

Cross-Cultural Influence on Diffusion and Adoption of Innovation: An Exploratory Case Study to Investigate the Social-Cultural Barriers

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Abstract

The development of science and technology increasing rapidly; in many cases advantageous innovations find obstacles for their establishment and in some others they simply fail. The authors of this paper demonstrate that the reason this may happen, is not depended only form the innovation itself; but the socio cultural aspects plays a fundamental role for the diffusion and the adoption of innovation. A number of studies have dealt with the diffusion and the adoption of innovation but limited research has been done about how socio cultural aspects can influence the diffusion and the adoption of innovation. Therefore this research aims to investigate how socio cultural aspects can act like a barrier for the diffusion and the adoption of innovations in different nations. Furthermore, this research will look into the reasons why innovations not readily spread, even if backed by strong market research as well as, the fundamental reason of why some innovations succeed and some others not? The research study will be based on a normative literature review of the important parts of the theory (outline network and socio cultural theories in cross-cultural studies); then the author will construct the conceptual model which will be tested using a qualitative research approach. This is a research in progress paper and the authors will design a comparative multiple case study to test the phenomena in three different nations, namely England, Greece and Italy.

Key words: Technological Innovation; diffusion adoption; barriers; socio culture, social networks.

1. INTRODUCTION

The diffusion and the adoption of innovation has been broadly addressed in the past from a variety of perspectives and reference disciplines; like in Rural sociology (Rogers 1995), in marketing literature (Mahajan, Muller & Bass, 1990), in development studies (Bourdenave 1976) in social psychology (Ajzen & Fishbein, 1980) in Communication studies (Rogers and Kincaid 1981) and in many other disciplines. All of them try to find an explanation of the diffusion and adoption of innovation. Some of them tell us that the socio culture influences the diffusion and adoption of innovations, but almost no one told us how the socio culture can act like a real barrier of the diffusion and adoption of innovation. Several theories and models have been developed in order to exam the technology adoption. In IS acceptance research has been influenced by intention-based models rooted in cognitive psychology, such as the theory of reasoned action TRA (Fishbein, and Ajzen 1975); technologies acceptance model TAM (Davis, 1986); and the theory of planned behavior TPB (Ajzen, 1991).

Theorist like (Dirksen, Ament, and Go 1996; Marshall 1990; Meyer, Johnson, and Ethington 1997; and Rogers 1995) stated that Innovations that have a clear, unambiguous advantage in either effectiveness or cost-effectiveness are more easily adopted and implemented. Nevertheless, relative advantage alone does not guarantee widespread adoption (Denis et al. 2002; Fitzgerald et al. 2002; and Grimshaw et al. 2004). Some innovations are never adopted at all; others are subsequently abandoned. Social influence leads to technology adoption (Vannoy & Palvia 2010). Technology adoption incorporates two essential elements, the embracement of the technology by individuals and its embedment in society (Baron, Patterson, Harris & Beyond 2006). In many cases innovations founds boundaries before their establishment and the reason is not only that an innovation can be "good or bad" there is a system of norms and rules written or not that "trap or release" an innovation. While the promise of change is what drives adoption, such explanations neglect the

social embeddedness of the process by which innovations are introduced to and accepted by the public (Granovetter, 1985; Dacin, 1997; Dacin, Ventresca, and Beal, 1999; Lounsbury and Glynn, 2000). So the research question that the authors highlight in this paper is: “Can the socio culture be the fundamental reason for the success and the failure of innovations?”

2. RESEARCH BACKGROUND

According to Rogers (1995), Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Sociologists have offered the important insight that diffusion of innovation may be driven by social contagion, another way of saying that actors' adoption behavior is a function of their exposure to other actors' knowledge, attitude, or behavior concerning the innovation. The contagion model generates S-shaped curves that have been fitted to a wide variety of data particularly the adoption of new products (Bass, 1969, 1980). Geroski (2000) states that the spread of information explains a lot about the time path of technology diffusion. Dattee and Weil (2007) discuss the importance of personal constructs about an innovation and its attributes in conditioning the time trajectory of diffusion, rather than the actual attributes. Individuals possess some information about the innovation being considered, and this information is dynamic; the tendency of the potential adopters to adopt the innovation is influenced by this information and their minimal expectations (i.e. adoption threshold) from such an innovation (Yücel and Daalen 2011). According to Rogers (1995) and others researchers, in a social system there is an individual tendency to imitate one another. Individuals tend to be linked to others who are close to them in physical distance and who are relatively homophilous in social characteristics like socioeconomic, educational, professional, and cultural backgrounds (Fennell and Warnecke 1988, Fitzgerald et al. 2002, West et al. 1999). More over data on the adoption and use of technology such as computers have shown that a number of factors, such as education, socioeconomic status, attitudes toward the technology, the perceived benefits of technology, and access to technology, influence technology adoption (Czaja, Fisk, Hertzog & Rogers 2006). A number of studies also indicate that high-status actors are more likely to be imitated because they are visible role models (Haunschild and Miner 1997; Strang and Soule 1998). Podolny (1993) said that reputation can influence mobility. As in the case of Nouvelle Cuisine in French Gastronomy when high-status peers with two or more Michelin stars abandoned classical cuisine for nouvelle cuisine, in that case chefs felt that they received permission to defect (Rao, Monin & Durand 2003). Moreover network theorists have proposed that networks shape the diffusion of technologies (Rodgers 1962; Coleman et al 1966) and organizational practices (Davis 1991; Strang & Macy 2001), social networks can influence actors through both position- and cohesion- based mechanisms (Marsden and Friedkin, 1993). Networks create individual tastes and preferences (Mark 1998).

Some researchers believe that dominant designs can help an innovation to succeed. Some others believe that, building an innovation in the paths of the old ones is the key to the success of an innovation. Innovations that are compatible with the intended adopters' values, norms, and perceived needs are more readily adopted (Aubert and Hamel 2001; Denis et al. 2002; Ferlie et al. 2001; Foy et al. 2002; and Rogers 1995).

In an increasingly global business environment, one of the central challenges facing firms is how to balance the desire for standardized global policies, with appropriate consideration of the specific norms of various cultural contexts (Bartlett and Ghoshal, 1998; Enderle, 1997). Different cultural backgrounds lead to different ways of perceiving the world and cultural differences affect individuals' ethical reasoning (MacDonald, 2000). The concept of culture may generally be defined as the shared beliefs and symbols of a group of individuals (McDonald, 2000). Theorist like (Powell & DiMaggio, 1991) have stressed that many dynamics in the organizational environment stem not from technological or material imperatives, but rather from cultural norms, symbols, beliefs, and rituals. Vitell et al. (1993) describe how culture differentially affects individuals' formation of teleological and deontological norms; hence, individuals' prescriptive reasoning.

Culture has been studied within IS discipline at various levels, including national (macro level, cross-cultural), organizational, group (sub-culture, professional, special interest, social class, etc.) and individual

(micro level, subjective culture) (Triandis, 1972; Hofstede, 1984; Dorfman and Howell, 1988; Myers and Tan, 2002; McCoy, 2003; Ali and Alshawi, 2004). Culture at a social or national level is the culture shared between people in a society or a country (Hofstede, 1984). Culture provides the very grounds for human communication and interaction; it is also a source of domination. The arts, science, religion, indeed all symbolic systems including language itself shape our understanding of reality and form the basis for human communication (Bourdieu, 1998). Culture pervades much of human existence. Its significance to human social interaction and cognitive development has convinced some researchers that the phenomenon and its underlying mechanisms represent a defining criterion for humankind. March (1978) said that, Human decision makers routinely ignore their own, fully conscious, preferences in making decisions. People follow rules, traditions, hunches, and the advice or actions of others. Spenser's (1852) evolutionary philosophy supports the fact that, the Universe, the Earth, the species, the individuals and society all evolve through the same pattern and in the same direction.

Cultural transmission simply replicates the existing distribution of behaviors, beliefs, and so on (Binford 1983:222) humans rely on social learning or cultural transmission to acquire the majority of their behavior (Bandura 1977; Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1981; for a summary, see Henrich 2002). Culture also has a powerful influence on information related behaviors including, at the most basic level, what is considered to be legitimate information (Hall 1983). In many cases in the past, culture influence the adoption of innovation, like in the case, of pure water in Egyptian Village, with their religion perceived of water boiling hot/cold as incompatible with their religious beliefs. Or in the case of the people in modern India, where there is a strong norm against eating food with the left hand because they believe that it is unclean, how we can persuade 900 million of people to eat with their left hand? If we are not capable of convincing them that eating with the left hand is not unclean, how can we persuade them to accept an innovation? In Parsons' "voluntaristic theory of action" it describes an actor who makes choices in a situation, choices limited by objective conditions and governed by normative regulation of the means and ends of action (Warner, 1978:121.).

3. RESEARCH PROBLEM

We live in an accelerated world, where everything from communication technologies to warfare and industrial production takes place faster and more comprehensively than ever before. All this years a number of researchers have dealt with the diffusion and the adoption of innovation but limited research has been done about how socio-cultural aspects with norms, values and attitudes can influence the diffusion and the adoption of innovation. The problem is that, innovations with really technology advantages are sometime struggle to be adopted. The present research wants to examine why this happened. Could the social cultural aspects influence on the diffusion and adoption of innovation explain the failure of adoption of innovation? Social mechanisms in all over the world influence the manners of people and in many cases create "walls" preventing their free movement and their full inclusion in society. When an innovation appears tries to find recognition bust first it must overcome all the obstacles that socio culture creates. Why innovations not readily spread? Do cultural values affect the acceptance of innovation, and if so, in what ways?

4. CONCEPTUAL MODEL

Moreover network theorists have proposed that networks shape the diffusion of technologies (Rodgers 1962; Coleman et al 1966). Geroski (2000) states that the spread of information explains a lot about the time path of technology diffusion. So through networks we have the diffusion of information and in our case the diffusion of information about technological innovations, the diffusion of information can be by personal contact or through network communications technologies like: Facebook, Twitter, MySpace, Skype and many others. Across those networks individual create tastes and preferences (Mark 1998). As a result if for a network an innovation has a relative advantage, then the diffusion of information's through those networks would be positive. If an innovation doesn't have a related advantage for a network, then, the information's that will diffused would be against the innovation. Here we can relate the sequent theory; Innovations that

have a clear, unambiguous advantage in either effectiveness or cost-effectiveness are more easily adopted and implemented (Dirksen, Ament, and Go 1996; Marshall 1990; Meyer, Johnson, and Ethington 1997; and Rogers 1995). Additionally, if an innovation has a clear related advantage the information that will be diffused (through networks) would be positive and they can help the adoption of an innovation; contrary if an innovation doesn't have a clear related advantage is probably that the information that will be diffused (through networks) could be against the innovation, as a result can obstruct the adoption of an innovation and bring it the failure. The present theory is not always confirmed. In many cases technologies with a clear related advantage fail, or they don't have the impact on market as it was predicted, here are some examples: electric cars, 3D televisions, iridium telephone by Motorola and countless more. Relative advantage alone does not guarantee widespread adoption (Denis et al. 2002; Fitzgerald et al. 2002; and Grimshaw et al. 2004).

Technology adoption incorporates two essential elements, the embracement of the technology by individuals and its embedment in society (Baron, Patterson, Harris & Beyond 2006). The present research lay that, the diffusion and the adoption of innovations is not depended on the innovation itself; the socio culture and the social networks influence people's beliefs and actions in a nation. Consequently socio culture can act as an obstacle for the diffusion and the adoption of an innovation. Different cultural backgrounds lead to different ways of perceiving the world and cultural differences affect individuals' ethical reasoning (MacDonald, 2000). Humans rely on social learning or cultural transmission to acquire the majority of their behavior (Bandura 1977; Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1981).

5. RESEARCH METHODOLOGY

The purpose of this research is to inquire how cultural beliefs can influence the diffusion and adoption of innovation in a nation; find if those beliefs can be the fundamental reason, why some innovations succeed and some others not. Furthermore, the overall objective of this research is to find the reason why, some innovations succeed and some others not and indagate how the incompatibility (if any) of innovation with socio cultural values and beliefs can "block" the diffusion and the adoption of innovation in a nation.

The methodology for this study involves: cross cultural research manipulating personalization approaches by using a case study and: (1) with the innovation itself, (2) The inner and outer communication influence (diffusion and presumptively obstacles, including social networks and socio cultural values), (3) the adoption/assimilation process. The measuring information processing style is the use of qualitative analysis and test of hypothesis. The analysis will take place in three nations England, Greece and Italy.

More precisely the present research will be contact by, analyzing an innovation that it didn't have the impact on the market as it was predicted; it will exam the innovation characteristics by analyze the advantages/disadvantages and find the diffusion process (the communication channels for the diffusion the innovation). Then it will follow a qualitative analysis by the form of semi-structured interviews of the users of the technological innovations and find why they didn't accept the precise innovation, was it a diffusion problem?(for example the consumer doesn't know the existence of the precise technology) or it was a cultural, or network problem?(for example the consumer new the existence of the technology but their beliefs or the people around them, for example: family, friends and others, didn't "allowed" them to acquire the technology). With those methods this research can provide reliable results, and have a spherical view of the subject.

6. SUMMARY AND FUTURE RESEARCH

All Individuals are inside of a social system and they are circulated by a web of norms and values. Phenomena like religion, ideology, politics, morals and norms, play a fundamental role in any culture. The argument of technological innovations is very broad and concern's every one of us. Even if we don't understand it, innovations influence our everyday life and the way we live; like PCs and laptops, mobile phones, fax, the web, digital communications, satellites, organ transplants, genetic engineering, machine

learning, robotics and countless more. In many cases technologically advantageous innovations find obstacles for their establishment. The main reason to this problem is not the innovation itself “good or bad”. This research lies that, the main reason to this phenomenon is the socio culture and the social networks that people creates in a nation. Innovations are always related to social action in one form or another. Why innovations not readily spread? Can the cultural values affect the acceptance of innovation, and if so, in what ways? Hughes (1983) mentions creating a new technology is not merely to apply science to technical matters; It is also, and simultaneously to deal with economic constraints, to surmount legal roadblocks and to get politicians on one's side. In future research the authors will combine a comprehensive literature review and based on that will develop the research conceptual model, which later will be validated through conducting a multiple case studies in three different nations, namely England, Greece and Italy.

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