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ICT AND CITIZEN EMPOWERMENT IN MEXICO

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ABSTRACT

There is no doubt about the impact that Information and Communication Technologies (ICT) has on development, and improve overall social conditions. Most of the time, this analysis is limited to statistics that describe citizen´s access to these technologies, but it is necessary tochallenge this data. This overview does pretend to establish if Mexican citizens have the capabilities to exploit these ICTs, in such ways that allow them to make a real difference in their local contexts andin consequence in their empowerment. This study uses three different frameworks proposed by the World Bank, and thus describe the actual conditions of citizens empowerment thru ICTs in Mexico. The results establish that although increasing access to ICT is available, there is a significant lack of capabilities to exploit them and thus contribute to citizen´s empowerment.

INTRODUCTION

The interdependence between organizations and society is undeniable. A healthy society expands business demands to meet most needs of the people and the increase in their aspirations. All this is better attained nowadays thanks to the advances of new technologies that are transforming the lives of most people around the world; therefore such technologies have the potential of being agents of change and social development [8],[4].

This is relevant for organizations, especially those having social responsibility because they understand that the principle of creating economic value must not exist alone, but must be accompanied by the creation of value for society. This will give enterprises a purpose for re-directing their own needs and challenges, taking into account society´s needs, with people as the main focus.

Good governance, based on a culture of legality, is essential for efficiency and innovation in organizations [17], [3]. Technologies are a medium that allows the development of social aspects in the creation of this inclusive social framework, through active citizenship value. In other words, what benefits the individual's development is reflected in an increase in better conditions in their economic and social environment [19].

The Country Report on the Quality of Citizenship in Mexico, developed by "El Colegio de Mexico" (ColMex) for the National Electoral Institute (INE), in 2014, pinpoints in its conclusions that Mexico is in the process of building citizenship, characterized by distrust in all aspects, which is reflected in a low participation of society. For this reason it is necessary that various institutions and organizations of the public, by means of trust and their involvement in communities in actions, will allow for attaining their desired economic growth. This participation will be possible through "the control of communication channels and citizen participation in the process of decision making in public affairs" [6].

If the communications channels are opened up, by implementing a framework using Information and Communication Technologies (ICT), individuals may participate and through these actions society may be empowered. Since technologies are accelerators for reducing the gap in accountability, the space between the supply (governments, service providers) and demand (citizens, communities, organizations of civil society),the use of ICT can be of service for a better government, which can conduct society to economic development [10],[16].

Taking into account what has been mentioned, this research had the following objectives: 1) to establish a theoretical framework about the relationship between ICTs and empowerment, according to various models found in the literature reviewed; 2) to describe the relationship of ICTs and empowerment in Mexico, according to the established models.

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Theoretical Framework

In order to understand the elements involved in the above ideas, one needs to set some basic definitions, such as empowerment, citizenship and civic participation.

What is empowerment? According to the World Bank definition [2] it is: "the process of increasing the capacity of individuals or groups to make choices and transform these choices into action and results." A fundamental aspect of these processes and actionsis that together, they build individual and collective assets, improve efficiency and justify the organizational and institutional context which, in turn, directs the use of these assets.

Then, empowerment consists of three terms: Participation, Transparency and Accountability. To be empowered, citizens must participate, express their concerns and voices. The search for an active partnership includes new forms of citizen participation and the unconventional addition to traditional political activities such as voting or membership in political parties or organizations of civil society. **What is citizenship?** According to the report of ColMex, [6], there are different definitions and visions, ranging from a minimalist view, where the concept is purely legal. Then there is the middle point of view, where the legal aspect is transcended and only participation in electoral processes is considered, and finally there is the perspective of the maximalists, which transcend and include legislative practices, feelings and values experienced by individuals and behaviors that result in certain social behaviors. The vision of a comprehensive citizenship developed by the United Nations Development Program (UNDP) report cited by the Quality of Citizenship [6].is: "a kind of basic equality associated with the concept of belonging to a community, which in modern terms is equivalent to the rights and obligations that all individuals are endowed with by virtue of their membership in a national government [...] substantially more space that goes beyond the political regime and its institutional rules. Speaking of full citizenship refers to the factthat a citizen of today must harmoniously access their civil, social, economic and cultural rights and, that they form an indivisible and articulated whole."

What is citizen participation? (Citizen Engagement) the idea of citizen participation has been extended to include both the voice of citizens and their ability to influence and demand accountability from their leaders. Several authors define public participation as "one that involves direct ways in which citizens exercise influence and control over the government." That is, they emphasize the direct involvement of citizens in public affairs and in demands of accountability from the authorities who are responsible for their institutions [9].

This participation means working to make a difference in the civic life of people´s communities, and the development of the combination of knowledge, skills, values and motivation. It means promoting the quality of life in the community. Although elections are the most recognized form of political participation, they are only a partial indicator of political activity in a society. The non-electoral political participation is done mainly through coordinated actions among different people; and, in order to attain this, the use of new technologies becomes fundamental.

Therefore, ICT become tools that provide opportunity for citizens' empowerment because they reduce the barriers to participation. Society can have access to information and communicate directly, rather than relying on intermediaries. Here are some reference models that allow us to understand the role of technologies in their relationship with empowerment.

Participation categories thick and thin

"Thick" participation is an intensive, informed and deliberative one. The organizers gather large and diverse groups of people; giving the opportunity for participants to share their experiences; they are presented with a wide variety of choices and encouraged to action and change at multiple levels. It is more likely to be face to face. "Thin" participation is quick, easy and potentially viral. It encompasses a range of activities that enables people to express their opinions, make choices or join a particular group. It is frequently done online, through information and communication technologies.

Both categories of participation are attempts at capitalizing responses to the new expectations and abilities of citizens. The most promising directions for innovation can find ways to combine the best of both types of participation [14].

Models for establishing empowerment through the use of ICT

Technology enables collective action within society. Countless civic groups use collaborative tools of communication and information to promote political action and sometimes operate an opposition movement or mobilize political activism. Collaborative government requires distinguishing between this kind of civic action that is independent of government: Change.org, instead of Change.gob.

According to the literature reviewed it is possible to recognize the increasingly important role played by ICT as a tool that allows the participation of society and consequently its empowerment. So that is relevant in establishing benchmarks to evaluate these mechanisms and establish ways for subsequent development of citizenship. The frameworks described below are part of the materials developed by various authors for the World Bank, compiled in "Closing the Feedback Loop. Can Technology Bridge the Accountability Gap?"Edited by Björn-Sören Gigler and Savita Bailur in 2014.

Model EPTA (Empowerment, Participation, Transparency and Accountability)

There is a tendency to view ICT evenly, as a black box. However, they fall within a wide spectrum, from low-tech to high technology (high-tech). In the low-end technology is included playing cassettes, using voice amplifiers or making presentations to community groups in order to increase interest (awareness) of government policies and the use of short messages (SMS, for its acronym in English), or calling to obtain feedback on government policies. On the other end, features like online forums, Facebook groups, hashtags on Twitter and interactive mapping are more sophisticated and have greater ranges, but may exclude those without connectivity or skills to access these technologies. It is important to recognize the wide range of ICT available in order to avoid bias in the study.

Moreover, a more fundamental criticism is the one related to the extent to which ICT are actually able to have on impact on

the government-citizen interaction and ultimately empower citizens. To understand this, one must observe the assumptions underlying the relationship between: Empowerment, Transparency, Accountability and Participation, through the EPTA model (Empowerment, Participation, Transparency and Accountability), as described in Figure 1:

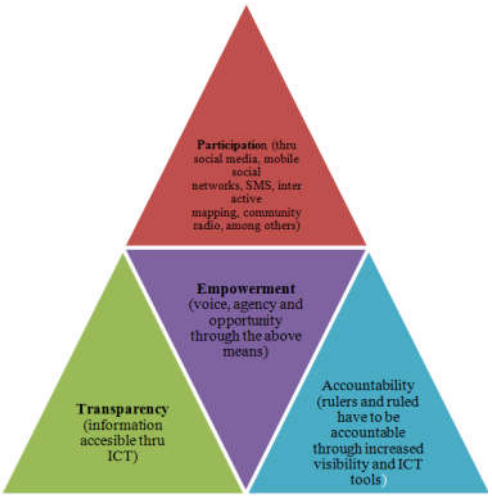

Figure 1 EPTA Model -Relationship between Participation, Transparency and Accountability. (Adapted from Gigler & Bailur, [9]).

As stated by Gigler & Bailur,[9], these four terms encompass concepts that containboth theoretical and practical challenges. Empowerment requires an agency as well as the opportunity to execute this agency. It implies the willingness of both parties to obtain this power in some way, even without the support of those empowered, sinceit challenges the *status quo* and authority. The same is often true of participation, which implies being part of a project owned by someone else. Even with increasingly lower barriers to participation, thanks to ICTs, there is an unmistakable difference between "managed" participation for a specific project and more free and unstructured citizen participation, like contributing to online discussions. There are scales for measuring accountability and transparency. A government may make data and information available on line, but how accessible is this to the average person? The data may need to be interpreted and analyzed by third parties, and these intermediaries may be weak or nonexistent.

According to Heeks [11], ICTs have the potential to empower, but this affirmation is based on five conditions: [1] data are made available and transparent; [2] this information is accessed by stakeholders who are able to assess it and transform it into information; [3] it can be acted upon; [4] it is used to initiate citizen-government and citizen-citizen dialogue and activism; and [5] government takes action based on these processes.

Therefore, access to ICT by itself cannot ensure the empowerment of citizens. It is only a potential tool for achieving this through a wide range of technologies available to support the underlying activities in each of the categories established. So empowerment is considered to be the voice and opportunity given to citizens through the access of information related to transparency and government accountability, through ICT tools, which also become a means by which people can participate [7].

STEP Model (Socio-cultural, technical, economic, political)

Socio-cultural, economic and political technical conditions are critical for achieving the vast potential of these technologies. The STEP framework is a structure for analyzing the factors that favor empowerment through ICT (Table 1. STEP Model).

Table 1 STEP Model (adapted from Hitler and Dancing, 2014)

	Supply	Demand	Structural
Sociocultural	Attitudes and motivations of supplier	Capabilities of civil society to access and use information	
Technical	Digital literacy	Linkage to collective action and mobilization	Ubiquity of devices Broadband penetration Infrastructure and connectivity
Economic	Availability of resources	Povertylevels	Role of technology companies Digital literacy
Political	Broader political economy Degree of political Will Level of democratization	Integration in to policy cycle	

Information Capacity Model

Gigler & Bailur [9] developed a framework for alternative assessment of the impact of ICT on human progress, based on the capability approach of Amartya Sen (1999), a more pluralistic framework for evaluating the development of growth, by analyzing what people can do with the products they can access and use in a creative form. This structure evaluates whether people have the ability [1] to use ICT effectively (ICT capacity); [2] to find, process, evaluate and use information (information literacy); [3] to communicate effectively with family, friends and professional contacts (communication skills); [4] to produce local content and share with others (capacity content), the capabilities of information related to the freedom of a person to use ICT within the institutional and socio-economic structure of society. The expansion of the capabilities of information can be translated to the management and expansion of the welfare of a person in the economic, political, social and cultural spheres of life.

The ICT measures in terms of capabilities enables them to go beyond superficial levels of access and use of technologies. According to this perspective, a framework is developed for assessing human management, rather than structural or institutional variables. These studies show that there is a linear relationship between access and use of ICT; Internet access is necessary but insufficient. So it is necessary not only to evaluate the wide range of ICT available, but include the capabilities of individuals, that is, their ability to transform these choices into real opportunities for achieving their life goals, including the motivations, expectations and reasons for their use and what they obtain from them for their welfare. To illustrate see Figure 3. Information Capacity Model.

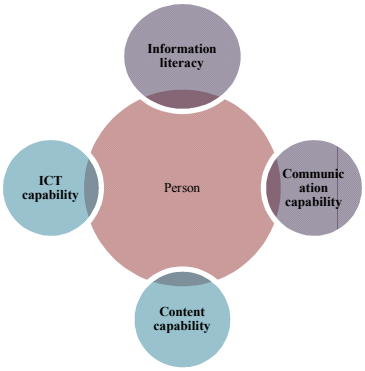

Figure 3 Information Capacity Model (adapted from Gigler & Bailur, [9]).

Enabling factors: the role of intermediary organizations

Intermediary organizations play a critical role in the process of introducing ICTs into local communities. Although this literature has a more institutional perspective and analyzes the effects of ICT within organizations, Gigler and Bailur [9] adapted it and proposed a new classification with two types of intermediaries: [1] technical-these are those people who come from outside of the community and provide effective support in the use and adaptation of technology, and [2] social intermediaries, that are local institutions.

The traditional information systems and the "ecology of information" within communities are critical to enabling or limiting the abilities of individuals to expand their capacity to an information factor. This framework analyzes the local social context. A common cause of failure of ICT programs is the perception of key community members in relation to new technologies and their adducing that they undermine existing information systems and technologies that challenge the role of "knowledge brokers" of community organizations. Therefore it is essential to analyze the interrelationship between existing social structures and the intermediation of ICT, so that they can improve the circumstances of those who have less. Furthermore, intermediaries can identify and provide access to ICT products and services that meet the information needs of communities, support the creation of locally relevant content and provide continuous training. Internet content often does not reflect the realities of local communities, and there is also the fact that the language used becomes a significant barrier to understanding.

MATERIAL AND METHODS

This investigation is of a quantitative nature: it uses the analytic-synthetic and theoretical-deductive methods. It was descriptive research. Also, bibliographical consultation on the benchmarks that establish the relationship between ICTs and empowerment was made. The components or indicators that might have some input in relation to ICT were identified in each model. This approach was used because the relationship of the reference models developed subjectively studied: EPTA, STEP, CI and their components. And all of them were obtained from documents issued by the World Bank in 2014.

EPTA model and its components

Participation: through, social media, mobiles, SMS, interactive mapping, community radio and others.
Transparency: accessible information through ICT.
Empowerment: voice, management and opportunity through the above means.
Accountability: rulers and ruled require accountability through greater visibility and ICT tools.

STEP model and its components (for this model the work was done using concepts found in various sources available online):

Socio-cultural: society´s capacities to access and use information.
Technical: digital literacy, ubiquity of devices, access and wide band penetration, infrastructure and connectivity.
Economic: availability of resources, poverty levels. Cursive: level of democratization and political will, policy integration cycle.

IC Model and its components

ICT capacity: using ICT effectively.
Information Literacy: find, process, evaluate and use information.
Communication skills: communicating effectively with family, friends and professional contacts.
Capacity content: locally produce and share content with others.

Quantitative approach: once the reference models were established, we proceeded to establish the consistency of the components of each model described, with quantitative indicator databases and results of surveys conducted by: [1] CESOP in its report "National Public Opinion Survey: electronic voting," 2014; [2] the "Country Report on the Quality of Citizenship in Mexico," presented by “El Colegio de Mexico” and the National Electoral Institute (INE) in 2014. Both surveys are available online.

RESULTS

To accomplish the objective of establishing a theoretical framework on ICTs and its relation to empowerment, two categories of citizen participation were found associated: Thick and Thin, as well as three models that explain how technologies enable citizenship empowerment: EPTA, STEP and IC.

As a precedent to this analysis, it is necessary to provide the data related to the technology available in Mexican households, as stated by INEGI[12]:

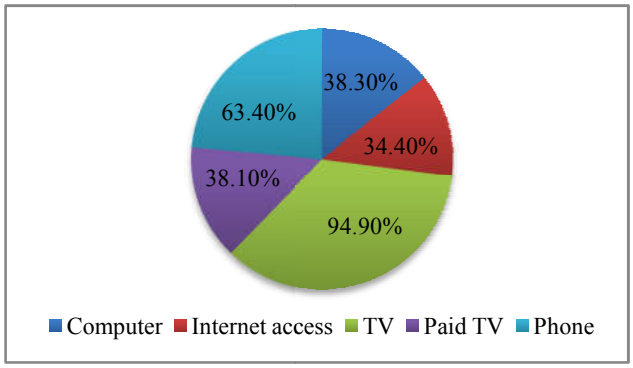

Figure 1 ICTs available in Mexican households [12]

For the second purpose of describing the relationship between technology and empowerment, according to the models described, ColMex studies [6] and CESOP [5] were primarily

used. The latter, in its survey of electronic voting, in particular questions:

How often (daily, sometimes weekly, sometimes monthly, rarely, never), do you follow information and news about what occurs in the country by: (television, radio, newspapers, internet, social networks like Facebook and Twitter). The answers were:

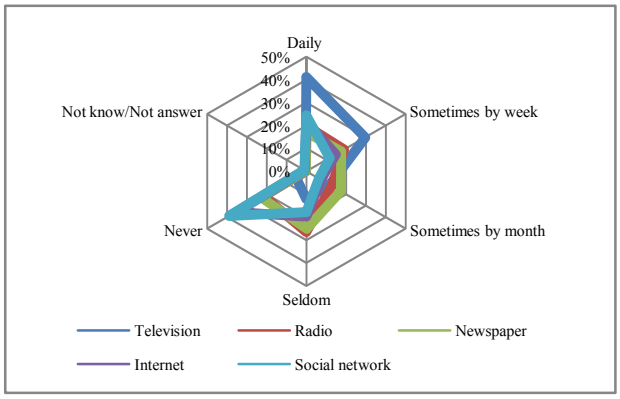

Figure 2 Frequency and use of Media for Monitoring News[5].

To the question, do you regularly use the Internet to...(find information, make bank transfers, purchases, consult bank balances, send / receive email, watch videos /movies, listen to music, access to social networks)?

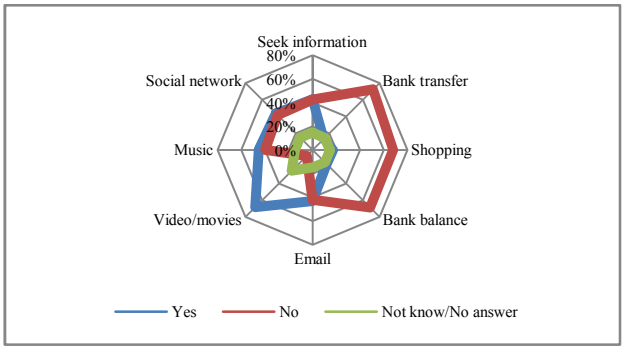

Figure 3 Regular Internet Use [5].

The study of the Country Report on the Quality of Citizenship in Mexico, ColMex[6], showed:

1. 10 % is the type of political participation, not related to elections, in which Mexicans are involved, through reading or sharing political information using some social network websites, like Twitter or Facebook.
2. 19%. Of Mexicans declare that they are involved in activities of non-electoral participation. The most frequent is reading or sharing political information in any social network, such as Twitter or Facebook.
3. Rate of success / effectiveness according to the type of participation, to read or share political information in a social network is: 3% "Yes", 5% "No".

From what was found in previous studies/surveys, as well as other sources, a basic overview of the type of participation associated with ICTs is given in Table 2:

Table 2 Description of Types of Participation.

Type	Description
Thick	Being face-to-face does not apply the use of ICTs. However, there may be some involvement through traditional media: TV and radio [5].
Thin	Certain online participation without successful results (mainly social networks) [5],[6].

As established from the above findings from CESOP [5], it is clear how traditional media, like television and radio are the main types of participation or communication with citizens, mostly on a daily basis.

Next, the different model elements, are identified and described, as defined inthe theoretical framework asEPTA, STEP andIC models.

EPTA Model

Table 2 Description of EPTA model

Elements	Description
Empowerment Who and how to empower?	The highest percentage of how often they engage in campaign activities is 19%, through social networks[6].
Participation Who participates?	They are significant: partisan identity. Gender (more women). Age (older).Trust in INE / IFE, meaning external political efficacy. Occupation (fewer housewives and students). Region of residence (greater participation in the center less in the southern and northern areas of the country[6].
Transparency - What is meant by transparent?	In 2014 Mexico was ranked at 103 of 175 countries with a score of 35/100 [22]. Participation in Open Government Partnership (OGP), since 2011 [13]
Accountability -*Do leaders respond?*	The level of interpersonal trust is low in the country. As the level of education and wages increase people rely more on others [6]. A system with low participation has a negative impact on the accountability of governments, as well as political equality, which are essential for the formation of relevant actors in the community [6].

As established by the EPTA model, the impact of Participation, Transparency and Accountability on Empowermentis clear. Mexico shows clearly low levels of civic engagement, which is somehow reflected in abstentions during elections. In a country where general distrust is an overwhelming feeling, it is not strange to find low scores in Transparency and as a consequence, no signs of Accountability from government.

STEP Model

After the description of the basic elements of the EPTA model, we can observe in more detail using the STEP model. Its elements describe the specific conditions prevalent in the country: Socio-cultural and Technical capacities shows there is a low degree of Internet penetration, less than half of the households has Internet access, most people must rely on public access, which is not always available, therefore it is not surprising that their information capacities are at the basic level, since there is no opportunity to learn and practice them. As for the Economic element, it is clear that the population does not receive enough income to pay for Internet access, which is expensive.

Table 3 Description of STEP Model.

Elements	Description
Sociocultural- capacities to access and use information	Households with: computer-35.8%, Internet 30.7%, Paid-TV 36.7%, Digital-TV-27.2% [12].
Technical- digital literacy, ubiquity of devices, access and wide band penetration, connectivity and infrastructure	Internet locations (access from where?): home-55.9%, Public-site 37.2%, work -21.3% [12]. 70,000 public Internet access sites. Subscriptions to fixed broadband and mobile are 11.9 and 13.7 per 100 of inhabitants in 2012 [15].
Economic- availability of resources, poverty levels	Socioeconomic survey [5]: A / B / C + (15%), C (16%), C (16%), D + (26%), E / D (27%). Main reason for not accessing computer / technology: cost [12], [15].
Political- Level political democratization and political will, policy integration cycle	Constitutional amendment to Article 6, in which the right of access ICTs is established. National Digital Strategy "Mexico Digital"[18]: objective of promoting adoption and development of ICTs and inserting Mexico intothe Society of Information and Knowledge. Among its objectives is a quality education, to integrate ICTs into the educational process, both in management and in educational teaching-learning,and in the training of teachers and dissemination and preservation of culture and art, to allow the population to be inserted successfully intothe Information and Knowledge Society.

As for the Political component, there seems to be a political willingness to make ICTs available to all citizens, reflected in a Constitutional amendment and operated through a National Digital Strategy, however, there is still a long way to go. First, it is necessary to train teachers, empower them with digital capabilities, in order to become intermediary agents, who can effectively prepare their students with a new set of skills.

Information Capabilities (IC) Model

Table 4 Description of Model of Information Capabilities

Elements	Description
ICT capacity: effectively use ICT	Main activities online: 80% e-mail, 77% access social networks, 72% seek information[1]
Information Literacy: find, process, evaluate and use information	General Baccalaureate Curriculum Map: includes two subjects Informatics I and II in the first year alone/only. The objectives of these two subjects is stated as "to locate computer knowledge in the field of language and communication (...) concerning the generation, processing and transmission of information (...)" [20]. However, the subjectrelated to Computing is more about concepts of technology than the use of ICT. Only 11% use Internet for training [1]
Communication skills: communicating effectively with family, friends and professional / business contacts	Through e-mail and networks mainly forsocial purposes [12], [1].
Capacity content: locally produce and share content through networks	Only 14-16% of Internet users reported access / create / maintain websites / blogs themselves [1]

If the explanatory elements from each model are "added together", it is clear – and not surprisingly- that the Information Capabilities Model shows low levels of digital literacy skills. Since the main use of Internet is oriented towards social activities, such as e-mail and social networks, there is no evidence of the capacity to create and share local content. In the end, these activities reflect the low level of information literacy provided by schools through the subjects taught. Moreover, if there is no such set of capabilities possessed by the teachers in charge, how is it expected that students learn something from them?

DISCUSSION AND CONCLUSIONS

According to the objectives mentioned at the beginning of this paper. First, to establish a theoretical framework which encompasses different types and models that allows for describing how ICTs are used in activities of citizen engagement, documental research helped to identify two types of citizen participation: Thick and Thin, as well as three different models which describe this participation: EPTA, STEP and MCI.

Second, describes the types and models already established in objective 1, according to information collected from different sources, as developed in the Results section.

Depending on the type of participation, the use of a wide range of available technologies is observed, but an increasing share of online media is seen through the most well-recognized networks where people express their views. However, these actions have not proved to have been entirely successful.

In the description of each one of the models it is interesting to note how they "evolve" in their elements, starting from basic broad categories and relationships, but in the end complementing each other. The depiction of their foundations through their basic components helps to explain and understand the "causality" between them. As the bottom line, there is a feeling of distrust between people, because of a lack of Transparency, in addition to no evidence of social conditions and technical capabilities for accessing ICTs, according to the STEP and MCI models. Even if there is a political will to do so, with the lack of evidence, the real impact of the use of technology to empower citizens cannot be established, since there is only usage and access statistics, but no data that describes how people are using these technologies to solve their problems, and as a consequence, empower themselves.

In the same way, there is no observation of civic participation, nor government transparency and accountability, as the cornerstone of citizen´s empowerment. Beginning with the EPTA model, there is an evolution into more sophisticated concepts, such as the MCI model, where aspects of capacity are evaluated for establishing whether users could really appropriate ICTs. Citizens should demonstrate their capabilities to exploit technologies in every possible way, starting with basics aspects such as access to technologies, digital literacy, up to the creation of their own-local content; thus achieving the fullest involvement within their own social-political-economic context.

The EPTA model description shows that the activity with the highest frequency of use of ICTs is participation through social networks. In a related manner, Transparency shows a low assessment of it, and therefore, it is reflected similarly in the appraisal of Accountability.

In the STEP model, it was only possible to obtain some basic indicators related to the use of Internet and computer households, from INEGI. As for the technical component,

related to digital literacy, there are only intermediary parties that deal solely with "making technology available" without worrying about the way users manage/exploit them thereafter. In relation to the socioeconomic levels determined by the CESOP survey it shows a predominance of low income levels. On the political side, although Mexico issued a Constitutional amendment and a National Digital Strategy that seeks to integrate the country into the Knowledge society, there has not been significant progress beyond these statements.

For MCI model, results show a basic use of ICTs in activities related to news search and socialization. Regarding literacy information, the contents of academic subjects are more oriented toward technical issues, instead of skills related to the use and exploitation of technology, for their own advantage. Regarding communication skills, the use of e-mail and networks is clear, but only for communicating and socializing purposes, other uses are not noticeable. There is no evidence of the ability to generate content.

On the one hand, literature reviewed [9] shows that under favorable conditions ICTs can increase people´s human and social capabilities and eventually have a positive impact on their well-being and quality of life. The keystone that favors this is information capabilities. In the same order of ideas, it is also mentioned that there is a direct causal relation between ICTs and development. But achieving this favorable interaction depends mainly on the dynamic and iterative processes between people and technology in specific, local cultural and socio-political contexts.

To achieve this favorable dynamic, the incorporation of intermediary agents such as teachers who work as “knowledge catalysts” becomes extremely necessary. They should become involved in these interactive processes, between people and technology. If teachers do not acquire the set of capabilities required, these skills will take much longer to flourish, and as a consequence, it will take more time to empower citizens.

According to the results detailed above, there is still a long way to go in generating initiatives that could help citizen’s engagement through the use of ICTs. It is necessary to put people at the center of the design and evaluation of ICT programs, in how these technologies are tools that help them improve their quality of life, different from conventional approaches that over-emphasize the importance of technology as a goal, which achieves development by itself.

The motivation to participate is perhaps one of the key factors to activate or inhibit empowerment through ICTs. Shirky believes that fundamentally, "People want to do something to make the world a better place. They will help you when you invite them" [21]. As stated by Gigler & Bailur[9], all these are tactics of democracy. The most important and encouraging impact is on the participants themselves: people who enjoy them and value these opportunities to make a difference. Both tactics of participation, Thick and Thin, have achieved significant results in influencing policies, when they are large and diverse enough to manage large quantities of interested people, and when it is the right time in the process of policy formulation.

Since new technologies allow for organizing job sharing and for working over distances and institutional boundaries, it is possible to enhance the sense of working as a team and recreate some of the conditions of traditional face-to-face work environments, such as confidence and sense of belonging. This ability to organize collective activity puts more power in the hands of individuals and it is possible for people to self-organize and form teams related to a limitless variety of objectives, interests and skills. Besides, technology can support the creation of bigger and more sophisticated teams tha never imagined.

Most people are motivated only when a critical mass of participation starts to increase, in the same way as trust. Thus encouraging the development of the information capabilities needed to use ICTs as a tool that helps build the necessary conditions to increase people’s participation and trust, as stated by Heeks [11]: data available and transparent; accessed by capable stakeholders; used to initiate dialogue and activism between related parties (citizens and government); and used by government and citizens to take action. And eventually, this engagement will have an impact on the whole system and will be come a virtuous circle: trust-participation-empowerment.

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