
Analysis of Effect of Organizational Capability and Knowledge Management on Success of IT Outsourcing in Organization

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Received: 11 December 2017, Revised: 20 January 2018, Accepted: 29 February 2018

ABSTRACT

Fast changes at workplace have affected behavior and performance in organizations. These transformations make organizations to changes their strategies in order to achieve competitive advantage in business. One of these strategies is focusing on main qualifications and making resources out of organization involved in these activities or in fact it is outsourcing of activities. Outsourcing is effective on performance of organizations as an executive useful and economic tool and its applications are increasing. The goal of this research is to analyze effect of organizational capabilities and knowledge management on strategic success of IT outsourcing in organizations.

This research is applicable by its goals and is correlative by it descriptive-survey method and is a field study. Statistical population includes managers and staff working in Mellat Bank of Isfahan whom were about 1300 individuals. In this research sample size was determined by means of limited sample size of population that sample was chosen by random sampling method. Questionnaire was used for data collection and its validity was confirmed by content and construct validity. Cronbach's alpha coefficient was used for measurement of reliability which was calculated 0.86 for organizational capability, 0.84 for knowledge management, 0.84 for outsourcing and 0.93 for the questionnaire. Statistical indexes were used for describing data and compare mean tests and structural equation modeling, were used for test of hypotheses. Amos.20 and SPSS software were used in this research. Results from analysis of findings indicated that organizational capability and knowledge management variables affect outsourcing success and due to regression coefficient in structural equations, knowledge management has direct and indirect effect on IT outsourcing success.

Keywords: Dynamic Capability, Knowledge Management, Outsourcing.

Introduction

In our country, outsourcing is seriously considered. Behavior of many organizations in our country including private and public ones, show that outsourcing is noticed in recent years. In our country this issue is often considered from view of organization that receives outsourcing but it is possible to notice this issue from view of organization that outsources its activities. Alster (2005) has estimated that about 3.3 milliard of IT activities can be outsourced until 2015 in America.

Outsourcing becomes more and more applicable as an executive simple and economic tool. Business and industrial managers attempt to utilize outsourcing but actually face with various conceptual issues and topics. Schneider (2006) prepared a questionnaire, "conference staff from 52 enterprises in America and Europe". It indicates that 79% of them outsource their subsidiary and non-strategic activities and IT processes were outsourced three times more than activities in service sector. Deloitte Touche (2005), according to his personal interviews with executive managers of 25 large organizations, stated that 70% of participants in outsourcing had bitter experiences and 25% of them demanded return of outsourcing services. According to these issues, this research studied effect of organizational capability and knowledge management in IT outsourcing success so that this activity would be carried out better in organizations of our country.

Dynamic Organizational Capability

Teece et al. (1997) have defined dynamic organizational capability as ability of an enterprise in integration, creation and formation of internal and external qualifications in order to consider

transforming environments. Since, these authors introduced and defined concept of dynamic organizational capability, many of other authors have also offered some definitions. But as it is observed all these definitions are coincident with main definition of Teece et al. (1997).

Dynamic capabilities are consisted of processes in an enterprise (especially integration, reformation processes and process of acquiring and losing resources) which utilize resources to match with changes in market or even change the market. So, dynamic capabilities are organizational and strategic procedures with which enterprises can achieve new formations of resources along with emergence of markets, damage of markets, division, progress and death of markets (Eisenhardt and Martin, 2000).

Dynamic organizational capability is learned and constant pattern of mass activity, that organization systematically creates and reconstruct required operational procedures. In this way it achieves improved efficacy (Zolla and Winter, 2002).

Dynamic capabilities are basically change-oriented capabilities that help the enterprise to create and form base of their resources, again and to face with progressive demand of customer and strategies of competitors (Zahra and George, 2002).

Dynamic capabilities are capabilities utilized for expansion, reconstruction or creation of usual capabilities of organization (Winter, 2003).

Dynamic organizational capability is a set of procedures which lead to progress of resources formation in the enterprise (Zott, 2003).

Capability of integration of various processes in business (Rai et al., 2006).

Reconstruction capacity of job capabilities in an enterprise (Lavie, 2006). Capacity of an organization for creation, development and targeted renewal of base of its resources (Helfat et al., 2007).

Wang and Ahmed (2007) have defined dynamic capabilities as behavior and continuous orientation of an enterprise in integration, reformation, reconstruction and recreation of resources and their capabilities and the most important, improvement and structuring of its nuclear capabilities for responding changing environments and achievement and maintenance of competitive advantage.

Conclusion of these definitions indicates that about structure of dynamic organizational capability there is a general agreement. These definitions show that dynamic organizational capability is consisted of organizational processes and their role such as changing base of resources in the enterprise. Also literature of research indicates that dynamic capability should be built over a period of time not by being bought from the market (Makadok, 2001), are dependent to a pathway that the enterprise has passed (Zello and Winter, 2003) and are based in the enterprise (Eizenhardt and Martin, 2000).

Research Background

Ashrafzadeh (2004) has carried out a research as “pervasive model for outsourcing the services”. In this research, at first, different features of services were studied due to modern publish reports and then a strategic model was offered for outsourcing of services. This model that emphasizes service features, in addition to pervasive view of topic is designed simply and is useful for guiding managers. In this paper, after provision of the model and explanation of relation between variables,

implementation of model in an organization and also results of research are stated, briefly. Three important results in public and private fields of services are: the more tangible and standardized service, tendency for outsourcing is more. The less service has unreliability of demand, tendency for outsourcing is more and the organization can outsource its main activity if it maintains the controlling mechanism of main activity.

Kazzazi and Haddadzadeh Nayeri (2006) determined effective factors on IT outsourcing decisions in their research as “proper framework of decision-making in IT outsourcing”, by studying and reviewing prior researches. In this quest, AHP technique was used for calculation of criteria weight and then some activities were chosen for outsourcing. Mentioned criteria and sub-criteria in this research are respectively: strategic, management, technological, qualitative, service providing, economic and security considerations. Sub-criteria are: competitive advantage and vitality of activity, expert forces in the organization, organizational control and so on. By means of AHP technique, strategic considerations and competitive advantage had the most weight from criteria and sub-criteria, respectively.

Ghahremani and Hasan Moradi (2007) in addition to theoretical basics of outsourcing, offered essential conceptual framework for outsourcing organizational education and suggested a pattern in their research “compilation of outsourcing model for organizational education”. Suggested pattern of this plan is taken from theoretical studies and also expert opinions of 120 individuals from managers, experts, researchers and specialists of human resources management. Questionnaire was tool of this research that its validity was

calculated with Cronbach's method. From research results, one of the important criteria in decision-making about outsourcing of organizational education activity is load and amount of activity. As outsourcing affects directly manpower of organization, its legal and executive aspects and even effects and consequences on organizational culture and atmosphere should also be evaluated.

Zare (2008) studied relation between empowering (culture, structure and technology) as independent variable and knowledge management processes as dependent variable in their research as "study of effect of empowering on knowledge management processes in Isfahan Oil Refinery Company". Research data were collected by questionnaire and correlation test and multiple regression tests was used for measurement of research hypotheses. Research findings show that in staff society technology and culture variables have significant relation with knowledge management process and the relation between structure variable and knowledge management processes was not significant. In managers' society technology and structure variables have significant relation with variable of knowledge management processes and there is no significant relation between culture and knowledge management processes.

Arabi and Mousavi (2009) studied a model for knowledge management in research institutes for improvement of their performances in their quests as "strategic model of knowledge management for performance improvement in research institutes". Statistical population included some research institutes. Main hypothesis of this research was defined in this way: coordination between knowledge strategy, production, development, transformation

and utilization in research institutes leads to their improvement performance due to work strategy of research institutes. In this research questionnaire was used for collecting strategic data which contained open and close questions. Results confirmed main hypothesis of research and indicated effect of coordination between knowledge strategy, production, development, transformation and utilization in research institutes on performance improvement.

Bomonett and Sowhall (2004) did a research in 2002 in Australia and studied outsourcing decision-making and reasons for outsourcing and lack of it. Australian organizations that had at least 20 staff were studied sample. They understood that by load of outsourcing, 84% of total organization outsourced 11.3% of special branch and 4.7% of special sector. Other findings of this research were outsourcing advantages and disadvantages. The most important advantage of outsourcing were achievement of skills, reduction of costs, acquisition of flexibility against environmental changes and performance improvement. The most important risks were reduction of control, reduction of reliability and unreasonable incomes.

Witalker (2007) studied "internal and external consequences of outsourcing in business process for customers and organizations" in North America. Significant factors in this research were features of involved organizations in outsourcing process and customers satisfaction. Results of this research indicated that IT substructures played considerable role in outsourcing of business process and it happens while IT improves abilities of organization.

Also, organizations should focus on quality in utilization of outsourcing for business process and finally outsourcing of processes in offices in front of customers

has negative relation with their satisfaction and outsourcing of processes in offices supporting customers has positive relation with their satisfaction.

Spida and Vera (2007), studied relation between dynamic organizational capabilities and operational organizational capabilities with knowledge management view, in 107 active enterprises in industry of information and communications technology of Spain. They indicated that dynamic organizational capabilities created by knowledge are a substructure for creation of new operational organizational capabilities and it is effective.

Boullat and Yilmaz (2008) studied effect of outsourcing on performance of hotels in Antalya, Turkey in their research as "relation between outsourcing and organizational performance, truth or legend in hotels. 80 hotels were studied as samples. Results indicated that cooperation with suppliers improves efficacy, productivity, profitability, quality, professional life quality and social responsibility and hotel managers believe that their organizational performance is increased after outsourcing.

Magnir, Vatanabeh and Sono (2008) studied organizational characteristics effective on knowledge management in their research as "organizational characteristics as prescriptive factors of primary activities of knowledge management. One new framework is designed for indicating prescriptive role of organizational characteristics in primary activities of knowledge management and data was collected by semi-structured interview with English, American and Japanese managers of a large pharmaceutical company in Japan. Results indicated that organizational characteristics especially culture, communications and strategy are

relatively effective on knowledge management which includes knowledge acquisition, storage, sharing and application.

Roberts (2009) allocated his PhD thesis to study of IT role in helping enterprises for feeling and responding market's opportunities in super competitive environments. His research, in addition to confirmation of IT role, indicates that along with IT, coordination factors of intra-tasking and coordination between distribution routes are also effective on feeling and responding market's opportunities. Also, customers' needs would be fulfilled more effectively. This research had only studied one role of IT (including integration and coordination) in helping one aspect of dynamic organizational capabilities (including feeling and responding customers' needs); so, it doesn't have comprehensive attitude.

Anderson (2009) studied organizational abilities as "effective predictors of knowledge management" in an operational study. He did a research about abilities of one organization in success of knowledge management activities for achievement of organizational goals. Data was collected by a questionnaire from 100 multinational enterprises that were chosen by Fortune Magazine. They were studied by means of structural equations method. Results indicated that process abilities of knowledge management are effective on sub structural abilities; team process abilities of knowledge management affect organizational process abilities of knowledge management and results also showed that organizational abilities of knowledge management are effective on organizational efficacy in organizations.

Chio et al. (2010), in their research as "outsourcing advantaged in computer industries of Taiwan", studied outsourcing advantages from attitude of enterprises

assigning activities and also suppliers and offered some criteria for selection of supplier. Sample selected for this research included 32 Thai computer enterprises that had implemented global management. Results indicated that outsourcing advantages for enterprises assigning activities were increase of profit and operational flexibility and ability of enterprise resources to focus on main activities. Also, for suppliers there were 4 advantages including entering new markets, improvement of competitive strategy of the enterprise, focus of resources on pivotal activities and controlling special resources. Another result of this research was identification of criteria for selecting the supplier such as production capacity, flexibility of services' quality with products and costs.

Wu (2010) studied application of resource-oriented attitude and dynamic organizational capability in environmental disturbance conditions. His research sample was 235 Thai enterprises. Results show that at the time of environmental disturbance conditions, enterprises with dynamic organizational capability (in comparison with enterprises without valuable, rare, non-successor enterprises) can maintain their competitive advantages better. This research helped expansion of research literature in dynamic organizational and operational capability. Hung et al. (2010) studied role of alignment factors of organizational processes and culture of organizational

learning in creation of dynamic organizational capability, by offering a model. They showed that these two factors have mutual effects on each other and are effective on organizational performance especially dynamic organizational capability. In this research, only a part of dynamic capability on organizational performance is studied.

Conceptual Model of Research

Today, there is accelerated expansion and growing increase of IT influence on organizations. Fast developments in IT, in one hand and the method of its combination with other organizational factors in another hand, have made the process of effectiveness of this technology more complicated and recognition and measurement of its effects on organization, harder. As success of outsourcing is important in the organization and its loss add high costs for the organization, most of the organizations seem to provide context of success. In this way, they should provide necessary capabilities and also by means of knowledge management, they are able to offer more favorable contexts that finally lead outsourcing to success. In this research, it is attempted to study organizational capabilities in knowledge management and also in success of outsourcing, and to study knowledge management in success of outsourcing according to conceptual model in scheme 1-1 and analyze the effect of these factors.

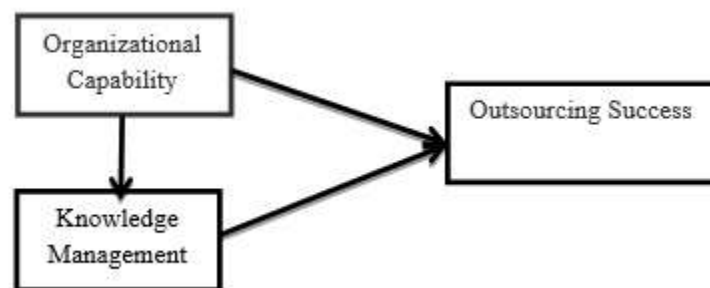


Figure 1. Research conceptual model

Research Hypotheses

According to research model, these are the hypotheses of this research:

Organizational capabilities have positive and significant effect on knowledge management.

Knowledge management has positive and significant effect on outsourcing success.

Organizational capabilities have positive and significant effect on outsourcing success.

Research Method

As this research is aimed to analyze organizational capabilities and knowledge management on IT outsourcing success in organizations, it can be said that this research is applicable by its goal and as library studies, books and articles related were used and field methods such as questionnaire tools is applied for data collection; so, this research is of correlative type by its survey-descriptive method. Managers and staff working in Mellat Bank of Isfahan include statistical population of this research whom were 1300 individuals. As statistical

population was limited, a formula sampling from limited population was applied for determination of number of required samples.

α = Statistical value of test at confidence

level of $\frac{t_{\alpha}}{2}$

N= population size

n=sample size

ϵ =estimation error

α =confidence level

S=estimated standard deviation of population.

$$n = \frac{N t_{\alpha}^2 s_x^2}{\epsilon^2 (N-1) + t_{\alpha}^2 s_x^2}$$

So, quantity of statistical sample was calculated 200 individuals. In this research 260 questionnaires were distributed by random sampling method that 200 of them were responded. Questionnaire was prepared according to theoretical basis of research and was designed in 5-point Likert scale from too little to too much. Questionnaire is consisted of two parts: 1-demographic questions, 2-main questions of research which include 32 questions for measurement of main variables of research. Demographic features of statistical sample are given in Table 1.

Table 1. Features of Respondents in Statistical Sample

	Gender		Age			Education				
	Female	Male	Younger than 30	31-40	41-50	Older than 50	Diploma	Foundation Degree	Bachelor	Master
Frequency	35	165	13	97	87	3	62	22	99	17
Percentage	82.5	17.5	6.5	58.5	43.5	1.5	31	11	49.5	8.5

As it is observed in table 1, about 82% of respondents were men and most of them were younger than 40 years. Also, study of their education shows that about 49.5% of them had bachelor’s degree. The questionnaire was distributed among university staff in order to determine its validity and necessary corrections were

done. For determination of validity, factor validity was also used that results of factor validity indicate validity of tool for data collection. Confirmatory factor analysis was performed on research variables. Due to this analysis, fitting of model for measuring variables, which is one of the

applications of structural equations model, is confirmed (Table 2).

In next step, Cronbach's alpha was calculated for determination of questionnaire reliability (Table 3).

Table 2. Fit indexes of measurement model related to research variables.

Variable	Fit Index				
	CIMIN/DF	GFI	CFI	NFI	RMSEA
Dynamic Capability	1.43	0.98	0.99	0.99	0.02
Knowledge Acquisition	2.71	0.99	0.99	0.99	0.05
Knowledge Dissemination	2.14	0.99	0.99	0.99	0.05
Knowledge Accountability	2.5	0.99	0.99	0.99	0.04
Outsourcing Success	1.67	0.99	0.99	0.99	0.03

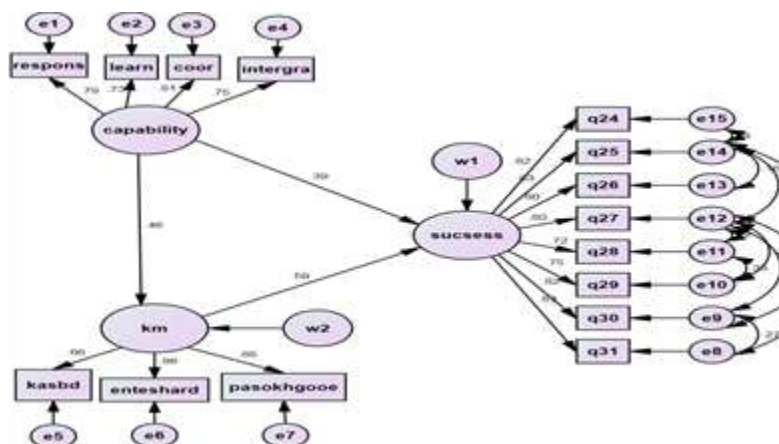
Table 3. Validity of questionnaire based on Cronbach's alpha

Variable	Cronbach's alpha coefficient
Total	0.93
Organizational Capability	0.86
Knowledge Management	0.84
Outsourcing Success	0.84

For evaluation of questionnaire validity Cronbach's alpha was used. Aloha value for questionnaire, organizational capability, knowledge management and outsourcing success is 0.93, 0.86, 0.84, and 0.84, respectively. It shows acceptable validity for each of the variables mentioned.

In this part, structural model of research is offered. In this model, which is pathway analysis, significant coefficients and figures indicate confirmation of research hypotheses. Also, for more explanation of research hypotheses test, significant coefficients and figures of variables related to structural model are given in table 4 and due to this, main hypotheses would be tested. Scheme 2 shows structural model of research.

Research Findings



Test of Research Hypotheses by Pathway Analysis

Table 4 indicates pathway analysis of relation between main variables of

research. According to scheme 2, there are coefficients and figures which show significant relation between main variables of research.

Table 4. Analysis of relation between main variables of research (test of main hypotheses)

No. of Hypotheses	Hypotheses	Regression Coefficient	Critical Value	P-Value	Result
1	Organizational Capability → Knowledge Management	0.458	9.94	0.000	Confirmed
2	Knowledge Management → Outsourcing Success	0.589	15.09	0.000	Confirmed
3	Organizational Capability → Outsourcing Success	0.385	10.15	0.000	Confirmed

Due to table above these results are achieved: 1-according to direct and positive relation between variables all main hypotheses of research are confirmed, 2-intensity of relation between variables is high in knowledge management pathway to outsourcing success.

Study of Total, Direct, Indirect Effects on Research Variables

In order to study direct and indirect effect of independent variables on dependent ones it is essential to provide total, direct and indirect effects for endogenous variables. Results are given in Table 5.

Table 5. Division of Total, direct and indirect effects in research model

	Dependent Variable	Independent Variable	Effect		
			Direct	Indirect	Total
1	Knowledge Management	Organizational Capability	0.458	-	0.45
2	Outsourcing Success	Organizational Capability	0.385	-	0.38
		Knowledge Management	0.589	0.17=(0.38*0.45)	0.75

The results indicate that organizational capability has 0.38 direct and positive effect on outsourcing success while by organizational capability way, knowledge management has 0.17 positive effect on outsourcing success. Due to 0.58 positive effect of knowledge management on outsourcing success, we conclude that organizational capability by knowledge management lead outsourcing to success.

First Hypothesis: organizational capabilities have positive and significant effect on knowledge management.

After fitting of research model, in order to test this hypothesis, conformation or rejection of this hypothesis was determined by means of critical value and standardized regression weight and P-Value related to this pathway. As critical value was 15.09 and it was greater than 1.96 and P-value was 0.000 and less than 0.05, it can be concluded that

Conclusion

with 95% confidence, organizational capabilities with regression weight of 0.58 have positive and significant effect on knowledge management. So, this hypothesis is confirmed.

Second Hypothesis: knowledge management has positive and significant effect on outsourcing success.

After fitting of research model, in order to test this hypothesis, conformation or rejection of this hypothesis was determined by means of critical value and standardized regression weight and P-Value related to this pathway. As critical value was 9.94 and it was greater than 1.96 and P-value was 0.000 and less than 0.05, it can be concluded that with 95% confidence, organizational capabilities with regression weight of 0.458 have positive and significant effect on knowledge management. So, this hypothesis is confirmed.

Third Hypothesis: organizational capability has positive and significant effect on outsourcing success.

After fitting of research model, in order to test this hypothesis, conformation or rejection of this hypothesis was determined by means of critical value and standardized regression weight and P-Value related to this pathway. As critical value was 10.15 and it was greater than 1.96 and P-value was 0.000 and less than 0.05, it can be concluded that with 95% confidence, organizational capabilities with regression weight of 0.38 have positive and significant effect on knowledge management. So, this hypothesis is confirmed.

Suggestions

Implicit implication of findings of this research for organizations is considering seriously outsourcing based on knowledge management. In another words, knowledge management provides the opportunity for the organization so that outsourcing process would be carried out more successful. On the

other hand, outsourcing process could be simplified by improvement of dynamic organizational capabilities including coordination, accountability, integration and learning. So, by appropriate proper setting for carrying out the knowledge management and improvement of organizational capabilities, it is possible to achieve success of IT outsourcing in the organization.

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How to cite this article: Simin Daneshvar, Hossein Rezaie Dolatabadi, Analysis of Effect of Organizational Capability and Knowledge Management on Success of IT Outsourcing in Organization. *International Journal of Advanced Studies in Humanities and Social Science*, 2018, 7(1), 1-11.

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