

Measuring Learning Practices in Public Sector: An Empirical Study of Telecom Industry in Faisalabad

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ABSTRACT: *The core purpose of this underlying research work is to assess the level of learning in telecom industry in public sector of Pakistan. In this article, Garvin's three building blocks of learning: supportive learning environment, concrete learning practices and processes, leadership that reinforces learning are hired to assess the level of learning in technical and HR/Admin departments of the said organization. We have selected Faisalabad Telecom region as the target environment for primary data collection using Garvin's questionnaire, empirical testing and comparative analysis of the said two under consideration departments. Total sample size is taken as 100 (50 from each department). For the calculations of performance evaluation parameters; Descriptive statistics, standard deviation, reliability of data and arithmetic mean well known statistical package for social sciences named SPSS is used.*

The average score is described by comparing with benchmark score of Davis A. Garvin. We come up with the conclusion from this empirical study that the public telecom sector has embraced the learning as a competitive tool. However, from the low learning scores, it has been observed that organization needs improvement in all three dimensions of learning organization.

Keywords: Global economy, Learning organization, Competitive edge, Telecom sector

This is the era of learning organization and change as the organizations are facing great economic pressures and challenges in global economy. Pakistan is the third world country with slowly growing economy. The telecom sector is playing a vital role in the country's economic growth as this sector's contribution is more than 10% in the country's GDP (gross domestic product). Telecom industry is providing huge opportunities for the investors as the customers' demands and preferences are changing day by day. Despite challenging and dynamic economic environment in Pakistan, the telecom sector of the country is performing better as the most of the telecom indicators have shown a positive growth. Telecom industry is governed by PTA (Pakistan Telecommunication Authority). PTA regulates the telecom industry by focusing on quality of service, investor concerns, consumers' protection and national interests. The industry has contributed Rs.411 billion in the economy of the country and has shown a growth of 13% during FY 2012. Telecom industry has two sectors; public and private telecom sector. The focus of the study is the telecom industry in public sector. The telecom industry in public sector is playing key role by providing the telecom services to the customers throughout the country and it is also competing with the telecom giants of the world. It provides landline telephone services, DXX (data services), broadband services, cellular telephone services, wireless telephone services, IPTV, transmission media to others telecom companies. It provides quality services at competitive prices, enhances customer satisfaction and improves the shareholders' value. To remain competitive in the telecom industry, learning is compulsory for the company.

Learning is the only sustainable competitive edge that a company has over its rivals. The company can lead the industry if it has faster learning capabilities than its competitors. It is needed for the success of the organization (Senge 1990).

For covering the dimensions of the learning concept, Scholars have defined learning organization in different ways. Peter M. Senge has given a comprehensive definition of learning organization in his book "The Fifth Discipline". The definition explains that in learning organization, people enhance their abilities and capacities continuously to get the desired results, new patterns of thinking is inhabited and nurtured, aspirations of people are set free, and a continuous learning process is adapted by the people of the organization. Learning differentiates between a traditional organization and a truly learning organization. He gives the five disciplines of the learning organization and suggests that any organization can become a learning organization by adapting the five

disciplines: mental models, personal mastery, building shared vision, team learning, and systems thinking.

Michael J. Marquardt describes the systems learning organization model in his book "Building the learning organization". This model consists of five subsystems: learning, organization, people, knowledge and technology. Learning subsystem comprises of level of learning, types of learning, and learning skills. Organization subsystem comprises of vision, strategy, culture, and structure. People subsystem comprises of customers, employees, business partners and alliances, managers and leaders, suppliers and vendors, and community. Knowledge comprises of creation, acquisition, store, analysis and data mining, application and validation, and transfer and dissemination. Technology subsystem consists of managing knowledge and enhancing learning. By mastering these five elements of corporate learning, Organizations can gain competitive edge over the rivals and achieve success in business (Marquardt 2011). For effective and speedy learning, Organizations adapt changes that occur in the environment. But the conceptual and practical framework of David A. Garvin is more comprehensive as it is developed from the essence of all previous studies.

David A Garvin mentions the hallmarks of the learning organization in "Building a learning organization" that are: systematic problem solving (using the statistical tools and standards operating procedures), experimentation (new ideas and approaches), learning from own past experience, learning from others (the best practices in industry), transferring knowledge (effective and prompt sharing information throughout the organization). He suggests the paths of becoming a learning organization and making knowledge as a strategic asset of the organization. He has given a practical framework for measuring the level of learning in any organization. Learning organization is the master of creating knowledge, acquiring knowledge, interpreting, and transferring knowledge over the organization for a change in behavior to reflect knowledge insights. You can't manage learning if you can't measure it (Garvin 1993).

There are different tools for measuring the level of learning in the organization. David A Garvin has contributed a comprehensive and effective measuring tool in the field of learning in his article "Is yours a learning organization". The core purpose of this study is to measure the level of learning in two departments of the telecom industry in public sector and comparative analysis of these two departments with their respective contributions in organizational learning. Garvin's Tool measurement Kit is used in this study with its three

building blocks that are: supportive learning environment, concrete learning procedures and practices, and leadership (Garvin, Edmondson et al. 2008). The results of these building blocks are compared with Garvin's benchmark score of learning. The building block of supportive learning environment has dimensions of psychological safety, appreciation of differences, openness to new ideas, time for reflection. The building block of concrete learning practices and processes has dimensions of experimentation, information collection, analysis, education and training, and information transfer. The building block of leadership includes the dimension of leadership that reinforces learning (Garvin, Edmondson et al. 2008).

This assessment tool has already been used by many scholars in their empirical research works. Mehmood and Amir have used this tool with all its dimensions to measure the level of learning of telecom industry in public sector of Pakistan (Mehmood et al. 2013). The dimension of Garvin's tool kit has been used in empirical work of Farrukh and Abdul Majeed for measuring supportive learning environment in FESCO, a public sector organization in Pakistan (Naveed 2013). To measure the learning level in private education sector of Pakistan, Noreen Aziz has used Garvin's tool in her empirical work (Aziz 2013). The same measurement tool has also been used for empirical analysis of learning levels in public and private firms of Pakistan (Rafiq et al. 2013).

Being a comprehensive and effective measurement tool, the dimensions of Garvin's tool kit are taken as variables. Primary data is collected from two departments (technical and HR/admin department) through questionnaire from the fifty respondents in each department.

Aim of the Study

The study in hand has the following core objectives apart from many other concealed purposes.

- To assess the level of learning in public telecom industry
- To measure the learning levels in technical and HR/Admin departments
- Comparative analysis of the learning in technical and HR/Admin department

Literature Review

Human learns from birth to death. The infant learns from mother's lap. During the different stages of life, the process of the human learning continues. Learning is compulsory for the organization as it is the only

sustainable competitive edge for the firm over its industry rivals and competitors (Senge 1990). Intense competition, economic conditions, technological advancement, social forces, network and global economy, radical changes in the work world, customers influence, demands and roles of the workers, workplace mobility and diversity and rapidly escalating chaos are the major winds of change that have compelled the organizations to become the learning organizations. Learning organizations have strategic advantage in the business world (Marquardt 2011).

There are three interrelated levels of learning: individual level (changes in knowledge, skills, insights, values and attitudes acquired through self-study and observation by the individual), team/group level (knowledge, competencies and skills of the groups), organization level (enhanced productive and intellectual gained through continuous improvement programs and commitments in the organization). All are the core parts of the learning organization (Marquardt 2011).

Future cannot be explored without understanding the origins and history of the learning organization. Where did the learning organizations come from? The roots of the learning organizations are very diverse and many. The development has been widespread and gradual over time. The concept of learning organizations comes from team of peoples who lived on the globe back in the history. The crew of teachers, writers, and thinkers can be referred as the "Thought Leaders". Thought leaders are the peoples who have contributed in the development of learning organizations. Learning stands on the shoulders of the thought leaders (Taylor 1995). The construct of "learning organization" starts in 1938, when John Dewey introduces the experimental learning as a continuous activity in the organization. He defines that the outcomes of learning should be effective actions in an organization. John wrote a book in which he explained the learning as a cyclic change in the organization (Dewey 1938). Kenneth Craik, a Scottish psychologist, introduced the concept of "mental model" in 1940s. He described mental model as an exposure of ideas openly in term of outward and inward direction (Craik 1940). Kurt Lewin introduced the concept of "creative tension" in 1946.

Kurt explained that the ideas that exist between an individual's vision and sense of reality in the organization termed as creative tension (Lewin 1946). Robert T. Taylor wrote about the thought leaders of the learning organization in his article "where did the learning organizations come from"? Russell Ackoff, a thought leader, contributed in the learning organization field by writing "Creating the corporate future" in late 1940s. Ackoff described that the organization is the part

of large system, named community and the community is the subsystem of society. Gregory Bateson worked from 1940 to 1980 till his death and introduced the concepts of first order learning and second order learning. Bateson developed the theory of the mind and wrote “steps to ecology of mind”. Chris Argyis, professor at Harvard business school, wrote “Overcoming organizational defenses”. Argyis introduced the dimensions of single loop learning and double loop learning in the organization learning and proposed the new theory of learning named “action learning” (Argyis 1976). Jay Forrester developed the concept of system dynamics in the learning organization and development in 1956. In 1961, Forrester wrote “industrial dynamics” and “urban dynamics” described the applicability of system dynamics in organization in a specific value chain (Forrester 1961).

Learning culture is source of sustainable competitive edge for the corporations. Learning is the continuous process of gaining, retaining, disseminating and utilizing the knowledge as a competitive advantage for the organization. Personnel, capabilities and resources are the core basis of for learning organization (Fiol et al. 1985). Peter M. Senge wrote a book named “The fifth discipline”. Senge believes that organizations are ineffective as they do not know the paths of learning organizations. He put the system thinking as the fifth discipline as it is the key for transformation of the organization into the learning organization (Senge 1990). The learning organizations must involve in the process of creating, acquiring, interpreting and transferring knowledge throughout the firm to reflect a change in behavior. Garvin defines the stages of learning that are acquiring, interpreting and applying information for learning purposes (Garvin 2000). The concept of learning organization has gained much attention as many organizations have adopted it as a symbolic change for growth. Organizations must have the capacity to modify their structures and their behaviors according to the changes in the global environment (Yang et al. 2004). Leaders play important and significant role in learning and development of organization. Leaders motivate the peoples of the organization to learn continuously for learning organization. Leaders can assess whether their organizations are on the path of learning or not. The organization must develop the learning leaders; if it wants to become a successful organization (Prewitt 2003).

David A. Garvin has contributed a practical framework for measuring the learning construct. To access the level of learning in any organization, Garvin has provided a measurement tool in his article “Is yours a learning organization”. The main building blocks of this tool kit are: a supportive learning environment, concrete

learning processes and practices and the leaders that reinforce learning. Garvin has also provided a benchmark score for comparison purposes (Garvin, Edmondson et al. 2008). A public sector study (FESCO Pakistan) reveals that there is need for improvements in leadership and its traits (Naveed et al. 2013). The results of empirical work of Akhtar and Amir reveal that the level of learning in public telecom sector of Pakistan is low and it needs improvement. The dimension of training and education in the same industry is in better condition (Mehmood et al. 2013). To measure the level of supportive learning environment in Pakistan, an empirical study has been conducted between the public and private sector organizations in Pakistan. The study reveals that the supportive learning environment is greater in private sector as compared to the public sector (Ali, Bajwa et al.).

Methodology

The objective of the survey is to check learning level and its applicability in public telecom sector of Pakistan by using the building blocks of the David A. Garvin’s tool kit. The target population is the public and pioneer telecom industry in Faisalabad (an industrial hub of Pakistan). The primary data has been collected through a questionnaire, having 55 questions, of Garvin’s tool kit (Garvin, Edmondson et al. 2008). The samples have collected from technical and HR/admin departments of the telecom company. The 7 points likert scale is used in the questionnaire from point 1 “highly inaccurate” to point 7 “highly accurate”. The total sample size is 100 as 50 respondents are randomly surveyed for data collection from each of two departments. The main objectives of the study are:

- Whether the organization is learning or not.
- To measure the learning level in Technical and HR/Admin departments of the company.
- To compare the learning levels between these two departments.

Variables

To measure the construct of learning, the tree dimensions of Garvin’s tool kit is divided into different sub-dimensions that are taken as the variables in this study. The dimension of “supportive learning environment” is divided into psychological safety, appreciation of differences, openness to new ideas and time for reflection. The dimension of “concrete learning processes and practices” has sub-dimensions of experimentation, information collection, analysis, education and training and information transfer. “Leadership that reinforces leaning” is taken as third dimension for measurement.

Research Findings

The data is collected from 50 respondents. Respondents are the officers and officials of the technical department. Efforts are made to collect the unbiased data. SPSS v.16 is used for analysis and interpretations. The reliability of the data has checked through reliability statistics by applying the Cronbach's Alpha test. Its value is 0.848 as shown in table-3, which is greater than 0.7. Standard deviation and arithmetic mean are measured by descriptive statistics through SPSS as shown in the Table-1. The average score is calculated by using the formula; $(\text{mean}/7)*100$ as shown in Table-1.

For Technical Department

Descriptive Statistics

Variable Name	N	Minimum	Maximum	Mean	Std. Deviation	Avg. Score
Psychological Safety	50	3	6	4.53	0.678	65
Appri Diff	50	3	6	4.51	0.879	64
Openness	50	2	6	4.57	0.723	65
Time Reflection	50	3	6	4.65	0.729	66
Experimentation	50	3	6	4.29	0.695	61
Information Collection	50	3	7	4.86	0.727	69
Analysis	50	3	6	4.47	0.757	64
Education Training	50	3	6	4.66	0.834	67
Information Transfer	50	3	6	4.69	0.687	67
Leadership Reinforce	50	3	6	4.59	0.824	66

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

Cronbach's Alpha	Number of Items
0.848	55

For HR/Admin Department

The data is collected from 50 respondents that include the officers and officials. The result of reliability statistics is 0.842 which is greater than 0.7. Its means that data collected is consistence and reliable as shown in table-6. Arithmetic mean and standard deviation are

calculated by applying descriptive statistics as shown in table-4. The average score is calculated

Variable Name	N	Minimum	Maximum	Mean	Std. Deviation	Avg. Score
Psychological Safety	50	2	6	4.54	0.909	65
Appri Diff	50	2	6	4.16	1.011	59
Openness	50	3	6	4.58	0.775	65
Time Reflection	50	3	6	4.34	0.814	62
Experimentation	50	2	7	4.32	0.971	62
Information Collection	50	2	6	4.41	0.891	63
Analysis	50	3	6	4.12	0.723	59
Education Training	50	2	7	4.59	1.147	66
Information Transfer	50	1	6	3.94	1.002	56
Leadership Reinforce	50	3	6	4.35	0.795	62

		N	%
Cases	Valid	50	100.0
	Excluded ^a	0	.0
	Total	50	100.0

Cronbach's Alpha	N of Items
.842	55

Discussion

The Garvin's benchmark score is shown in Table-A. The score of 100 is divided into four quartiles ranging from bottom to top quartile. If the learning score of the company lays in bottom and second quartiles, its means that improvement is required in the field of learning. The third and top quartiles explain the strong learning position of the company. The scores of technical and HR/Admin departments are compared with the benchmark score for evaluation of learning in these two departments.

Building Blocks and Their Subcomponents Variables	Scaled Scores				
	Bottom Quartile	Second Quartile	Median	Third Quartile	Top Quartile
Supportive Learning Environment					
Psychological_Safety	31-66	67-75	76	77-86	87-100
Appri_Diff	14-56	57-63	64	65-79	80-100
Openness	38-80	81-89	90	91-95	96-100
Time_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_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

Psychological Safety: The average score for this variable is 65 for technical department and 65 for HR/Admin. The learning score of both departments fall in second quartile of benchmark score. It means that the employees of the company do not feel much safety while speaking their thoughts and ideas. The comfortable level of talking about disagreements and problems falls in the second quartile of scaled score.

Appreciation of Differences: For this variable, technical department's score is 64 and it falls in median quartile. HR/Admin department's score is 59 that are in second quartile. Results show that the difference in opinions is appreciated but still need a more supportive environment for more learning.

Openness to New Ideas: The results of this variable of the studied organization explain that it needs much improvement. The scores of both departments fall in bottom quartiles. The organization is not flexible for the new ideas but it should be more open for the new ideas for becoming a learning organization.

Time for Reflection: The score of technical department is 66 and it lays in top quartile of benchmark score. The result of HR/Admin score is 62 and it lies in the third quartile. This shows that there is sufficient time for the people of the organization to improve themselves to become a learning oriented organization.

Experimentation: This is the important factor (variable) for the telecom organization. The technical department's score is 61 and is 62 for the HR/Admin department. The organization is using simulation and prototype

techniques before commercializing the new products and services. The scores of both departments fall in the second quartile which explains that improvement is required in this dimension of learning.

Information collection: Information collection is the basis for the learning organization and it the key factor for the organization. The studied organization collects the information of the new technologies, trends and the competitors. The scores of both departments are in the bottom quartile that shows that there is immense need for improving this factor.

Analysis: The scores for this variable are 64 for the technical department and 59 for the Hr/Admin department and scores fall in second quartile. It explains that the organization do not engage in productive debate and conflicts during the discussions that ultimately help in the key decision making. The organization needs to implement this learning practice.

Education and Training: The scores are 67 and 66 for technical and HR/Admin departments respectively. Being a telecom organization, the company educates and trains the new recruited employees. Periodic trainings are also giving to the experienced employees. During switching and rotation of employees, *on the job* and *off the job* courses are given to the employees. But for better learning in networked economy, company on this factor.

Information transfer: Information transfer is the major factor of learning processes and helps to gain a competitive edge for the organization. 67 and 56 are the scores for the technical and HR/Admin departments respectively and fall in second and bottom quartiles of the benchmark score. The score reflects that transfer of information is not up to the mark as there is no forum for sharing information in teams, divisions and departments. The information sharing of the organization with the outside experts is poor. The studied organization needs enhancement in this critical area.

Leadership: Leadership that reinforces learning is one the building blocks of the learning organization. Success and failure of the organization depend on this factor. The average scores for this dimension are 66 and 62 for technical and HR/Admin department respectively. The low score describes that the leaders and managers take less inputs from others, give less time for listening the problems attentively. It also shows that leaders and managers do not encourage multiple and opposing points of view of the officials and do not provide the resource, time and venues for improvement.

Comparative Analysis

The average score of technical and HR/Admin department is shown in below mention table-B

Table-B Mean Score for the Departments

Variable Name	Technical Dept.	HR/Admin Dept.
Supportive Learning Environment		
Psychological Safety	64.71	64.86
Appri Diff	64.43	59.43
Openness	65.29	65.43
Time Reflection	66.43	62.00
Experimentation	61.29	61.71
Information Collection	69.43	63.00
Analysis	63.83	58.83
Education Training	66.57	65.57
Information Transfer	67.00	56.29
Leadership Reinforce	65.57	62.14

Hallmark- I. Supportive Learning Environment:

Results show that there is no difference for the psychological safety variable and both fall in the same quartile of benchmark score. The appreciation of difference is more in the technical department as compared to the HR/Admin department. This means that difference in ideas and opinions are welcome in technical department more than the HR/Admin department. Both departments have the same score for the openness as shown in table-B. It describes that both the departments treat the new ideas and better ways of performing job equally. The score of time for reflection for technical department is 66.43 that are greater than HR/Admin department score of 62. It explains that employees of technical department have more time for reflection of their knowledge and improvement.

Hallmark- II. Concrete learning practices and processes:

The learning score for this factor, experimentation, is equal for both the departments. It shows that new ways of working, conducting and evaluation of experiments are equally exist in both departments. The collection of information is greater in technical department as its score is 69.43 as compared to

the HR/Admin score of 63. The results of analysis are 63.83 for technical and 58.83 for the HR/Admin department. It explains that productive debate and conflicts are encouraged more in technical department as compared to the HR/Admin department. The factor, education and training, has the different score for the both departments. It is 66.57 for the technical and 65.57 for the HR/Admin department. The organization gives trainings and courses for knowledge and skill development of old and newly hired employees, still this factor needs attention of the organization. The factor, information transfer, has 67 score for technical department and falls into second quartile while 58.29 score for the HR/Admin department which falls in the bottom quartile of the scaled score. This shows that technical information more quickly disseminate in the organization.

Hallmark- III. Leadership that reinforces learning:

The score for the factor, leadership that reinforces learning, is 65.57 for the technical department and 62.14 for the HR/Admin department. It describes that inputs of employees and multiple opinions are more welcomed in technical department as compared to the HR/Admin department. More resources, time, and venues are provided in technical department as compared to the HR/Admin department.

The overall score of the technical department for the three hallmarks of learning is more than the HR/Admin department. It means that level of learning in the technical department is high as compared to the HR/Admin department of the public telecom organization.

Limitation and Future Research

This empirical was conducted with small sample size due to time and resource constraints. The target population for this study is Faisalabad telecom region as it was difficult to conduct survey throughout all Pakistan. The results may differ if all telecom regions were included in this study. But the care should be taken in all dimension of learning if generalizing the findings of this empirical work. The doors for the future research are open in learning organization in all public and private organizations of Pakistan by avoiding the limitations.

Conclusion

This paper contributes an empirical analysis for the measurement of learning in telecom organization of public sector. The studied organization has adapted the learning with all its dimensions. Although the learning scores for all three learning dimensions are low yet the

learning is nourishing in the organization. Hence, we have come up with the conclusion that the employees from both the departments of the company do not feel much safety while speaking their thoughts and ideas since the learning score of Psychological Safety factor lies in the second quintile of Garvin's defined scale of learning evaluation process. Difference in opinions is more appreciable in technical department than HR/Admin department. Flexibility to the openness to new ideas is on same level for both the departments. Technical department staff has more value for time of reflection factor compared to HR/Admin department.

Experimentation Dimension of learning in both departments direly needs improvements. Same is the case with the Information Collection factor. In case of Analysis factor, both the organizations need to implement this learning practice. In view of the importance of information transfer factor, there seems dire need of improvement in the studied organization since the information sharing of the organization with the outside experts is poor. In this regard HR/Admin department has lower performance than technical department. Concluding remarks on the last learning factor; Leadership about both the under discussion departments of the said organization are also not very satisfactory since leaders and managers do not encourage multiple and opposing points of view of the officials and do not provide the necessary resources for improvement.

As the overall comparative study it is revealed that the level of learning is higher in technical department than HR/Admin department of the organization. If the telecom organization wants to become a learning organization in its true spirit, it must have to improve its learning scores by implementing and prioritizing the learning practices and environment. Our performed study is supposed to be helpful for the practitioners to improve the organization's performance by creating learning organizations.

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