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Measurement of Learning in Telecom Sector: A Study on Major Public Sector Organization in Pakistan

Akhtar Mahmood and Muhammad Amir

Author(s) Biography

Akhtar Mahmood is Engineer Database NMC, PTCL Pakistan

Muhammad Amir is MS Scholar at National University of Modern Languages Islamabad (Fsd. Campus).

ABSTRACT: *The purpose of this study is to measure the level of learning in Telecom Service Providing Company, in public sector of Pakistan. In this article David Garvin's questionnaire which he provided in his article "Is yours a Learning Organization" has been used (Garvin, Edmondson et al. 2008). The questions were relating to three building blocks; Supportive learning Environment, Concrete Learning Processes and Practices and Leadership that Reinforces Learning. The questionnaires were distributed in Faisalabad Region. The responses inserted in SPSS software for further analysis. Arithmetic Mean, standard deviation and reliability test were applied. The average score of all three building blocks; supportive learning Environment, Concrete Learning Processes and leadership have also been calculated. The results have been compared with the Benchmark score consisted of five quartiles ranging from bottom to top quartile provided by the same scholar. It has been observed that most of the values are falling in bottom and second quartile which revealed that significant improvement is required in all dimension of learning in Public Telecom Sector in Pakistan.*

Keywords: Learning organization, Measurement of Learning, Telecom sector, Experimentation, Information transfer.

Today organizations are facing great challenges of competition and it is dire necessary to up to date the knowledge about customers, suppliers, competitors, technology, capabilities and resources of the competitors. Public sector Telecom industry in Pakistan is playing a vital role in providing the telecom services to its customers throughout the Pakistan. It offers a number of services to its customer i.e. landline telephone, broadband services, cellular phone, IPTV media connectivity to Cellular mobile operators etc. The industry has a lot of competition with the private organization in the same business. To sustain a competitive advantages learning is dire necessary at all levels.

Peter Sange (Senge 2006) said that the organization which has a faster learning capabilities then competitor will be in the position to get sustainable comparative advantage. When the organization adopted the culture of learning environment then there is a need for measurement the level of learning in the organization.

Many scholars have given different dimensions for becoming a learning organization. As per Peter M. Senge book which was published as "The Fifth Discipline" that the learning is the main element in organization which creates distinguish between the learning organization and traditional organization. He suggests that if any organization wants to become a learning organization it should follow the five disciplines, these are: - System thinking, Personal Mastery, Mental Models, Building Shared Vision and Team Learning. But the problem is how we measure these disciplines in the organization that either organization is following these discipline or not and how we can decide on the basis of these disciplines that organization is learning organization or not.

As per Michael J Marquardt book published as "Building the learning organization" that learning is not possible and cannot sustain competitive edge without understanding the learning organization model. Learning organization model comprises five subsystems. These subsystems are Learning, Organization, Peoples, Knowledge, and technology. Learning subsystem consists of learning level, learning types and learning skills. Organization subsystem consists of vision, culture, strategy and structure. People subsystem consists of Employees, Customers, Business Partners & Alliances, Suppliers and Vendors & community. Knowledge comprises Acquisition, Creation, Storage, Analysis, and Data Mining, Transfer and Dissemination, and application &validation. Technology consists of Managing Knowledge and Enhancing learning (Marquardt 2011). According to the article cited by Marquardt Michael in his book "As Reginald Revans (1983) a pioneer of organization learning said that "Learning inside must be equal to or greater than change occurring outside the organization or the organization dies".

David Garvin said that If any organization used the following five learning skills during its working, the organization will be a learning organization, these are: (1)System problem solving, (2)Experimentation with new approaches (3) Learning from past experience, (4)Learning from the best practices of others (5)Transferring knowledge quickly and effectively throughout the organization. He also write in his article that you can't manage something if you can't measure it (Garvin 1993).

Different researchers have different point of view regarding learning. A series of tools have been studied and the most appropriate tool published in the well reputed journal was chosen for measurement of learning. The main focus of this study is collectively measures the level of learning by using three building blocks named as Supportive learning, concrete learning and leadership introduced by David Garvin in his article published as "Is yours a learning organization". These dimensions are necessary for every organization which wants to become a learning organization. The Average score of each of each building block was calculated and compared with benchmark score provided by the same author. The author have subdivided these building blocks into 10 main variables; Psychotically safety, Appreciation of Differences, Openness to New ideas, Time for Reflection, Experimentation, Information Collection, Analysis, Education and Training, Information Transfer and Leadership That Reinforces Learning. In this article top listed company in public sector telecommunication have been selected and information has been gathered from middle and front level management.

Literature Review

Most of the senior managers in many organization are agree and accept the importance of learning in the organization but there is a not only need to clarify the concept to organizational learning but it is also necessary to establish the relationship between the concept of learning and business performance. This paper explore the relationship and conclude that organizational learning contribute positively both to innovation and competitiveness. The results shows that there is positive relationship between innovation and competitiveness (López, Peón et al. 2005).

Different measurement tools are available for measurement of different dimensions in the organization. Every scholar gives his own tool and dimensions. When researchers find out the results of the learning organization by using one tool and then compare it with the result measured through another tool it gives variation. There is a need for developing a comprehensive tool which provides authentic results to

the researchers. the scholar in his article "Diagnostic tools for learning organization" provided comprehensive tool which measures the learning and the development in the organization (Moilanen 2001).

The concept of the learning organization refers the organizations towards the different dimensions of learning and the organization should aware from the measurement tools. The writer of the article "The Construct of the Learning Organization: Dimensions, Measurement, and validation" cited many articles in his research paper who argue that there is a lot of conceptual confusion about the nature of learning at the organizational level and suggest that researchers need to know the dimensionality of this concept and its relationship. He provided a different dimensions, measurement and validations. He discussed different methods for developing alternative models for measurement of organization outcomes, for studying of instrument validity (Yang, Watkins et al. 2004, (Khaliq Ur Rehman Cheema, 2012)).

Three critical issues must be addressed before a company can truly become a learning organizations writes Harvard Business School professor David Garvin First question of meaning, second comes management and finally better tools for measurement. He criticizes on Peeter Sange that he did not provided any measuring instrument for measurement of five disciplines provided by him. He said that he has provided only the different building blocks to become a learning organization and no frame work have been given to measures these building blocks Mr. David gives some tools like learning curve, manufacturing progress functions and half life curve for traditionally measuring the learning in the organization (Garvin 1993)

There are three major building blocks that are important in learning these are called building blocks of learning organization. These are "Supportive learning environment, Concrete learning processes and practices, and Leadership behaviour that provide reinforcement" (Garvin, Edmondson et al. 2008)

Managers don't know that either the company is learning or not and how learning is important for the company. For this purpose David A. Garvin in his Article "Is yours a Learning Organization" provided three building blocks which help the manager for assessment of learning. These are a supportive environment, concrete learning process and leadership that reinforce learning. Then the author uses the diagnostic tool kit to determine how the team, department and organization are performing. The authors have taken a survey and took the input from executives of more than 100 companies and on the basis of results: he developed Benchmark Score for learning organization and provided Four Slabs. These slabs are Bottom quartile, Second quartile, Third Quartile and Top Quartile. When the researcher completed data collection and interpret the results then he compares the result with the Benchmark score to access the level of learning in the organization (Garvin, Edmondson et al. 2008).

The Dimensions of the Learning Organization Questionnaire (DLOQ) is an instrument provided by Victoria J, Marsick and Watkins in his article "Demonstrating the Value of an Organization's Learning Culture: The Dimensions of the Learning Organization Questionnaire" which help to check the organization either it is learning organization or not. The author have built the questionnaire having sixty two (62) questions on six point likert scale starts from 1 to 6 labeled as Almost Never to Almost Always and subdivided it into four distinct levels named as Individual Level, Team or group Level, Organizational Level and Measuring Learning Organization. At the end of the questionnaire the author has provided the result sheet for calculation of mean score of each group level and guides how to interpret the results (Marsick and Watkins 2003).

Leaders play a significant and important role to becoming a learning organization. There are the only peoples called leaders in the organization who can access the organization, that the organization is learning or not. Leaders are the most important personalities that motivate the people to learn so that organization can sustain a competitive advantage. The article recommended that if an organization want to achieve success through learning efforts he should first develop the learning leaders in the organization (Prewitt 2003).

A learning organization has to perform a lot of efforts to become a learning organization. It has to go through the series of steps and widely distributed activities. Normally there are different types of businesses like logistics, billing, order fulfillment and product development. Learning process involves the generation collection interpretation and dissemination of information. Concrete learning process involves experimentation, information collection, analysis and Education and Training. A comparison of Learning processes and practices between Manufacturing and Services Sectors of Pakistan has been carried out and derived that the level of concrete learning processes and practices is same in both sectors and there is a need for improvement (Rasheed, Ali et al.).

An environment that supports learning in the organization has four characteristics these are Psychological safety, Appreciation of differences, Openness to new ideas and Time for reflection. A comparison has been made on supportive learning in private and public organization is Pakistan by using toolkit provided by Mr. David Garvin's article "Is yours a learning organization" and it is concluded that supportive learning factor is greater in private organization then public organizations. It means there is

a supportive learning environment available in private organization to learn (Ali, Bajwa et al.)

Methodology

To measure the learning intensity in telecom sector of public sector organization in Pakistan is the prime objective of the study. For this purpose a modern and pioneer industry in Telecom industry have been selected and. The input is collected from the employees of telecom public sector organization in Faisalabad Region through questionnaire having 55 questions on different dimensions of learning. The objective of the study was:-

- Assessing that either the organization is learning organization or not
- Measurement of learning level in Telecom sector of Faisalabad.

Four departments from Telecom service provider organization in Faisalabad was chosen on the basis of convenient sampling. The data was collected from Front line management and middle level management .Different tools and instruments have been studied to measure the learning level organization and the most appropriate tool, Questionnaire introduced by (Garvin, Edmondson et al. 2008) has been used. The original tool kit was consisted of three building blocks i.e. "Supportive learning environment, concrete learning process and leadership that reinforces learning". The total tool kit was taken to carry out the research.

The whole toolkit comprises three building blocks and each building block is subdivided into different questions; the first learning block "Supportive learning is subdivided into psychological safety, Openness to new Ideas and time of Reflection, the second building block; Concrete Learning Processes an Practices comprises Experimentation, Information collection, analysis, Education and Training and Information Transfer, the third block consists of leadership that reinforces learning. To maintain the accuracy high level efforts have been made during data collection. To ensure the reliability of the data Cronbach's Alpha is applied on the information collected from the respondents. The test estimates for the ten dimensions in the learning organization variable. The result is 0.747 above from 0.7 means that data is valid. Descriptive state is used to measure the Arithmetic mean and standard deviation. At the end Average score has been calculated by using the formula "Mean/7*100 "and the results have been inserted in table No. 4 for comparison with benchmark score.

Table No.1 Case Processing Summary

	N	%
Valid	50	100.0
Excluded	0	.0
Total	50	100.0

Table No.2 Reliability Statistics

Cronbach's Alpha	N of Items
.747	10

Variables and Analysis

The important learning elements have been considered for evaluating the learning level in the organization for this purpose following variables has been used.

Supportive learning Environment

1. Psychological Safety
2. Appreciation of Differences
3. Openness to New ideas
4. Time for Reflection

Concrete Learning Processes and Practices

5. Experimentation
6. Information collection
7. Analysis
8. Education and Training
9. Information Transfer

Leadership That Reinforces Learning

10. Leadership that reinforces Learning

For assessing the depth of learning in the organization, the entire above said variable are used through multiple questions. The collection of data was completed from telecom services providing company in public sector from front line and middle management through 55 questions that cover all the 10 areas of learning.

Discussion on Results

The below mentioned Table 3 is representing the benchmark scores for each variable given by David Garvin. It consists of scaled scores of 100. These scores are subdivided into four quartiles ranging from bottom quartile to top quartile. There are three quartiles in between the top and the bottom these are Second Quartile, Median and Third Quartile. Median value is clearly indentified in this table. A range has been specified in the scaled score that if the average score of the company fall in bottom and second quartile, it represents that improvement is required in that area, and on the other hand if the score fall in third or top quartile, it means company's situation is strengthen. The comparison of the scores is as under:-

1. By comparing the first variable, psychological safety has Average Score of 65 with the benchmark score it fall in the bottom quartile of the benchmark score. It reveals that peoples in this organization are unable to speak up about what is in their mind. Mistakes often held against them and people feel uncomfortable and they are not eager to share information.
2. Average Score of second variable Appreciation of Differences have 59 score which also falls in the

bottom quartile. The results reveals that differences in opinion are less welcome in this organization, the people does not have the option to avail the opportunity of alternative ways of working.

3. Openness to New Ideas with average score of 62 falls in the bottom quartile and it has been observed that the people are too busy and have no spare time to improve them.

Table: 3 Benchmark Scores

Scaled Scores					
Building Blocks and Their Subcomponents	Scaled Scores				
Variables	Bottom Quartile	Second Quartile	Median	Third Quartile	Top Quartile
Supportive Learning Environment					
Psychological Safety	31-66	67-75	76	77-86	87-100
Appreciation of Differences	14-56	57-63	64	65-79	80-100
Openness to New ideas	30-80	81-89	90	91-95	96-100
Time for Reflection	14-35	36-49	50	51-64	65-100
Learning environment composite	31-61	62-70	71	72-79	80-90
Concrete Learning Processes and Practices					
Experimentation	18-53	54-70	71	72-82	83-100
Information Collection	23-70	71-79	80	81-89	90-100
Analysis	19-56	57-70	71	72-86	87-100
Education and Training	26-68	69-79	80	81-89	90-100
Information Transfer	34-60	61-70	71	72-84	85-100
Learning environment composite	31-62	63-73	74	75-82	83-97
Leadership Reinforce					
Composite for this block	33-66	67-75	76	77-82	83-100

1. Experimentation is a most important factor in learning organization and it has 61 score which lies in the second quartile, it means experimentation exists to some extent but improvement is still required. The organization is using the technique of experiments with new ways of working. It is also used experiments before launching the product or services in the market. The result shows that organization used the prototypes and simulation techniques before launching the new products to some extent but improvement in experimentation is still required.
2. Information collection is another important learning factor in the learning organization. The average score of this variable is 63 which lie in the second quartile of the benchmark score. It indicates that the organization under study uses the method of systematic collection of information on competitors, customers, economic and social trends, technological trends and compares its performance with that of competitors and the organizations which are best in class but there is also need for improvement in this sector.

Table: 4 Mean Scores of Telecom Organization

Name of Variables	N	Minimum	Maximum	Mean	Mean*100/7
Psychological Safety	50	1.6	6.4	4.528	65
Appreciation of Differences	50	2	6	4.135	59
Openness to New ideas	50	1.75	5.75	4.55	65
Time for Reflection	50	3.2	5.8	4.336	62
Experimentation	50	2	7	4.3	61
Information Collection	50	2	6.14	4.397	63
Analysis	50	2.6	5.6	4.116	59
Education and Training	50	1.833	7	4.59	66
Information Transfer	50	1	6.375	3.94	56
Leadership that Reinforces Learning	50	2.625	5.875	4.34	62
Valid N (list wise)	50				

1. Analysis has average score of 59 which also falls in second quartile. It means this organization not engages in productive conflict and debate during discussions. During discussions this organization not pays a sufficient attention to different views. There is also a need for improvement in this sector.
2. The variable Education and Training gets 66 marks and it is the highest score of the organization as compared to other score which the organization under study obtained during the data collection. It means that the organization has take keen interest in training of the employs, existing and newly hired. Training has been given to the employee when the organization switches any employee to a new post but improvement in this sector is still required.
3. The next and important variable is information transfer which helps the organization in concrete learning processes. The average score of this factor is 56 which fall in bottom quartiles. It means that the organization have a poor trend towards information transferring. The employee in this organization has no forum for meeting with and learning from experts from other departments, teams, or divisions. The organization has poor or no forum of learning from customers and suppliers. The organization is unable to share information with networks of experts outside the organization. The result shows that the organization under study needs improvement in the area.
4. Leadership that reinforces Learning is an important factor for learning organizations. Leaders are the peoples who give direction to the people in the organization and motivate them to do work with

keen interest. This factor has gets 62 scores which falls in a second quartiles in the benchmark score. It means that the managers of the organization not take input from the others, manage does not take care the suggestions received from the subordinates and does not encourage multiple points of view. It also shows that managers in this organization does not provide time, resources and venues for identifying problems and organizational challenges

Conclusion

The study has been conducted by using questionnaire and the response of the respondents has been calculated in magnitude form by using the SPSS software. The average score received from the output of SSP software compares with the benchmark score and conclude that in Telecom sector significant improvement is required in all three dimensions; supportive learning environment, concrete learning environment and Leadership. Only the average score of Education and training is higher from the other variable under study but it also falls in the second quartile of the benchmark score which reveals that the organization have strengthen position in Education and training sector. Trainings are being provided by the company to the peoples of the organization. The doors for further research are open in the area of measurement of learning in private and public sector organization.

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Appendixes

Descriptive Statistics

	N	Minimum	Maximum	Mean	Deviation
Psychological Safety	50	2	6	4.53	.965
Appreciation of Differences	50	2	6	4.13	1.022
Openness to New ideas	50	2	6	4.55	.860
Time for Reflection	50	3	6	4.34	.821
Experimentation	50	2	7	4.30	1.013
Information Collection	50	2	6	4.40	.899
Analysis	50	3	6	4.12	.730
Education and Training	50	2	7	4.59	1.147
Information Transfer	50	1	6	3.94	1.002
Leadership that Reinforces Learning	50	3	6	4.34	.802
Valid N (list wise)	50				

KMO and Bartlett's Test

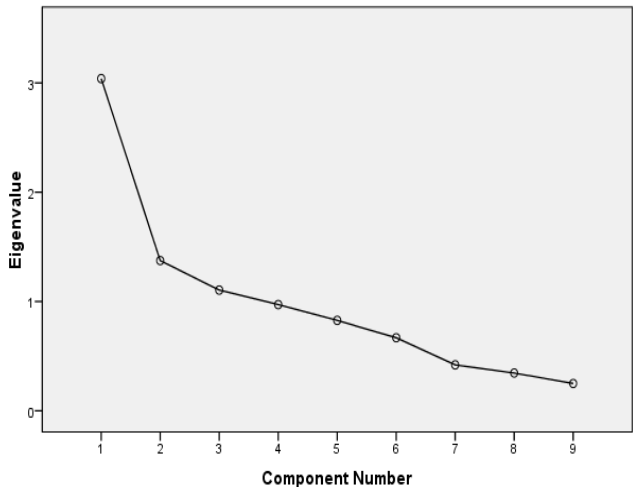
Kaiser-Meyer-Olkin	Measure of Sampling Adequacy.	.613
Bartlett's Test of Sphericity	Approx. Chi-Square	108.940
	Df	36
	Sig.	.000

Total Variance Explained

Component	Initial Eigen values			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.040	33.774	33.774	2.425	26.950	26.950
2	1.374	15.268	49.042	1.820	20.221	47.171
3	1.105	12.272	61.314	1.273	14.143	61.314
4	.972	10.798	72.112			
5	.827	9.190	81.302			
6	.668	7.425	88.727			
7	.420	4.663	93.390			
8	.345	3.835	97.225			
9	.250	2.775	100.000			

Extraction Method: Principal Component

Screed Plot



Rotated Component Matrix

	Component		
	1	2	3
Psychological Safety	.636	.414	-.105
Openness	.318	.545	-.184
Appreciation_Diff	.193	.545	-.446
Time_Reflection	-.145	.846	.290
Experimentation	.393	.515	.110
Information_Collection	.707	-.066	.322
Analysis	.234	.108	.891
Education_Training	.844	.114	-.092
Leadership_Reinforce	.664	.213	.162

Component Transformation Matrix

Component	1	2	3
1	.818	.562	.123
2	-.318	.619	-.719
3	-.480	.549	.684

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.