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Incremental Innovation Management in Some of the Public Member-Institutions of the Costa Rican Science and Technology National System (SNCT)

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Presentación

A lo largo de sus cuatro décadas de labor, la Escuela de Relaciones Internacionales se ha caracterizado por contribuir al debate y la discusión sobre los temas más relevantes de la actualidad nacional e internacional. Con tal fin, surgieron en 1989 la serie Documentos de Estudio, que, posteriormente, en 199, pasaron a denominarse Documento de Estudio Nueva Época. Estos cuadernos orientados primordial, pero no exclusivamente, al uso de nuestros estudiantes, pretenden reflexionar sobre materias propias de los programas de estudio que se imparten en las carreras de bachillerato y licenciatura en Relaciones Internacionales, así como en Comercio y Negocios Internacionales.

A continuación se presenta el documento número 38, titulado *Incremental Innovation Management in Some of the Public Member-Institutions of the Costa Rican Science and Technology National System (SNCT),* cuyo autor es el profesor Dr. Juan Carlos Bermúdez Mora. Esta obra aborda la innovación, competitividad, inversión, estructura organizacional, asuntos metodológicos y teóricos pertinentes, tecnología y desarrollo institucional. Temas propios de los cursos: Emprendedurismo e Innovación Internacional, Administración Internacional, Economía Internacional y Seminario de Investigación, contemplados en el programa de Bachillerato en Relaciones Internacionales y el Bachillerato en Comercio y Negocios Internacionales.

Desde la Escuela de Relaciones Internacionales seguiremos apoyando el esfuerzo académico de nuestros investigadores, con el propósito de dotar al país de los componentes necesarios para el debate constructivo de los grandes temas de actualidad internacional.

Campus Omar Dengo
10 de marzo de 2013

Carlos Humberto Cascante Segura
Subdirector

Introduction

The purpose of public service is not the same as that of a private enterprise. The private sector aims at providing profits and dividends to shareholders. The private sector depends, in every case, on its capacity to be up-to-date doing something new, improved, within the otherwise too competitive global markets.

In the public sphere, profit is not the measuring instrument for everything. It is said that the State belongs to all and none and, as such, the wealth administered by the government belongs in equal parts to all, and none in particular. Public employees are administrators of the national wealth who produce and reproduce beliefs and practices, inside and outside the government. In this sense, the question of great heuristic and hermeneutic implications to be studied is the following: What is the latent concept of "innovation" and "innovation management" among the institutions of the Costa Rican Science and Technology National System *(SNCT)*?

When doing research on innovation management among public or private organizations, we find two paradigms. The first one relates to the problem of thinking of innovation as an end, rather than as a mean to help the organization in achieving its objectives, and the second one relates to the idea that innovation is responsibility of an innovation department or area, when it is in fact a collective responsibility.

This document, based on the above-mentioned question, presents the results of the research project "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica" *(Capacidades institucionales y condiciones estructurales determinantes del dynamo innovador en Costa Rica)*[1], conducted by researchers of the Universidad Nacional, Costa Rica. The project provides some ideas to understand the innovation activity among the offices of the public institutions, organizations and bodies, members of SNCT, and contribute with SNCT's partners in the transition from the technology absorption-adaptation stage to a technology creation one.

Notas

1 Some of the project activities in 2008 were implemented with human and material resources provided by the Academic Units, and through the economic support of the MICIT-CONICIT Stimulus Fund (Fondo de Incentivos del MICIT-CONICIT). In 2009, the qualitative phase of the project is being executed with resources from the Academic Development Institutional Fund (Fondo Institucional de Desarrollo Académico, FIDA).

State of the Art of Research on Innovation Management in the Public Sector

There is a vast literature on technological innovation in the private sector, but a technical gap on technological and non-technological innovation management in the public service institutions including local, national and regional governments.

Those research activities concerning innovation in the public sector have been developed from many different perspectives.

According to Mulgan (2007; 31); researchers in the 1960s focused on the characteristics of the innovating organizations that were more receptive to ideas. For example, the studies on dissemination of innovations in the USA, by Walker's and Gray's; innovation on politics, by Mohr; and bureaucracy, change and innovation, by Etzioni. One of Mohr's main conclusions proved that the most innovative governments are the major ones.

In the 1970s and 1980s, some researchers changed the perspective and studied the psychological characteristics of innovation management, based on Bandura's work on personal efficiency, as well as on H. George Frederickson's values and motivations of the public service. Other significant studies have highlighted the difference between the total patterns of public innovation, based on Altshuler and Behn.

One of the principal researchers on innovation management in public administration of this century is Everett Rogers (2003); USA. Rogers, who is one of the global forerunners in this field has numerous regular publications on technology dissemination.

In Europe, the PUBLIN network of researchers has developed other studies to understand public innovation, particularly related to occupational health and the increasing importance of users for the innovation process. An ecological perspective is also beginning to be used in other models of thought concerning innovation.

For example, the recent study by Greenhalgh et al (2004); continues the work started by Rogers, going deeply into the most important factors for developing the environment of an innovative organization.

According Mulgan (2007); "Canada has been a particular centre for study, helped in recent years by an Innovation Network and Innovation Journal supported by the Government, as well as several academic centres for the study of social innovation".

These Innovation Network named Innovation Salons, was initiated and promoted by Eleanor Glor,

with the intention to brings together the activities of international and Canadian networks working on public sector innovation and the planning to communicate very important issues and experiences on The Innovation Journal – the internet-based and named The Public Sector Innovation Journal at www.innovation.cc, both created in 1995.

These Innovation Salons were a discussion group focused on public sector policy, program, process, and administrative innovation.

Sanford Borins (2001); has undertaken one of the few, significant polls on innovation management in the public sector. This research reported that, in most cases, innovation starts at the low and middle-levels management (50 percent); that innovation management is not an answer to the organization crisis (70 percent); that there are crosscutting benefits for the organization through innovation management (60 percent); and that innovation management is generally motivated by recognition and pride, and not by financial rewarding.

In the United Kingdom, research on innovation management in the public sector has increased since 2000. In 2003, the Cabinet Office published a report on this subject to make the new knowledge available worldwide.

In 2006, the National Audit Office (NAO) and the Audit Commission, among other governmental and non-governmental organizations, worked on the issue of innovation management in the local and national governments. One of the most significant research findings is that, the major innovative authorities are not, generally, the most competent ones, which rarely have the necessity of innovating, and have received a higher budget and a great financial support.

According to Mulgan (2007; 32); Nutley has studied the process and creation of public policies on innovation management in the United Kingdom. He has proven with empirical evidence the complexity of creating policies based on existing or pilot programs.

Hartley (2006); has observed in detail how innovation is developed, and the degree in which the organizations adopting innovative ideas are willing to adapt them. Hartley has concluded that the adaptation pattern of the organization influences the organization's willingness to adopt innovative ideas.

Another perspective of research is geoinnovation, including Landry's (2006); research on creative cities, and Hall's (1998); study on innovative contexts. Both studies have been made popular by Richard Florida.

Finally, the most recent research "Seeing the light: innovation in local public services" (NAO, 2007); from the United Kingdom, was published at the beginning of 2007 by Audit Commission.

Some of the major findings are deficiencies of the administration concerning risk management, estimation of innovation capacity, lack of a strategically effective direction, poor organizational communication among the personnel, lack of or deficient project management, inadequate dissemination methods, deficiencies related to the use of external consultancy services, and poor administration of contractual relations.

Theoretical and Methodological Considerations

This is a very significant study for the scientific technological development of the country. It represents a theoretical-empirical contribution to new knowledge on innovation management in the Costa Rican public sector. It provides an overview of how a field of study, of the Social Sciences, in public administration and technology economics, can be the starting point to tackle the problems of knowledge that affect the efficient, effective decision-making by those in charge of science and technology, at the central and local levels.

The methodological input is not centered on the technique applied, but on the object of study. Unlike other studies conducted in the country on research, development and innovation (R+D+i), which have examined technological innovation in businesses and research units of public universities, this research fills in a theoretical-empirical gap on non-technological innovation management in the public sector ecosystem, a sector of multiple dimensions and multiple interpretation possibilities.

The analysis unit is public administration as a public ecosystem: "an organization susceptible to innovation, as in reference to the innovation policies delivered to society by the administration" (Cotec, 2007; 135).

In this public ecosystem, managing innovation involves public services, processes, individuals and organization, as well as the budget performance models.

Internally, at the core of the institution, the relation model is determined by the budget performance, through the appropriate interconnection among taxpayers, lobby groups, economic and institutional-policy groups and other public administrations, suppliers, regulators and communication media.

Thus, through the institutional culture, strategies and management tools, the public administration delivers the public services available through the individuals, organization, knowledge, processes, information technology systems, equipment and facilities, and public budgets, among others.

As a result, the policy for promoting innovation in the public ecosystem responds to the necessities of the population, particularly those of taxpayers in the role of citizens, including health care, education, science and technology, industry and energy, environment, social welfare, infrastructure and transportation, among others.

Since this research focuses on the public sector, and the concept of technological innovation does not illustrate properly innovation in the service industries, the object of study in this research is technological and non-technological innovation management, which includes organizational innovation and innovation in marketing, according to revisions of the Organization for Economic Co-

operation and Development (OECD).

The reason for this is that, if we want to make an impact on these processes by recommending policies "it is necessary to understand, in a better way, the various critical aspects of the innovation process, such as the different R+D innovation activities, interactions between shareholders, and flow of knowledge" (Bermúdez, 2008; 23); as presented in Figure 1.

Figure 1. Object of Study

Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

The *Manual de Bogotá* (RICYT/OEA/CYTED; 2001); for developing countries was used as a conceptual and methodological guide. It focuses on the activities and efforts to improve the organization management, and introduces the concept of Managing Innovation *(Gestión de la Actividad Innovadora, GAI)*.

Managing innovation, seen as a process, needs the organizational dimension for the analysis of innovation, since the organizational modernization becomes an essential mechanism for such reconversion.

This mechanism captures the distinctive characteristics of innovation processes in the organizations, for example, the organizational strategies that will determine the efforts for "non-technological" innovation (Bermúdez; 2008); based on three dimensions of analysis: innovation keystones, assets and actions, as shown in Figure 2.

Figure 2. Dimensions of Analysis

Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

The keystones determine the solutions available from innovation to achieve the business or institutional objectives. The assets define all the business internal and external elements in which managing innovation should be supported. The actions describe all the steps that can (and should) be taken toward innovation in the short, middle and long terms, according to the COTIM Model "Total Administration of Taxpayer-oriented Innovation" *(Administración Total de la Innovación Orientada al Contribuyente)* (Cotec; 2007); proposed by the Cotec Foundation for Technological Innovation *(Fundación Cotec para la Innovación Tecnológica)*, of Spain.

For the methodological considerations, a telephone poll of open-ended and closed-ended questions was applied. This is a probability sample of 5 percent error and 90 percent confidence.

Since the results obtained are opinions and perceptions of the poll participants, the research team considered the scope and limits of such perceptions, to avoid invalid speculations in the interpretation.

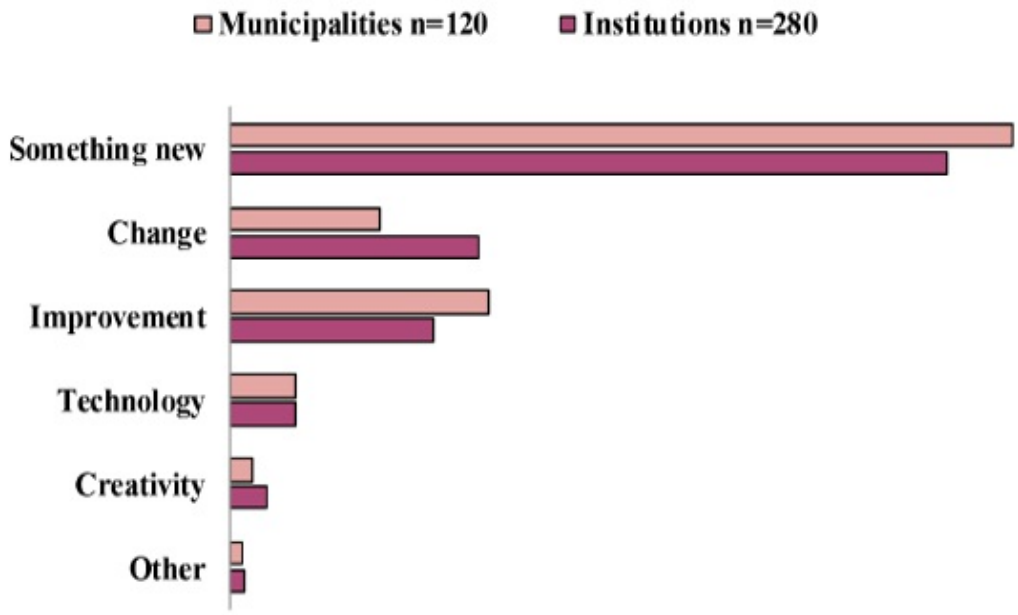
As for institutions, the study included 280 individuals aged 18 or older (41 percent men, and 59 percent women), with master's or licentiate's degree (58 percent), working at the Legislative Assembly, Office of the President of Costa Rica *(Casa Presidencial)*, Ministry of Finance, Ministry of Agriculture and Livestock, Ministry of Economy, Ministry of Science and Technology, Social Security System *(CCSS)*, Ministry of Health, National Council for Scientific and Technological Research *(CONICIT)*, and the Children's Museum; who have been working at those organizations for more than two years (79 percent).

As for municipalities, the study included 120 individuals aged 18 or older (48 percent men, and 52 percent women), with master's or licentiate's degree (45 percent), working in municipalities that served important commercial or industry areas, namely San José, Heredia, Belén, Alajuela, San Carlos, Cartago, Tejar del Guarco, Liberia, Santa Cruz, Puntarenas, Garabito, Limón, Pérez Zeledón and Golfito; who have been working at those organizations for more than two years (81 percent).

Understanding the Concept of Innovation

According to the results obtained from the research, the participants understand innovation as "something new", "a change", "an improvement" associated to "technology" and "creativity". See Graphic 1 and Figure 3.

Graphic 1. What is undestood by the term "innovation"



Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

As observed in the previous graphic, more than half of the municipal employees, who participated in the study, understand innovation as "something new", "a change", "an improvement", and only 5 percent of them mentioned the technological aspect. Rather than giving a specific definition of innovation, the poll participants understand innovation according to their own perceptions.

Based on the perception of the poll participants, "something new", "a change", "an improvement" could mean the implementation of a new procedure or software to improve a process and speed up a service. Alternatively, it could be moving a desk from the spot it has occupied for years or be determined, in a particular day, to change or improve the service delivered to the citizens.

In conclusion, all kinds of answers can be expected from perception; all of them are valid from the epistemological point of view, but not so much from the academic perspective. Nevertheless, the purpose of this research is, precisely, to know the factors that have influenced the employee's idea of innovation.

As a conceptual benchmark, the term "something" refers to what you do not want to (or cannot) designate, specify, give a name or nickname; it implies an undetermined quantity. Meanwhile, "new" means "the new-made", "heard by the first time", "re-done to be renewed" or "different from what there was before"; "the new" opposes to "the old".

The term "change" means leaving what existed or belonged to take another action considered of the same or analogous importance. The term "to improve" is then defined as "a change" aiming at a "better", "more favorable" and "beneficial" state, that is, an "advantage".

Based on the above, it is evident that, in the public sphere, the municipal employees refer to the so-called non-technological innovation, i.e. incremental innovation focused on improving processes

and services and, thereby, on improving the quality of life.

Furthermore, 61 percent of the employees from the local governments included in the study answered that innovation is "something new". This is equivalent to say that innovation is to do something different to what you did yesterday, or the week before, which was "something old". Innovation is seen as "the new", in contrast to "the old"; "the new" is different and "the old" is more of the same.

For example, an activity, a step, an assignment is new regardless of its magnitude and, as such, it means innovation; that seems to be the answer of the poll participants. However, how new can be something considered as new? How much is it different from that considered old? Which of all the everyday tasks are new? These questions will be answered later, when conducting a fieldwork from a qualitative view.

On that same question, 20 percent of the employees from the local governments considered innovation as an improvement. From this point of view, innovation becomes an adjective, a qualification and, thereby, an attribute. According to the poll participants: innovation involves improvement. In other words, it is not enough to do something new, it has to be done with the purpose of improving what already exists. To innovate is to improve; and to improve involves doing activities and tasks better than before. This was not so evident in the previous answer since doing something new, in the municipality or in any other organization, does not always mean doing it better. In fact, sometimes changes done in the organizations do not generate any improvements.

For example, so far, the transference of property taxes (Impuesto de Bienes Inmuebles, IBI) to the Costa Rican local governments, which is something new, has not produced the changes or improvements expected. Again, based on the answers provided by the municipal employees who participated in the poll, the following questions arise: What does it mean to do something better? How do the poll participants measure if something is better? There are more questions to be studied.

Innovation was associated to change by 12 percent of the employees that participated in the research. In this sense and to some degree, to innovate involves breaking with the traditional individual or collective unchangeable way of thinking and doing things, being in the comfort zone, and letting time go by. These employees seem somehow away from the lethargy and organizational stagnancy deep-rooted in some organizations. There seems to be a major approach to "the new", "challenging", "the uncertainty", but also to "change". Certainty versus uncertainty that is a question where innovation plays a fundamental role. Again, other questions arise: What is it to change? In what degree does change should be done? In what specific things does change should be done?

The 5 percent of the poll participants indicated to understand innovation as technology. In this case, innovation is material and tangible, visible to all employees. According to these employees, it is possible to innovate when the organization has technology.

From the conceptual perspective, there are various meanings for "technology". The more common meanings, which are three, define technology as a group of theories and techniques that facilitate the practical use of scientific knowledge through procedures and technical instruments.

From this point of view, technology could be innovation *per se*. However, is innovation correlated to technology? Does having technology imply innovation *per se*? Lastly, 2 percent of the poll participants indicated to understand innovation as creativity. It is worth saying that innovation is creativity; someone is creative by doing innovation. However, it is not known yet if to be creative is related to novelty, originality, or to something different or little known. Then, what does the

municipal employee understands as creativity?

As represented in Graphic 1, there were multiple answers to the question "What do you understand by innovation?" According to the answers, participants associate innovation to the concepts of "something new", "a change", "technology", "creativity", "improvement", and "others". This sort of polysemy of the innovation concept demonstrates that municipal employees do not have a clear idea about innovation. In this way, almost everything fits into this definition.

Based on the ideas exposed by the poll participants, other concepts arise, including "the novelty", "the new", "different things" and "new things". This may be perceived as an orientation to innovation, centered on incremental innovation management, aimed at improving the managing processes by modification, renewal or change.

The study reveals that the changes occurred in the local governments, in the last 17 years, have helped municipal employees to a real innovation activity in their organization. That is, that something new and better is being carried out in the center of the local governments; and this, regardless of being a simple perception, even very far from becoming real, is a very significant step for the organizational culture and environment, among the local governments.

Although there are still a series of political, bureaucratic limitations embedded in the local governments that prevent the development of urgent, indispensable, thoroughgoing improvements at the political and administrative levels, it is worth emphasizing the fact that a significant percentage of poll participants have perceived winds of change. In fact, such perception that innovation is being conducted is an essential -although not sufficient- condition for the development of innovation processes. Now, considering the subjectivity and intersubjectivity contexts, we still have an impression that local governments are making progress.

Based on the above, there are two other questions: How much can the perceptions of employees influence the objective innovating force of local governments, regarding the existence or absence of innovation? To what extend are these perceptions of employees -who affirm the existence of an innovation process- the result of their familiarity with critical organization inactivity and, as such, any tiny variation generates the perception of "change" or "improvement"?

Figure 3. What is understood by innovation

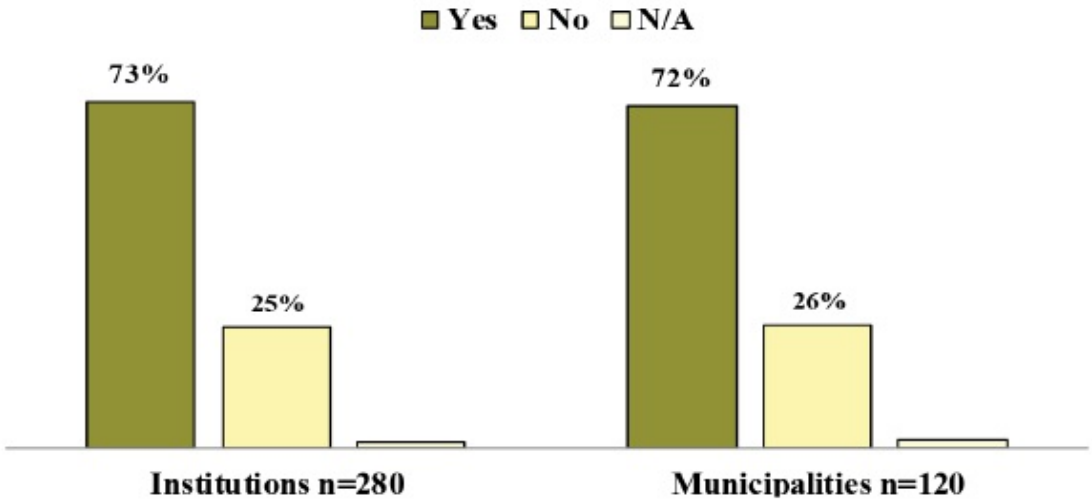
Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

There is a similar scenario for the rest of SNCT's institutions included in the poll, except that for them innovation is considered more as a change than as an improvement, in contrast[2] to municipalities.

Managing Institutional Innovation

There is a perception, among the population included in the poll, that managing innovation is more frequently developed at the macro or institutional level, than at the micro or office level. See Graphic 2 and Figure 5.

Graphic 2. Opinion on Managin Innovation



Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

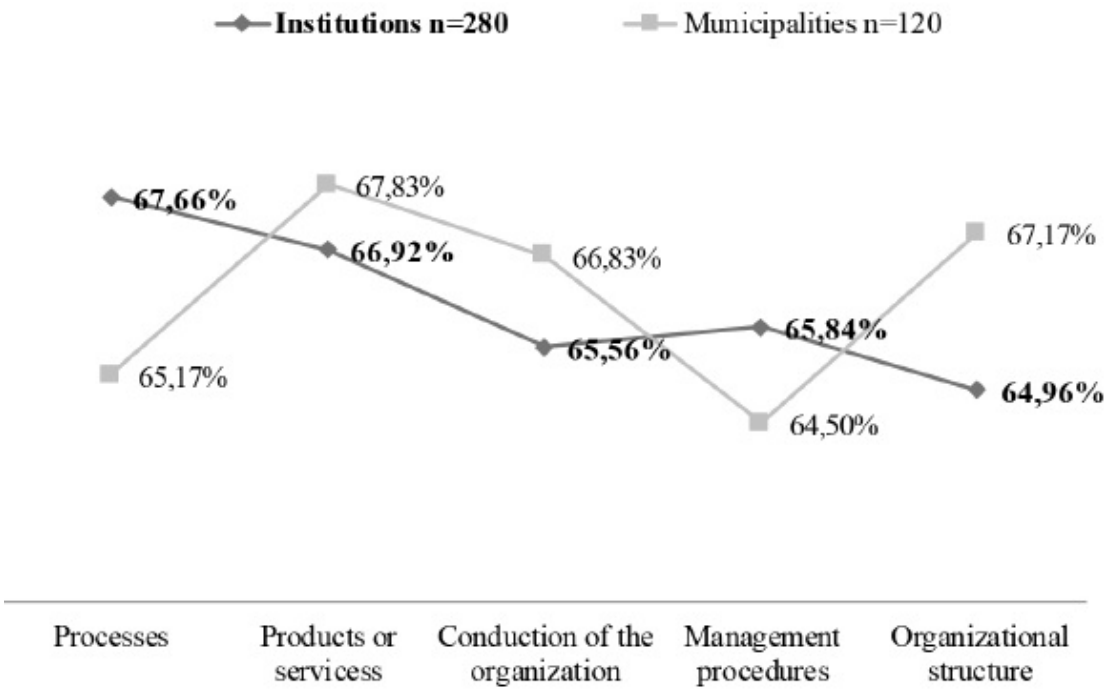
In this regard, poll participants were asked if there is managing innovation going on in the institutions they work for. Based on the affirmative answers of the 73 percent of the participants, the result is that, indeed, there are innovation approaches in the SNCT member-institutions.

When municipal employees were asked about the existence or absence of innovation management at their worksite, 73 percent responded affirmatively, 26 percent responded negatively, and 2 percent did not know or did not answer. The 73 percent of the affirmative answers may be interpreted as a low percentage for general public institutions; however, this is a very acceptable number for municipalities, considering the few changes experienced in the last decades.

Innovation Management Indicator

Regarding managing innovation in the conduction of the organization, the management procedures, and the organizational structure (non-technological innovation), as well as in the products or services and procedures (technological innovation), Graphic 3 and Figure 5 reveal that managing innovation is more commonly perceived in the services, organizational structure and conduction among the municipalities. For the rest of the SNCT member-institutions, managing innovation is more frequently perceived in the processes, and products or services.

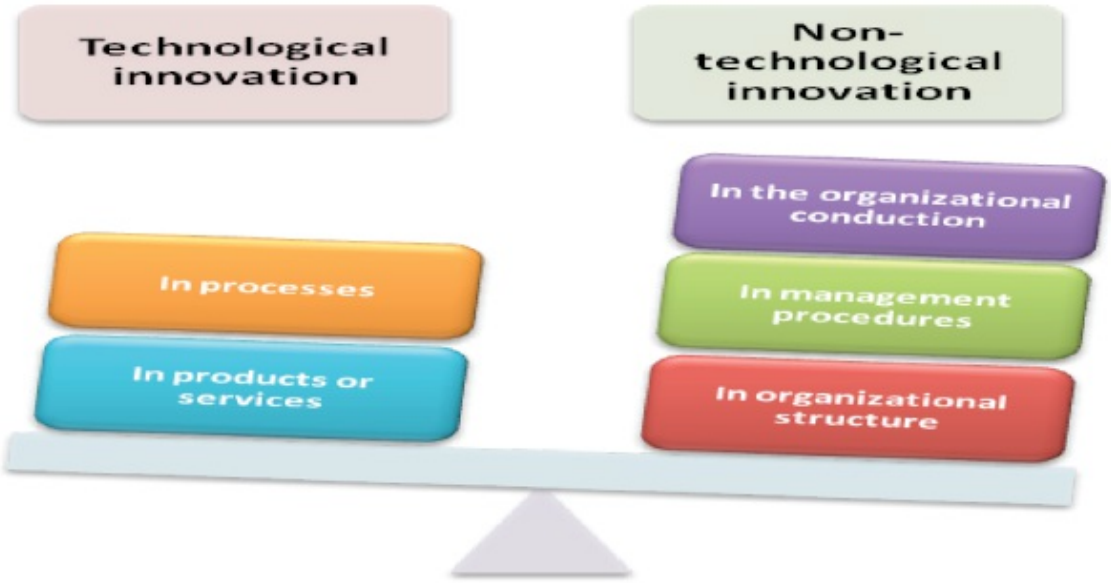
Graphic 3. Perception of Innovation



Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

Based on Graphic 3, it may be observed that, according to the participant perception of his organization, innovation is more non-technology-based than technology-based, as shown in Figure 4.

Figure 4. Innovation Level



Source: Project: "Institutional Capacities and Structural Conditions Determining the Innovation Dynamo in Costa Rica", Universidad Nacional, Costa Rica, 2008.

Conclusions

In no country, innovation is promoted and entitled to put in practice "by decree". In fact, in the context of human thoughts and practices, nothing works "by decree", everything is the result of comprehensive sociocultural initiatives and projects that are being carried out since childhood.

Therefore, the commitment to a long-term innovating culture is as well, and without a doubt, a commitment to the worldview, a development model and, consequently, a model of a country,

government and society, of course. Perhaps, this brings the idea of making a change of structural nature, born from society itself and spread throughout the community of a particular territory.

For many reasons, not considered in this study, in some societies innovation is irrefutably the rule, not the exception. In this case, it is an intrinsic element of the citizen's being and way of thinking. Day after day, people think on how to do things differently. For example, how to provide a better service, change a process at work, reduce waiting times and improve the organizational image; in sum, people image and think on the actions required to do everyday tasks in a different and better way. For this reason, in such innovating context, to improve the quality of life of society is not a utopia, but a clear reality.

In fact, all the citizens of any particular country should assume the innovation culture. Their thoughts and practices should be natural, and reflect their aptitudes and attitudes toward innovation. All social actors should feel a part of it.

The innovation culture is a matter of common interest for society. Indeed, businesspeople, politicians, scholars, public employees and non-formal sector employees, among others, should be involved. The local governments, whose strategic role within their own territories is undeniable (although such role is in decline in Costa Rica), should also assume the innovation culture.

As pointed out by Cárdenas Nersa (2002); "any synergic, enhancer process to perform national changes depends on the sociopolitical capacity of the Central Government to put local governments together in coordination around projects and objectives".

Undoubtedly, without the local governments and all the social actors of a specific area, there is no feasibility for any country-project focused on building the innovation culture -so much needed in Costa Rica-, validating and spreading it upwards and downwards. The reason for this is that local governments are the encouraging, linking institutions that activate the thoughts and practices of the social actors within their specific area.

Although it may seem a truism, innovation is of critical importance for the public system, even more than some politicians, businesspeople or scholars want to admit, particularly if you consider that innovation is a matter of common interest for the entire society, as stated before.

It is well known that by the services delivered to the general population, public institutions may contribute to improve or not the quality of life of the citizens; in other words, they may contribute to make the life of people better. Well, this rule, which is also an ethical commitment of the public sector, cannot be performed under the quality standards expected if there is no innovating culture or process.

For example, a high-quality quick service is not possible when there is no innovation. For the force of tradition, services are always delivered in the same way; breaking with the tradition and linking to innovation encourages individuals to provide better, different services.

According to the Cotec Foundation "individuals are the protagonists of innovation, since innovation is related to any change promoted by them based on value-generator knowledge" (Cotec, 2007; 17);

In conclusion, it is of especial interest, but also imperative for public institutions to become innovative. In fact, they should become permanent agents of innovation-change within their territories. Strictly speaking, this is what society expects from governmental institutions and organizations (including local governments), since today, more than ever, new innovation-oriented policies, procedures, methods, processes and services are indispensable to improving the total activity of the

much-maligned Costa Rican local governments.

Of all the Costa Rican, centralized or decentralized state institutions and organizations, the local governments have experienced the minimum change. In fact, Costa Rica is well known in Latin America for its strong, deep-rooted centrally oriented colonial heritage.

So far, in Costa Rica, centralization is the rule and decentralization is the exception. In the local governments, the organizational inactivity has been the rule and the organizational energy the exception. Probably for not being very demanding, users of the local governments are jointly responsible for the limited, not sufficient changes in these organizations.

So little is demanded of local governments that their actions for change and improvement are very modest, at least until the middle 1990s. In a not very demanding social context, change is the exception. Therefore, this research gives us with the impression that future research is urgently required to study the social context of the local governments in Costa Rica.

To be fair, we should mention that the Costa Rican local governments are experiencing considerable changes since 1995. Some of them are still very superficial, without an effective political support. However, there are some changes of relative importance, which could contribute to strengthening the local governments, in the long term. At least, that is what some people expect.

The specific actions taken in Costa Rica include transferring the *IBI* operation from the central government to the local governments, mayoral elections through the citizen's direct vote, professionalization of the municipal human resources and establishment of a Permanent Commission for Municipal Affairs in the Legislative Assembly.

Special emphasis should be placed on the transference of the *IBI* operation, because it is the first specific financial-administrative action, which demonstrates some political will leading to a process of governmental decentralization and strengthening of the local governments.

In conclusion, innovation in public service involves changing paradigms, in fields as complex as the relation "Administration-Citizen", the role of public employees, or the internal-administrative operation "system".

Innovation in the public sector does not only involve purchasing technology ("hardware" and "software"). More than that, it means a change or transformation in the outcome of the process or service, in the organization doing the change, and even in the society adopting the change.

Managing innovation in the public sector refers to what "technological innovation is not", within an ecosystem of multiple actors, multi-dimensionally connected.

The meaning of innovation refers more to incremental changes than to radical changes. It is not only a technical term but also a social term.

Notas

2 No statistical comparison is provided due to the number of participants in the sample in each population group (municipalities and other institutions included in the study).

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