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Assess Barriers to Knowledge Management According to Ahrnjany - Tripartite Ramifications Model in South Pars Gas Complex

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ABSTRACT

We now live in an age where it can truly be called knowledge era. Nowadays, knowledge is the best value in organizations. Company's success in the 21st century, according to markets which are becoming more competitive every day is depending on use of the knowledge that companies need to it in their important processes. Here, organizations that have a high degree of creativity and work performance manage their knowledge effectiveness. Most of private companies recognize importance of knowledge and manage it in order to gain a competitive advantage and survival in a competitive field. Experience has shown that knowledge management issue does not lose its importance, but its value is increased day-to- day according to rapid changes in the environment. In this article, barriers of establishment Knowledge Management System in South Pars Gas Complex has were studied and recognized. Results show that the main obstacles to the establishment of knowledge management system include: existence rapport and trust between managers and employees, existence mechanisms to encourage people to share knowledge, use of appropriate and new technologies.

KEYWORDS: Knowledge Management, Main Barriers to Establishment, Ahrnjany- tripartite Ramifications Model

1. INTRODUCTION

Knowledge management is one of the interesting and challenging management science issues in the new millennium. Domain, application and use of knowledge management have widespread and it have opened its place in the management literature as a multidisciplinary domain. Knowledge management is the preparation, establishing, encouraging, and monitoring of people, processes and systems in the organization to guarantee that its knowledge-related assets are enhanced and effectively employed [1, 2]. Knowledge management isn't a new concept. Perhaps many of us manage knowledge without having the slightest understanding of it. But regulate these activities and have a plan for its implementation is a new topic that was considered in the late twentieth century. Knowledge management is a new and valuable approach beside other business and competitive strategies. For this purpose, organizations decided to implement knowledge management programs to take advantage of its potential benefit. This construct has many of strategies and approaches [3].

Enduring history of the oil industry in Iran and the dynamics of this industry, especially in the 30 years since the revolution have been full of Knowledge, experience and numerous innovations, that preservation and dissemination of this invaluable treasure is valuable and lasting work. Ministry of Oil and its subsidiary companies are working on several projects with so varied themes, using the knowledge, expertise and experience of a wide range of professionals from different disciplines in upstream areas (Including oil , gas, petrochemical , refining and distribution of petroleum products, etc.) and downstream area of oil industry (Including exploration, drilling, extraction, transport, utilization, etc.). In these companies, (especially due to the expansion of activities), a large amounts of knowledge is produced with implementation big Project and specialized management that part of this knowledge is recorded in the form of documents, reports, software, instructions, etc. and other part was also intangible and in terms of experiences, relationships, skills, insights etc. is hidden that there is very little possibility for transmitting and rework.

Knowledge management systems in the oil and gas-related industries were produced at this situation and with the aim of influencing the identification, creation, storage, retrieval, sharing and applying required knowledge in organization. Knowledge management process helps organizations to do their mission well and achieve their vision and goals. The oil and gas industry has taken advantage of knowledge management (KM) improvements for more than two decade [4, 5]. Knowledge management is an approach to creating a learning organization whose members can gain, share and create knowledge and take profit in their decision making [1]. However, today this experience in some of the organizations and companies about knowledge management has failed and that is because the barriers to successful knowledge management that has been neglected. However nowadays, necessity to pay attention to this type of management in the form of strategic tools has proved for advancement of organization resources success in the field of competition.

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Organization and management phenomena can be reviewed and analyzed based on three groups behavioral, structural and contextual factors and “three- ramifications " model are used in order to identify the components of the behavioral aspects. Noted model is an analytical tool that all studies and theories of organization can be evaluated in three areas based on it [6].

Relationship between these three branches is a close one and they are inseparable practically. Indeed, type of relationship between the three branches is correlative and they are as the three growing branches from single trunk of organization life. In this relationship, structural, behavioral and background factors are interacting as continuously system relations. Therefore, recognition these three aspects of organizational life is only theory and it only use for analysis concepts understanding and organizational phenomena [6].

So, according to the organizational barriers to knowledge management the main problem of this research is review of barriers to the establishment of knowledge management system according to Ahrnjany tripartite ramifications model in South Pars Gas Complex Company.

Ahrnjany tripartite ramifications model

It is named for the three ramifications that the relationship between structural factors, behavioral and contextual is in a manner that is that no events or corporate event can take place outside of the interaction of these three branches. This study intends this model as a conceptual model, given the important and integral feature of the three branches. These components and indexes are given in Table 1.

Table 1. Barriers to establishment knowledge management

Component	Index
Structural branches	Senior management support
	Promotion based on meritocracy
	Payments and rewards with respect to competencies
	Governing occupational and organizational regulations
	Doing things as a team and group
	Mechanisms exist to encourage people to share knowledge
	Attention to staff training programs
	Lack of participation 's culture in the organization
Background branches	Isolated nature of public organizations
	Transparency rules
	Scientific conferences held
	Using of appropriate and new technologies
	Existence technology infrastructure in the region
Content Categories	Staff attitude
	Leaders focus on employee motivation
	Managers attention to employee spirited effort and perseverance
	Management and employee commitment and loyalty
	Existence mutual understanding and trust between managers and employees
	Skills and knowledge of employee
	Resistance to change

Research questions

Main question: What are behavioral, structural and contextual barriers in establishment knowledge management system in South Pars Gas Complex Company?

Sub-questions:

1. What are behavioral barriers in establishment knowledge management system in South Pars Gas Complex Company?
2. What are structural barriers in establishment knowledge management system in South Pars Gas Complex Company?
3. What are contextual barriers in establishment knowledge management system in South Pars Gas Complex Company?

2. MATERIAL AND METHODS

The method used in this study is survey. I.e. data has been collected using survey methods. Barriers of management establishment were categorized by Ahrnjany tripartite ramifications model then, a questionnaire was designed with 20 questions in 5 -point Likert scale. Here, statistic society is included 70 employed, managers, supervisors and middle managers. Since the target population is limited, whole community were selected by the research as a samples. Content validity is used in order to validity and reliability questionnaire. In order to validity

of the questionnaire, blueprint questionnaire was prepared and was studied by professors and professionals, in addition to study related references. As a result, several amendments were proposed for correction and after desired reforms, final questionnaire was prepared. Cronbach's alpha coefficient of questionnaire was calculated by use of SPSS software in order to determine the reliability of the questionnaire that is equal to %93.

3. RESULTS

In this section, we calculate and analyze data. For this aim we calculate and measure sampling adequacy. Results are presented in Table 2. Given that the sig = 0.001 therefore, we can conclude that selected samples is suitable factor for analysis test. In preliminary analysis, results show that, all research questions involved in implementing knowledge management, since the coefficient of determination of all questions is more than 0.5. In the next step, we calculate distributed total variance. The results of this analysis presented in Table 3.

According to the 53.463 in above table that is more than 50, we can conclude classification by three-ramification model is approved. Explanation of dimension matrix is given in Table 4. In order to interpret above table that categorize research component, we should pay attention to the issue that absolute value over %5 can be classification in one level, so it is confirmed that performed classification in this study base on three-ramification is correct by attention to above table results. Meanwhile, transparency rules and regulations are common in structural and contextual dimensions. In this section we rank and prioritize affecting factors on knowledge management implementation base on Friedman test.

As shown in Table 5, the value of Friedman test is significant at 0.001 level. In the Table 6, the average rating of dimensions is presented.

Table 2. Calculate and measure sampling adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**765**
Bartlett's Test of Sphericity	Approx. Chi-Square	4228.228
	df	190
	sig	000

Table 3. Distributed total variance

Dimension	**Initial Eigen values**			**Total extraction of loaded square**		
	Total	Percentage of variance	Cumulative percentage	Total	Percentage of variance	Cumulative percentage
1	7.132	35.660	35.660	7.132	35.660	35.660
2	1.930	9.650	45.310	1.930	9.650	45.310
3	1.630	8.152	53.463	1.630	8.152	53.463

Table 4. Dimension matrix

Dimensions	**Background**	**Structural**	**Content**	**Conclusion**
Senior management support	-171	613	-319	Structural
Promotion based on meritocracy	373	-705	151	Structural
Payments and rewards with respect to competencies	334	541	410	Structural
Governing occupational and organizational regulations	0.061	693	147	Structural
Doing things as a team and group	-0.001	718	256	Structural
Mechanisms exist to encourage people to share knowledge	0.219	517	324	Structural
Attention to staff training programs	0.050	733	-0.34	Structural
Lack of participation 's culture in the organization	0.098	722	-158	Structural
Isolated nature of public organizations	0.531	366	-145	Background
Transparency rules	0.522	-505	293	Structural & Background
Scientific conferences held	0.589	-188	-122	Background
Using of appropriate and new technologies	0.556	-381	-116	Background
Existence technology infrastructure in the region	0.791	-294	238	Background
Staff attitude	0.254	-273	540	Content
Leaders focus on employee motivation	0.212	201	626	Content
Managers attention to employee spirited effort and perseverance	-0.060	270	797	Content
Management and employee commitment and loyalty	-0.107	064	703	Content
Existence mutual understanding and trust between managers and employees	0.403	453	125	Low impact
Skills and knowledge of employee	0.105	173	728	Content
Resistance to change	0.267	-0.17	715	Content

Table 5. Meaningful ranking by Friedman test

Test Statistics(a)	Index
Number	380
Kai skiver	959.704
Degrees of freedom	19
Asymp. Sig.	0.000

Table 6. Description priority by Friedman Test

Dimensions and elements	Average Rating
Existence mutual understanding and trust between managers and employees	15.55
Mechanisms exist to encourage people to share knowledge	15.41
Using of appropriate and new technologies	11.73
Promotion based on meritocracy	11.51
Isolated nature of public organizations	11.07
Skills and knowledge of employee	10.81
Existence technology infrastructure in the region	10.32
Managers attention to employee spirited effort and perseverance	10.29
Payments and rewards with respect to competencies	10.09
Lack of participation 's culture in the organization	10.07
Attention to staff training programs	9.67
Managers focus on employee motivation	9.59
Staff attitude	9.54
Transparency rules	9.51
Doing things as a team and group	9.49
Resistance to change	9.26
Management and employee commitment and loyalty	9.14
Governing occupational and organizational regulations	9.09
Scientific conferences held	9.08
Senior management support	8.77

4. DISCUSSION AND CONCLUSION

The overall results indicate that “Existence mutual understanding and trust between managers and employees”. Due to point of View Corporation of South Pars Gas Complex, it was placed in the first place of influenced factors on establish knowledge management system. These results are consistent with Michailova and Husted’ research results that is said “employee aren’t sure about goals and intentions of their superiors in conjunction with sharing knowledge and also some low and medium levels employee don’t share knowledge on purpose because they presume if superiors understand that their subordinates’ knowledge is higher, they won’t promote subordinates. For example, a research has shown that Russian managers reluctant to working with individuals with lower rank. Especially, they resist learning something of his subordinates.

From the Viewpoint of South Pars Gas Complex, another main factor for establishing knowledge management is” Mechanisms exist to encourage people to share knowledge” that it was place in second rank. But this issue is contrary to findings of McDermott and O’Dell [7]. They say changes in reward systems and related policies rarely impact on organizational culture and knowledge sharing in long run. They believe knowledge sharing process should be natural to continue also, in a corporate culture opposed to knowledge sharing use of incentives and rewards would be insufficient because these types of incentives lost its effectiveness quickly and won’t lead to increasing knowledge sharing.

Third factor of establish knowledge management from the viewpoint of South Pars Gas Complex is “use of appropriate and new technology” that is in accordance with research’s results [8, 9, 10]. Coleman [8] argues” improper allocation of ICT can be negative effects on creating an effective environment for knowledge sharing. Establish an appropriate infrastructure and providing adequate resources to facilitate knowledge sharing activities within the unit and between different units of the organization are foundation of a successful knowledge management program. But in the other hand, failure of knowledge sharing activities rooted in the lack of basic infrastructure and required capabilities for knowledge sharing in the organization, even before start it.

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