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Innovation Cultural Models: Review and Proposal for Next Steps

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Artículos

Innovation Cultural Models: Review and Proposal for Next Steps

Modelos culturales de innovación: revisión y propuesta de siguientes pasos

Modelos culturais de inovação: revisão e proposta de seguintes passos

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Abstract: An abundance of literature suggests a strong link between organization, culture, and innovation. These three concepts cannot be understood separately. Since the eighties, when culture began to be valued as a crucial factor by managers and scholars, several innovation cultural models have been developed to help understand this link. The aim of this paper is to review the most commonly used and applied theoretical models, analyze them, and propose several new elements that must be integrated into future models. Through an intensive review of the literature published between 1970 and 2016, we find seven main models, which we examine to explore their internal mechanisms. Then we analyze them as a group to identify gaps that need to be filled. As a result, our next steps proposals integrate concepts such as plurality, dynamism, and complexity to broaden the definition of organization, culture and innovation. New and far-better innovation cultural models are still to come.

Keywords: Innovation, culture, organization, innovation cultural model, subculture.

Resumen: Existe abundante literatura que sugiere un fuerte vínculo entre organización, cultura e innovación. Estos tres conceptos no pueden ser entendidos de manera independiente. Desde la década de los 80, cuando la cultura comenzó a ser reconocida como un factor crucial por administradores y académicos, varios modelos culturales de innovación han sido desarrollados para entender este vínculo. El objetivo de este documento es revisar los modelos teóricos más usados, analizarlos y proponer nuevos elementos que deban ser integrados en modelos futuros. A través de una extensa revisión de literatura de 1970 a 2016 encontramos siete modelos principales que fueron analizados para conocer su mecanismo interno; después, fueron analizados en conjunto para encontrar vacíos que requerían ser llenados. Como resultado, nuestra propuesta de Siguientes Pasos busca integrar conceptos como pluralismo, dinamismo y complejidad, para así complementar la definición de organización, cultura e innovación. Nuevos y mejores Modelos Culturales de Innovación están por venir.

Palabras clave: Innovación, cultura, organización, modelo cultural de innovación, subcultura.

Resumo: Abundante literatura sugere o forte vínculo entre organização, cultura e inovação. Estes três conceitos não podem ser entendidos de forma independente. Desde a década dos 80, quando a cultura começou a ser reconhecida como um fator crucial por administradores e acadêmicos, diversos Modelos Culturais de Inovação têm sido desenvolvidos para entender este vínculo. O objetivo deste documento é revisar os modelos teóricos mais usados, analisá-los e propor novos elementos que devam ser integrados em modelos futuros. Através de uma extensa revisão de literatura de 1970 a 2016 encontramos sete modelos principais que foram analisados para conhecer

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seu mecanismo interno. Em seguida, foram analisados em conjunto para encontrar vazios que requeriam ser enchidos. Como resultado, nossa proposta de Seguintes Passos busca integrar conceitos como pluralismo, dinamismo e complexidade para assim complementar a definição de organização, cultura e inovação. Novos e melhores Modelos Culturais de Inovação estão por vir.

Palavras-chave: Inovação, cultura, organização, modelo ultural de inovação, subcultura.

INTRODUCTION

Critical widespread concepts: culture, organization, innovation

The literature about organization, culture and innovation is endless. 'Culture', 'organization', and 'innovation' are very widespread concepts that, for this very reason, have very vague definitions. There is no consensus on what 'organization' is (Casey, 2002; McAuley, Duberley, & Johnson 2007), neither on the meaning of 'culture' (Giddens & Sutton, 2015), nor on the meaning of 'innovation' (Sharifirad, & Ataei, 2012). A quick search of 'innovation cultural model', where these three keywords collide, on Questia (Questia.com) returns us 2,227 results of heterogeneity.

However, many scholars suggest attributes with which we can characterize, albeit roughly, these concepts.

In first term, the meaning of 'organization' establishes the compulsory existence of an objective (Mayntz, 1980; Daft, 2013), administrative-economic goals (Casey, 2002) and the logical ordering of processes, resources, and people in the same direction (McAuley, Duberley, & Johnson 2007). Such rationalist and instrumental imperatives often leave organizational agents in the background, as simple resource or facilitator of these processes (Casey, 2002). To understand organization in depth, the culture must be included (Ouchi, 1982; Casey, 2002; Morrill, 2008; Rodriguez Garay, 2009), because an organization without sociocultural ends, it is reduced to no more than a technical apparatus (Casey, 2002).

Then, the concept of 'culture' comes from cultural anthropology and has been included in the last three decades (Morrill, 2008) in behavioral theories in organizations, marketing, management (Hogan, & Coote, 2014) and innovation (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2011). Although there is no universal consensus in defining organizational culture, terms such as holistic, historically determined, anthropological, socially constructed, soft, and difficult to change are often applied (McCarthy, 2013). For many papers –to cite a few: Yang and Hsu (2010), Sharifirad and Ataei (2012) or Büschgens Bausch and Ball (2013)– the unavoidable reference is the approach of Barney in 'Organizational Culture: Can it be a source of sustained competitive advantage?' (1986); Barney defines organizational culture as a complex set of shared values, beliefs, assumption and symbols that differentiate one organization from another, carry out the development of its business, and add sustained competitive advantage. Thus, culture must be considered as an active for the survival of the organization (Olivares Farías, 2013) and

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can provide clarification to the elusive concept of 'innovation' (Jaskyte, 2004).

Finally, the concept of 'innovation'. More than 30 years ago, van der Koy (1988) examined almost eighty definitions of innovation. Innovation is considered as essential for the organizations (Kim, 1980; Rothwell, 1994; Zahra, & Covin, 1994; Porter, 1996; Hamel, 2007; Baregheh, Rowley, & Sambrook., 2009; Gaglio, 2011; Jiménez-Jiménez, & Sanz-Valle, 2011; Ryan, & Tipu, 2013) nevertheless, given the use and abuse this word, there is no such thing as a definitive definition (Baregheh, Rowley, & Sambrook, 2009). Through the literature, two are the most recurrent. The first one comes from Schumpeter, which defines innovation as creative destruction, that means a destructive force that destroys the current market conditions, and at the same time creates new ones through new combinations (Iwai, 1984; Gaglio, 2011). The second one is the definition stablished by the OECD Manual (Organization for Economic Co-Operation and Development), which consider innovation as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD, 2005, p. 46).

A strong link

Despite the semantical difficulties, there is no doubt about the strong link between them; various authors, different perspectives, and empirical studies support this strong link between organization, culture, and innovation (Tushman, & O'Reilly, 1997; Naranjo-Valencia, 2012). Culture shapes behaviors and drive desires (Hofstede, 2001; Schein, 2004), which is a critical factor for the innovation carried out by the organization (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2012), focusing on the stimulation of a common commitment, fostering innovative attitude and internalizing new values to push the creation of novelties (Hartmann, 2006). For Feldman (1988) and Tushman and O'Reilly (1997), organizational culture is the core of innovation; both concepts cannot be understood separately, because they are the very substance of organization. Quality of innovation is intimately linked to the organizational culture: culture and their basic elements-shared values, beliefs and behaviors-influence innovation (Michela, and Burke, 2000).

The late-seventies marks a *cultural turn* with the exhaustion of the American organizational frameworks and the renovated interest in German and Japanese strong cultural frameworks (Morrill, 2008; Rodriguez Garay, 2009). In the eighties, as an alternative view of the instrumental and functional literature –the means-end thinking–, the organization tend to be perceive as a socially constructed systems of meaning (Morrill, 2008). From 1982, the organizational year *par excellence*, in which published 'Theory Z' (Ouchi, 1982), 'In Search of Excellence' (Peters and Waterman, 1982) and 'The Rites and Rituals of Corporate Life' (Deal, & Kennedy, 1982), the interest in cultures

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takes shape as a central topic in the Organizational Theory. Starting from that, the Innovation Cultural Models (ICMs) arise as the most common and usual theoretical methods to explain the strong link between organization, culture, and innovation (Büschgens, Bausch, & Ball 2013).

Aim

Thus, the main aim of this paper is To review the most commonly used and applied theoretical ICMs, analyze them, and to propose several elements that must be included in future ICMs.

1. METHOD

The method applied is an intensive literature review, documental and theoretical, to find the most commonly used theoretical ICMs. The data bases explored were Dialnet, Scielo, ABI Inform Emerald and Science Direct. The chosen period was from 1970 to 2016. With the objective to find the main ICMS, the categories that we searched were some permutation of our three main words: 'innovation' + 'culture', 'innovation' + 'organization', 'innovation' + 'organizational culture', 'innovation cultural model', and so on.

We understand for ICMs a theoretical framework, which usefulness relay on their capacity to give a diagnosis of the culture, and allow the decision-maker to define and deploy strategies to modify behaviors in order to enhance innovation-friendly-attitudes. The ICMs help to get a general idea of the innovation culture of the organization; what comes later –for instance, an open ecosystem, and *stimuli* to employees, etc.– is a direct consequence of this diagnosis. Innovation culture that are not theoretical models used in scientific literature are not included: open innovation culture (Lego, Whirlpool), innovation ecosystem culture (Alphabet, Apple) or Japanese innovation culture examples (Kaikaku, Hoshin Kanri, Toyota Kata), because, in despite of their great interest, they are not the same thing, and any comparison would be sterile.

As a result, we found seven theoretical ICMs, which we deepened in its internal explanatory mechanism of the organizational culture of innovation to understand its strengths and weakness. Known in detail, we can proposed new elements to include in further theoretical developments.

2. RESULTS

2.1. Hofstede

After more than two decades working on national cultures, Geert Hofstede crystallized his experiences in 'Culture's Consequences: International Differences in Work-Related Values' (1984), in which he

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postulated four basic dimensions to describe the different values that shape forty national cultures. Comparing the national culture with the organizational culture with a comprehensive statistical analysis of surveys to IBM -117,000 employees in over 40 countries- (Magnusson, Wilson, Zdravkovic, Xin Zhou, & Westjohn, 2008), as explained on its website, statistical analysis showed that national cultural differences could only be due to the values, practically unconscious. To the initial four dimensions, because of his collaboration with Bond –in the 90s– and Minkov –in the 2010s–, two more have been added. The model is the following (figure 1):

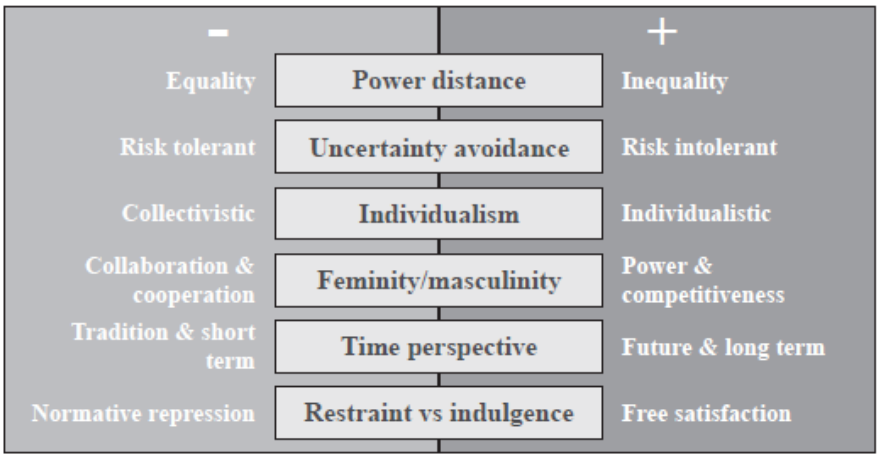


Figure 1
Hofstede's Cultural Dimensions Model
Source: Hofstede, (online).

According to Geert Hofstede (online), the six dimensions are:

1. Power Distance: with great distance from power, people, organizations or institutions will accept hierarchies and inequalities; on the contrary, with little distance power is shared among the members of the social structure.
2. Uncertainty: risk-intolerant cultures will seek above all to minimize risks and fears through laws and regulation. At the other extreme, with minimum rules stipulating socialization, the risk-tolerant cultures will be tolerant, relativistic and opportunistic.
3. Individualism: it indicates the consistency of social ties. In individualistic cultures, each personal will have particular goals and needs. In cultures with sense of community, people will tend to the common benefit and shared goals to the detriment of individual benefits.
4. Feminity/Masculinity: the masculine attitude will be expeditious, competitive, assertive, focused on goals and the search for power; the feminine attitude will be focus on friendship, collaboration and cooperation.
5. Time Perspective: cultures with long-term orientation work pragmatically towards future reward; short-term cultures, on

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the other hand, prefer pride, tradition, and fulfillment of social norms.

6. Restraint vs Indulgence: by indulgent, Hofstede means ease of freely satisfying the most basic human impulses related to passion for life. In restrictive cultures, the satisfactions are suppressed and regulated through norms.

Taking into the account these dimensions, Hofstede give relative scores to the cultures and, thanks to this scale, facilitates comparison between them. These indexes tend to be fairly stable over time, and when cultural changes occur they are often global, so even though certain dimensions vary, overall, positions between countries are maintained. In addition, what is even more important: the six dimensions are statistically correlated. For Hofstede, culture is a software, and it can be understood as those common elements of mental programming in a particular environment which manifestation is through socially constructed institutions, families, groups, and organizations (Hofstede, 1991).

Taking into the account the deep roots of cultures, Hofstede make some critical statements: social inequality is greatest in countries of South America, Asia and Africa; the Chinese, Anglo-American and Nordic are the most risk tolerant; individualism prevails in the West, unlike in the East; Japan, Germany, Austria and Switzerland are male, and Spain, France and Thailand are female; the English-speaking and Arab world focus on the short term, Asia on the long; indulgence scores highest in Latin America, the United States and northern Europe, the restriction in the East and East Asian bloc. So the organization. Therefore, organization based in these regions must take into the account the elements that will molder the attitude of their employees towards innovation. Certain features as risk tolerant, democratic, masculine and indulgent are the marks of an innovation attitude (Hofstede, [online]).

According to him, cultural changes are provoked by changes in practices; these changes will enable changes, in the broadest sense, in social groups. As McCarthy (2013) states, the malleability of its adaptation to different social structures is what raises the academic interest for its application in organization in relation to attributes such as efficiency and innovation. There are similar models –such as Schwartz and Trompenaars–, but the proposed dimensions to characterize cultural identities are different (Magnusson, Wilson, Zdravkovic, Xin Zhou, & Westjohn, 2008). Among them, Hofstede has the more numerous and consistent empirical validity (Efrat, 2014).

2.2. Schein

Unlike the previous ICM that take the culture as a unique construct, as a whole (Hogan & Coote, 2014), Edgar Schein considers in his classic '*Organizational Culture and Leadership*' (first edition, 1992) that the main problems of the modern organization in relation with culture is due

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to the lack of distinction between the different levels in which culture manifest itself. Hence, Schein (2004) proposes his three level –level as the degree by which a given cultural phenomenon is visible to the researcher– of culture model of Schein (2004), or also known as the multi-layered organizational culture model (MOCM) (figure 2).

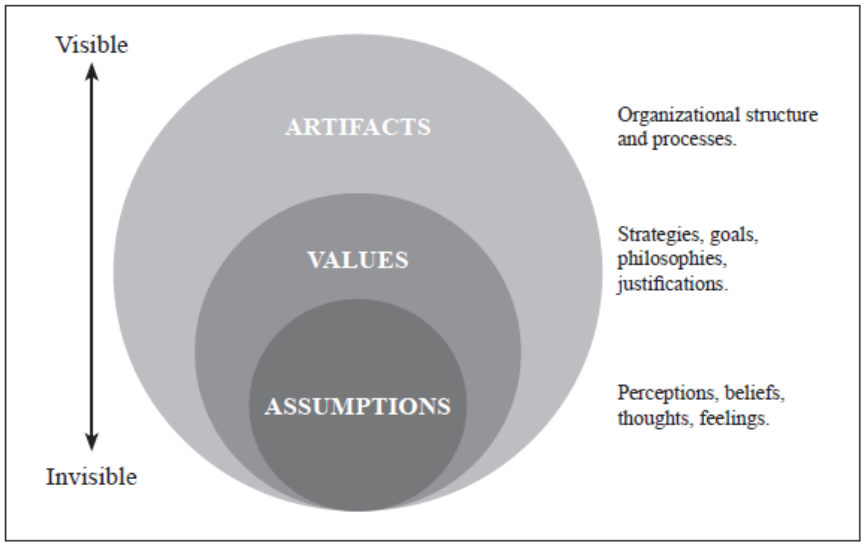


Figure 2
Schein's Multi-Layered Organizational Culture Model
Source: Schein (2004).

The three levels are:

1. Artifacts: by artifact, Schein means the visible cultural products of as organization, such as: spatial distribution, language, technology, style, clothing, manners, expressions, or to put it briefly: the surface of the reality, the visible behavior of its members. The artifacts also includes the organizational processes by which behaviors become routines.
2. Values: a value is confirmed only by the shared experience of a group. If it is accepted, firstly it will become a shared value and, as it becomes embodied and used in the everyday life, it will become an assumption: it will be included in the taken for granted. Cultural elements included in these levels are cognitive processes, commitments, consensuses, ethics, ideologies, strategies, knowledge, visions, etc. Values cannot be directly observed, but they can be distilled from what their members explain and how they do justify.
3. Assumptions: unconsciously, the underlying assumptions are taken for granted, as DNA. In Argyris' terminology, the assumptions would be the theories-in-use, so implicit in each member way of acting, thinking, interpreting, feeling, and interacting. The deepest level is hard to modify, as it provides ontological security; whatever on the opposite site, it produce anxiety and fear.

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In MOCM, the manager is a key part of the innovation culture; Schein encourages a strong leadership to cope the divisionalization, the excessive inner-differentiation –hierarchy and goals–, and geographic decentralization. The anthropological model of Schein focuses, in particular, on manager's leadership and skills to lead the cultural change towards innovation attituted. Artifacts can model daily routines and practices, shifting behavior patterns that enable innovation to the members of the organization, for instance, new ways of doing their work (Hogan, & Coote, 2014). If culture is an abstraction of organizational forces, these forces must be understood and mastered (Schein, 2004).

2.3. Cameron & Quinn

The Competing Values Model (CVM), in its original version (Quinn & Rohrbaugh, 1983) and its most widespread adaptation (Cameron, & Quinn, 1999), is one of the most used models in empirical research on organizational culture of innovation (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2012). This model offers a simple diagnosis to describe the organizational culture, fundamental to begin, if necessary, the slow organizational cultural change to face external forces (Cameron, & Quinn, 1999). Based on Campbell's 1970s work, which compiled 39 indicators of organizational effectiveness, Quinn and Rohrbaugh (1983) went one-step further. Thanks to the statistical treatment, they identified two large dimensions and four quadrants. In the latest version, Cameron Quinn, Degraff and Thakor (2006) added two secondary dimensions. Therefore, four dimensions and four quadrants compose the CVM; in the middle, the competing values map (figure 3).

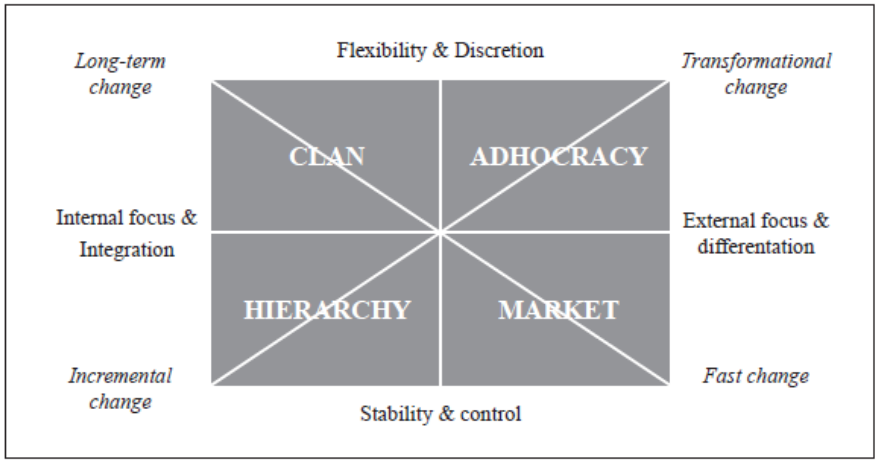


Figure 3
Cameron & Quinn's Competing Values Model
Source: Cameron, Quinn, Degraff & Thakor (2006).

The CVM is composed by cultural dimensions and the competing values map:

1. Cultural dimensions is composed by four axis:

a) Internal/External focus: axis that describes intensity of organizational focus: partners & customers vs organizational agents & processes.
b) Flexibility/Stability: axis that describes who take decisions: top-down vs bottom-up.
c) Speed of change: axis that describes the speed of change: long-term vs fast.
d) Degree of change: axis that describes the degree of change: incremental vs transformational.

The combination of these four axis demarcates a representational space with four types of culture:

2. Competing Values map is composed by four quadrants/ cultures:

a) Hierarchy: the classic approach to power demonstrations. Orientation to results and maximum efficiency. Rigid organization based on roles and positions, which are translated into policies, procedures and norms. Strict and close to Weberian bureaucratization where reigns the cultural uniformity and the manager as the leader.
b) Clan: emphasis on flexibility, autonomy, collaboration, and participation. Preponderance of interpersonal cohesion, commitment, shared values, collective goals, loyalty and affective bonds. Search for human and professional development. The leader is a mentor.
c) Market: control, but focused on value exchange. External and internal relations are weighted in terms of market. High competition between organizational agents. Stability and profitability goals. Results-oriented and consolidate achievements. The leader is a manager.
d) Adhocracy: maximum flexibility, agility, dynamism an interdependence that enable adaption to change. Empowered teams that work with prototyping methodologies and new resources addressed to new challenges. Creativity, innovation and risk tolerance. The leader is a visionary or an entrepreneur.

To determine the type of culture, the CVM use the Organizational Culture Assessment Instrument (OCAI), a simple but revealing six-category survey. Based on these six categories, 100 points are distributed among these four types of culture that opens organization to a different level of analytical depth. The OCAI has been used by more than 10,000 organizations worldwide. Each culture, in some ways antagonistic, contains underlying attributes, as type of management, work climate, roles, cultural changes, strategic rewards system, norms,

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socialization, leadership, etc. Due to their cultural congruence, which means that several aspects of an organization are interdependent and aligned, we can recognized the main attributes and, then, find new alternative cultural configuration beneficial to the organization's innovation (Cameron, & Quinn, 1999; Cameron, Quinn, Degraff, & Thakor, 2006; Büschgens, Bausch, & Ball, 2013). In these typologies, Google is 'adhocractic', McDonalds 'hierarchical', General Electrics 'market', and Nokia 'clan' (Cameron, Quinn, Degraff, & Thakor, 2006). As Naranjo-Valencia, Jiménez-Jiménez and Sanz-Valle, (2012) suggest the adhocratic culture, that means, flexibility, freedom and external orientation, would be the better cultural configuration to deploy innovation.

2.4. Denison

For Daniel R. Denison (2001) two are the main functions of organizational culture: keeping the organization together while being a fundamental part of its transformative movement (Denison, & Neale, 1994, 2000). Statism and dynamism, cohesion and freedom, united through culture and innovation as elements of company survival. Denison was created and tested his multidimensional Denison Organizational Culture Survey (DOCS) in collaboration with Neale, Fey, Haaland, Goelzer, Hooijberg, Nieminen, Mishra, Lief and Hart, among others (figure 4).

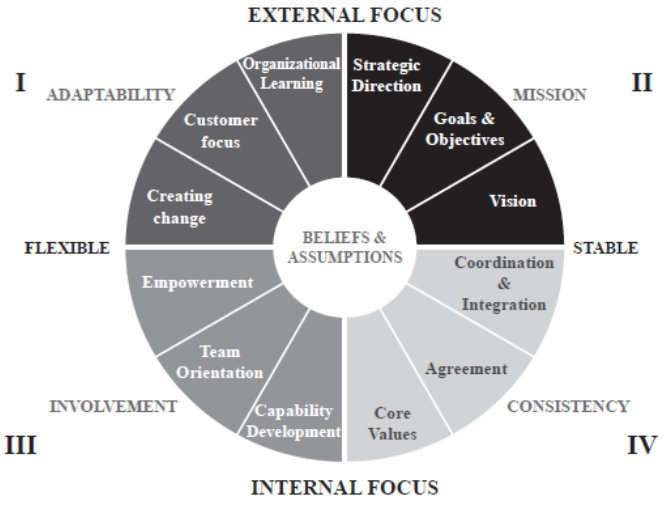


Figure 4
Denison Organizational Culture Survey
Source: Denison Consulting, (online).

DOCS divides culture in four essential traits –mission, adaptability, consistency, involvement–, each one with three associated management practices, and two axis (Denison, Hooijberg, Lane, & Lief, 2012). The elements are:

1. Four traits:

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a) Adaptability (I): organization listens and respond environment, customers, and markets reconfiguring their internal structure.

    i. Creating change: open minded behavior to assess new ideas, practices, and opportunities.
    ii. Customer focus: need to serve internal and external customers' needs.
    iii. Organizational learning: gain knowledge trough successes and fails.

b) Mission (II): organization communicates to organizational agents, which are the values, the goals and the collective mission.

    i. Strategic direction: strategies and priorities deployed into concrete actions.
    ii. Goals & objectives: daily individual goals, and how they contribute to collective goals.
    iii. Vision: the purpose to achieve.

c) Consistency (III): source of integration, coordination and control to raise an operative governance from consensus.

    i. Coordination & integration: understanding of individual work as an integrated part of a whole.
    ii. Agreement: collective consensus through dialogue.
    iii. Core Values: set of values that help to make consistent decisions and actions.

d) Involvement (IV): sense of ownership and responsibility grows around commitment, autonomy, and trust.

    i. Capability development: training and coaching to prepare for new responsibilities.
    ii. Team orientation: capture new ideas to achieve collective goals.
    iii. Empowerment: competence and freedom to clarify responsibilities.

2. Two axis:

    a) Vertical: focus on internal environment or focus on external actions.
    b) Horizontal - flexible vs stable: focus on freedom and innovation or focus on order and stability.

DOCS consists in four big traits, two axis, and twelve management practices. Each of these practices has a scale from 1 to 5, being 1 'absolute disagreement' and 5 'total agreement' (Denison, 2001; Fey, & Denison,

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2003; Denison, Hooijberg, Lane, & Lief , 2012). The assessment of these items are compared with a large database where the results of other organizations can be found. Depending on that, the organizational culture will be characterized. Over 20 years, DOCS has been applied to over 5,000 organizations worldwide: HP, NASA, JetBlue Airways, ABC Disney, Northorp Grumman, RJ Reynolds, the Defensive Logistics Agency, etc. (Denison Consulting, [online]). This fact is motivated by its easy application, which makes it one of the most widespread models (Kokina, & Ostrovska, 2013), and with Cameron & Quinn one of the most recurring tools of analysis of the innovation organizational culture (Sackmann, 2011).

2.5. Harrison & Stokes

Harrison & Stokes model (1992) has played an important role in organizational thinking (McCarthy, 2013, Manetje, & Martins, 2009). This model has a four-dimension conceptualization of organizational culture (figure 5).

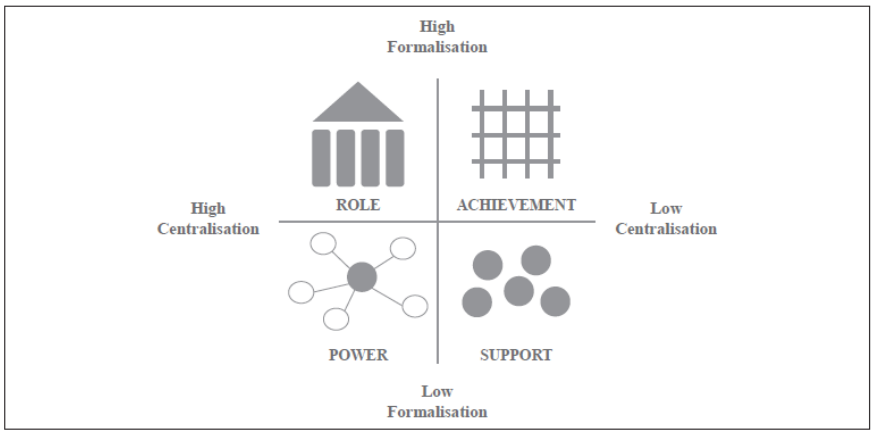


Figure 5
Harrison & Stokes Model
Source: Manetje & Martins (2009).

The model distinguishes four types of organizational cultures, which depend heavily on the social interaction between organizational agents, its values, and its motivation, and the way in which the structural power is used. Every organization has four types of culture (Harrison, & Stokes, 1992):

1. Role: culture characterized by detailed descriptions of task, high specialization, and focus on rationalization, optimization, and internal consistency. Norms, control, and procedures to regulate interactions and to delimit what is allowed and what is not. According McCarthy (2013), these static cultures do not mobilize resources and emotions towards the innovation attitude.

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2. Achievement: a team of experts put their efforts toward a strategic objective that are beyond the self-interest of their particular members. To achieve innovation goals, punishment and rewards are alternated to encourage certain behaviours.
3. Power: power, as a distance between –High Direction– and peripheries –rest of organizational units–, is unequal, hierarchical, centralized, radiocentric. Centralized power reduce agential autonomy and, therefore, innovation.
4. Support: the commitment are the pillar of the organization, between agents and organization –global level– and between agents –particular level–. Agents work for their own self-satisfaction and for a general purpose. Collaboration, cooperation, and coordination are strongly promoted.

The model diagnoses the organizational culture (Harrison, 1993), but at the same time, as Manetje and Martins (2009) point out describe the distance between agents and their engagement towards the organizational culture.

2.6. Deal & Kennedy

Deal and Kennedy (1982) define four types of organizational cultures (figure 6).

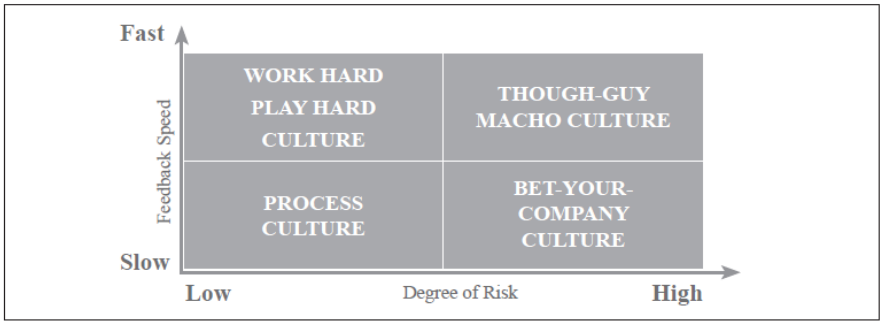


Figure 6
Deal & Kennedy Model
Source: Deal & Kennedy (1982).

Six elements are identified on the two axis –feedback speed and degree of risk– (Deal, & Kennedy, 1982):

1. History: narrative and cultural guide socially constructed and shared by organizational agents.
2. Beliefs & Values: deep assumptions that shape values.
3. Rituals: recurrent collective actions to create identity.
4. Stories: anecdotes, small stories that implies commitment to larger cultural elements.
5. Heroes: role models for their uprightness and compliance with organizational culture.

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6. Informal Cultural Network: cultural dissemination of everyday life through storytellers, gossipers, whisperer, spies, and priests.

Following these six elements, Deal and Kennedy (1982) describe four cultures:

1. Work Hard-Play Hard Culture: stability and persistence are the values, so feedback is given immediately. Teamwork and collective commitment abound. It matters more the sum of people than a single individual does. It is a common culture in large corporations where low risk levels disperse objectives into operational requirements. Innovation is not a priority.
2. Though-Guy Macho Culture: aggressive and competitive individuals who execute quickly and expeditiously, in organizations where risk and economic reward reign. Individualism has repercussions on internal conflicts and a narrow short-term vision. Collaboration are unknown; isolated, innovation is a result of an individual effort.
3. Process Culture: a highly bureaucratized organization where the focus is in the execution without reflection. Mechanistic culture, far from the market, society, and made up by interchangeable workers. No innovation, if it is a deviance from the normality.
4. Bet-Your-Company Culture: important strategic decisions with a high degree of uncertainty. Long-term projects with a high resources allocated, but whose results are known only a great deal of time after. The decision points becomes very relevant. Innovation, as a matter of success or failure, is an important variable.

In spite of its simplicity, the model shows the organization as a human structure where innovation has its origin in the collaboration (Deal, & Kennedy, 1982).

2.7. Hatch & Schultz

In the Organizational Identity Dynamics Model (OIDM) of Mary Jo Hatch and Majken Schultz (2009) 'identity' results from the unstable and dynamic balance between, on the one hand, the external environment and the relationship with the stakeholders and, on the other hand, the internal organizational structure (figure 7).

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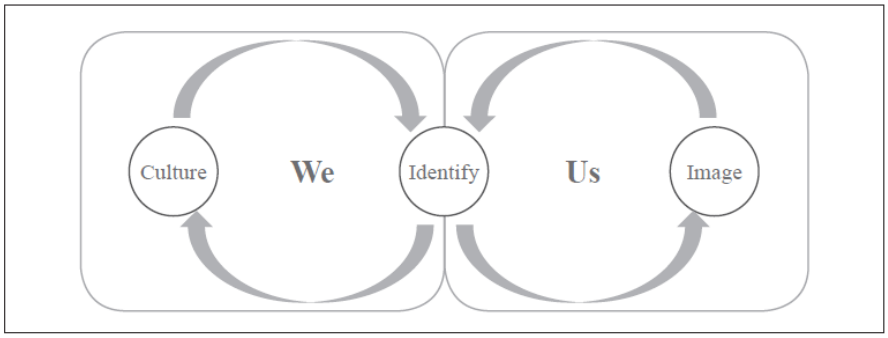


Figure 7
Organizational Identity Dynamics Model
Source: Hatch & Schultz (2009).

In-and-out, answer-and-listen are merged in a continuum. Identity expresses culture, and identity mirrors the images of others; identity leaves impressions on others, internal and external, and they embedded their values in the identity. Therefore, as Hatch and Schultz (2009) suggest, identity is a fragile negotiation, and to maintain a healthy equilibrium external requests need to be balanced with internal responses. One example is Toyota; it not only listen their ecosystem of innovation, but, in the chesbroughian way of open innovation, it projects its image to transfer its values and aspirations.

The authors defines two extreme moments:

a) Narcissism: the maximum projection of the identity towards the outside –Enron, as example–.
b) Hyperadaptation: the internal transformation by external influence –AT&T, as example–.

Undesirable extremes that can lead to destruction. When organizational culture responds to external influence, as innovation opportunities, the organization will show its alignment between its culture and the projected image outside the organizational boundaries (Hatch, & Schultz, 2009).

2.8. Others ICMs

The list of theoretical ICMs could be broad, endless as Denison (1996) argues. The number of cultural values, factors, and variables of an organization associated with innovation can be infinite, as it is at the mercy of scholars' imagination. In addition to the main ICMs already exposed, we show a sample of other cultural models applied innovation culture (table 1).

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Table 1
Others ICMs

Authors	ICM
Weisbord, 1976	Six-Box Model
Ouchi and Jaeger, 1978; Ouchi, 1979	Organizational Control Model
O'Reilly, Chatman and Caldwell, 1991	Organizational Culture Profile (OCP)
Johnson and Scholes, 1992	Cultural Web
Weick, 1995	Sensemaking Model
Nakata and Sivakumar, 1996	Factors of the Organizational Culture
Schwartz, 1992, 1999	Schwartz Model
Nonaka, Toyama and Konno, 2000	SECI Model

Source: Own elaboration.

3. DISCUSSION

3.1. Analysis

After this review, where we examined the theoretical ICMs, we proceeded to analyze together. In ICMs, complex relationship, interactions and dependencies are established between organization, culture, and innovation (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2012). Martins and Terblanche (2003), who called companies 'knowledge-based organizations', whose success and survival depends on creativity and innovation, emphasize this strong link. For this reason, managers seek to create and to promote an underlying innovation culture through which inoculate certain assumptions, values, and beliefs to encourage positive behaviors towards innovation. In this panorama, the scholars, as we have seen, prefer theoretical models development, where innovation, culture and organization are embedded and grounded upon different variables. These models seek to classify cultural elements to highlight resonance and comparisons based on clear criteria, explaining the not-so-often obvious cultural pattern that emerge from the dimensions of organizations (Büschgens, Bausch, & Ball, 2013). Due to the obvious conceptual differences between ICMs, all of them have been analyzed through a Strength & Weakness Analysis, being 'strengths' the strong points and the 'weakness', their flaws (table 2):

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Table 2
Strength & Weakness Analysis

ICM	Strength	Weakness
Hofstede	- Strong cultural characterizations - Cultural congruence - Rooted in empirical research	- Agential oversimplification - Innovation as a derivation - Static culture
Schein	- Cultural stratification - Conceptual framework to manage organizational culture - Cultural production	- Top-down cultural production - No insights about innovation culture - Agential oversimplification
Cameron & Quinn	- Cultural congruence - Insights about innovation culture - Rooted in empirical research	- Overall characterization of culture - No modes of action
Denison	- Strong cultural characterization - Insights about innovation culture - Comparative with other organizational cultures	- Overall characterization of culture - Organizational homogeneity - No modes of action
Harrison & Stokes	- Power relations - Everyday life - Subcultures - Insights about engagement	- Cultural typologies are adaptations of Mintzberg's Six Basic Parts of Organization - Innovation oversimplification - No modes of action
Deal & Kennedy	- Everyday life - Subcultures - Informality	- Innovation as a derivation of other combinations - Vague cultural congruence
Hatch & Schultz	- Organization as an open system - Dynamic approach	- Innovation as a derivation of the equilibrium - Agential oversimplification

Source: Own elaboration.

As a result of the Strength & Weakness Analysis, we have done a Three-Axis Analysis. In this analysis, each axis is a 'capacity of apprehension'. For 'apprehension' we mean, as Merriam-Webster Dictionary suggest, the act of perceiving or comprehending something, grasping with understanding and recognizing the deepest conceptual implications. Therefore, a better capacity of apprehension means that the concept is fully apprehend, well understood in its minor details and in its particular complexities. The axis have been (figure 8):

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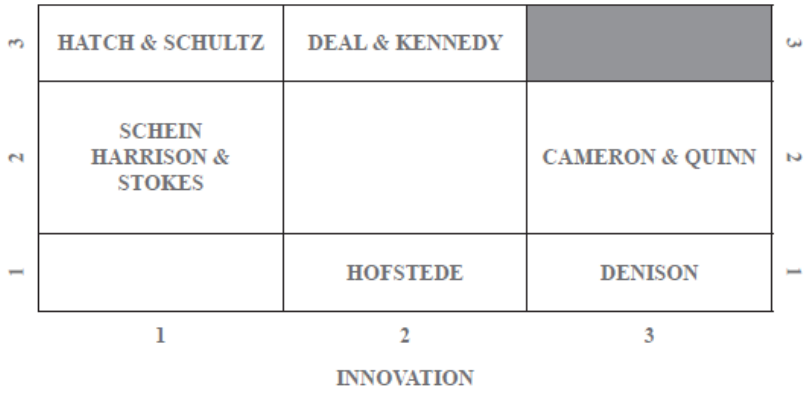


Figure 8
Three-Axis Analysis
Source: Own elaboration.

1. Innovation axis: capacity of apprehension of the concept of 'innovation' by the ICM, being 1) 'low', 2) 'medium', and 3)'high' capacity of apprehension. ICMs with '1' means: innovation is a derivation of other elements or a simplistic conceptualization. On the contrary, ICMs with '3' means: innovation is a critical and a complex variable in the model.
2. Organization axis: capacity of apprehension of the concept of 'organization' by the ICM, being 1) 'low', 2) 'medium', and 3)'high' capacity of apprehension. ICMs with '1' means: organization is conceptualize as a block, static, and undynamic. On the contrary, ICMs with '3' means: the concept of organization is complex, rich, changeful.
3. Culture axis: capacity of apprehension of the concept of 'culture' by the ICM, being 1) 'low', 2) 'medium', and 3) 'high' capacity of apprehension. ICMs with '1' means: culture is seen as homogenous, structural, oversimplified. On the contrary, ICMs with '3' means: plurality, every-day life and agents are taking into the account.

These two analyses allow us to postulate the following facts:

1. It is fairly evident the strong link between organization, culture, and innovation, and its relevance for organizations survival. For more than three decades, different theoretical efforts have been made to conceptualize this link.
2. Little is known, as Hogan and Coote (2014) claim, about the characteristic of the ideal innovation culture. The ICMs are mainly focused on organization culture; innovation is mainly inferred.
3. There is no such thing as a total ICM that apprehend the strong link and the multiple interdependencies between conceptgs. The perfect ICM –'3' in each axis– does not exist yet.

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Therefore, it seems necessary to make some proposals towards a total ICM.

3.2. Next steps proposals

According to Godin (2015), a model provides a conceptualization, a narrative, a figure, a tool, and a perspective, whose power is the creation of images from everyday complexity. ICMs, as a lens through which, as scholar, we examine the reality, need to deal with complexity. Thus, it is highly critical to refine ICMs to enhance our capacity of apprehension. Following our Next Steps Proposals:

1. On culture, two cultural aspects should be considered.
    a) In current ICMs prevail the culture as a tool to mold agents' behaviors in order to direct their actions to an instrumental goal, in this case: an innovation attitude. As Fine (1979) and Giddens (2003) insist on culture is twofold: producer of social interaction and a product of this social interaction. The organizational agents are cultural molded, but, at the same time, they are producers of this culture. Culture is freedom and mechanization, predefined framework and collective creation, and we need to know how it is produced.
    b) The cultural homogeneity –the same culture for all agents– is an illusion too naïve. We must to distinguish what Van Maanen and Barley (1985) called 'subcultures'; subcultures are separate cultures from the discursive culture and exist in departments, groups, etc. The concept of subcultures could help us to deepen our understanding related the changing nature of the organizations and their power stratification and plurality; it could provide, also, insight on the flexibility to transform or to adapt the organization and what are the innovation impulses and barriers to implementation.
2. On organization, three organizational aspects should be considered.
    a) Currently dominates an oversimplified view of the organization, where the complexity of everyday life is suppressed. The ICMs have little interest in social conflicts, power dissymmetries and agents' feelings and personal strategies. Organizations are made up of a plurality of logics (Lousbury, Ventresca, & Hirsch, 2003; Dorado, 2013), as well as fluctuation, diversity and instability (Gioia, Schultz, & Corley, 2000).
    b) In the Open Innovation Era, organizations cannot be seen as closed and static systems. The influence of

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the stakeholders ecosystem should be integrate as a fundamental part.

c) ICMs are too much focus on structural level, which means high level of abstraction –statistics, correlations– and instrumental driven oriented view. The socialization between (interchangeable, indistinguishable) agents is oriented only to achieve the supraorganizational objectives (Casey, 2002). Therefore, the power of informality and non-productive time as a source of socialization should be included. The productive side is just a part of the total organizational reality.

3. On innovation, two innovational aspects should be considered:

a) Innovation is not a mechanistic process without subjects, a milestone after milestone, where ideas become products or services; on the contrary, innovation is pure social interaction, at its highest level of complexity (Gaglio, 2011). For Alter (2013), innovation would be consider as a renewing, destructive, unstoppable, permanent and living flux that transform social structures. It is time to leave theoretical *clichés* associated with innovation. Agents in coordination, cooperation or opposition carry out the process of innovation: failure or success is a matter of social forces. Agents are the blood of the organization, and they carry the structural changes.

b) ICMs do not apprehend the most powerful insight related to innovation: the deviance. From this point of view, innovation is a deviation from a given reality that breaks social regularity and predictability and relativizes organizational norms. As a transgressive force that reshapes reality, the real innovation explores the unknown where nothing is given. The innovators never act alone and they need adepts to reformulate norms and reverse the culture (Gaglio, 2011; Alter, 2013).

4. On methods: generalist surveys and quantitative interviews have been the main methods to capture raw data. This is insufficient and narrow-minded. The development of intricate cultural categories through huge data sets are OK, but the aim would be understand the reality. This impersonal approach neglects personal embodied experience and feelings. Although organizations are remiss, ethnography is vital. As Ladner (2014) points out, ethnography capture direct data –people, actions, objects, etc.– according to its real contexts. Assuming that social life is a dynamic force, the ethnographer's emic position help to understand the agents' point of view,

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> taking into the account gender, economic class, age, race, etc. Ethnography does not describe but understand decoding culture-embedded forms and discovering wider patterns in the *lebenswelt*. We strongly support ethnography as a method to untangle the organizational symbolic worlds.

A model is useful according to its ability to penetrate reality and to reveal the congruence between culture, organization and innovation (Büschgens, Bausch, & Ball, 2013). If the model does not satisfy these terms, it is time to go beyond. This is the Next Steps Proposals; further research must be carried on.

5. CONCLUSIONS

Certain conclusions can be drawn. The comparison between ICMs is complicated due to each one is based on different empirical experience and, therefore, on different theoretical constructions. Dimensions, quadrants or levels are a sample of the heterogeneity of ICMs. Culture, organization and innovation are three elusive concepts. The proliferation of many ICMs demonstrate the strong link between them and its importance shaping performance and social reality. Since the 1980s, culture has been integrated in the Organization Theory's *corpus*, bringing ontological relativism and humanism to the hitherto rigid instrumental conception of what an organization is. The social dimensions have been revealed as a critical factor to take it into the account; as Crozier and Friedberg states: "L'acteur n'existe pas au-dehors du système qui définit la liberté qui est sienne et la rationalité qu'il peut utiliser dans son action. Mais le système n'existe que par l'acteur qui seul peut le porter et lui donner vie, et qui seul le peut changer" (Crozier, & Friedberg, 1977, p. 11). However, the analysis of the seven major ICMs suggests that, despite their undeniable theoretical and practical achievements, they lack some *qualitative sensitivity*, compulsory to dissect innovation, organization, and culture as a total social phenomena; as the literature asserts, the current analytical depth of the interdependencies between the three concepts is very limited, disappointing. In ICMs, the integration of people, in *lato sensu*, is a fact; the meaning of 'culture' in the current ICMs includes people as an indistinctive mass. It is necessary to go further. This structural postulate of culture as producer of socialization eludes the unknowing relevance of the everyday interaction as a source to build, day a day and from the bottom, the innovation culture. This oversimplification of organizational life impedes a more detailed research: only when we have ICMs faithful to reality, embracing the challenges of complexity and organizational plurality, the interdependencies between innovation, organization and culture can be understood. The future ICMs is ready-to-hand.

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Additional information

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