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Organization Culture and Innovation: Affect of Its Variables

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Abstract

Today the firms exist in a turbulent environment where technology changes quite often, satisfying a customer is a big challenge and competition among companies is severe within the industry. With these backgrounds it is clear that innovation is indispensable for any organization. Innovation gives a competitive advantage over other organizations. There is no doubt that for the organization to survive and flourish innovation is considered to be very important. Sustainable growth is possible due to continuous improvement through innovation. For the innovation to happen a supportive organizational culture is inevitable. The study tries to find out the favorable cultural characteristics that can introduce and prosper innovation in an organization.

For the study a small sample of 30 responses are collected from the individuals who are working in three different companies where innovations are encouraged. Companies are in existence for three or more than three years. Study may throw light on the importance of culture on innovation. Other independent variables considered for the study are age of the company and years of experience of the respondents in the same company.

Key words: *Innovation, Culture, Organization, Strategy, Leadership.*

Introduction

There is no doubt that innovation is a driving force for the growth of a company. Those companies realized this factor encourage for more novelty. It is clear beyond doubt that innovation is the key to the success of many organizations. Imitation always takes the back seat and customer satisfaction and appreciation will be less for such products. Defining innovation is not as easy as it is expected. It is highly intricate and complicated. It is a multidimensional phenomenon where thorough knowledge and skill and out of the box thinking contribute for the new idea to born, develop and implement. Other important factors include infrastructure, teamwork and supportive supervisor or management. High level of motivation, opportunities, flat structure and flexibility will provide an environment for new ideas to generate. An idea generated has to be nurtured well in the organization, for that an encouraging and supportive work culture is important. Culture influences the innovation to design with novelty, to take risk and make use of opportunities appropriately. It is the behavior and faith that persuades or dissuades the ideas that are created. The development and implementation of the created ideas is based on the trust, cooperation and support from fellow workers and superiors. Convincing the new idea and later executing is challenging.

Many a time the fear of failure and loss of money deter employees from supporting it. But studies show that companies that conduct business in high

technology industries must “innovate or die” (Angel, 2006; p.1) and the presence of an innovation culture serves as a critical success factor. Such companies do not give importance to failure. They try continuously till success is achieved. This paper tries to understand the importance of culture for innovation to happen. Four important characteristics considered for culture include dominant characteristics, management of employees, organizational glue and criteria of success. These characteristics are based on the adhocracy and hierarchical culture. Innovation is defined based on the components like resource, capability and leadership.

Defining Innovation

An increasing number of professionals and researchers define innovation as any idea, practice, or object that the individual or organization adopt and regard as new (Damanpour, 1991). According to Drucker (1974), innovation can be generally defined as the process of equipping in new improved capabilities or increased utility (i.e. innovation is not a science or technology but a value). Inputs are transformed to outputs using technology. Sophisticated machines, systematic process, complicated techniques and appropriate layout make the technology innovative. The focus on strategies, values and methods makes technology purposeful for those who use it. Rogers (1995) defines innovation as an ‘idea, practice or object that is perceived to be new by an individual or other unit of adoption’. It is not correct that complicated and sophisticated invention is only innovation. Any innovation that adds value to the end user and adds profit to the creator is accepted. Innovation always gives a competitive advantage to the companies. For the companies to continue in the growth phase of the life cycle, innovation is a must. Novelty is the ultimate word to satisfy the existing customers and can create new clients. So innovation can be defined as creation of new products and services that can serve the society with ease and with comfortableness. Identifying the needs and modifying the existing products or

creating totally a new one that satisfy the needs of customers gives stability and continuous growth for the company. Keeny and Reedy (2007) point out that innovation involves the adoption of new products and/or processes to increase competitiveness and overall profitability and it involves new ways of identifying the needs of new and existing clients. For the innovation strategies to be initiated and to encourage this motive an ideal culture that supports innovation is required.

Understanding Culture

Culture is generally defined as a set of values, norms and beliefs within a company. An apt definition by Schein (1992) explains culture as ‘a pattern of basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to these problems.’ Culture can encourage and mold behavior and attitude of the employees. Adapting to the new culture may take time but once adapted it will continue for long time. It is important to create a healthy and progressive culture to be developed in the organization for the employees to be positive and energetic towards the job. According to Gaynor (2002) innovation is depicted as a cultural element of an organization which should be instilled by managers in order to communicate to employees the organization’s mission, drive them to search for unique opportunities, ensure that those opportunities align with the organization’s strategic direction, and both define the measurements needed to evaluate those opportunities success and to continually reassess that opportunity in the future so as to ensure that it remains relevant and beneficial. Culture explains the shared values, ideologies, beliefs and traditions that is passed year to year and is shared among all the employees. This culture reflects in their job and behavior. The metamorphosis that happens in the new entry employees related to the culture of the organization will lead to better performance and advantage.

Culture and Innovation

A culture that motivates innovation focus to update with latest technology, capable employees who get motivated by themselves related to novelty and exhibit sheer interest in implementing new ideas that leads to creativity. In this kind of culture, support from the superiors can be considered as an advantage to this direction. Organizations that concentrate to develop new technology or improve the existing one are possible with a strong organizational culture. A culture that sustains innovation is in the road of success. A favorable environment that focuses on trust, mutual understanding, cohesiveness, supportive superiors and structure, flexibility and openness encourage innovation. Organizational culture can persuade or dissuade the behaviors related to innovation. The relationship between innovation and culture to understand is not easy as there are many variables to be considered. It is impossible to consider all the variables in a study. Also some variables are difficult to measure and evaluate. Some studies show that there is a relationship between innovation and culture but identifying the characteristic factors of culture that influence innovation is important. Researchers also argue that organizational culture does not produce innovation per se (Covin and Slevin, 1991). In majority of the situations culture acts as a mitigating factor for the innovation to flourish well, even though there are other resources required. It helps the organization to achieve innovative competency within the organization. Some of the concepts related to cultural aspects apart from innovation are organizational change and growth. Any organization planning to grow innovatively should be prepared for continuous change and is linked to risk. This risk gives the result of continuous improvement that is essential for innovation. Another important feature of innovation support culture is the rewarding system. Rewards encourage innovation, leads to more creativity and continuous learning.

A culture that cultivate autonomy, open and informal communication, flexible structure and

teamwork among the employees result in innovation to thrive well. The results of the study by Wang et al. (2010) indicate that firms with high orientation for the team were able to make better use of financial investments and human capital to produce innovations than firms with low orientation for the team. An effective team with mutual trust and cohesiveness is possible to achieve the best with good leadership. Leadership style also influences innovation (Amabile, 1998). As an environment of explained, for the creativity to develop an environment of more flexibility, openness and with less stringed rules and regulation are required. Along with this, leadership style to follow is also important. For the creativity to penetrate into the minds of the employees participatory or democratic leadership is perfect. Such kind of a leader motivates the employees to work along with him and is clear about the outcome to be attained.

Objectives:

- To find out the influence of culture on innovation.
- To find out ideal culture (adhocracy or hierarchy) for innovation to flourish.
- To find out whether age of the company has relation with innovation components like resources, capabilities and leadership.

Hypothesis

H1: There is a relationship between adhocracy culture and innovation.

H2: There is a relationship between age of the company and components of innovation.

Creation of Framework

In this study, cultural characteristics like dominant characteristics, management of employees, organizational glue and criteria of success are considered. The items selected for these dimensions help to score the culture as adhocracy or hierarchical. Muller et al. (2003) have developed a framework to understand the innovative capacity within a firm. He has considered resource,

capability and leadership as the dimensions of innovation. Framework prepared by him combines resource view, capability view and leadership view on innovation. Resource view addresses the allocation of capital, labor and time resources to achieve the return on investment in strategic innovation. Capability view assesses the extent to which the company's skills, tools, and values are adapted to innovation. Leadership view assesses the degree to which a company's leadership supports innovation. The competing values framework, as developed by Cameron, Quinn and Robert (1999) has been used in constructing an organizational culture profile. In this respect the overall culture profile of an organization is identified as clan, hierarchy, adhocracy and market. For the study only hierarchy and adhocracy is considered. Hierarchy in an organization focuses on internal maintenance with a need for stability and control. Adhocracy concentrates on external positioning with a high degree of flexibility and individuality. The six characteristics developed from it are dominant characteristics, organizational leadership, management of employees, organizational glue, strategic emphases and criteria of success. In this only four characteristics are considered for the study. They are dominant characteristics, management of employees, organizational glue, and criteria of success.

Methodology

In the demographic aspects age of the company and the sector is considered. Another factor was the years of experience of the individuals from whom sample was collected. This was not included for the study but considered only those respondents who has worked in the same company for minimum of five years. Employees with more years of experience can respond well to questions related to culture and innovation. The data for the study is collected from employees working in three different sectors. They are manufacturing, IT and publishing companies. A total of thirty samples are collected including all the three sectors. Other samples with less years of experience has been eliminated for the study. From the four cultural profiles according to Cameron, Quinn and Robert (1999) only hierarchy and adhocracy are considered for the study. The four characteristics of culture considered are dominant characteristics, organizational leadership, management of employees, organizational glue and criteria of success are developed by Julia, Daniel and Raquel (2011). From innovation side the framework developed by Muller et al (2003) that explains the dimensions of innovation like resource view, capability view and leadership view are considered. The study tries to find out the favorable cultural characteristics that can introduce and prosper innovation in an organization.

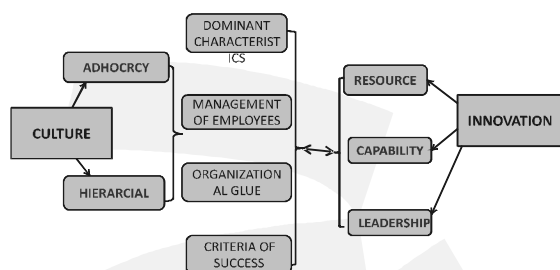


Fig. Framework of Culture and Innovation

From the descriptive statistics it is found that out of the 30 samples collected, 12 companies are aged less than 5 yrs, 11 are more than 5 years and less than 10 years, about 7 companies are aged more than 10 years of age. While collecting the sample, companies more than 3 years are considered. Sectors taken into account were manufacturing, software companies and publishing. Out of which 50% were manufacturing, 20% were software companies and the rest 30% are publishing.

Age of Company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5yrs	12	40.0	40.0	40.0
	more than 5yrs but less than 10yrs	11	36.7	36.7	76.7
	more than 10yrs	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

Three sectors considered for the study are manufacturing, software and printing press. More samples are collected from manufacturing (50%), then publishing (30%) and software sector (20%).

Sector that company belong

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manufacturing	15	50.0	50.0	50.0
	Software	6	20.0	20.0	70.0
	Publishing	9	30.0	30.0	100.0
	Total	30	100.0	100.0	

Analysis is conducted using regression to find the cause and effect of the characteristics of culture with innovation. For this items related to adhocracy and hierarchy is taken to find the culture suitable to innovation.

The first characteristic considered is organization-dominant characteristic. In that one item is adhocracy culture related and the other one is hierarchical culture related.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.200	.822		3.893	.000
Organization-dominant characteristics (adhocracy)	3.243	.249	.123	.304	.000
Organization-dominant characteristics (hierarchy)	2.989	.218	.145	.291	.000

a. Dependent Variable: innovation

The two items considered to understand the characteristics of culture, organization-dominant characteristics are –

- a. Dynamic and entrepreneurial place – people are willing to stick their necks out and take risks.
- b. Controlled and structured place – formal procedures generally govern what people do. In this former was related to adhocracy culture and later to hierarchical culture. From the analysis it is found that both are positively significant.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.676	.856		4.294	.000
Management of employees (adhocracy)	-.133	.230	-.112	.579	.027
Management of employees (hierarchy)	-.038	.205	-.036	-.186	.051

a. Dependent Variable: innovation

Two items considered for management of employees are

a) Individual risk-taking, innovation, freedom, and uniqueness.

b) Security of employment, conformity, predictability, and stability in relationships. The former is related to adhocracy and the later is hierarchy. There is a significant relation for both. But the significance is more for adhocracy while hierarchy. For hierarchy the significance is weak as the value slightly higher than 0.05.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.200	.822		3.893	.000
Orgnization-dominant Characteristics (adhocracy)	3.243	.249	.123	.304	.000
Orgnization-dominant Characteristics (hierarchy)	2.989	.218	.145	.291	.000

Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.570	.615		5.804	.000
Organization glue (adhocracy)	-.280	.196	-.313	-1.427	.016
Organization glue (hierarchy)	.195	.206	.208	.949	.032

a. Dependent Variable: innovation

The items considered under adhocracy and hierarchy for the characteristics organizational glue is

- a) Commitment to innovation and an emphasis on being on the cutting edge.
- b) Formal rules and policies-maintenance, and hierarchy importance. For both the items p value is less than 0.05 and it is significant.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.676	.826		2.029	.052
Criteria of success (adhocracy)	.892	.455	.361	1.961	.050
Criteria of success (hierarchy)	.020	.253	.014	.077	.939

a. Dependent Variable: innovation

The last characteristic considered in the study is criteria of success. In this items considered in adhocracy and hierarchy are

- a) Having the most unique or newest products. It is a product leader and innovator.
- b) Efficient-dependable delivery, smooth scheduling, and low-cost production are critical.

There is a significant relation for both the items.

The study tries to find out whether innovation parameters are true with the age. First innovation related to resources is taken into consideration. ANOVA is carried out to find out the allocation of resources for strategic innovation is related to the age of the company. The test finds that as the age of company advances strategic allocation of resources will be well versed by the company. This help in innovation and thus age is related to resources that leads to innovation.

Tests of Between-Subjects Effects

Dependent Variable: innovation-resources

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.124 ^a	2	1.562	1.353	.016
Intercept	153.714	1	153.714	133.123	.000
Age	3.124	2	1.562	1.353	.016
Error	31.176	27	1.155		
Total	193.000	30			
Corrected Total	34.300	29			

a. R Squared = .091 (Adjusted R Squared = .024)

There is no significant relation between age and innovation related to capabilities. It is found that innovation due to the capabilities has no significant relation to age of the company.

Dependent Variable: innovation-capabilities

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.073 ^a	2	1.536	1.027	.372
Intercept	183.169	1	183.169	122.433	.000
age	3.073	2	1.536	1.027	.372
Error	40.394	27	1.496		
Total	226.000	30			
Corrected Total	43.467	29			

a. R Squared = .071 (Adjusted R Squared = .002)

In the case of innovation related to leadership, the study finds that leadership is not significantly related to age.

Tests of Between-Subjects Effects

Dependent Variable: innovation-leadership

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1.124 ^a	2	.562	2.114	.240
Intercept	50.923	1	50.923	191.587	.000
age	1.124	2	.562	2.114	.240
Error	7.176	27	.266		
Total	59.000	30			
Corrected Total	8.300	29			

a. R Squared = .135 (Adjusted R Squared = .071)

Discussion

This study focuses on culture and innovation. In order to study the culture the characteristics considered are organization-dominant characteristics, management of employees, organizational glue and critical success. The items considered in these dimensions are categorized as adhocracy and hierarchy. This has helped to understand which type of culture is suitable for innovation. From the study it is found that organization-dominant characteristics related to hierarchy and adhocracy culture are significantly related to innovation. From the analysis it is clear that innovation happens in a dynamic and entrepreneurial environment and also in controlled structure where policies and procedures govern the organization. Even though some other studies prove that entrepreneurial climate is ideal for innovation, here it is proved that hierarchical culture also initiate innovation. This is found in some manufacturing and few printing organization. But not found in the software companies. Next characteristics considered is management of employees, here in adhocracy culture individuals are keen in taking risk, freedom and uniqueness. But in hierarchical culture security, stability in relation and less interest to take risk is found. The study proves that adhocracy culture is suitable for innovation. But hierarchical culture

cannot be eliminated totally. It is not significant as compared to the adhocracy culture. Hypothesis is proved correct for innovation to nurture, adhocracy culture is significant. A culture where risk-taking initiatives are encouraged, novelty and freedom is given to test and develop new ideas is the ideal environment for innovation. This is proved through this study. In organization glue, adhocracy and hierarchical culture proved true and significant. Both the cultures are proved to be good for innovation. Hierarchical culture emphasis on rules and policies but study proves that innovation initiatives can happen in such a climate also. Such initiatives are seen more in manufacturing and printing companies compared to software companies. While considering the criteria of success, the adhocracy culture item included is about the uniqueness of the products. It is proved significant that such things are part of innovation. But hierarchical culture related to criteria of success that includes smooth scheduling and low cost production is not significant. Apart from this for the innovation to happen some of the components that contribute to innovation is compared to age of the company to find out whether there is any relation between the company with experience and innovation. This study concludes that leadership and capability as innovation components has no influence on age of the company. It shows that optimal resource allocation improves with experience and is related to innovation.

Conclusion:

The study tries to emphasize the importance of culture for innovation. A culture that is flexible, open and with fewer formalities is good for innovation is proved beyond doubt from this study. But interestingly a culture with formal, hierarchical, stable and that rule with policies and procedure can also nurture innovation is clear in this study. The study did not try to understand in-depth about the sector that encourages hierarchical culture. But interaction with the employees after the analysis revealed that manufacturing environment in most cases is rigid and still innovation happens. So the view that adhocracy culture alone encourages innovation is proved wrong through this study. From

the analysis it is clear that innovation with resource view is managed well as the age advances. Optimal use of resources for the innovation is possible in an effective manner as the experience of the company increases. But capabilities and leadership varies from time to time in the organization. It depends on the incoming or outgoing of the employees and leaders in the organization, innovations prosper. So age of the company is not related to the capability view and leadership view of innovation. The study can be extended to find out the influence of other cultures like clan and market culture to find out how innovation do well in these cultures. Another area of interest can be to probe the innovation sting in the sectors that is not included in this study.

References:

1. Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior*, 10, 123–167.
2. Angel, R. (2006), "Putting an Innovation Culture into Practice", *Ivey Business Journal*, January/February 2006, pp. 1 5
3. Covin, J. G., Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice*, 16(1), 7–25.
4. Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34 (3), 554–590.
5. Drucker, P.F. (1974). *Management: Tasks, Responsibility, Practices*. New York: Harper & Row.
6. Gaynor G.H. (2002), *Innovation by Design: What it Takes to Keep Your Company on the Cutting Edge*, AMACOM American Management Association, New York, NY.
7. Muller, Amy, Välikangas, Liisa & Merlyn, Paul (2003), *Metrics for Innovation How Companies Can Develop a Suite of Innovation Metrics to Combat Decay* Retrieved Feb 16, 2005, from www.woodsidesinstitute.org.

8. Rogers, E (1995), *Diffusion of Innovations*, New York, NY: Free Press
9. Schein, E.H. (1992), *Organizational Culture and Leadership*, 2nd ed., Jossey Bass, San Francisco
10. Wang, S., Guidice, R. M., Tansky, J. W., Wang, Z. (2010). When R&D spending is not enough: The critical role of culture when you really want to innovate. *Human Resource Management*, 49 (4), 767–792.

