questionnaires, the questionnaire back 20, of which 13 accords with a requirement, recovery rate was 9.3%, effective rate was 6.1%.

In addition, in the head with related enterprises during the interview to the issue and fill in the questionnaire, it handed out questionnaires to 6 full recovery, and total effective rate and efficiency reached 100%.

In the end, the two forms out 270 questionnaires, withdrew 172, including 51 meets the requirements, the recovery rate was 26.7%, effective rate was 18.9%.

##### 4.3 STATISTICAL ANALYSIS METHODS

This research by way of questionnaire survey to collect data, for recovery of the questionnaire data, using descriptive statistics, reliability and validity test, correlation analysis and factor analysis method to measure the relationship between the relevant variables and verify whether or not they are consistent with the hypothesis, and then with the aid of analytic hierarchy process. This research uses the analysis software of SPSS version 17.0.

#### 5 The empirical test results

##### 5.1 SAMPLE CHARACTERISTICS

For the 51 valid questionnaires recovered, respectively from the number of employees, enterprise scale and respondents position from several aspects such as descriptive statistical analysis, in this research the basic characteristics of selection of sample companies.

###### (1) Enterprise staff

Among the survey sample enterprises, there are 10 enterprises, the enterprise number under 50 and 50 people, accounting for 19.6% of the total number of samples; Between the number of companies in 51-100, a total of eight to 15.7% of the total number of samples; Companies have 101-101 people, accounting for 31.4% of the total number of samples; The number of companies in 301-301 between nine, accounting for 17.6% of the total number of samples; The number of companies is five which have 501-501 people, accounting for 9.8% of the total number of samples; Enterprise number is 3 who have more than 1000 people, accounting for 5.9% of the total number of samples.

###### (2) Enterprise assets

Assets is less than 1 million yuan of 15 enterprises, accounting for 29.4% of the total number of samples; Assets in 100-5 million yuan between enterprise has 11, 21.6% of the total number of investigation sample enterprise; Assets in the enterprise has 16, 500-500 yuan, accounting for 31.4% of the total number of samples; Assets in 1000-50 million yuan between enterprises have five, accounting for 11.8% of the total number of samples; Assets in enterprises with a total of three to 50 million yuan, accounting for 5.8% of the total number of samples.

(3)Survey respondents

Three companies who take questionnaire those are senior executives, accounting for 5.9% of the total number of samples; For middle managers have 12 companies, accounting for 23.5% of the total number of samples; Supervisor for the enterprise staff of 18 companies, accounting for 35.3% of the total number of samples; 8 companies answering question for technical engineers, accounting for 15.7% of the total sample; Seven companies answer for administrative staff, accounting for 13.7% of the total number of samples; Other duties of the answer three, accounting for 5.9% of the total sample. From the descriptive statistical indicators and sample data covers large, medium and small businesses, the questionnaire of an exam is given priority to with mid-level management personnel.

5.2 SAMPLE TEST

Must carry on the empirical analysis, first of all should be observed in the questionnaire each item if it has good identification degree, namely the issues involved in the questionnaire can be identified every degree of different reaction by visitors. So be to T test data obtained from a questionnaire survey. Results show that the data can be obtained by the questionnaire to do further analysis, the questionnaire of each item has a good identification.

5.3 FACTOR ANALYSIS OF THE FEASIBILITY ANALYSIS

Factor analysis is a kind of latent structure analysis, this study of KMO value of 0.644 (> 0.5). Chi-square test result shows that Bartlett sphere inspection card party statistical value of 681.124 (p < 0.000), reject the null hypothesis, correlation matrix is not a unit matrix, can consider for factor analysis. Through the above two measures of statistical tests showed for factor analysis in this study.

5.4 FACTOR ANALYSIS RESULTS

In the factor analysis, this study adopts the principal component analysis to extract factor. With eigen values greater than 1 for the standard. 11 factor analysis to extract the common factor. On influence factors of knowledge integration of the item for exploratory factor analysis, the analysis results show that the corresponding

item has the characteristics of single dimension (characteristic root is greater than 1), each factor Cronbach alpha were greater than 0.7, KMO is 0.644, so the variable measurement meet reliability requirements, you can use the above variables for further analysis (see Table 1)

TABLE 1 Reliability test

variable	The number	Cronbach $\alpha$ coefficient
Learning intention	5	0.713
Knowledge leading level	3	0.728
Degree of knowledge protection	5	0.831
Knowledge tacitness	6	0.876
The complexity of knowledge	3	0.753
The intensity of trust	2	0.881
The degree of interaction	7	0.916
Organizational culture differences	6	0.819
Knowledge acquisition	3	0.882
Knowledge processing	3	0.728
Knowledge application	3	0.894
Service capability	5	0.940

5.5 A MODEL OF REGRESSION ANALYSIS

In order to more accurate verification in this paper, the hypothesis, we adopt the method of regression analysis, to validate the assumptions. According to the above proposed hypothesis and model, establish regression equation is as follows:

$$y = \alpha_1 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_8 x_8 + \epsilon_1 \tag{1}$$

$$z = \alpha_2 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_8 x_8 + \beta_9 y_1 + \beta_{10} y_2 + \beta_{11} y_3 + \epsilon_2 \tag{2}$$

$\alpha_i$  —— Intercept item,  $i = 1, 2;$

$z$  —— Outsourcing service ability;

$\beta_i$  —— Standardized regression coefficients;  $i = 1, 2, \dots, 9$

$Y$  —— Knowledge integration capability;

$y_1$  —— Knowledge acquisition ability;

$y_2$  —— Knowledge processing capabilities;

$y_3$  —— Knowledge application capability;

$x_1$  —— Learning intentions;

$x_2$  —— Knowledge leading level;

$x_3$  —— Degree of knowledge protection;

$x_4$  —— Knowledge tacitness;

$x_5$  —— Knowledge complexity;

$x_6$  —— The intensity of trust;

$x_7$  —— The degree of interaction;

$x_8$  —— Organizational culture differences;

$\epsilon_1$  —— residual, The influence of other factors on the  $y$ ;

$\epsilon_2$  —— residual, The influence of other factors on the  $z$ .

5.5.1 The relationship between the factors affecting knowledge integration and knowledge integration

In order to analyze the relationship between the factors affecting knowledge integration and knowledge

integration, we construct the regression equation (1). This equation can be validated hypothesis of above assumption 1 to 8. This equation regression analysis results are shown in Table 2.

TABLE 2 The coefficients between knowledge acquisition and the factor

	Non-standardized coefficients		Standardized coefficients		Sig.	F	R2	Corrected R2
	B	Standard deviation	Beta	t				
(Constant)	14.703	8.098		1.816	.003	28.820	0.537	0.252
The degree of interaction	.529	.230	.734	2.304	.038			
Knowledge leading	-.221	.245	-.262	-.905	.000			
Trust intensity	-.006	.443	-.004	-.014	.029			
Organizational cultural differences	-.534	.462	-.301	1.155	.000			
Learning intentions	.395	.552	.174	.716	.007			
Knowledge Protection	-.167	.331	-.155	-.504	.023			
Knowledge of complex	-.377	.513	-.211	-.736	.000			
Knowledge of implicit	-.023	.281	-.022	-.081	.000			

Note: enterprise service capacity as the dependent variable

Table 2 reflects the factors affecting knowledge integration and knowledge integration capability between the regression results, in the above analysis results. Standardization regression coefficient of learning intention  $\beta$  is 0.174. A value of 0.007, the results show that the learning intention has positive influence on the ability of the knowledge integration, the assumption 1 is established. Standardization regression coefficient of the degree of knowledge ahead  $\beta$  is -0.262, Sig. A value of 0.000, the results show that the degree of knowledge lead has a positive effect on ability of the knowledge integration, the assumption 2 is established.

By the same token, the hypothesis 3 to 8 assumptions have been very good support. But we also found in this study, the hypothesis 4 and 7 that is about the trust level and knowledge tacitness and the

assumption of relation between knowledge integration, standardized regression coefficient is small, it may also be imperfect and the trust of the enterprise in our country at present market and focus on self development of the knowledge innovation. We can further in-depth study on this aspect.

5.5.2 Analysis of the relationship between knowledge integration and enterprise service capabilities

Regression equation (2) for us to analyze the relations between the knowledge integration and enterprise service ability provides support. It can be validated presumption that hypothesis 9 to 11. Regression analysis results are shown in Table 3.

TABLE3 The coefficients between knowledge integration and service capability

	on-standardized coefficients		Standardized coefficients		Sig.	F	R-squared	odified R-squared
	B	Standard deviation	Beta	t				
(Constant)	4.082	6.375		.640	.030	87.049	0.936	0.925
Knowledge application	1.442	.159	.834	9.046	.000			
Knowledge Processing	.536	.415	.151	1.292	.013			
Knowledge Acquisition	.229	.318	.061	.718	.002			

Table3 reflect the knowledge integration capability and the enterprise service ability between the regression results. Standardization regression coefficient of knowledge acquisition  $\beta$  is 0.834. A value of 0.000, knowledge acquisition the standardized regression coefficients of beta 0.151, Sig. A value of 0.013, knowledge acquisition the standardized regression coefficients of beta 0.061, Sig. A value of 0.002, the results show that the knowledge acquisition, knowledge

integration and knowledge application has positive influence to the ability of the enterprise services, the assumption of 9, assumptions are supported and assumptions. We found that the knowledge acquisition of standardized regression coefficient of only 0.016, and possible distance between enterprise eventually service ability to improve the path of the remote, people pay attention to the result of things too.

## 6 Conclusion

Through the empirical test, this study proposed the related assumptions have been a good support. But we also find, hypothesis 4 and 7 that is about the level of trust and tacit knowledge acquisition and knowledge of the relationship between hypothesis, standardized regression coefficient is small, it may also be imperfect and the trust of the enterprise in our country at present market and focus on self development of the knowledge innovation. Enterprise knowledge has a positive correlation between integration and service ability. Regression analysis between knowledge integration and enterprise service ability results better support for this study, we propose three hypotheses. But, small knowledge acquisition of standardized regression coefficients, and possible distance between enterprise eventually service ability to ascend the logical path of remote, attaching too much importance to the industry caused by the results of the project implementation.

Companies should encourage employees to learn, pay attention to the accumulation of knowledge, to strengthen the knowledge sharing and regular training of employees, etc., make the enterprise knowledge acquisition can be smoothly. At the same time, enterprise should attach importance to knowledge, enterprise should take knowledge as an important assets, through the process of knowledge acquisition, processing and application to enhance their knowledge integration capability, increase the proportion of knowledge assets in the enterprise value

promotion, further strengthen and improve the service ability of enterprises.

## References

- [1] Daft, R. L., & Huber, G. P. 1987. How organizations learn: A communication framework. In N. DiTomaso & S. B. Bacharach (Eds.), *Research in the Sociology of Organizations*, 5: 1-36.
- [2] March, J. G. 1991. Exploration and exploitation in organizational learning. *Organization Science*, 2: 71-87.
- [3] Grant, R. M. 1996a. Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science*, 7(4): 375-387.
- [4] Alavi, M. 2001. Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25(1):107-136.
- [5] Zhao Yong. 2003. Core competence theory and empirical analysis. *Chengdu: Southwest Jiaotong University*.
- [6] Hamel, G.1991. Competition for competence and inter-partner learning within international strategic alliances. *Strategic Management Journal*, 12: 83-103
- [7] Jian ZhaoQuan, Wu Longzeng, Huang jing. 2008. Absorptive capacity, knowledge integration research on the influence of organizational innovation and organizational performance. *Research Management*. 1: 80-86.
- [8] Wei Jiang. 2000. Knowledge characteristic and the enterprise knowledge management. *Research Management*. 3:6-10.
- [9] Grant, R. M. 1996a. Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science*, 7(4): 375-387
- [10]Hu Hao.2007. Theory of knowledge of the application of integrated management *Scientific and technological progress and countermeasures*, 4:154-156
- [11]Mei-Chih Hu, Naubahar Sharif, and Erik Baark. 2014. Information Technology Services: A Key Knowledge-Intensive Business Service Industry in Hong Kong SAR, China. *Science Technology & Society*, 19(1): 27-55.

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