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The Influence of the Personalization and Codification Strategies on Successful Knowledge Management Case Study: National Iranian Oil Company

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Abstract: Successful implementation of Knowledge Management (KM) involves on identification the most effective associated factors. Hence well-thought-out of organization strategy often is absent in implementing KM. Moreover resource restrictions lead us to prioritize them. Consequently, organizations are looking to prioritize the projects for deploying KM in order to invest on the infrastructural projects based on that. The purpose of this study is on identifying, classifying and ranking the enablers related to four key factors of people, process, leadership and information technology based on two given KM strategies. The quantitative approach was utilized in collecting data through questionnaire. In order to approve and classify the identified enablers in each key factor, a quantitative approach was utilized in collecting data through a few justifiable reliable questionnaires. We designed them using Delphi method and distributed among organization experts. Significant factors extracted from applying an exploratory factor analysis using the SPSS package. In order to prioritize the extracted enabler's a fuzzy multi-criteria decision making technique is then applied. The results shows that among thirty identified enablers in personalization strategy, twenty seven ones and among the nineteen identified enablers in codification strategy, sixteen of are significant. Accordingly by ranking the factors and enablers in nine management organizations of the National Iranian Oil Company (NIOC), the leadership factor in personalization strategy and also information technology in codification strategy have higher ranks by weighing 0.259 and 0.267respectively.

Keywords: Codification strategy, fuzzy multi-criteria decision making, exploratory factor analysis, key factors, knowledge management, knowledge management strategies, personalization strategy

INTRODUCTION

Knowledge Management (KM) is a set of processes to transform data and information into valuable knowledge which includes creating, discovering, organizing, applying, sharing and replenishment of knowledge (Knapp, 1998; Duffy, 2000). In another definition, Plessis and Boon declare, KM is a planned, structured trend for creating, sharing, using and profit-making knowledge as an organizational asset for promoting the company capability and better efficacy in delivering products and services toward customers' profit and organization commercial strategies (Dalfard *et al*., 2012). KM is considered to be the most important asset of an organization (Khan *et al*., 2012). Despite the significance of the subject of KM implementation in organizations, in many of them, KM implementation failed which was due to the lack of evaluation, comprehensive and sufficient recognition of the effective factors in successful KM implementation. According to Wong (2005), organizations must be aware of the factors that affect the success of the KM projects. The lack of information and ignorance of these necessary and important factors would probably lead the efforts of organizations to inanity. The essential factors of success in implementing KM can be considered as the activities and processes attended for the successful implementation of KM which should be reinforced if exist and if the factors do not exist, they should be created (Wong, 2005). But usually what is less considered by researchers in identifying the factors is the strategy and approach of the company about KM implementation.

KM strategy is defined as a high level plan that describes and outlines the processes, tools and infrastructures (organizational and technological) required in managing any knowledge gaps or surpluses. KM strategy is the means by which the exact knowledge determined by a knowledge strategy can flow effectively in corporations (Zack, 2002).

Therefore, the organization's KM strategy, the enabling factors and also the related enablers should be considered before the implementation of KM in

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organization. In fact, KM strategies could determine the strategic directions in KM actions and the enabling factors are the tools to facilitate these activities (Chan *et al*., 2005). In other words, KM strategies show the right direction of KM implementation to the organization and also the effective factors in KM implementation provide the necessary foundation to implement the KM. So, the organization which is supposed to implement KM, should survey which KM strategy to use to take the necessary actions based on that. It means that the organization should identify and use the related factors and the infrastructure enablers based on the chosen strategy.

Many researchers have been conducted on the factors and their enablers or the enabling factors affecting the success of KM. For example, the research findings of Pualeen and Mason (2002) and also Bhatt (2001) show that the most important obstacle for KM implementation in the organizations is the management and cultural factors. By conducting a case study in large companies such as Amazon. Davenport and Probest (2002) gave a list of key factors of success in KM implementation: leadership, performance evaluation, organizational policy, knowledge gaining and sharing, information systems structure, benchmarking and training. Naghib (2003) revealed that the most important factor in KM implementation is the right combination of the human participation and technical tools; also the people's attitude is an important prerequisite in KM projects. Lucas and Ogilvie (2006) believe that the knowledge transfer is successful just when the critical resources are controlled and managed effectively. Transferring the knowledge and its main core is a social activity. A successful knowledge transfer needs the understanding of how the people develop and manage their relationships. The organizational structure and process, technical infrastructure, team work and motivation were introduced as the essential factors of KM success in another survey (Jafari *et al*., 2007). Many researches were also done to introduce and classify the KM strategies, for example Nonaka and Takeuchi (1995) introduced the socialization, externalization, combination and internalization strategies. Also Jordan and Jones (1997) tacit-oriented and explicit-oriented, (Zack, 1999) aggressive and conservative, (Hansen *et al*., 1999) codification and personalization, (Choi and Lee, 2002) system-oriented and human-oriented introduced as KM strategies which are determined in Hsin-Jung (2007) study. But a few studies in the ground of the relation between KM strategies and the effective factors in KM success were done such as the study of Yan (2009) about the relation between the organizational culture and KM strategies. After studying the enablers of four types of different organizational culture. They surveyed their relation with two types of the mentioned strategies. The results reveal that the different types of KM strategies could be used in the different organizational cultures.

In this research the enablers of the people, process, leadership and Information Technology (IT) as the effective factors in KM success were identified considering the previous researches and on the basis of personalization and codification strategies. These factors were investigated in National Iranian Oil Company to answer the following main questions:

- What are the enablers of effective key factors in KM implementation based on the two KM strategies (personalization and codification)?
- How is the ranking of the effective factors their related enablers in KM regarding the two KM strategies separately.

Questionnaire, Exploratory Factor Analysis and Fuzzy Simple Average Weight (FSAW) were used to find the right answers to these questions in this research.

MATERIALS AND METHODS

As it was said before, different researchers classified the KM strategies to different categories; Hansen *et al*. (1999) classified them into two categories, personalization and codification. The personalization strategy refers to the type of a knowledge which an individual develops, stores and shares it in a person to person contact; the main task of IT in this strategy is to help people interact the knowledge rather store it and the other strategy namely codification means to collect and store the knowledge in database, thus, the peoples could have access to the knowledge, use it and share it freely. But there is no clear and specific classification of the effective factors and enablers in KM success based on these two strategies in the previous studies. For example although in their study it was specified that the personalization and codification strategies should be used in what type of the organization and with what enablers, but the factors which could help the accomplishment and realization of that strategy in KM implementation, were not mentioned clearly and precisely. According to the above matters, a conceptual model is given in the following. As it is shown in Fig. 1, every organization should determine its appropriate strategy and provide the essential enablers in the scopes of process, people, leadership and IT considering that chosen strategy. Therefore, the organization only defines the projects which are based on its chosen strategy and then spends its organizational resources to implement a goal-driven KM.

As it was said before, the realization of every KM strategy or in the other word KM implementation successfully while using a specific strategy, needs providing the essential and appropriate infrastructures,

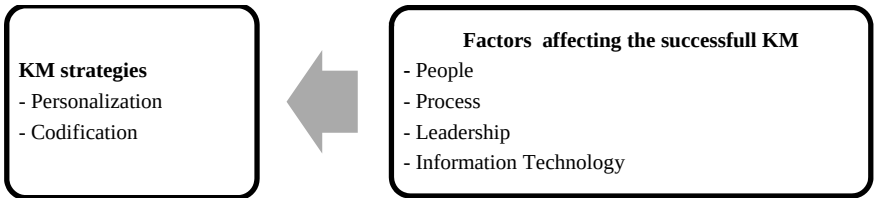

Fig. 1: Conceptual model on influence of two common strategies and successful KM

Table 1: Factors and the enablers affecting the success of KM by relying on the type of strategy

Leadership	Information technology	Process	People	Strategy
Facilitating and coaching role of the managers	Knowledge sharing groupware	Creating teamwork structures	Criticism	Personalization
Encouraging the people to collaboration and empathy	Supporting hardwares	Participatory decision making system	Organizational commitment and affiliation	
Supporting individual's innovation and their accepting risks	Supporting softwares	Learning-oriented educational system	People trust to each other	
Clarification of organizational vision	-	Reformation of employment system on the basis of absorbing the innovative and creative labor	Internal motive to create and share the knowledge and learning	
Motivating and encouraging to people	-	Considering non-financial reward	Dialogue skill	
Showing the value of knowledge sharing to the people	-	The flexibility of organizational structure and creating horizontal structure	Sympathizing , cooperative and teamwork spirit	
Creating the chance of self-learning	-	Making an open physical work space	Communicative skill	
Creating job satisfaction and commitment	-	-	Risk taking	
-	-	-	Specialty and experience	
-	-	-	Morality and spirituality	
-	-	-	Self-confidence of people	
-	-	-	Alignment of people objectives with organization objectives	
The management's special attention to the execution of regulation and policies	High investments in IT	Focus on legislation, knowledge documentation and knowledge storing	The people ability to use the computer	Codification
Providing time and resources for the people to document knowledge	Developing information management system	Clearing the roles and responsibilities of the people	The people ability to search the content	
Controlling role and organizing the managers	Creating decision making support system	Providing job security for the people	Documentation skill	
Manager's practical contribution in using the systems of information and knowledge documentation	Database integration	Motivational and reward system for knowledge documentation	-	
-	-	Using the principals of project management	-	
-	-	Employing the staff on the basis of experience and IT knowledge	-	
-	-	Applying process management system	-	
-	-	Using office automation system	-	

the enablers of that strategy should be identified in organization and the necessary actions should be taken. For example in personalization strategy which emphasizes on the people's creativity and innovation based on sharing their knowledge, the necessary conditions should be made for them to do that such as creating "the sense of confidence" and "internal motive" among the people. Also codification strategy emphasizes on documenting and collecting the organizational.

Knowledge, the enabler "focus on legislation, documentation and storing the knowledge" should be

considered in the organizational structure and process. Therefore, the necessary factors and enablers should be identified for each of the two strategies. After reviewing the literature and also interviewing with the professors of Management and Industrial Engineering majors, consultants and experts of KM in Iran, the effective enablers in KM success were identified and collected considering the personalization and codification strategies in four key factors: people, process, leadership and IT. The results are shown in Table 1.

To verify the identified enablers of factors in both KM strategies, an appropriate questionnaire was provided and distributed among 30 experts (1st questionnaire in Appendix). The reliability of the effective factors calculated on the basis of the Cronbach'salpha, was 0.876 and 0.855 for personalization and codification strategies respectively. The Cronbach'salpha was also above 0.7 for all the factor-related questions of the questionnaire, therefore, the questionnaire is considered reliable. Thus, the questionnaire was randomly distributed among 152 eligible experts including the professors of Management and Industrial Engineering majors and also the KM consultants and experts and underwent explorative factorial analysis tests based on the extracted votes. Then every factor's enablers were weighted and ranked according to the type of the strategy. Thus, another questionnaire was designed with the Cronbach'salpha 0.946 for personalization strategy's questions and 0.931 for codification strategy's questions which indicate the reliability of the questionnaire (2nd questionnaire in Appendix). Then 32 persons among the managers, assistants, bosses and experts of 9 experienced management organizations of NIOC were questioned; then the factors and their enablers were ranked by using Fuzzy Simple Additive Weighting (FSAW) method. It should be mentioned that to measure the content validity of both questionnaires, some questionnaires were distributed among the experts of this major including consultants, supervisors and advisors professors and the questions ambiguities tried to be determined, therefore, the designed questionnaires were revised to have the necessary content validity.

RESULTS AND DISCUSSION

Verifying, classifying and ranking the enablers of KM factors based on personalization strategy: Before the factor analysis, the KMO and the Bartlett's test applied to ensure the appropriateness and number of the data (Field, 2000). Based of them when the KMO value is more than 0.5, the data is appropriate for factor analysis. Results showed that the KMO amount is more than the given threshold for all the factors in personalization strategy and Bartlett's test is significant when the error level is less than 0.05. Thus, explorative factorial analysis could be done to verify and classify the identified enablers of each factor.

After ensuring the possibility of factor analysis, separately each enabler's load in every main factor calculated using the "Principal Component Analysis" choice in the SPSS™ package. Bruce *et al*. (2003) believed that amount of the loading factor should be more than 0.4. So after calculating them, it is observed that "alignment of people objectives with organization objectives", "reformation of employment system on the basis of absorbing the innovative and creative labor" and "knowledge sharing groupware", which are the enablers of people, process and IT factors with loading amounts of 0.249, 0.388, 0.391 respectively, should be excluded. The load amount of other factor's enablers is larger than 0.4; thus, they can be used in next stages. Now to classify and summarize every factor's enablers, the total amount of explained variance in factor analysis is calculated for the factors of personalization strategy, i.e., people, process, leadership and IT. Many researchers such as Bruce *et al*. (2003) consider the Eigen value 1 as a base to determine the number of factors. Thus, in the analysis of the main components, only the factors whose the Eigen value is larger than 1, are considered the significant and the factors whose the Eigen value is less than 1 are excluded as the statistically meaningless factors. The results showed that there are 3 the Eigen value larger than 1 in the people factor; therefore, 11 enablers of this factor are divided into three categories. 6 enablers of the process, 8 enablers of the leadership and 2 enablers of the IT factor are classified into 2, 3 and 1 category respectively. Generally the rotated factor matrix also needs to be calculated in the factor analysis process because this matrix gives a simpler and more significant factor process for data analysis. When factor rotation is done, the variance is redistributed between the first factor and the next ones. Although the total amount of variance explained by the factors remains fix for both rotated and unrotated matrixes, but the variance explained by each factor (the Eigen values) changes because variance redistributes among the factors (Bruce *et al*., 2003). Thus the rotated factor matrix should be used in this stage to classify every factor's enablers. By calculating the rotated matrix it was found that every enabler belongs to which category. The results are shown in Table 2.

Now after verification and classification of every factor's enablers separately, these factors and their enablers were ranked among the 9 management organizations of NIOC; 32 managers, bosses and experts of NIOC were selected. Fuzzy Simple Additive Weight (FSAW) as a multi-attribute decision making techniques then applied for prioritizing process. To normalize $W_j$the following formula is used.

$$Rj = \frac{Wj}{\sum_{j-1}^{n} Wj} \sum_{J-1}^{n} R_j = 1$$

Table 2: Classification of KM enablers in every factor of personalization strategy

People	Leadership
• Criticism	• Facilitating and coaching role of the managers
• People trust to each other	• Encouraging the people to collaboration and empathy
• Organizational commitment and affiliation	
• Internal motive to create and share the knowledge and learning	
• Dialogue skill	• Supporting individual's innovation and their accepting risks
• Sympathizing , cooperative and teamwork spirit	• Clarification of organizational vision
• Communicative skill	• Motivating and encouraging to people
• Risk taking	• Showing the value of knowledge sharing to the people
• Specialty and experience morality and spirituality	• Creating the chance of self learning
• Self confidence of people	• Creating job satisfaction and commitment
IT	**Process**
• Supporting hard wares	• Creating teamwork structures
• Supporting soft wares	• Participatory decision making system
	• Learning-oriented educational system
	• Considering non-financial reward
	• The flexibility of organizational structure and creating horizontal structure
	• Making an open physical work space

Table 3: Ranking factors and enablers-personalization strategy

Weight of enabler within factor	Enabler	Weight importance	Category	Weight	Factor
0.824	Facilitating and coaching role of the managers	0.3429	1st leadership enablers category	0.2595	
0.789	Encouraging the people to collaboration and empathy				
0.845	Supporting individual's innovation and their accepting risks	0.3301	2nd leadership enablers category		Leadership
0.777	Clarification of organizational vision				
0.706	Motivating and encouraging to people				
0.810	Showing the value of knowledge sharing to the people	0.3268	3rd category for leadership enablers		
0.752	creating the chance of self learning				
0.743	Creating job satisfaction and commitment				
0.851	Organizational commitment and affiliation	0.352	1st category for people enablers	0.2526	people
0.830	People trust to each other				
0.824	Internal motive to create and share the knowledge and learning				
0.702	Criticism				
0.816	Self confidence of people	0.332	2nd category for people enablers		
0.783	Sympathizing , cooperative and teamwork spirit				
0.674	Dialogue skill				
0.859	Risk taking	0.316	3rd category for people enablers		
0.746	Specialty and experience				
0.736	Morality and spirituality				
0.539	Communicative skill				
0.815	Creating teamwork structures	0.540	1st category for process enablers	0.2461	process
0.805	learning-oriented educational system				
0.736	Participatory decision making system				
0.706	The flexibility of organizational structure and creating horizontal structure	0.460	2nd category for process enablers		
0.663	Making an open physical work space				
0.641	Considering non-financial reward				
0.5142	Supporting hard wares	0.2418	All enablers of it are in one category	0.2418	IT
0.4860	Supporting soft wares				

where R_j Indicate the un-scaled weight of jth effective factor.

After collecting the questionnaires and doing the calculations by FSAW method, the people, process, leadership and IT factors were ranked as it is shown of Table 3.

The 2th column of Table 3 shows the average weight of leadership, people, process and IT enablers separately. From the viewpoint of the evaluators, leadership has the greatest weight importance in NIOC. People has the second rank, process and IT also have the lower priorities for KM implementation in personalization approach.

As the 5th column of Table 3 shows, "Facilitating and coaching role of the managers", "encouraging the people to collaboration and empathy" have the highest

Table 4: Classification of KM enablers in every factor of codification strategy

People	Leadership
• The people ability to use the computer • The people ability to search the content • Documentation skill	• The management's special attention to the execution of regulation and policies • Controlling role and organization the managers
IT	**Process**
• High investment in IT • Development information management system • Creation decision making support system	• Focus on legislation, knowledge documentation and knowledge storing • Clearing the roles and responsibilities of the people • Providing job security for the people • Motivational and reward system for knowledge documentation • Using the principals of the project management • Employing the staff on the basis of experience and IT knowledge • Applying process management system • Using office automation system

priority among the enablers of leadership factor in personalization strategy. "Showing the value of knowledge sharing to the people", "creating the chance of self-learning", "creating job satisfaction and" commitment" have the lowest priority. "organizational commitment and affiliation", "people trust to each other", "internal motive to create and share the knowledge and learning" "Accepting criticism", which are in one category, have the highest priority among the other enablers of people factor in personalization strategy. "Risk taking", "specialty and experience", "morality and spirituality" and "relation skills" have the lowest priority. "Creating teamwork structures", "learning-oriented educational system "and "participatory decision making system", have a high priority among the enablers of process factor in personalization strategy. "The flexibility of organizational structure" and creating horizontal structure", "making an open physical work space" and "considering non-financial reward" are in one category and have the lower priority. IT enablers are classified into one category and the supporting hard wares have a high priority.

Verifying, classifying and ranking of the enablers when codification selected for KM strategy: In this section the KMO amount is larger than 0.5 for all the factors in codification strategy and Bartlett's test is significant when the error level is less than 0.05; thus, explorative factorial analysis could be done to verify and classify the identified enablers of each factor. After that the communality amount of every factor's enabler is obtained. The communality amounts shows that "providing time and resources for the people to document knowledge", "manager's practical contribution in using the systems of information and knowledge documentation" which are the enablers of leadership factor with the communality amount 0.248, 0.240 respectively and "database integration" which is the enablers of IT factor with the communality amount 0.289 are excluded; the other enablers enter the next stages with communality amount larger than 0.4.

Now to classify and summarize the enablers of every factor, the total variance explained related to the enablers in every factor of codification strategy and also rotated matrixes should be calculated. The results shows that there is one the Eigen value larger than 1 in the people, leadership and IT factors; therefore, the enablers of these factors are explained in one category and 8 enablers of the process factor are divided into 3 categories. The results are shown in the Table 4.

In the next step, the enablers of people, process, leadership and IT factors in codification strategy were ranked based on the results of the collected questionnaires from NIOC. The results are shown in the column 6 of Table 5.

In Table 5 the key factors of KM implementation in codification approach are given regarding the priority and weight importance. The results of each factor weight in 2nd column of Table 5 the average enablers of people, process, leadership and IT are presented separately. From the viewpoint of the evaluators, IT factor has the greatest weight importance. Process has the second rank; people and leadership also have the lower priorities in KM implementation for codification approach.

In IT factor, "Developing information management system", "creating decision making support system for managers", "high investments in IT" which are the enablers in one category are ranked first to third respectively. In process factor, "motivational and reward system for knowledge documentation "and "Providing job security for the people", has a high priority among the enablers of process factor in codification strategy. "Focus on legislation, knowledge documentation and knowledge storing" has the second priority as well as "clearing the roles and responsibilities of the people". Finally, "using the principals of project management in organizational projects", "applying process management system", "employing the staff on the basis of experience and IT knowledge" and "using office automation system" have the last priority. In people factor, "The people ability to use the computer" and "The people ability to search the content" and also their "Documentation skill" are in one category and takes the first, second and third priority respectively. All the leadership enablers are in one category of which the "controlling role and organizing the managers" have a higher priority.

As it was said in the topic literature, the organizations which intend to use the personalization

Table 5: Ranking factors and enablers-codification strategy

Weight of enabler within every factor	Enabler	Weight	Category	Weight	Factor
0.864	Developing information management system	0.267	All enablers of IT are in one category	0.267	IT
0.850	Creating decision making support system				
0.792	High investments in IT				
0.846	Motivational and reward system for knowledge documentation	0.825	1st category for process enablers	0.249	Process
0.804	Providing job security for the people				
0.792	Focus on legislation, knowledge documentation and knowledge storing	0.786	2nd category for process enablers		
0.781	Clearing the roles and responsibilities of the people				
0.809	Using the principals of project management	0.751	3rd category for process enablers		
0.734	Applying process management system				
0.730	employing the staff on the basis of experience and IT knowledge				
0.729	Using office automation system				
0.818	The people ability to use the computer	0.248	All enablers of people are in one category	0.248	People
0.810	The people ability to search the content				
0.697	Documentation skill				
0.795	Controlling role and organizing the managers	0.236	All enablers of Leadership are in one category	0.236	Leadership
0.679	The management's special attention to the execution of regulation and policies				

strategy for KM implementation, should consider a human-oriented approach. In other words they should provide an environment of learning, knowledge sharing and creativity for the people (or the organizational unit). The objective of this KM strategy is to create a person to person relation and interaction; thus, the organization potentials in leadership, people, IT and process should be used in a way that creates this environment.

As the result shows, leadership has the greatest weight in NIOC and it seems natural considering the important role of management in public companies and organizations in Iran. In other words, from the viewpoint of the evaluators in NIOC, the most important factor to establish the personalization approach (which requires creating a learner, creative and active organization) is realizable by the company manager's determination. The people factor has the second rank with slight weight differences from the leadership factor. To have the enablers of the identified people of this research plays a key role in knowledge transfer and interaction. Finally, process and IT factors are ranked third and fourth. As it was mentioned before, in personalization strategy the role of IT is to facilitate the possibility of person to person interaction and knowledge transfer. The organizations which intend to use the documentation or codification strategy for KM implementation, should consider a system-oriented approach. In other words, the IT infrastructures should be provided in these organizations; besides, the organization's system and process should be designed in a way that supports and leads the knowledge documentation. Therefore it seems natural to give the first rank to IT learning and second rank to the process, although in codification approach the leadership and people factors have a key role in the organization success in knowledge documentation by people and KM implementation.

Therefore, it seems natural that the IT and process factors have the higher priority. Although the enablers of leadership and people factors have importance role in documentation and implementation KM successfully based on codification strategy

CONCLUSION

This study is to explore the impact of two most commonly KM strategies on selecting, classifying, ranking of their associated factors and enablers. The performance of tactics evaluated by using a quantitative approach based on collecting data through questionnaire. Questionnaires were collected and analyzed using exploratory factor analysis in the SPSS software. Kind of strategy was found to be positively correlated to successful KM. The finding of the study has shown that:

- Organizational strategy could significantly effect in focusing factors on successful KM.
- The empirical study on the selected case suggests that:
- Among the 30 acknowledged enablers in personalization strategy, 27 of them are significant. They are presented in column two of the Table 3.
- 16 out of 19 identified enablers in encoding strategy significantly effect on successful KM. They are listed on the Table 5.
- Applying fuzzy multi-attribute decision making technique showed that leadership is the most important factor in NIOC when personalization is selected for KM strategy. This factor includes

relatively 26% of total weight. Also information technology by covering about 27% of total weight has the maximum effect on NIOC successful knowledge management when codification is on main focus of enterprise strategy.

In order to establish knowledge management in any organization regarding the results in NIOC, we suggest that due to the difference missions and nature of works, firstly choose an appropriate management strategy and then identify the most effective relevant factors and enablers. The presented factors and enablers could only act as alternative.

APPENDIX:

Enablers of the questionnaire: In this research two questionnaires are used whose enablers are presented separately.

The 1st questionnaire: the purpose of this questionnaire was to approve the relevant effective factors and enablers to knowledge management strategies. The questionnaire contains 8 general questions. Questions 1 to 4 consider the factors and enablers of people, process, leadership and information technology in personalization strategy and questions 5 to 8 consider the factors of staff, process and leadership and information technology in codification strategy. The questionnaire contains Five-point Likert-type scale including: completely agree, agree no idea, disagree and completely disagree. 152 experts filled the questionnaires. The eligible experts include professors of management and industrial management and also consultants and experts of knowledge management.

The 2nd questionnaire: The purpose of this questionnaire is the ranking of the key factors of implementing knowledge management. The questionnaire contains two parts. The first part is related to the effective factors on the implementation of knowledge management based on the personalization strategy and includes 27 questions. The second part is related to the effective factors on the implementation of knowledge management based on the encoding strategy and includes 16 questions. The weight significance of each question is assessed by 7 alternatives (1 the least significant and 7 the most significant). 32 of the experienced employees of NIOC including the managers, deputies, bosses and master experts of 9 management organizations filled this questionnaire.

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