

A process Model for implementing knowledge management

(The case study: IIES)

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Abstract: The research has concentrated on the designing a process model of knowledge management for implementation in one of the Iranian Research Organizations (Institute for International Energy Studies -IIES). This research on the base of its goal is an applied and developing research; the research methodology is quantitative and survey research. Needed information in this study gathered from document analysis and semi-directed interview and analyzed by content analysis method consequently. As a result of this research, the model includes 7 stages as following:

- Project Management and Planning
- Analysis of Knowledge background and its literature in IIES
- Knowing about Best Practices in similar organizations, with focus on Tacit & Explicit Knowledge)
- Designing SKM(strategic knowledge management) statement in IIES
- Formulating KM regulations in IIES
- Experimental apply of the model and also testing the KM Software in the Institute
- Designing an educational plan for creation of KM culture in the Institute and take the feedbacks.

Considering to the integration of this model in the enterprises strategically will be due to synergy and resources and knowledge capabilities value creation.

Key Words: Knowledge Management System, process mode, SKM, Tacit & Explicit Knowledge, IIES.

1. Introduction:

Since 1970, because of technology advancement particularly in the field of communication and computer, the pattern of economic progression in the world fundamentally is changed. Consequently, from 1990 organizational knowledge puts the place of financial and physical investment (Chen et al, 2004). Nowadays economy has based on such knowledge orientation that cites out Knowledge-Based Economy. As Drucker said, "knowledge will be the main economic resource instead of financial investments, natural resources and work force (Drucker, 1995). Knowledge management systems have developed with the effect on creation, retrieve, preserving, sharing, transferring and practicing the knowledge in the enterprise. Knowledge management is a strategic and systematic subject, which it's successful implementation needs comprehensive insight about enterprise infrastructures.

Naturally, knowledge management implementation will be done gradually in each enterprise. Because sudden changes not only don't solve enterprises the problems, they lose the capitals. Generally different sorts of knowledge management implementation exist, but there are a little more differences in the knowledge management approaches and enterprises diversification and its requirements to implement the knowledge management system. In implementing Knowledge Management System different elements such as competitor behavior, plan content flexibility, knowledge and information transformation and flexibility,

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implementation methods, global best practices experience and step-by-step implementation should be considered consequently.

2. Research Method:

This research has an applied and developed methodology. Moreover, its methodology is quantitative method (including of surveying research and semi-direct interview). In order to data gathering, it focuses on library documents and also exploratory and semi-directed interviews. Besides, content analysis has been utilized for data analyzing. Research population includes IIES managers and experts who have some experiences about KM.

In this way, after surveying the research background, theoretical literature and completing semi-directed interviews by the professionals, managers and experts, a pilot model has designed for implementing KM, and then criticized by 14 professors and experts on the base of Delphi Method. In addition, we have arranged three focus groups (F.G) meeting for validity assessment with the participation of IIES scientific members and industrial advisors. Finally the model reviewed and revised.

3. Knowledge Management Concepts:

- Knowledge concept, because of its complexity and different approaches, has too many definitions. some important definitions will present bellow:
- Knowledge management is a process of the developing, preserving, transferring and applying knowledge in an enterprise, which renders by enlarging enterprise potentiality to gather knowledge from environment, and apply it in the enterprise (Habibi, 2009).
- Knowledge management is the systematic process of finding, selecting, organizing, distilling and presenting information in a way that improves an employee's comprehension in a specific area of interest. Knowledge management makes an organization gain insight and understanding from its own experience. Specific knowledge management activities help the organization focus on acquiring, storing and utilizing knowledge for problem solving, dynamic learning, strategic planning and decision making. It also protects intellectual assets from decay, adds to firm intelligence and provides increased flexibility (University of Texas).
- Knowledge management is the strategy and process, which enables enterprises to initialize and flow relevant knowledge throughout the business to produce organization, customer and consumer value (David Smith, 2007).
- Knowledge Management is the broad process of locating, organizing, transferring, and using the information and expertise within an organization. The overall knowledge management process is supported by four core competencies: leadership, culture, technology, and measurement (American Productivity and Quality Center).

We define knowledge management in this study as following: “managing the process of initiating, acquiring, preserving, transferring and applying knowledge in order to obtain and maintain business competitive advantages”.

4. IIES KM Implementation Applied Model:

In general, the main processes of the implementing KM in IIES are shown schematically in the figure 1:

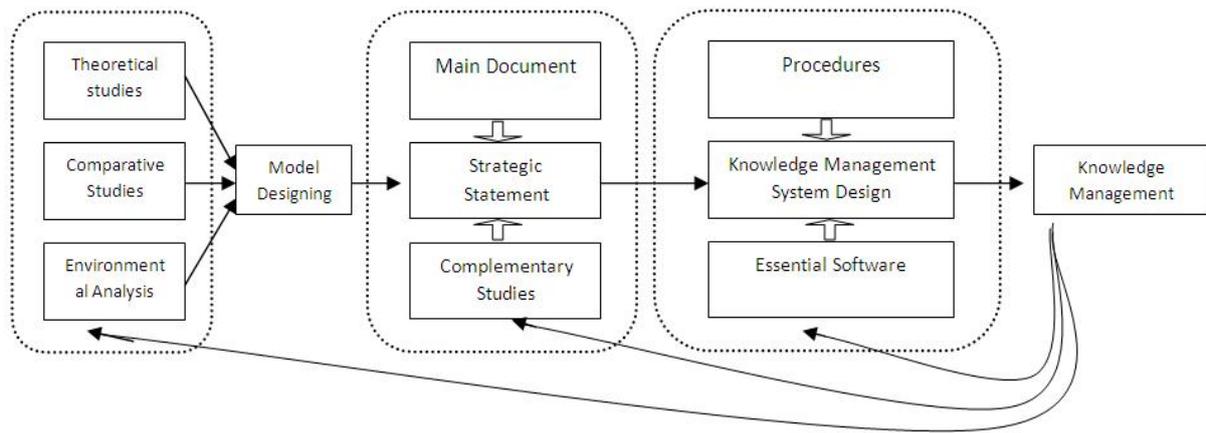


Figure 1 - Conceptual model of main processes of implementing KM in IIES

The model of implementing KM for IIES consists of 7 steps as comes below:

1 - Project Management and Planning:

This stage in an attempt to define project statement includes in Feasibility Study, risk management and how controls and warrants the project quality. This stage will render with qualitative method and by handling focus group meeting with the presence of scientific consultant and industrial consultant, which will formulate by executive group. In this stage following activities will be done:

- 1-1- FS preparation (it involves on determining the problem, description, mission and vision, project province, core competencies, hypotheses, limitations and project life cycle)
- 1-2- Initializing interactive matrix for project activities and products
- 1-3- Determining the method of quality management
- 1-4- Determining the method of project control
- 1-5- Determining risk management in the project
- 1-6- Defining general and specialized glossary

2- Analysis of Knowledge background and its literature in IIES:

The second stage will handle in attempt to survey theoretical concepts and literature of the previous similar projects in the world to practice the experience productively toward better implementation of KM in the pilot section. Therefore, executive group gathers KM theoretical concepts from library and valid websites from internal and external oil company by fiche. Main activities in this stage define below:

- 2-1- Determining research Literature and theoretical fundamentals
- 2-2- Deriving background (it includes in comparative studies oil enterprises in the world, comparative studies about internal companies and surveying best practice in this field)

3- Knowing about Best Practices in similar organizations, with focus on Tacit & Explicit Knowledge):

In this stage, third stage, SWOT analysis will render in the pilot section to how it implement. Hence, the requirements of KM implementation in the pilot section analyze with document analysis and interview with specialists. Then the strengths and weaknesses determine with qualitative methods such as Brainstorming, Nominal group and Delphi meetings. Those principal activities are as below:

- 3-1- Pilot section recognition
- 3-2- Surveying mission, vision, objectives, strategies and procedures of KM
- 3-3- Analyzing the requirements of KM implementation in the pilot section (including cultural, technological, structural organizational dimensions)
- 3-4- Defining organizational communication in the field of knowledge
- 3-5- Recognizing external environment of pilot section
- 3-6- SWOT and PESTEL analysis in the field of KM and implementation method
- 3-7- Designing the methodology and optimized model of KM pilot section

4- Designing SKM (strategic knowledge management) statement in IIES:

In the fourth stage, relying on previous studies and with the use of semi-directed interview (focus group meeting with the presence of five managers) which filled out by top and middle managers, strategic statement of KM formulates in pilot section (it contains knowledge vision, knowledge mission, knowledge objectives, knowledge strategy and KM). Those significant activities define as below:

- 4-1- Formulating knowledge vision statement
- 4-2- Formulating knowledge mission statement
- 4-3- Formulating knowledge objectives
- 4-4- Formulating knowledge strategy
- 4-5- Preparing strategic statement of KM

5- Formulating KM regulations in IIES:

This stage accomplishes in an attempt to formulate KMS in the pilot section. On that ground, with the use of the results of stage two and three will compose towards formulated strategic statement for KMS in the pilot section. Because of that, after preparing KMS draft by executor group by handling nominal group meeting (with the presence of five internal beneficiaries) the statement will be finalized. The main activities will be as comes next:

- 5-1- Recognizing general and specialized fields of knowledge
- 5-2- Composing knowledge group relying on knowledge fields
- 5-3- Composing coding procedures and formulating exist knowledge in the pilot section
- 5-4- Designing KM processes
- 5-5- Designing and formulating motivational procedure
- 5-6- Defining crucial technology requirements
- 5-7- System analysis and presentation of software logic
- 5-8- Formulating knowledge regulations, rules and procedures derived from project
- 5-9- Designing and presenting appropriate organizational hierarchy for KM

6- Experimental apply of the model and also testing the KM Software in the institute:

The goal is KM implementation in the pilot section, sixth stage. In this stage with the use of consequences in the second and third stages, available soft ware in the field KM that prepared by the specialized KM enterprises, will be surveyed and analyzed. In addition, the most appropriate software in this field will be ordered by the confirmation of Management Information Technology in the pilot section. The significant activities in this area will come next:

- 6-1- Structure preparation for needed technology
- 6-2- Software experimental implantation
- 6-3- Software testing and finalizing modifications
- 7- Designing an educational plan for creation of KM culture in the Institute and take the feedbacks:

The seventh stage accomplishes in an attempt to operate KM software and to spread the culture by education in the pilot section. For this, knowledge mottos, educational brochures, and user guide will provide for users in the pilot section. Then with the support of educational workshop toward more familiarization about KM, essentials and Functions (KM's software) in the pilot section will be managed. Additionally some specialized educational meetings will be held for knowledge brokers and experts, which will participate in KM department in future. Next activities will be done:

- 7-1- Providing KM handbook for users
- 7-2- Formulating procedures for utilizing the software
- 7-3- Managing educational workshop: familiarizing about KM essentials and functions and knowing about KM soft wares
- 7-4- Specialized education to the knowledge brokers and experts

5. Conclusion:

Nowadays knowledge as a strategic resource and core competency plays a key role in the enterprises. For using efficiently, KM will be the most significant function of the enterprises such as global, pioneer, oil company. KM is based on three principles; human, structure and technology. KM will achieve to the organizational objectives and strategies by preparing appropriate infrastructure and utilizing the knowledge resources with the orientation of human capitals as knowledge users. That prepares enterprise to pass industrial age toward knowledge age and to develop knowledge based and learning organization. in this research, We found that KM implementation is a gradual process. Furthermore, there are different methods of implementation, which are lead to different insights and organizational diversification and requirements in KM implementation. On this base, this paper is the fruit of the IIES studies in the field of KM, which result designing SKM(strategic knowledge management) statement in IIES.

6. References:

- [1] Aggestam, Lena (2006), Learning Organization or Knowledge Management: Which Came First, The Chicken Or The Egg? *Information Technology and Control*, vol.35, No.3: 295-302.
- [2] Alipour, Vahideh (2009), Knowledge Management: definitions and concepts, Hamshahri Research Institute.
- [3] Akhgar, Babak (2010), Strategic approach through Knowledge Management Implementation, the Fourteenth International Oil, Gas, Petro-Chemical Conference in Oil Industry Research Center
- [4] Chen, J., Z. Zhu and H. Y. Xie (2004), Measuring intellectual capital: a new model and empirical study, *Journal of Intellectual Capital*, 5(1): 195-212.
- [5] Davenport, T. H. and Prusak L. (1998), *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston, MA.
- [6] Drucker, P. (1995), *the Post-Capitalist Society*, Oxford: Butterworth – Heineman.
- [7] Habibi, Ali (2009), *Implementing Knowledge Management in Engineering Organization*, Ark
- [8] Nonaka, I. & H. Takeuchi (1995), *the knowledge – creating company*, Oxford University Press. Oxford.
- [9] Ruggles, R. (1998), the State of the Notion: Knowledge Management in Practice, *California Management Review* 40, No. 3: 80–89.
- [10] Sarmad, Zohreh, Abbas, Bazargan & Hejazi, Elaheh (2006), *Research Methods in Behavioral Sciences*, Agah Publication, 13th Edition.
- [11] Sippach, /M. (1999), Aktuelle software Loesungen im Bereich Wissensmanagement, in: *HDM Praxis der Wirtschaftsinformatik*.
- [12] Tavallae, Ruhollah (2010), Knowledge Strategy Formulation in the Islamic Republic of Iran Oil Industry, Case Study in the NIOC, MA Theses advising by Dr. Ali Rezaian, University of Imam Sadegh (a).
- [13] Tavallae, Ruhollah and Mohammad Mahdi Rashidi (2010), *A Practical Framework for Documentation of Experience and Knowledge Acquisition of Experts in Organizations*, ICBER 2010, Kuala Lumpur, Malaysia.
- [14] Wickramasinghe, Nilmini & Lubitz, Dag von (2007). *Knowledge-based Enterprise: Theories and Fundamentals*, Idea Group Publishing.