
KNOWLEDGE MANAGEMENT INITIATIVES OF THE REGIONAL COOPERATIVE AGREEMENT (RCA) UNDERTAKEN BY THE ELECTRONIC NETWORKING AND OUTREACH (ENO) PROJECT

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Abstract. The Regional Cooperative Agreement (RCA) in the Asia Pacific region is one of the cooperative agreements under the aegis of the International Atomic Energy Agency and currently consists of 17 Member States. Since the region covered by the RCA is undergoing a rapid expansion in nuclear power development, many activities have been carried out under the RCA. The Electronic Networking and Outreach (ENO) Project under the RCA was used as a vehicle for the RCA Programme for the dissemination of valuable information to end-users. This paper will describe the initiatives undertaken by the ENO Project to initially establish an information and knowledge-sharing environment as an initiative towards a nuclear knowledge management system within the RCA community. It will also discuss the challenges and issues peculiar to the region that have been encountered during the project cycle. Then it will try to offer a conceptual framework of a nuclear Knowledge Management system for the RCA region.

1. Introduction

The Regional Cooperative Agreement (RCA) established under the auspices of the International Atomic Energy Agency (IAEA), is a regional framework agreement for multilateral co-operation on research, development and training for Member States within the Asia Pacific region. The RCA was brought into force in 1972 and has been extended six times, each time for a period of five years [1]. Today, the RCA enjoys the participation of 17 Member States, namely, Australia, Bangladesh, China, India, Indonesia, Japan, Republic of Korea, Malaysia, Mongolia, Myanmar, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, Thailand and Vietnam. The Asia Pacific region covers an area with a vast human and natural resources and strategic geographical locations. The Asia Pacific countries also have different economic modes and development levels as well as diversified cultures.

Today, the advent of the information age saw the increasing sophistication of ICT and the growing interdependence of nations in a borderless world. This scenario necessitates new approaches in the forging of national, bilateral as well as multilateral links and collaborations within the RCA community. The Electronic Networking and Outreach (ENO) Project under the RCA was initiated in 1998. It was initially aimed as a vehicle for the RCA programme for the dissemination of nuclear related information to end-users [2].

By tapping the potentials of the internet technology, the ENO project is now an important means of infrastructure within the RCA community. The ENO project not only provides a means of sharing and disseminating nuclear related information among RCA Member States, but also provides a central repository of reports on experiences, past achievements and lessons learned on past failures. The ENO project future plans would be to support the planning, management and implementation of the RCA programme with the introduction of collaborative tools.

The ENO project initiatives in the development of the National RCA homepages, the Members only RCA regional homepages, the Regional Resource Unit (RRU) database and the introduction of collaborative tools has paved the way for these resources to be used as a potential for a powerful nuclear Knowledge Management (KM) system for the RCA community.

2. The Electronic Networking and Outreach (ENO) Project

At the 1995 conference on “Regional Development Cooperation for Asia Pacific”, a paper presented by the UNDP had identified that one of the obstacles to regional cooperation was the lack of information and the poor information flow within the Asia Pacific region [2]. This has prevented some countries in the region from taking advantage of existing opportunities.

The RCA has long recognised the importance of effective networks as a necessary component in achieving practical outcomes from regional technical cooperation. The dissemination of information on the benefits and safety of nuclear technologies to the end-users has been recognised as an important aspect in the development and expansion on the use of nuclear application and techniques. The ENO Project under the RCA was formed out of this need for a more efficient and effective means of communication and cooperation within the RCA Member States. During its inception in 1998, the ENO project was initially aimed at establishing an information and knowledge-sharing environment for the RCA community using electronic means.

3. Nuclear Knowledge Management (KM) Initiatives of the ENO Project

Knowledge Management (KM) can be summarized as the management of processes that govern the creation, dissemination, and utilization of knowledge by merging technologies, organizational structures and people to create the most effective learning, problem solving, and decision-making in an organization [3]. KM initiatives require the utilization of both explicit and tacit knowledge. Lubit [4] observes that explicit knowledge is codified and stored in a repository and is available to employees throughout the structure, while tacit knowledge is personal knowledge possessed by an employee through his experience over the years that may be difficult to express or communicate to others. Capturing explicit knowledge is much easier than capturing tacit knowledge.

According to Yogesh Malhotra [5], KM initiatives can be as simple as setting up mailing lists between workers with specific interests, or as intricate as building intranets with software that facilitates collaboration. Gold et al. [6] argue that collaboration between employees begins the transformational process of tacit knowledge to explicit knowledge. Collaboration brings together individual differences in cultures, backgrounds, experience and ways of doing things, which has the potential of generating new ideas and creative thinking.

The ENO project had started its KM initiatives with the development of the RCA national and regional homepages and the RRU database. It is an attempt to create a repository for the explicit, documented knowledge within the RCA community so that the knowledge could be shared and reused by the RCA Member States, while the introduction of the collaborative tool is an attempt to capture tacit, subjective knowledge from the minds of experienced workers with years of experience in the nuclear field.

3.1. *The RCA National Homepages*

The RCA national homepages, developed and maintained by the Member States participating in the ENO project have been used for reporting Member States’ national nuclear activities to the wider community. The homepages have also been used for the promotion of nuclear science and technology with improved access to detailed information on the applications of nuclear science and technology. It also provides solutions to problems of national and regional importance plus the consequent benefits of the work to the general community. See Figure 1. Up to date, thirteen RCA national homepages have been established.

FIG. 1. The Malaysian RCA National Homepage

RCA Events Hosted in Malaysia 2004

Date	Project Code/RAS	Project Title
24-28 May 2004	5/042	Application of Food Irradiation for Food Security, Safety, and Trade
5-9 July 2004	5039	Restoration of Soil Fertility and Sustenance of Agricultural Productivity
19-23 July 2004	6034	Quality Assurance Program for Molecular based Diagnosis of Infectious Diseases
13-17 Sept 2004	8/091	Process Diagnostics and Optimization in the Petrochemical Industry
20-24	FNCA	Radioactive Waste

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3.2. The Members Only RCA Regional Homepage

FIG. 2. The Members Only RCA Regional Homepage

RCA Members only homepage

Search | Meetings/Conferences | Reports | TCDC | Project Proposals | Project Coordinators

Reference Materials

Home | Search | Meetings/Conferences | Reports | TCDC | Project Proposals | Project Coordinators | Reference Materials

Regional Co-operative Agreement (RCA)

Today's Date: 14-06-2004
Last Update: 03 June, 2004

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Search
click here to [Search...](#)

Message from the RCA Office in Vienna

"Good wishes to all RCA members. Please browse this site regularly to keep you informed of new changes and happenings within the RCA communities"

Upcoming events

This is the homepage for RCA Member States. It contains information exclusive to Member States such as detail meeting reports, annual reports, evaluation reports, event reports and other materials of relevance to the RCA community.

Quick Review....

One of the achievements of the ENO Project is the development of the Members Only RCA regional homepage. The Members Only homepage contains detailed information on RCA projects, reference materials and various detail reports on RCA related subjects. See Figure 2. Previous minutes of the RCA National Representatives meeting, the RCA General Conference meeting, the RCA annual reports, reports on success stories and lessons learned and reference documents on the RCA are published on this homepage as a central source of reference for Member States [7].

By utilising the internet technology, information can now be disseminated to the RCA Member States and the IAEA secretariat more efficiently, with less cost and minimum effort. The homepage is a central repository of information on nuclear related projects for the RCA community.

Malaysia, as the lead country for the ENO project is hosting the Members Only homepage.

3.3. The Regional Resource Unit (RRU) Database

The Regional Resource Unit (RRU) concept, introduced in the RCA several years ago, constitutes the backbone of the RCA [1]. The criteria for choosing an RRU was suggested and documented in 1996. From this document [8], an RRU can be defined as a well-established expert group comprising of laboratories, expertise and facilities in an RCA Member State that has attained scientific excellence in a technique (publication record, modern equipment, standards of measurements, etc) and is willing and capable of providing hands-on training for other Member States. The RRU concept was developed to acknowledge the achievements of the scientific and technical expertise of the RCA Member States so that it can be utilized for the benefit of the RCA Programme.

With the help of the IAEA's Technical Cooperation and Information Systems Unit (TCISU) a formal requirements analysis and specifications of the RRU database was completed in the first quarter of 2003. Carrying on from there, ENO, with India as project leader took up the project and initiated the design and development of the RRU database system. The system is in its final development stage.

The ENO project will support the maintenance of information of nuclear capabilities of RCA member countries, through the RRU Database. From the RRU Database, Member States can gain direct access to information on available major scientific facilities and expertise in the region and seek assistance from other Member States, more proficient in that particular field, to help them solve specific problems.

3.4. Collaborative tools

Knowledge is shared more effectively when Member States collaborate, which makes internet-driven collaboration technologies essential for competitive organizations. The internet technology also offers a means of sharing knowledge more effectively across continents, time zones and language barriers.

The e-mail, which can be considered as a first-generation effort at collaboration is being used extensively as a means of communication between the Member States and the IAEA secretariat. Moving on from e-mails, we (Member States) now have discussion groups and collaborative tools which offer interactivity and brainstorming.

In the third quarter of 2003, the use of a collaborative tool was introduced to support the planning, management and implementation of the RCA programme. The utilization of a collaborative site was demonstrated by the ENO project for the preparation of the 2005-2006, ENO project proposal. The collaborative tool provides a platform for people who work in the nuclear-related fields to share their skills, experiences and insights through virtual interactions and discussions for their mutual benefits.

4. Challenges and issues

The Asia Pacific region with its vast human capital and natural resources spans a wide spectrum of countries with different economic modes and development levels. The challenge faced from the perspective of internal coordination within Asia Pacific cooperation, is that the countries range from the least developed to the technologically advanced. To add to this is the diversified and complex cultures, language spoken and value judgement of each of the countries within the region.

To bridge the gap between the least developed and the technologically advanced, several initiatives were taken to address the issue. Some of the initiatives are, the provisions of

technical advice through expert mission, which was carried out at the initial stage of implementation of the project in 2000 by Malaysia and India, and conducting several training events and workshops on website construction and management in 1999 and 2000, a workshop on advanced information technology and e-learning in 2001 and a workshop on development of RRU database in 2003 . The donation of computer hardware to some developing countries was also instigated in the first quarter of 2004 by the RCA Regional Office in Korea. For the IAEA/RCA 2005-2006 project cycle, the ENO Project, had also proposed technical support in terms of computer and networking facilities to developing countries who do not have these facilities.

In operating the National RCA homepages, language was found to be a constraint. For non-English speaking Member States, English homepages were not practical since not many local visitors understand English written homepages. For these non-English speaking countries, extra translation work and the need for a bi-lingual homepage is imperative for the homepages to be useful and beneficial.

5. Regional Knowledge Management Centre: The Proposed Concept

Several KM initiatives have been undertaken by the ENO project as described above and many more will be developed in the future. The proposed concept for the Regional Knowledge Management Centre is composed of two components: The Knowledge Community involving the RCA Member States and the Regional Knowledge Web that is the RCA Regional Web. The RCA supports and governs the operation of the centre. The proposed concept for the Regional Knowledge Management Centre is shown in Figure 3.0.

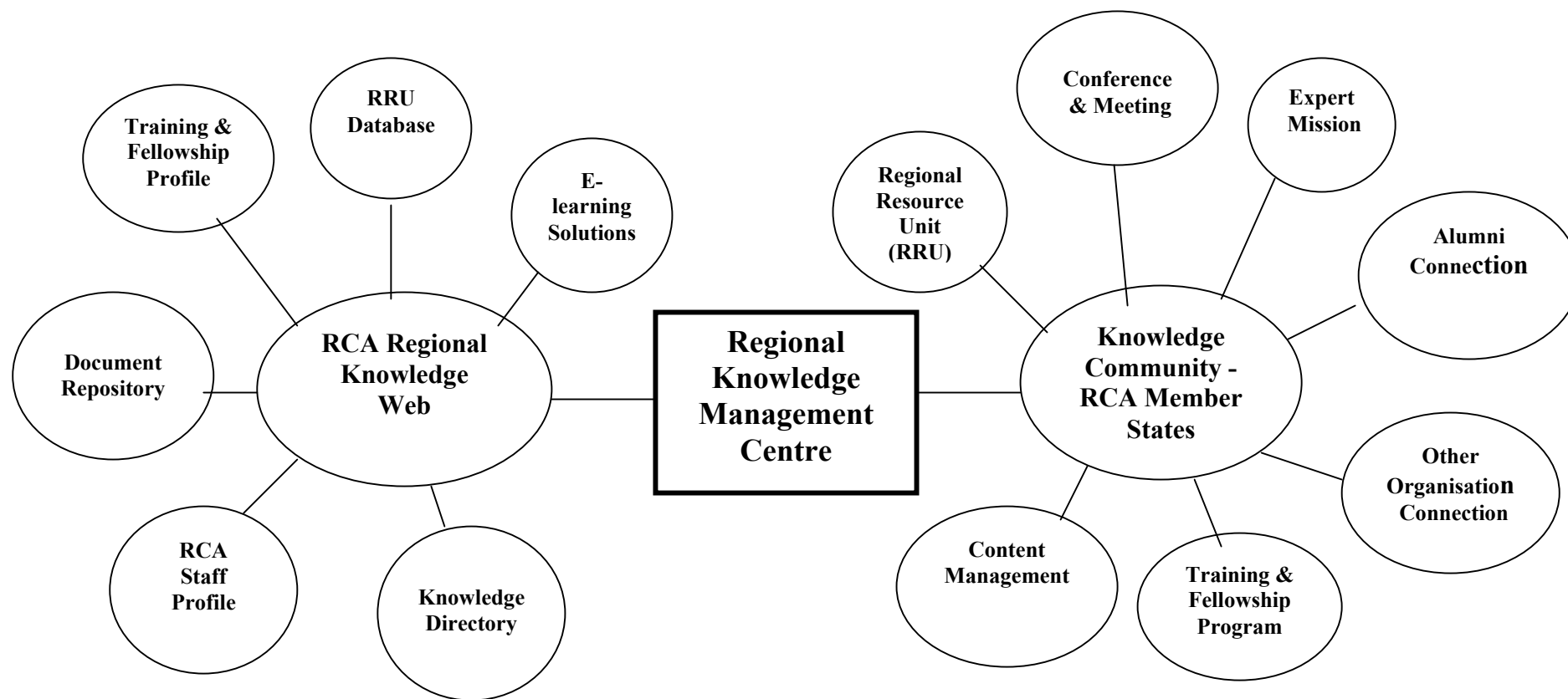
6. Conclusions

The ENO project has demonstrated a regional-initiated effort in envisioning a regional KM system. These efforts can be further enhanced towards achieving regional capacity building for the Asia Pacific region. The project has carried out activities in its effort to capture both explicit and tacit knowledge. The explicit knowledge has been categorized and stored online in databases and in electronic document repositories which can be easily accessed via the internet, while collaborative tools have been used to tap tacit knowledge which are held in the minds of experienced and long serving employees with years of practical experience in the nuclear field. All these efforts however are just the first steps towards realising a KM system. In charting the route for a regional KM system for the Asia Pacific region, it is important however, to remember that KM is about culture and behaviour. To create a knowledge-sharing culture, there must be mutual trust and openness. There should be a focus on building relationships and connecting people together using appropriate tools and to adopt new ways of doing things. The key to this is the need for cultural sensitivity and an understanding of the diverse and complex culture of the Asia Pacific region. Respecting the cultural diversity of other Member States and their different paths of development and pursuing common development in the process of seeking common grounds will be the key to a successful implementation of a nuclear KM system for the region.

Acknowledgements:

The authors would like to thank the Malaysian RCA National Representative, Dr. Nahrul Khair Alang Md. Rashid for his continuous support on the ENO project and to Mr. Markku Kemppainen, the technical officer from the IAEA for his support and technical advice. Last but not least, thank you to all ENO Project Coordinators of participating Member States for their roles in making the ENO project a success.

FIG.3. Regional Knowledge Management Centre: A Proposed Concept



REFERENCES

- [1] A. Djaloeis. *RCA in the 21st. Century: Enterprising, Meeting Challenges and Capturing Opportunities*, Document Prepared in commemoration of the 30th. Anniversary of the Regional Cooperative Agreement (RCA), Seoul, Korea (2002).
- [2] UNDP/RCA/IAEA Project (RAS/97/030/a/01/18). *Better Management of the Environment, Natural Resources and Industrial Growth through Isotopes and Radiation Technology. Sub-project: Electronic Networking and Outreach*. Project Formulation Meeting Report, Kuala Lumpur, Malaysia (1998).
- [3] Adisorn Na Ubon and Chris Kimble. *Knowledge management in online distance education*, Proceedings of the 3rd. International Conference Networked Learning 2002, University of Sheffield, UK (2002).
- [4] Lubit, R. *Tacit knowledge and knowledge management: The keys to sustainable competitive advantage*, Organizational Dynamics, 29 (3), (2001) 164-178.
- [5] <http://www.brint.com>
- [6] Gold, A.H., Malhotra, A., and Segars, A.H. *Knowledge management: An organizational capabilities perspective*, Journal of Management Information Systems, 18 (1), (2001) 185-214.
- [7] A. M. Abdul Rahman, A. Musa, C. A Krishnan et al. *Electronic Networking and Outreach to Strengthen Regional and Institutional Nuclear Information Exchange within RCA Member States*, Proceedings of MINT R&D Seminar, Bangi, Malaysia (2000).
- [8] RCA document. Suggested Criteria For Selecting/Evaluating Regional Resource Units (RRUs) in the RCA Programme (1996).