Innovation Culture – Determinant of Firms' Sustainability

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Abstract—Changes in global economy require changes in firms. They need to adapt to speed producing faster and creating new products, structures and processes. The purpose of the paper is to explore literature about organizational culture and its impact on innovation

In the paper the method of literature review is used to examine influence of organizational culture on innovation and performance of enterprise.

Organizational culture is crucial for innovation. Literature reveals that research of organizational culture mostly confirm already existing conceptions and models, but those help to make profile of innovation culture.

Research summarize previous research of organizational culture as culture which foster innovation and provide profile of innovation culture, which may be used by managers to improve cultural environment to increase performance of their companies. Research also leads to hypothesis for further research.

Keywords—Innovation, Innovation Culture, Organizational Culture.

I. INTRODUCTION

INNOVATION is widely used word in the nowadays life. Even there were many ideas and discussions about Innovation in last century, (OSLO manual 1992), [15], [37], [26], [55] entering in the new centuryworld's attention has been focused to the Innovation (Global Innovation Index [56], The Intercultural Innovation Award (since 2009, UN Alliance of Civilizations) [57], OECD Innovation strategy (2010) [58]). The "big running" has started: who will be faster and better and more innovative?

According to executive research innovative companies' had 76 percent product success ratio, but companies with medium or low innovation effectiveness only 54 percent [49]. Innovation is essential for company's sustainability [53]. There were found that the most of the top innovative companies of the world have also extensive sustainability policies and many of them are seen as leaders in the field of sustainability [14]. Research "Innovating for Sustainability" tried to answer to the question about what innovation activities do firms engage in to become sustainable. In the result were found that 38 practices for fostering innovation are provided [51].

Sustainability is driver of innovation [52]. Firms becoming environment-friendly lower costs and products become better

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Study is supported by project Implementation of PhD *Programme in Riga International School of Economics and Business Administration*, No.2011/0051/1DP/1.1.2.1.2/11/IPIA/VIAA/007

and enable companies to create new business [52].

Some companies believed that investment in R&D leads to innovation and started to invest in R&D. Research "Mobilizing Innovations: The changing landscape of disruptive technologies" [60] results showed that proximally 35% managers believe that innovations are fostered mostly by investment in R&D, but Booz &Company's [33] research results shows that there is no correlation between investment in R&D and companies' performance. Research "Why Culture Is Key" results [60] proved that companies with higher organizational culture score have also higher performance.

Many authors consider that culture can be competitive advantage of company [5], [10], [14], [39], [61]-[64].

In literature there are mentioned different kind of organizational culture – "culture of quality", "culture of service", "culture of innovation" etc. Every type of culture shows what is important for manager, what values he wants to implement in an organization. Organizational culture can stimulate innovation behavior in organization and accept innovation as value.

The aim of this paper is explore literature about innovation culture and create its' theoretical framework.

Paper provides insight in definition and actuality of innovation (Chapter IIA), conceptions/theories of organizational culture (Chapter IIB) and summarizes previous research of innovation culture and provides profile of innovation culture (Chapter III).

II. INNOVATION AND ORGANIZATIONAL CULTURE

A. Innovation

All in the literature available definitions of innovation are very similar, only described in different words. Innovation is concerned to number of activities which are necessary for creating of additional value for customers and business [37]. It is ability to create and develop new products and services and deliver them to market [27], [28]. It is process in which knowledge is transformed in new products or service and is made something better than customer had before. Innovation is both – what you do (product, service etc.) and how you do (value chain, strategy, etc.).

Some authors [25], [26] make a very close link between creativity and innovation. Creativity is not the same as innovation; it is first step to innovation. There are always two characteristics for creativity – novelty and utility, and both are involved for result product or service which is new and original and the same time appropriate (useful, embedded, etc.) [26]. Result of creativity is only idea which can or can't be implemented [41], but innovation is the process which

leads this idea from its first moment to the result – new value for customer [42]. Some firms as General Electrics or Apple recognize that main success factor of innovation management isn't creativity but excellence of operations and professionalism [29].

Innovation is not only creativity, it is not only generating of new ideas; it is work to realize these ideas; it is work, patience and commitment. New ideas aren't meaningful unless you put them in practice and test how they work [24], [41].

Innovation is concerned also as process of learning and knowledge sharing [5].

Innovation is associated with change [15], [29].

"Innovating for sustainability involves making intentional changes to organizational products or processes that produce environmental and/ or social benefits as well as economic value" [59].

Every innovation starts from idea to change something, to make it better. There can be a lot of different types of innovation. Schumpeter [1], [4], [7] has identified them long time ago (new methods of production, new commodities, new forms of organization; new sources of supply; new markets. Every innovation requires certain changes – changes of resources, changes of technology, changes of supply methods, changes of structures.

Some time ago innovation was announced as new formula for enterprises to be efficient in long term [1], [8]. In the approaches and models of economic growth innovation is key driver of economic growth (Table I).

TABLE I
KEY DRIVERS OF ECONOMIC GROWTH

Approach of Economic	Keys of Economic Growth	
Growth		
The Schumpeterian	Disruptive activity of Entrepreneurs	
approach	Creative destruction by causing continuous	
	disturbances (innovation)	
Neoclassical Exogenous	Technological progress rather than increases in	
Growth Models	capital or labor inputs (importance of	
	innovation)	
The Evolutionary	Innovation as a mechanism of economic	
Approach	change	

Source: Adapted from Innovation and Research strategy for Growth [11]

Innovation is not something unusual anymore. Innovation has come in everyday life of enterprises. According to McKinsey Global Survey 70% of corporate leaders said that innovation is among their top three priorities [30].

B. Organizational Culture

Word "Culture" in World English Dictionary is defined as total of the inherited ideas, beliefs, values and knowledge, which constitute the shared of social action. Hofstede(2010) has defined culture as "collective programming of the mind that distinguishes the members of one group or category of people from others".

Organizational culture is phenomenon that is created by interactions between people and shaped by leadership behavior, and set of structures, rules, norms and behavior [19], [46].

Organizational culture is values and beliefs which are deep

in personnel and are shared between personnel in an organization [36]. Another definition of organizational culture relates organizational culture with values, beliefs and hidden assumptions that are common for members of organization [31].

TABLE II Conceptions/Models of Organizational Culture

CONCEPTIONS/MODELS OF ORGANIZATIONAL CULTURE				
Author	Conceptions/ Models	Advantages	Disadvantages	
Quinn &Spreitze r	4 types of cultures: Group culture; Development Culture; Rational Culture; Hierarchical culture.	Describe 4 types of organizational cultures; Let to compare and analyse organizational cultures Describe 4 types of organizational cultures; Let to compare and analyse organizational cultures cultures;	Internal focus and Integration vs External focus and Differentiation Used only two dimensions: Flexibility vs Control; Internal vs External	
Langdon Morris	Innovation Culture managed via 3 roles: Creative Geniuses, Innovation Leaders, Innovation Champions	Look at Innovation culture like to holistic process; Describe roles from aspect of personality and personal values to common values and goals of organization	Doesn't answer how to select person for these roles; Doesn't take account that persons who destined to realize their roles have a lot of other values and assumptions There are may be necessary some more roles in organization	
Hofstede	Dimensions of culture: Power Distance Individualism- Collectivism Masculinity- Femininity Long /Short Term Orientation Avoidance Uncertainty	Global analysis of national cultures. Set the most visible differences between different nationalities Help in communication between different nations and regions	Look at domestic population as at homogenous Look at culture as unchangeable in time Used only few dimensions	
Schein	Organizational culture: Artifacts; Values & attitudes; Basic assumptions.	Simple structure Let to make analysis on more structured basis Look to organizational cultural from management point of view;	Too general classification which doesn't let to compare, classify and describe cultures of different organizations	
Martins &Terblan che	5 determinants of innovation culture: Strategy; Structure; Support mechanisms; Behaviour; Communication	Show the way of implementation of innovation culture Let to analyse and find out the wake and strong side of organizational culture	Oriented to processes, No sufficient orientation to values and assumptions; Impact of external environment not taken in account	

Kotter and Heskett argue that corporate culture has significant effect on firm's long term economic performance

and its' success and failure [44].

In literature are offered some models to observe and explain organizations (Table II).

One of these models is described by Cameron and Quinn [31]. Using two dimensions – flexibility and discretion versus stability and control - they defined four types of cultures: hocracy, clan, market and hierarchy.

Schein analyze culture using three levels meaning the degree to which organizational culture is visible to observe. These three levels are: artifacts (include visible aspects of theorganizational culture, like physical environment, language, products, manners, organizational structure); Espoused beliefs and values (include goals, strategies, philosophies) andunderlying assumptions (beliefs, thoughts, feelings).

Hofstede(2010) described model for national culture using 5 dimensions: power distance; uncertainty avoidance, collectivism, masculinity – femininity and future orientation [32], [38], [40], [46].

Culture is created by learning. It is learning from norms, leaders' behavior and socialization with other members. Culture is open system and to change it is necessary to involve new members who will bring new beliefs and assumptions.

Communication in organization and shared values increases innovativeness in the company [4].

"One of the obvious forces toward culture change is bringing together two or more cultures." [19]

There are two opposite opinions which of cultures is stronger and influence other. One opinion is that organizational culture is strongly influenced by national culture [48], [65], [66]. Mostly this idea about strength of national culture was dominating in last century, but with new century, globalization and rapid technological progress there appeared other research results which emphasize importance of organizational culture[46], [47], [66]. Organizational culture dominates over national culture. Especially bright it can observe in technological organizations where people share the same system of meanings even being grounded in different national cultures and being thousands kilometers far from others colleagues. To reduce cultural differences in multinational companies necessary to develop strong organizational culture.

Innovation has a strong link with organizational culture [4]. Organizational culture is strong driver of innovation [10], [20].

III. INNOVATION CULTURE

There are a lot of definitions of Innovation Culture in the literature (Table III).

Definitions aren't contradictious and supplement each other. Combining all of them in one author conclude that Innovation culture is organization ability to define, implement and develop new products, processes regularly, making it organizations daily life.

Innovation itself doesn't last long time, but advantage through systematic innovation capability can last for long time [50]. To reach this advantage is necessary to create innovation

culture.

TABLE III

	INNOVATION CULTURE		
Author	Definition		
Gandotra, 2010	Culture that make innovation a daily way of life [41]		
Streets and	Culture in which new ideas are generated, valued and		
Boundary, 2004	supported [43]		
Bordia,	Innovation as a mechanism of economic change		
Kronenberg,	The ability to define and develop new products and		
Neely, 2005	services and deliver them to market [27]		
Jonczyk, 2011	Implementation of a new or significantly improved product, process, marketing method or positive material change in the organization. 2 elements of innovation:		
	novelty and change [34]		
Langdon, 2011	Innovation culture comes into being when people		
	engage in the three different types of activities: Creative		
	Geniuses, Innovation Leaders, and Innovation		
	Champions [35].		

There are two moderating factors – managerial commitment and actions and motivation in the company [18].

Important is leadership and managerial actions which can foster innovative behavior of the workers[18],[20], [22]-[24], [45]:

- Communicating the organizations mission, vision and strategy [14], [53](Innovation strategy has positive impact on the quality of innovation [16]. Must to be achieved match between culture and strategy [18]. "Innovation is one of the core values of our company" (J.Horan, IBM)[60].
- Realization of corresponding reward and recognition system [3], [51], [53];
- Building trust by listening, accepting failure [14];(Organizational trust enhances innovative behavior [21];
- Allowing autonomy of workers and task identity [14];
- Providing learning, training and tools for creativity [2],
 [53]:
- Giving feedback to innovative ideas and behavior [3], [14], [53];
- Providing communication channels and collaboration [2], [6], [53], [54];
- Initiating innovation projects [6];
- Foster risk taking accepting failure [3], [14];
- Provide work security [14].

There has been done some research according to conceptions/models provided in Chapter II (Table IV)

Author concludes that most of research about culture's impact on innovation has made according to existing theories /conceptions of organizational culture. Only some researchers go forward offering new concepts of innovation culture.

Innovation culture includes five main stages [24]:

- Strategy or setting main conditions required to support innovation;
- Focus or identifying of the problem or opportunity which you want to innovate;
- Generating ideas to solve problems or support opportunities;
- Experimenting and piloting new ideas;

Sharing the innovation.

TABLE IV
POSITIVEEFFECT TO INNOVATION (FINDINGS ACCORDING TO CONCEPTION /
THEORIES OF ORGANIZATIONAL CULTURE)

	THEORIES OF ORGANIZATIONAL CULTURE)
Theory /	Findings
Conception	
Deshpande	 Market orientation and innovative culture enable
	organizations to achieve higher brand performance.
	 Market orientation is a response partly derived from
	the organization's innovative culture [68]
Hofstede	 Organizations with low power distance generate
	high exploratory innovation, but organizations with
	high power distance will generate high exploitative
	innovation [9]
	 Uncertainty avoidance is low in high exploratory
	innovation, but high in exploitative innovation [9]
	 Individual activities and group heterogeneity are
	positively related to exploratory innovation [9]
Barros	 Personal values balance and organization cultural
&Pratesmodel	index positively related with the value innovation index
	[12]
Cameron and	 Hocratic cultures have a positive effect on product
Quinn	innovation, external and flexible orientations are key
	drivers for developing new products [7]
	Organizational culture is important determinant
	for innovation over the internal and external variables
	(size, age, external environment) [7]
	Adhocracy cultures have positive effect on
	innovative orientation, while hierarchical cultures foster
	an imitative [8]
	Not all dimensions of each culture have the same
	effect on innovation orientation of the firm.
0	Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both – Developmental and group culture – have Both –
Quinn and	positive effect on Innovation and product quality [67]
Spreitzer	• Cultural dimensions which are primarily related to
	innovation also show a significant effect on quality [67]

Nowadays when open innovation become more and more popular, companies need to think not only about innovation culture inside but innovation culture which cross the borders of organization. Every firm who is using open innovations must choose its model [13] and develop culture according to that open innovation model. Would be interesting observe how is developed and sustained culture in virtual organization, which is center of the network [17].

Ismail and Abdmajid (2007) have modeled innovation culture based on five observed elements of intersection: leadership, structure, strategy, organizational culture, and the innovation culture as the outcome [43].

Summarizing literature about previous research of innovation culture author provides profile of innovation culture using 5 determinants of innovation culture: values, strategy, structure, behavior and communication and leadership (Table V).

IV. CONCLUSION

Main conclusions are:

- Innovation culture is culture which makes innovation its everyday life, supporting company's sustainability
- Main words characterizing innovation culture are: creativity, risk taking, future orientation, autonomy and flexibility, collaboration, openness, tolerance.
- In firms' policy innovation and sustainability must be

- together as main values and priorities.
- Research of organizational culture mostly confirms already existing conceptions and models.Models/Conceptions describing different types of cultures (Kameron& Quinn, Quinn &Spreitzer, Hofstede) are mostly used in further exploration and let compare and analyze innovation culture;
- National factor is taken in account only in some studiesto analyzeinnovation culture.

TABLE V
PROFILE OF INNOVATION CULTURI

Determinants of	Characteristics	
organizational		
culture		
Values	Freedom; risk taking; trust; openness; creativity;	
	flexibility; continuous learning	
Strategy	Innovativeness as strategic goal; strong identification	
	with the customer; future orientation	
Structure	Autonomy; flexibility; cooperative teams and group	
	interaction; transparency	
Behavior and	Supportive collaboration; tolerance for mistakes;	
communication	openness of new ideas; ability of adoption of new ideas	
	processes, or products; adapt quickly to external marke	
	shifts; trust relationships; focus on edge competences	
Leadership	Innovation a core part of the leadership agenda;	
	modeling behavior that encourages innovation, such as	
	taking risk; support for change; awards	

Hypothesis for further research:

- Management style determine strong or weak culture of innovation
- Companies with strong innovative culture show better performance
- Performance of innovation culture in new companies is greater than in old companies
- Innovation culture is more significant in multinational companies

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