
A Practical Process Model to Develop Knowledge Management Life Cycle in National Iranian South Oil Company (NISOC)

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Abstract

Nowadays, valuable human and knowledge resources will be wasted unless management accepts and supports efforts to gather, sort, transform, record and share knowledge by an optimum implementation process. One of the most problems in some organization is that all people suggestions and comments may not be analyzed carefully. Therefore, it is missed an opportunity about tacit knowledge and experiences that have researchable nature or maybe to convert them to a researchable proposal especially in skill organization layers, whereas they could be developed and advanced by converting to a research to increase the suggestions effectiveness. In order to solving this problem, by a relation between suggestion system and R&T implementation process, all suggestions and comments are analyzed. Then, some of them are selected by R&T expert person or group in the research committee to create a RFP. At last, the R&T department results as explicit knowledge are recorded in the knowledge base and interned in the KM life cycle.

Keywords: Knowledge Management, KM life cycle, Research, Technology, R&T, Suggestion System.

I. Introduction

Generally, organizational knowledge should be applied in accordance with the products, services, and processes of an organization. If an organization fails to clearly define the right form of knowledge at the right place, it will face problems on competition grounds. Nowadays, creativity and innovation are two important factors to improve competition advantages in an organization. To guide individual knowledge toward organizational goals, organizations should create an environment of knowledge pooling, sharing, and transferring among their members. The main approach of knowledge management (KM) is converting tacit to explicit knowledge. In some organizations, there is a system to identify, collect, evaluate and apply the suggestions. On the other hand, the main approach of Research and Technology (R&T) is innovation and creation a new technology or process to improve organization productivity. In this research, by a relation

between suggestion system and R&T, all suggestions and comments will be analyzed. Therefore we prevent of missing some comments that have researchable nature or maybe to convert them to a researchable proposal especially in skill organization layers. The R&T results are stored in the knowledge base. Finally, they are used in the KM life cycle.

The reasons for this relation are as below:

1. Receive and analyze all suggestions and prevent of missing some comments especially in skill organization layers.
2. Increasing the R&T inputs.
3. Improve the research culture in the all organization layers.

This model is proposed in NISOC. Therefore, it maybe requires some changes to use in other organizations. There are some researches and papers about KM life cycle, applying the KM and so on, but it is better to pay attention to importance of skill organization layers comments and relationship between suggestion system and R&T.

II. Case Study

The National Iranian Oil Company (NIOC), under the direction of the Ministry of Petroleum of Iran, is an oil and natural gas producer and distributor headquartered in Tehran. Current NIOC production capacities include 4.05 million barrels of crude oil and 437 million cubic meters of natural gas per day. With world's third largest proven oil reserves and second largest proven reserves of gas; the Islamic Republic of Iran is the second major oil producer in the Gulf region. The country is OPEC's second-largest producer and exporter and is the fourth-largest exporter of crude oil globally.

Iran holds around 11% of the world's proven, conventional world oil reserves. According to the BP Statistical Review of World Energy June 2012, Iran held 151 billion barrels of proven oil reserves. The vast majority of Iran's Crude Oil reserves are located in giant onshore fields in the southwestern Khuzestan region near the Iraqi border.

National Iranian South Oil Company (NISOC) is the biggest NIOC subsidiary engaged in onshore activities. Considering the extent and diversity of its tasks, the company currently handles the oil and gas operation and management of five companies as follows:

Karoun Oil and Gas Production Co.

In Ahwaz, with the production capacity of 1.04 million barrels of crude oil, 30,000 barrels of condensates and 15.5 million cubic meters of associated gas per day.

Maroun Oil and Gas Production Co.

In Ram Hormuz with the production of 600,000 barrels of crude oil, 27,000 barrels of condensates and 17.4 million cubic meters of associated gas per day.

Aghajari Oil and Gas Production Co.

In Aghajari, with capability of producing 783,000 barrels of crude oil and 45.5 million cubic meters of natural gas. Of the total production, daily quantities of 30,870 barrels of condensates and 17,500 barrels of naphtha are exported.

Gachsaran Oil and Gas Production Co.

In Gachsaran, with capability of producing 750,000 barrels of crude oil, 11 million cubic meters of associated gas and 21,000 barrels of naphtha.

Masjid Soleiman Oil and Gas Production Co.

With the production capacity of 120,000 barrels of crude oil as well as 8 million cubic meters of sour and associated gases.

III. Knowledge Management in NISOC

In the NISOC current situation, many comments and suggestions are received by suggestion system. After analyzed all comments by evaluation committee, some of them are accepted and the remnant are rejected.

The accepted comments are applied and the results are recorded in organization knowledge database.

On the hand, in R&T department, the knowledge is created by research and innovation.

IV. APO Knowledge Management Assessment Tools

The APO (Asian Productivity Organization) KM Assessment Tool is based on the APO KM Framework as shown in Figure 1. The questions in the tools are based on seven of the elements in the Framework. The first stage of APO KM Framework is the understanding of the organizational vision, mission and strategic directions. These help the organization to identify and analyze core competencies and capabilities that it has and need to develop. The four accelerators (people, processes, technology and leadership) can help the organization understand to what extent these drivers and enablers are prevalent in the organization, enabling a successful KM implementation. The five core knowledge processes (identify, create, store, share and apply) provide an initial assessment of existing practices related to KM that can be leveraged on during implementation. Organizations, sometimes, can already be practicing KM without realizing it. The outcomes of KM efforts measure the effectiveness of the knowledge processes supported by

the critical success factors (accelerators, vision, and mission). The outcomes must be able to demonstrate enhancement of learning and innovation that build individual, team, organizational, and societal capabilities and, ultimately, lead to improvements in the quality of products and services, productivity, profitability, and growth.



Figure. 1. APO KM Framework

There are seven audit categories in the APO KM Assessment Tool based on the key elements of the Framework:

KM Leadership

This category evaluates the organization's leadership capability to respond to the challenges of a knowledge-based economy. The KM leadership is assessed in terms of KM policies and strategies that are in place within the organization. The leadership is also assessed in terms of efforts to initiate, guide, and sustain KM practices in the organization.

Process

The process category assesses how knowledge is used in managing, implementing, and improving the organization's key work processes. It also assesses the extent to which the organization continually evaluates and improves its work processes to achieve better performance.

People

In the people category, the organization's ability to create and sustain an organizational knowledge-driven and learning culture is assessed. The organization's effort to encourage

knowledge sharing and collaboration is evaluated. The development of knowledge workers is also assessed.

Technology

The technology category reviews the organization's ability to develop and deliver knowledge-based solutions, such as collaborative tools and content management systems. The reliability and accessibility of these tools are also assessed.

Knowledge Processes

The organization's ability to identify, create, store, share, and apply knowledge systematically is evaluated. Sharing of best practices and lessons learned to minimize reinventing of the wheel and work duplications are also assessed.

Learning and Innovation

This category determines the organization's ability to encourage, support, and strengthen learning and innovation via systematic knowledge processes. Management's efforts to inculcate values of learning and innovation and provide incentives for knowledge sharing are also assessed.

KM Outcomes

The KM outcomes category measures the organization's ability to enhance value to customers through new and improved products and services. The organization's ability to increase productivity, quality, and profitability, and sustain growth through the effective use of resources and as a result of learning and innovation is evaluated.

V. THE PROPOSED MODEL

As it is shown in figure 2, there are Five-step in APO KM process.

This five-step KM process is concerned with five key steps:

1. Identifying the knowledge
2. Creating knowledge
3. Storing knowledge
4. Sharing knowledge
5. Applying knowledge

Identifying and creating are two important steps in KM process. If we increase the knowledge identify and creation power, we will improve the KM cycle and organization productivity.

There are some methods and tools for each step in the APO five-step KM process. With consideration to main approach of knowledge management which it is converting the tacit to

explicit knowledge, in this proposed model, by a logical relationship between suggestion system and R&T, all suggestions and comments will be analyzed by a research proficiency committee. Then, some of them which have researchable nature or it may be to convert them to a research proposal will be selected by an expert person or group in committee to create a RFP and send to the R&T. At last, the results as explicit knowledge are recorded in the knowledge base and interned in the KM life cycle.

The most important reason for this relation is receive and analyze all suggestions and prevent of missing some comments especially in skill organization layers. Meanwhile, in this process model, the R&T inputs and research culture in the all organization layers are improved.

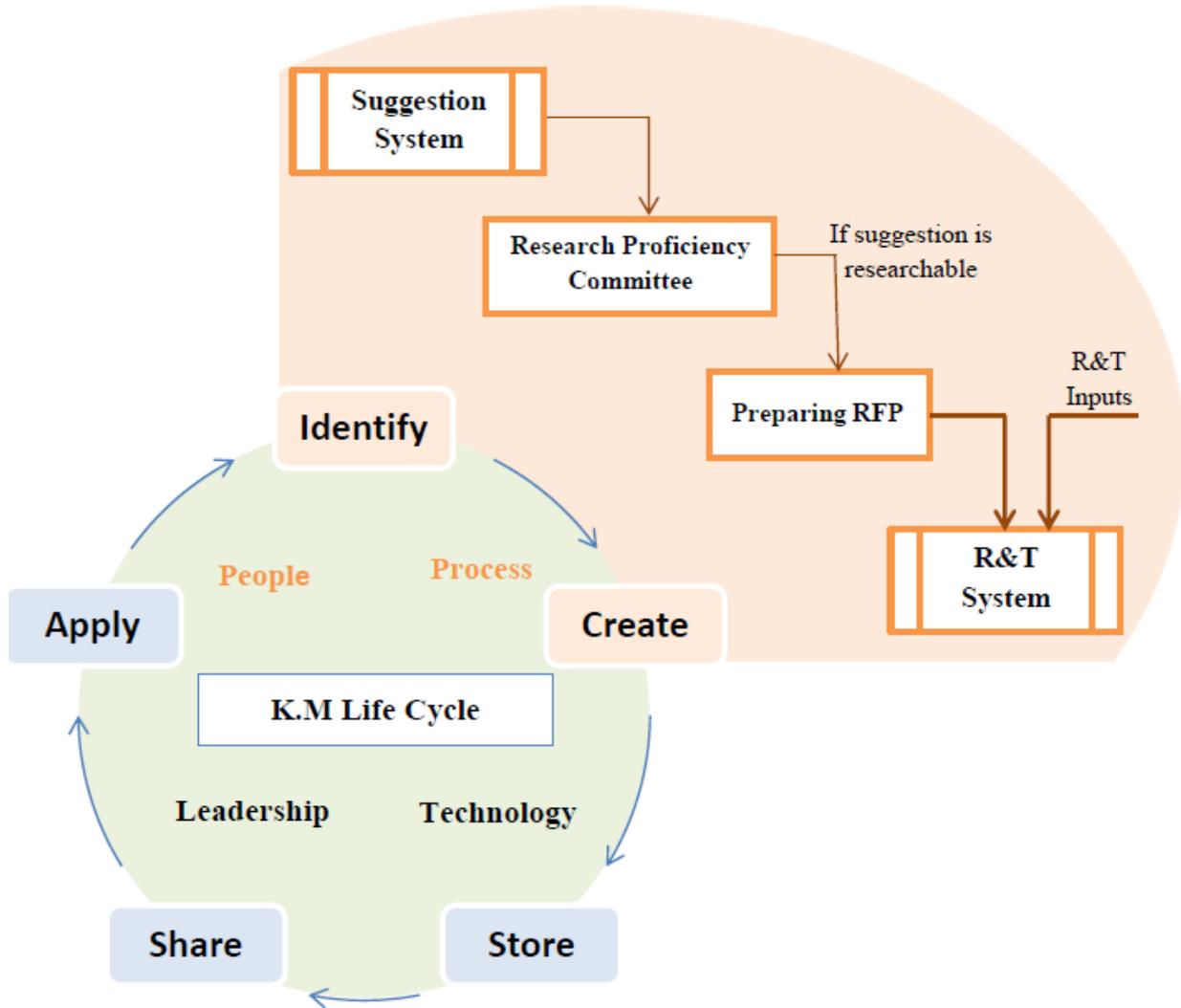


Figure. 2. The Proposed Practical Model.

For example the effectiveness of a tacit experience in current situation and proposed model is comprised in table 1.

Tacit experience: Removing the oil and water from compressed air increase the production quality and productivity.

Suggestion: increasing the number of filters or separators.

TABLE 1
 COMPARISON OF CURRENT SITUATION AND PROPOSED MODEL

	Current Situation	Proposed Model
Implementation Method	After analyzing by suggestion system committee, the suggestion is accepted or rejected	All suggestions are analyzed in research committee
Analyzing Result	If accepted, the number of oil and water separator increase in compressed air line	Suggestion has research nature or it may convert to research proposal. Then, R&T department analyze the suggestion
Researchable Proposal	Has neglected	Technical and economical analyzing of using the oil free compressor in system
Final Result	Solving the problem for a short time	Removing the oil and water completely and increasing the system productivity in long time
Receive and analyze all suggestions and prevent of missing some comments especially in skill organization layers	Has neglected	Has considered
Converting tacit to explicit knowledge and sharing in organization by K.M life cycle	Has neglected	Has considered

VI. CONCLUSION

With consideration of the importance of creating and managing intellectual capital in organization success, preventing of missing them especially skill layers tacit knowledge and experience is very necessary. Therefore, organization should try to reinforce the identifying and creating steps in KM life cycle. Suggestion system and R&T are two important tools in this field. This paper emphasize to gathering and analyzing the all suggestion especially skill layers

comments by R&T expert person or group to optimization the suggestion effectiveness. By modeling a practical process is achieved simultaneously three essential purposes: preventing of missing some tacit knowledge especially in skill organization layers, increasing the R&T inputs and improve the research culture in the all organization layers.

Acknowledgements

Authors thank National Iranian Oil Company(NIOC) and National Iranian South Oil Company(NISOC) for their help and financial support.

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