ORGANISATIONAL LEARNING PROGRAMME OF A LARGE RETAIL ELECTRIC UTILITY IN THAILAND

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ABSTRACT

The paper presents the learning of an organisation. The organisation needs to learn in order to do its businesses, improve its performance or transform itself to a new environment. The research concerns a case, which thoroughly examines organisational learning in a large retail electric utility in Thailand. The case shows an attempt of the electric utility to develop its organisational capabilities in technical areas in order to prepare itself for doing businesses in a competitive market. The training and research programme that is the cooperation between the electric utility and the university is set up to serve this objective. Two main activities of the programme, training and joint research, are discussed from perspectives of both the electric utility and the university. The results of the research provide insights about advantages and disadvantages of both training and joint research discovering in the selected case. The empirical findings demonstrate factors influencing the success of the programme. Lessons learned from the programme are informative and necessary for an organisation to establish learning within it effectively.

INTRODUCTION

Learning is increasingly accepted as a critical success factor of sustainable development of an organisation in an information era because it contributes not only to doing its current businesses efficiently and effectively as well as performance improvement, but also to the long-term growth of the organisation [1]. In a dynamic environment, it is specially needed because learning is a capability that is necessary for adaptation and transformation. The organisation might learn from its own experience, both successes and failures, or from other organisations. Organisational learning can take place in numerous organisational activities, both routine practices and extraordinary tasks, including the joint programme between the organisation and its partners.

On the side of a large retail electric utility, the Thailand government has gradually improved the institutional efficiency of the electricity supply industry (ESI) by reforming this sector. As a large public retail electric utility in the ESI, the Provincial Electricity Authority (PEA) is responsible for supplying electricity to its customers throughout areas of the kingdom of Thailand, except Bangkok, Samut Prakarn, and Nonthaburi [2]. In the early 1990s before the Asian economic crisis, few new engineers had joined the PEA and experienced engineers had moved to the private sector, because of high demands for engineers in businesses as well as an inefficient recruitment system of the PEA. Because of the crisis, a process of the ESI reform has been accelerated. The PEA has responded to this change by, for example, restructuring, setting business units, improving a rewarding system, and developing competencies of employees. Even though the PEA has been dominated by engineers and has accumulated technical knowledge since 1960, it found that occupied knowledge could not be applied to effectively satisfy its current needs during a transition period and its future requirements in a competitive ESI. The PEA has responded to these requirements by recruiting new employees and developing technical competencies of employees. In developing technical competencies of employees, PEA set up various programmes, for example, training programmes that are operated by the PEA itself or collaborated with other organisations.

On the other side, the Kasetsart University (KU) is under reform of a national educational system. It is requested by a society to be involved in a process of development in many segments, e.g. agriculture, manufacturing, service, energy, and transportation. It has to conduct basic and applied researches and should, if possible, implement, in a real environment, works based on results of researches. With academic capabilities of engineering, the KU – the department of Electrical Engineering in particular – plays its role in the ESI reform. Together with the PEA, the KU jointly set up the PEA-KU training and research cooperation programme [3]. This programme is expected to contribute to development of both organisations.

This paper demonstrates the study on the PEA-KU training and research cooperation programme. The characteristics of the programme are discussed. Two main activities of the programme – training and joint research – are examined. Primary data are collected from people, events, and situations using observation, discussion, and questionnaire. Secondary data in, for example, internal memos, programme reports, reports on the programme are also gathered. This will meet the criteria of data triangulation [4]. Lessons learnt from the case contribute to learning of an organisation.

THE CASE OF THE JOINT PROGRAMME

Objectives of the Programme

The PEA-KU training and research cooperation programme is designed to serve requirements of both the PEA and the KU [3, 5]. On the PEA's side, it is aimed at (i) strengthening technical competencies of PEA's employees and (ii) creating abilities to solve problems and conduct research of the PEA's employees. This responds to both present and future needs of the PEA. On the other side, purposes of the KU are: (i) to conduct field research that use actual data from electrical power system of the PEA and (ii) to transfer knowledge to practitioners through scholars. The programme is divided into 5 braches – namely, (i) power system planning, (ii) power system reliability, (iii) fault analysis and protection, (iv) power system techniques, and (v) the design of power system network information and maintenance. To meet these objectives, two main activities – training and joint research – are built up in each branch.

Programme Activities

Main activities in the programme are training and research. Firstly, training methods applied in the programme are lecture, group discussion, and problem solving [6]. The lecture is a speech by the instructor, with very limited discussion. The group discussion is a speech by the presenter, with a lot of question and comments from the listeners. Sometime a presenter is not necessary but a leader of group is needed. The problem-solving consists of a description of real situations or issues. Trainees use and apply the basic information, their own initiatives as well as suggestions and comments of instructor to solve problems in a specific condition. While participants from the PEA are strengthened or newly built their necessary knowledge, scholars from the KU practically transfer knowledge to the PEA's participants and facilitate them in a process of learning. Secondly, joint researches are mainly based on requirements of the PEA. Almost all of them are the applied researches. Research topics were together selected by both the PEA and the KU. Research activities would lead to applicable results that help the PEA's participants to develop their abilities to conduct researches and also help the KU's scholars to develop their supervisory, instructing, and consulting skills. In addition to two main activities, supplementary activities, e.g., site visit and seminar, provide opportunities to the PEA's participants: (a) to know what happen in the real environment that create clear actual pictures in their mind; (b) to develop their abilities in affective communication and active participation; and (c) to create group interactions.

Programme Participants

Almost all of participants of the programme come from either the PEA or the KU. Participants from the PEA involve in the programme as working committees and steering committee. The working committee in each branch is divided into a primary team and a support team. The number of members in each team varies from 15 to 20 persons. This provides an opportunity for the KU to give lecture to the team appropriately [6]. The steering committee consists of management of the PEA. Its responsibilities are control, consulting, and approval. On the KU's side, the consultancy team is composed of nine scholars from the department of Electrical Engineering and five scholars from the department of Computer Engineering. Support staffs, secretary, coordinators, data analysts, computer programmers and researchers, are also employed. Those are internship students and engineers.

Programme Resources

Resources in the programme refer to those that are used to support all activities of the programme. The PEA has to provide a meeting room and working space whereas the KU has to prepare a class training room with supporting equipments. The PEA has to supply data of its electrical power system and the KU is requested to allow the PEA's participant access its database of literature. In addition, office equipments and facilities e.g. telephone machines, computers, and printer have been acquired and installed. Financial supports are adequately provided by the PEA over the lifetime of the programme. This makes the programme feasible.

Programme Arrangement

The office of the PEA-KU training and research cooperation programme was independently established. Meetings between the PEA' s working committee and the KU's consultancy team are arranged once two weeks. The programme progress reports are quarterly presented to the PEA steering committee and the annual reports are also submitted. One who has high competencies in both technical and managerial skills was assigned to be the programme manager who manages day-to-day activities of the programme office. The approach of coordination is selected in accordance with objectives and activities of the programme that focus on the growth of the PEA. It means the programme has to build not only products but also learning and research capabilities of the PEA. At the start of the programme, the PEA and the KU together analysed current situations and readiness to implement the programme of both parties. After that the KU was designed to orderly be a facilitator, a counsellor, a coach, and a partner. It is necessary that the PEA and the KU closely cooperate. With this approach, the programme can initially develop practicable knowledge for the PEA and consequently produce desired outputs.

Training and Research Management

Unlike management in a usual event, engineering training and research management requires not only managerial skills but also technical skills. The programme manager plays a critical role in a success of the programme. In the

programme, key scholars have been appointed, according to their expertise, to be a head of a branch of the programme. Outlines of training course and training materials were mainly adapted from those used in a regular course. Training classes were in advance arranged. Trainees from the PEA were selected according to criteria defined at the beginning of the programme. Pre-test and post-teat were applied, by the programme officers, to measure the extent to which trainees gains knowledge from the training courses. Supplementary contents of the subject were also arranged to reinforce the trainees' insight. Certificates were rewarded to qualified trainees. In addition to training, the conceptual and theoretical basis of research works was firstly discussed. Data have been provided by the PEA's working committees. In principle, research works are autonomously carried out. To monitor and control the research works, the progress, questions, and comments are often presented and discussed.

Performance of the Programme

Performance measurement is conducted by the programme itself and an independent researcher. The internal progress reports in October 2002 showed that all 1,155-hour planned training courses were completed but the percentage of completed research works was 66 % of the total number of research works [5]. There were 42 supplementary seminars/conferences held by the programme or participated by the programme participants. There were 31 working papers presented at the programme annual seminar in 2002 and other three technical papers were presented at the international conference in Japan. The achievement test is applied in both pre-test and post-test to measure cognition of participants before and after participating the programme respectively. The mean percentages of pre-test and post-test are showed in the table 1.

Table 1. The mean percentage of score of pre-test and post-test

Branch	% of score	
	Pre-test	Post-test
Power system planning	45.74	72.04
Power system reliability	46.76	63.07
Fault analysis and protection	52.58	74.69
Power system techniques	47.75	80.46
The design of power system network information and maintenance	53.14	77.19
All branches	49.19	73.49

Source: Provincial Electricity Authority, A Report on the Programme Assessment, (2002) [5]

The table 1 shows that training methods, applied in the programme, improve recall and understanding of participants from 49.19% to 73.49 %.

An independent researcher measured the perception of participants from the PEA. Questionnaires were designed, by using the perception measures and a noncomparative rating scale, designating by 1 = strongly dissatisfy and 10 = strongly satisfy. Ten sample questionnaires were tested and then some questions were modified. Questionnaires were sent through an internal communication channel of the PEA to its 86 participants. Consequently, they were returned at a response rate of 87.21 % and all returned questionnaires were valid. Possible explanations about validity are that most of participants, 80% of responding participants, are willing to join the programme and all of them hold, at least, a bachelor degree. Six features of the programme – objectives, programme arrangement and management, learning, products of the programme, application of outputs, and the whole programme – were evaluated. Attributes of objectives are clearness, measurability, achievability, relevance, and time constraint. Programme arrangement and management are related to programme partner selection; participant selection; budget; training and research management. Learning refers to acquiring, assimilating, executing, sharing, storing, and retrieving knowledge of participants. Products of the programme include research reports, programme task reports, and working paper. Application of outputs is the use of products of the programme and knowledge gained from the programme in the activities of the PEA. It also includes a possibility to use the knowledge gained from the programme in the future. Results of evaluation are shown in table 2.

Table 2. Satisfaction of participants

Feature	Score
Objectives	7.77
Programme arrangement and management	7.30
Learning	6.93
Products of the programme	6.80
Application of outputs	6.76
The whole programme	7.05

Remark: 1 = Strongly dissatisfy, and 10 = Strongly satisfy

The table 2 shows that objectives of the programme are highly accepted by participants while application of outputs is likely to be low, by comparison with other features.

Organisational Learning

According to the research on organisational learning, findings resulted from an analytical assessment indicate that the programme meet the first two criteria of organisational learning [1]. The first criterion is that outputs of learning contribute to goal achievement of an organisation; the second criterion is that learning is shared and distributed among members inside the organisation; and the third

criterion is that outputs of learning are merged into at least one of organisational components – practices, structures, procedures, processes, technologies, systems and culture. It can be noted that results of questionnaire analysis related to learning, shown in table 2, are in accordance with findings in that research. Thus, it is clear that the programme is the case of organisational learning.

Lessons Learnt from the Case

It could be observed from the case as follows:

(i) both technical and managerial skills are required in order to manage the engineering training and research programme,
(ii) high competencies in technical and managerial skills of the programme manager critically contribute to the great success of the engineering training and research programme,
(iii) practitioners are likely to need the practicable knowledge more willingly than ideal thoughts,
(iv) contents of training courses differ from ones used in regular courses of the university,
(v) an organisation can establish learning within it by training its employees and conducting research concurrently,
(vi) when an organisation applies a training method to develop organisational learning, it has to consider not only 'how-to-learn' of trainees, but 'how-to-train' of trainers as well,
(vii) both the PEA and the KU learn together and learn from each other,
(viii) in general, the PEA's participants are willing to join the training and research programme. Willingness to join the programme is likely to influence the success of the programme,
(ix) organisational culture – collective belief, attitude, and value of members within an organisation – plays an important role in the success of the programme,
(x) the PEA's participants are generally worried about organisational culture rooted in a bureaucratic system of the PEA that might delay development of the PEA.

CONCLUSIONS

The paper presents the case of organisational learning emerging with the training and research cooperation programme. The case shows that various training methods – lecture, group discussion, and problem solving – can be applied to build technical competencies of employees effectively. The research programme grounds not only theoretical foundations but also application in a real situation. Objectives, activities, participants, resources, arrangement, and management of the training and research cooperation programme are important basic elements of organisational learning whereas products and application of outputs can be used to classify whether or not organisational learning take place in the organisation. It is noted, especially in case of training and research, that learning should be viewed and treated as a process rather than a discrete activity.

Three significant findings derived from the case contribute to organisational learning by using engineering training and research approaches. Firstly, competencies in both technical and managerial skills of the programme manager are the critical success factors, discovering from the case, of the training and research cooperation programme. Secondly, certificate rewarding setting, by using pre-test and post-test, can be used as an invisible enabling factor influencing the success of the training courses. Thirdly, sufficient financial support is a necessary enabling factor of the successful training and research cooperation programme. They are necessary for an organisation to establish learning within it effectively.

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REFERENCES

[1] Meenual T., de Bruijn E. J., and Hokierti J., "Organisational learning: A Case Study of a Large Electricity Retailer in Thailand", *Proc. the 17th International Conference on Electricity Distribution*, Spain, (2003)
[2] PEA, *Provincial Electricity Authority: Annual Report 2001*, Thailand, Provincial Electricity Authority (PEA), (2002)
[3] The Office of the PEA-KU Training and Research Cooperation Program, *the Program Progress Report*, Internal and unpublished document in Thai, (2001)
[4] Kumar R., *Research Methodology*, Sage Publications, Malaysia, (1999)
[5] PEA, *A Report on the 5-Program Assessment*, Internal and unpublished document in Thai, Provincial Electricity Authority (PEA), (2002)
[6] Byans L. L. and Rue L. W., *Human Resource Management* (3rd end.), the USA, Richard D. Irwin Inc., (1991)

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