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Role of Knowledge Societies as a Solution Provider

Durga Prasad, S*, Neeraj Kumar, R K Srivastava, Kaustav Nag and B P Singh
E&D Directorate, ONGC, Dehradun

Summary:

Knowledge management comprises a range of practices used in an organization to identify, create, represent, distribute and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practice. It can be considered as the end of a chain that begins with data and passes on to become information, leading ultimately to insight. Knowledge dissemination has been defined as the process of systematically and actively managing and leveraging the stores of knowledge in an organization [Laudon and Laudon, 1991], or the framework for discovering, capturing, transmitting, and reusing knowledge to gain advantage [Butler Group, 1999].

An important and popular distinction in industry is between that of knowledge which is explicit – ie, readily available – and that which is tacit – embedded in a person's experience and often difficult to articulate clearly [Polanyi, 1966]. The former are amenable to IT management; the latter require contact with people like Subject Matter Experts, Communities of Practice, etc.

Exploration experience of Exploration & Production companies and their operating procedure is an admixture of divergence and congruency against a back drop of work culture variances. The skill and knowledge used for the insight of exploration is institutional knowledge. It is based largely on years of experience and best practices.

For the past few decades, the issue of how to support the reuse of tacit knowledge under rubrics such as industrial memory, knowledge management and expertise management has received increasing attention. There is a mounting concern as to how this industry will retain its institutional knowledge and intellectual capital. How does an individual bring to himself just the key information that he needs to rekindle his imagination for a unique solution of his problem?

In view of such issues, scientific societies have got a pivotal role by taking initiative in a right direction by providing a systematic and organized platform to share a specific experience and resolve and show a way forward.

The paper discusses the expanding role of knowledge societies as a continuum of tacit knowledge rubrics from individual to industry and suggests ways and means for institutionalizing knowledge capturing for future use and facilitate operations to save time and costs.

Introduction:

Knowledge/scientific Societies originate as an outcome of a group of intellectuals committed towards a common cause bounded by the specific knowledge base and contribution to the cause of the industry. This creates a forum to bring

domain experts on to a platform for exchanging specific experience, results and relating "cause and effect" for development of knowledge.

Conglomeration of the domain experts, many times, results in providing solutions to the burning problems in the industry which hang around as brain-teasers, puzzling and



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hampering progress in the respective domains. Remarkable things have happened by implementations of directions provided by such conglomerations which otherwise were thought as “not possible”.

The bottlenecks could be related to want of technology, service providers, logistics, administrative, resource mobilization etc. However, many a times, majority of hurdles have been found to be due to lack of new ideas or simply put “to think differently”. At the other end, there are bottlenecks which may be of similar in nature with respect to a specific domain and despite of having a solution somewhere in the industry, are left unresolved at other places primarily due to lack of knowledge of solutions been implemented elsewhere. In such cases the scientific societies are helpful in providing a platform to resolve and show a way in a right direction.

United Nations economic and social council world summit on sustainable development has also highlighted the role of scientific communities by realizing that the sustainable development is inconceivable without science, engineering and technology. This also chart the path for scientific communities and knowledge societies for bringing to fore the knowledge dissemination processes targeted to not only provide solutions but also to inculcate the scientific temperament to the general good of the people.

Issue of Knowledge dissemination and Learning

Exploration & Production industry entails synergistic approach from core and applied Research and Development from related disciplines. Knowledge is presumed to be of having an expiry value in the present scenario. Moreover, the organizational knowledge is not the cumulative knowledge of its human capital. Individual knowledge therefore has a paramount importance in E & P industry which needs constant update.

The issue of how to support the reuse of knowledge under rubrics such as organizational memory, knowledge dissemination and expertise management has received increasing attention over the last decade. There is mounting concern as to how this industry will retain its institutional knowledge and intellectual capital. How does an individual bring to himself just the key information that he needs to rekindle his imagination for a unique solution of his problem? Within the matrix of competitive companies and stagnated growth situation, how often the ideas and unique solution can make its way in a systematic manner to the industry at large for an accelerated growth and survival of industry. Its importance can be gauged from the following facts.

- Average age of the work force in the industry is about 48 years+ and is ever increasing. Preemptive measures are required in the E&P industry for induction and training of personnel to meet the "big crew change".
- Advances in IT are making available ever more sophisticated tools for accumulating, analyzing, and managing data. An aggressive role in data management and data -specifically, seismic information- continue to amass within companies' data warehouses.

The development of a prudent and efficient data management strategy remains one of the industry's most daunting challenges. How to generate more and more data and turn them into really valuable knowledge for the industry?

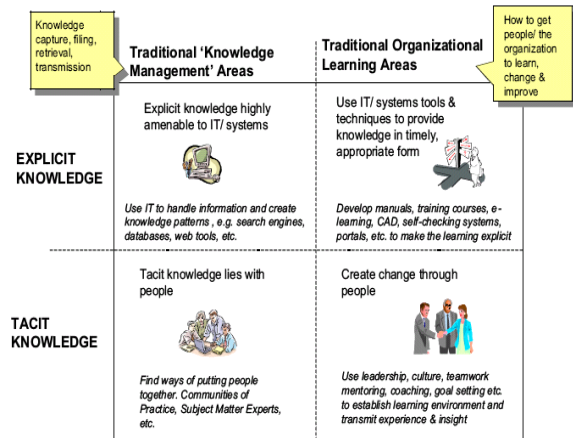


Figure 1: KM characterized against organizational learning in terms of tacit and explicit knowledge (After Peter W.G. Morris & Irene Loch, 2002)

Aspects of Knowledge in E&P industry

Exploration experience of E&P companies and their operating procedures is an admixture of divergence and congruency against a back drop of work culture variances. The skill and knowledge used for exploration is institutional knowledge. It is based largely on years of experience and best practices.

An important and popular distinction in knowledge management is between that knowledge which is explicit – that is, readily available – and that which is tacit – embedded in a person’s experience and often difficult to articulate clearly [Polanyi, 1966]. The former are amenable to IT management; the latter require contact with people either with Subject Matter Experts, or Communities following best Practices, etc.(Figure 1).

Knowledge has a temporal dimension as well. In general, for an industry, knowledge capture has two time dimensions, viz., Real-Time Capture (RTC) and Lag Time Capture (LTC).

Expanding Role of Knowledge / Scientific Societies

Presently these societies organizes training programmes, seminars, conferences, work shops, promotion of interest in scientific and social development activities in younger generation, providing literature, library facilities, sponsoring affiliations to other societies. With the increasing flow of knowledge and information it becomes imperative for these societies to encompass a larger role by systematizing the knowledge with the help of IT into Knowledge threads emerging from different papers, discussions, lectures and individual experiences. Outcome of such activities perhaps would be far superior in nature compared to individual efforts of the enterprises in general.

Discussions and deliberations of case studies in such threads will create a dynamic learning environment and further lead to propagation of success stories for replication elsewhere in similar settings.

Possible Work flow for implementation

A Knowledge Center (KC) as part of a scientific society would operate as a nodal agency. Different Chapters of the society would constitute Knowledge communities. Initial impetus would be given by these “knowledge communities” of different gamut of E&P business - from different Basins, Producing fields, service provider and innovators. They would populate and validate the vast legacy data and analyses from literatures and different public domain available data, besides, individual experiences and views. In the process, interactions with veterans and mentors on specific issues would take place in a scheduled manner. It will include various aspects of Geological & Geophysical activities, surface and reservoir experiences and all analyses containing suitably indexed recommendation as pilot and field scale implementation.



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For creating a dynamic learning and information system, the focus should be on information capture, its storage, cataloguing and linking to advanced search to the point of need, besides acquisition of new skills and competencies through the completion of instructional modules. Information through the knowledge management repository can feed into learning environments in the form of ever flowing data set from the ordinary workers to domain experts, company's known for best practices, methodologies, approaches, procedures, experiences of veterans and knowledge community of each basin on a specific issue and its global analogue and supporting data wherever available. All these knowledge modules can feed into an Information technology support system to ensure task completion in a quality manner through automation.

After the initial phase, KC would receive data, knowledge and analyses from real time publications, lectures and domain specific discussions. Additionally, individuals, based on their interaction/ work association with domain experts and mentors as part of training programme, seminars and lectures, will expand knowledge base.

Initial success of this portal in systematizing the knowledge thread can bring a company into its fold as corporate member patronizing Knowledge Center and providing access to planning, execution, and evaluation of ongoing work as well. This would allow the new user to immediately learn the consequences of each decision, thus imprinting in his or her mind a negative or positive "memory" of the scenario that could be used later in real situations. Individuals can assess their professional need and can design a plan to assimilate the knowledge.

Thus the whole concept is knowledge retention and experience sharing by way of self created links and to experience the cross current which was not known earlier. All the benefit accrued along with its analysis, procedures and methodology have to be posted to enrich industrial knowledge.

Conclusion and Recommendation

Knowledge dissemination process of Knowledge/scientific societies', particularly in the field of E&P business has been launched through the various phases of their growth. To support the reuse of knowledge in the context of organizational memory and expertise, these societies need to encompass a larger role for creating an IT driven dynamic learning and information system. The imperative of today clearly calls for systematizing the knowledge thread by populating legacy data and information at an accelerated pace. Thereafter, through "real time knowledge capture" by a new set of proposed 'Knowledge communities' feeding into a "Knowledge centre" can be achieved. The focus of the proposed centre should be on information capture, its storage, cataloguing and linking to advanced search to the point of need, besides acquisition of new skills and competencies through the completion of instructional modules. Discussions and deliberations of case studies in such threads will create a link for dynamic learning environment and further lead to propagation of success stories for replication elsewhere in similar settings. Within the matrix of competitive companies and stagnated growth situation, it becomes more necessary for the ideas and unique solution to make its way in a systematic manner to the industry at large for an accelerated growth and survival.

As in some of the professional institutions wherein pledge is made at the time of convocation to contribute to the society, a similar mission of the scientific societies would be appropriate for smooth functioning and advancements in the industry. This would reinforce value based closer ties between members and societies.

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Scientific freedom and Responsibility Activities of Scientific Societies., MUZZA EATON, Assistant Professor, Department of Health Science, Brooklyn College, CUNY, Brooklyn, New York, 11210