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Research Article

THE ANALYSIS OF KNOWLEDGE MANAGEMENT IN THE ELECTRIC POWER DISTRIBUTION COMPANIES IN IRAN (CASE STUDY: ALBORZ ELECTRICITY PROVINCE DISTRIBUTION COMPANY)

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ABSTRACT
Todays, knowledge management is an important and key factor in organizational management and productivity. Understanding the technology and selecting suitable model to determine knowledge management strategy is one of the most important factors of organizational success. Since the Probst *et al.*, model is a comprehensive model; therefore, in this paper, the model is applied for the study of knowledge management in Electricity Distribution Company in Alborz Province. In this article, using the results of field research and conceptual model of knowledge management foundations (Probst *et al.*), electricity distribution companies of Alborz are analyzed through eight aspects. At first, the concepts and definitions used in this model are briefly reviewed and then the distribution company is analyzed through this model that includes 35 indicators and 8 aspects. The gap of each aspect with favorable situation is determined the strengths and weaknesses were identified. In this company, knowledge purposes aspect (53.90%) has highest and knowledge sharing aspect goals (36.03%) has lowest rank. Finally, investigating the weaknesses of knowledge dimensions, practical and appropriate solutions have been proposed.

Keywords*: Knowledge Management Foundations, Probst et al., Model, Knowledge Management, Albroz Electric Power Distribution Companies*

INTRODUCTION
Mark and Mac Alroy emphasized the importance of knowledge by stating that knowledge can be encoded and transferred (Zaferian *et al.*, 2008). Leitner and Jordan (2003) argue that societies are moving toward the knowledge economy where knowledge is an important element to create value in organizations. Todays, in the competitive conditions, knowledge is the most important capital which is replaced by physical and financial capitals (Chen *et al.*, 2004). Transferring knowledge in the first step requires tendency to share and work two groups. The transfer of knowledge cannot be done unless the employee groups show a high level of cooperation (Bender and Fish, 2000). Given the importance of knowledge, knowledge management is managing to change knowledge in the organization by gathering, sharing and using knowledge as an organizational capital and for organizational purposes (Hassanzadeh, 2007). Thus, knowledge management for many of the developing countries is a symbol of power and achieves competition (Drucker, 1998). Developing management strategy is One of the key success factors in the implementation of knowledge management. Knowledge management strategy is a realistic and action-oriented process that comes from the targets and includes promotion of organizational knowledge to desirable situation and collecting, creating and deformation of knowledge (Akhgar *et al.*, 2012). The companies which have not conducted knowledge management lose competitor advantages 30 to 40 % of their competitors (Gartner group, 1998). Jennex and Olfinan believe knowledge management system evaluation is important to recognize development of the system (Jennex and Olfinan, 2004).
Measurement of knowledge capital is hard due to feature (Ahn and Chang, 2002), and unlike materials or equipment may not be distinctive core competencies and abilities of employees considered in the balance sheet (Austin and Larkey, 2002). Intangible property of knowledge makes measurement of past record difficult. Survey of 431 American and European shows that 43% of them believe that measuring the value and performance of knowledge capital is a difficult task of changing people's behavior (Reggles 1998)

instead efforts directly assess the knowledge, evaluate their past record of business performance, is the most effective approach (Ahn and Chang, 2002) as an example of the process that makes a company to achieve higher efficiency and performance (Asol *et al.*, 2002). The main purpose of assessing their past record of performance of knowledge management is increasing efficiency management measures knowledge to improve organizational performance (Toften and Olsen, 2003). Knowledge management performance evaluation of their past record suggests the utilization of resources is smart (Marr *et al.*, 2003). In fact, in such circumstances, knowledge management is a special place for companies and organizations and it is growing increasingly on its importance.
Table 1 summarizes the main results of studies in the field of knowledge management.

Table 1: Results of Knowledge Management

Authors	Results
Skyrme(1999)	Improve service quality, improve product quality, reduce operating costs, enhance employee recruitment, improve creativity, enhances learning
KPMG(2000)	Improve decision making, to serve more customers, improve productivity, reduce costs, offer innovative ways to work
APQC(2002)	Reduce costs, improve product quality and service, delivering value to the customer
O'Dell *et al.*, (2003)	Increasing innovation, improving operations, improve customer satisfaction, improve organizational learning empowerment
Anatatmula and Kanungo (2006)	Employee performance, organizational performance, intelligent capital market performance
Chong and Lin (2006)	Staff development, customer satisfaction, organizational success, science activities, regular, good external relations
Lee and Lee (2006)	Corporate financial performance and customer satisfaction
Wei *et al.*, (2009)	improve performance, better decisions, improve accountability, creativity, improve competitiveness and productivity, employee retention, flexibility, improve learning curve, improve service and quality
Zack *et al.*, (2009)	Financial performance, organizational performance: a mix of innovation, customer satisfaction, operational costs

In the companies like power distribution, someone believes skillful individuals can provide better performance due to expertise work. In these companies, new and updated services are required in the structure of the organization to observe specific standards. Later, literature review is studied and in second section, conceptual model and methodology are presented. In the third section, the obtained data is represented and in the final section, practical recommendations are provided.

Literature review

Knowledge is organized and applicable information to solve problems (Woolf, 1990). Knowledge has been categorized to different kinds based on structural features, preliminary features, purpose, application and conceptual level (Backman, 1999). Based on kind of categorization, knowledge is divided in two

sections like clear and secret. This kind categorization in the business is contributed to Japanese theorist (Nonaka, 1995).

He believes incident knowledge is hidden in the mind and business of individual and transferring them to others is difficult. Clear knowledge is formal and organized and is transferred easily in form of product features, a formula or a computer program (Downport, 1998). Other kind of categorization divides knowledge management to viewpoint and process. In this study, processes- based knowledge management is used.

MATERIALS AND METHODS

The study is applicative in term of purpose and is done through survey and field method. The questions of the study are:

1-what are the levels of dimensions of knowledge management in the Alborz power distribution company?

2-what are the gaps between knowledge management dimensions of Alborz power distribution company rather desirable situation?

In table 2, 27 knowledge process models have been presented by different authors and institutes to evaluate and measure knowledge management.

Table 2: Process model of knowledge management

model / Steps	1	2	3	4	5	6	7	8
Hicks	Create	Save	Publish	Apply	-	-	-	-
Marc & Meceltoje	Knowledge creation	Knowledge repetition	-	-	-	-	-	-
APQC	Create	Involve	Broadcast / share	Exchange in the public level	Expend	exchange	Making culture	-
AMS	Find	Organize	Share	-	-	-	-	-
Anderson Consulting	Obtain	Create	analyze	Analyze	share	Utilize	-	-
Di Bella & Nevis	Obtain	Publish	Apply	-	-	-	-	-
Marquqe t's	Learning	Transferring	saving	-	-	-	-	-
Wiig	Creating	gathering	publish	apply	-	-	-	-
Spek & Spijkernet	Create knowledge	Maintain new and available knowledge	Knowledge distribution	Applied combination knowledge	-	-	-	-
Ruggles	Create, learning, combine	Representor representative	transfer	-	-	-	-	-
O'Del	Identify	Gather	adapt	organize	Apply	distribute	Create	-

Weggeman	determine	develop	save	share	apply	evaluate	-	-
UTI	Arrange	Requirement recognition	share	create	Gather / save	reveal	-	-
Le manageur	Restrain	organize	Learn	apply	evaluate	-	-	-
APOQ	Create	recognize	gather	Organize	share	adapt	Apply	-
Keep & Daly & Ham	Create	Restrain	f	Save	share	-	-	-
Green Wood	Create	recognize	categorize	communicate	understand	create	-	-
Davenport & Prusak	produce	Organize	transfer	-	-	-	-	-
Newman & Conard		stabilize	transfer	apply	-	-	-	-
Hjelmeruik & Kirkemo	Restrain	Create	Send	apply	-	-	-	-
Promote	Targeting	recognize	develop	publish	apply	Save	evaluate	-
Beekman	identify	capture	select	save	distribute	apply	create	business
Holsapple & Jashi	obtain	select	Internalize	apply	produce	Reveal	-	-
Bukowitz & Willams	Find	apply	learning	share	create	Maintain / remove	evaluate	-
Pawlowsky	identify	obtain	broadcast	develop	transfer			-
Probst & raub & romhard	Determine the purposes of knowledge	identify	obtain	develop		apply	maintain	evaluate
Nonaka & Takeuchi	Socialize	Externalize	communicate	Internalize	-	-	-	-

Introducing the applied model in the study

Since Probst *et al.*, model is one of complete model in the knowledge management (Probst/ Raub/ Romhard, 2002), so it was used in the study. This model has 35 indexes and 8 dimensions.

The designers of foundation model (Probst) know the knowledge management as a dynamic cycle which is rotating.

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Stages of this model include eight elements consisting of two internal and external cycles:
Internal cycle: is composed of identify, obtain, develop, share, utilize and maintain blocks of knowledge. External cycle: is composed of knowledge and evaluation purposes blocks which specifies the management cycle. Feedback complements these two cycles.
The elements of the model are shown in Figure (1):

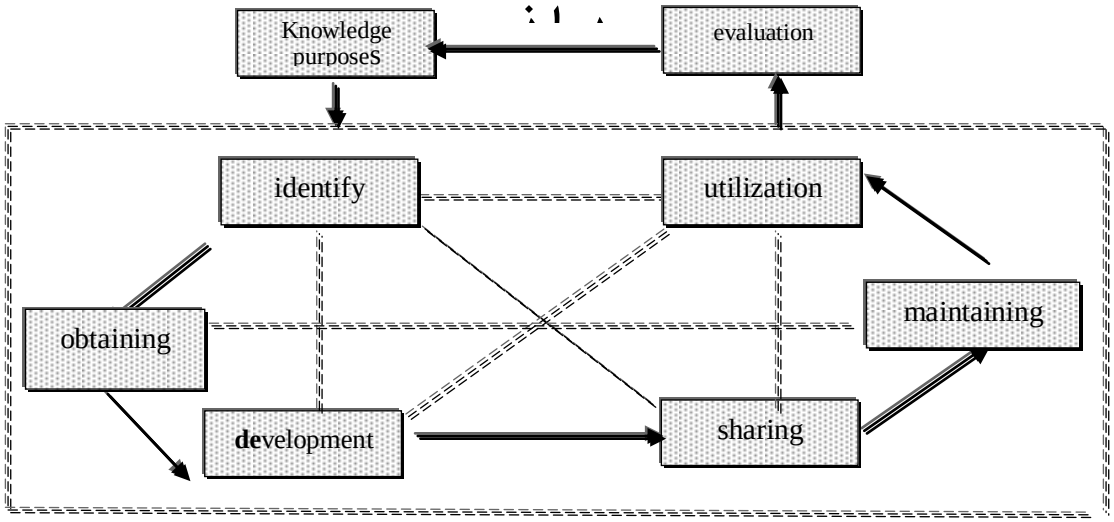

Figure 1: The Elements of Probst *et al.*, Model (Knowledge Management Foundations)

The performance of foundations in this model is as following (Afzareh, 2005):
a. Determining the knowledge purposes: the knowledge management purposes should be raised main purposes of organization and should be specified in the practical and strategic levels.
b. Identifying knowledge: in this step, knowledge is identified. Most of organization encounters some difficulties in the targeting and decision-making due to not understanding their knowledge. Albeit, identifying external and internal knowledge are done together.
c. Obtaining knowledge: in this stage, knowledge should be obtained of external and internal market like related knowledge to customer, production, colleagues, competitors et…. in this study, the capacities should be provided and applied.
d. Developing knowledge: in this stage, knowledge of the organization should be developed like developing capacities, products, new ideas, processes etc…
e. Sharing knowledge: sharing the available knowledge and transfer it to the appropriate place and transferring knowledge from individual level and group level and finally organizational knowledge level.
f. using knowledge: assure to use knowledge in the organization usefully
g. maintaining knowledge: saving and maintaining knowledge and updating
h. Evaluating knowledge: achieving to specific purposes and using results as feedback to determine or modify the target.

Statistical Society

In this study, needed data to develop hypotheses and questions were gathered through librarian resource, conceptual model, and professor and elites ideas. Questionnaire was used to test hypotheses and answers of the questions. Data was analyzed using questionnaire in two descriptive and deductive analyses.

Data Analysis

First, Cronbah alpha was estimated through questionnaire analysis using SPSS statistical software. The estimated value was 0.82, so reliability of the questionnaire was confirmed. Then, the gathered data was analyzed using Probst model and mean test through Excel software. The methodology was survey. the statistical society included experts of different departments of customer services, dispatching and

utilizing, engineering and designing and someone who understood or related knowledge management. Finally, 24 people with MA and BA degree replied to the questionnaire based on table 3.

Table 3: Descriptive Parameters of Respondents

Row	Education degree	Number of individuals	Percent of total	Average of work experience (year)
1	BA	15	62.5%	18.5
2	MA	9	37.5%	20

Findings of the study

Question 1- what are the level of knowledge management dimensions in the Alborz power distribution company?

The answer of the question is as table 4 after complementing questionnaire by statistical society and entering information in EXCEL software:

Table 4: Percent of Knowledge Management Dimension

dimension	percent
Knowledge purposes	53.90%
Identify knowledge	45.81%
Knowledge obtaining	41.93%
Knowledge development	44.97%
Knowledge sharing	36.03%
Knowledge utilization	47.20%
Knowledge maintaining	43.01%
Knowledge evaluation	43.03%
Total	43.66%

Question 2- what are the gap of knowledge management dimensions in the Alborz power distribution company?

The gap of knowledge management dimensions with desirable level (100%) is shown in table 5 and diagram 1.

Table 5: Qualitative Amount of Gap between Available Level and Desirable Level

Dimension	Available level	Desirable level	Gap between available level and desirable level
Knowledge purposes	53.90%	100%	46.10%
Identify knowledge	45.81%	100%	54.19%
Knowledge obtaining	41.93%	100%	58.07%
Knowledge development	44.97%	100%	55.03%
Knowledge sharing	36.03%	100%	63.97%
Knowledge utilization	47.20%	100%	52.80%
Knowledge maintaining	43.01%	100%	56.99%
Knowledge evaluation	43.03%	100%	56.97%

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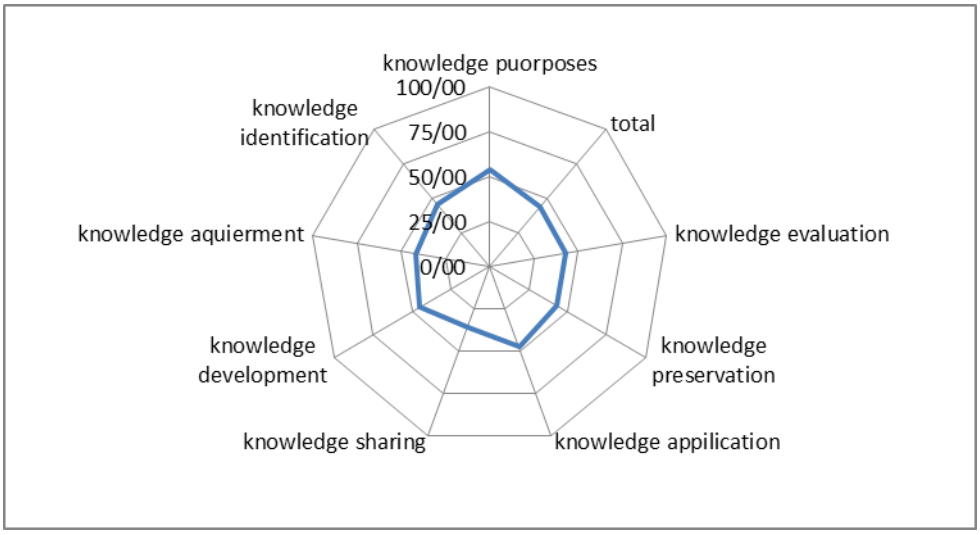

Diagram 1: Eight Dimensions of Knowledge Management

RESULTS AND DISCUSSION

Based on the obtained data of tables 4 and 5 and diagram 1, following issues are extracted:

- Highest dimension in Alborz power distribution company was allocated to knowledge purpose with 53.90% and lowest was allocated to knowledge sharing with 36.03%.
- Qualitative gap with desirable level in all dimensions are high.
- Qualitative gap of highest dimension like knowledge dimension is high rather desirable level.
- based on obtained data, this company is lack of any department as knowledge management department (due to low sharing, maintaining, evaluating dimension)

Results

Since, there are high gap between available levels and desirable levels in the company, it is recommended that superior managers implement knowledge management with appropriate planning to solve problems and promote knowledge management indexes in this company.

Structure part is one of the causes in the company which leads to low knowledge management dimensions. Informatics and IT activity is low in this company. So, sharing knowledge is less than others and should be surveyed.

Based on the indexes, long-term and comprehensive approach is needed to implement knowledge management system. It is recommended to implement such strategies in the company to decrease cost, wasting and increasing productivity. Superior manager implement this system in the organization using available facilities.

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