

Communicative maps and challenges in the digital era

Mapas comunicativos e desafios na era digital

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Abstract: The present article carries out a reflexive work that began while carrying out the thesis presented by the author (Said, 2006) in the PhD program “Technology, structures and treatment of the information” of the Universidad Complutense de Madrid. Starting from this work it has advanced into IKS referring to the information and knowledge society, digitalization, telematic and has also proposed a term that is expected to be received with interest by the academic and professional community related to the topic dealt with in these lines: communicative maps, which will be presented in this article with the aim of contributing to the generation of proposals leading to solutions on how to face the communicative challenges posed by the particular socio-cultural, political and economical realities of our societies.

Keywords: Information societies; Information and knowledge technologies; Communicative maps; Digitalization; Telematic

Resumo: O presente artigo realiza um trabalho reflexivo iniciado na tese apresentada pelo autor (Said, 2006) no Doutorado “Tecnologia, estruturas e tratamento da informação” da Universidad Complutense de Madrid. A partir deste trabalho avançou-se para a SIC, que se refere à sociedade da informação e do conhecimento, digitalização, telemática e propôs também um termo que se espera venha a ser recebido com interesse pela comunidade acadêmica e profissionais relacionados com o assunto tratado neste texto: mapas comunicativos, que será apresentado neste artigo, com o objetivo de contribuir para a geração de propostas que conduzam a soluções sobre como lidar com os desafios comunicativos colocados pelas realidades sócio-culturais, políticas e econômicas específicas das nossas sociedades.

Palavras-chave: Sociedades da informação; Tecnologias da informação e conhecimento; Mapas comunicativos; Digitalização; Telemática

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Current societies are at a crossroads, where the technical-economic paradigm (TEP) of industrial societies is cohabiting in an increasing way, with a new type of society known as the information and knowledge society (IKS). This has been determined by: the technological advance in computer science, telecommunication, the rapid advance of consumerism and the importance of communication and knowledge as exchange elements.

As we advance into this new space of obvious paradigmatic industrial-telematic mixing, societies can not be considered as processes solely framed within the cultural environment, but also as key elements for the economic development and that of the social organization in all aspects (education, leisure, transportation among others).

Facing this re-dimension of communications within a new societal stadium characterized by “the ability of its members (IKTizens), enterprises and public management) to obtain and share any information instantly from anywhere and anyhow” (Telefónica Foundation, 2001, p. 16), industries related with IKTs and content development have become two of the most important and most increasing actors in the current world economy.

This change of perspective has contributed to the progressive transformation of labour, cultural and social nets, among other aspects, since “it puts together all the activities that consume, deal with, store or distribute information... more power” (Ramonet, 1992, p. 148).

This is all framed within the process of development of infrastructures, which are being developed at such speed, that for example, the law of technological evolution of Moore¹ (Intel, 2007) and the law of wide band in Internet of Charles Guilder,² used by Fogel (2004: p 42) are left behind or necessarily adjusted due to the accelerated process of the IKTs resources that we are actually using and they become more complex in front of our eyes. This bring as a consequence the reduction of the times required for the appearance of new computer science components for the generation of new support and telematic services as the ones we know now. The unfavourable conditions of technology acquisition in the world and the subsequent increase of the digital gap in societies (Santoyo; Martínez, 2003) prevent the global character of these laws. The underdevelopment of contents nourishing technological advances to get more individuals interested has as a consequence a greater slowness in the process of price reduction of many of the existing services for the inability to generate a market strong enough to reduce costs, among other reasons.

¹ This law says that each 18 months the chip potency in the world has to duplicate, but the price has to be divided by two.

² It says that every two years the global width of the wide band in Internet has to be duplicated.

The above stated places us in a scenario loaded with doubts, illusions, fears and expectations as a result of the limited perception capabilities of the real dimensions of the impacts being generated by the increasing digitalizations in the communicative levels of our societies as products of the IKTs.

When placed at a moment of a cross trend and ways of technological development, the situations in which we are immersed will change according to the different levels of depth allowed by the existing conditions in the different regions of the world, which can be viewed by the IKS indicators as products of the advancement of the IKTs and measured by different organisms of national regional and global environments as for example International Telecommunication Union (ITU, 2007; 2007a), Telefónica Foundation (2001; 2005; 2007), Spanish Association of Enterprises in Information Technology (Sedesi, 2000), Interamerican Telecommunication Commission (Intel, 2007), among others. For this reason it is very common to debate about the CIS while other areas of the planet still live with anterior social models (agrarian, industrial, pre-industrial) which not necessarily mean not imposing progressively the TEP that is characteristic of the digital era.

The global character in contemporary societies

To better understand the development of the elements that integrate the CIS it is necessary to deal with one of its concepts which may have been dealt with in the most extensive way within the new societal framework: globalization.

Although recognized researchers have dealt with this process, arguing extensively about its characteristic features, the local within the frame of globalization and the digital world, such as Brünner (1998), Castells (1996), Beck (1998), Colina (1998; 1996), Pascuali (1998), Negroponte (2000), just to refer some of them, our aim is to deepen into the coexistence of both environments (the local and global) through the term coined by Robertson (2007): glocalization.

Even though it is true that “globalization is not accessory in our lives, it is a turn in the proper circumstances of our lives, and it is the way we live now” (Giddens, 2000, p. 31). This fact does not prevent us from understanding it as a complex series of micro (local) and macro (global) processes that account for the social context and which interact, get into agreements and have constant conflicts. This results in a process characterized by: 1) an increment of informative fluxes transmitted transversally in society; 2) the increasing strengthening of what is defined as *media plutarchy* (Said, 2005) formed

by an ever decreasing number of corporations or enterprise conglomerates with the capacity to control a wide variety of sectors related with the field of telecommunications and computer science and an action dynamics not limited by the geographical barriers of industrial societies, among other characteristics; 3) it not only covers “what is outside”, external to the individual, but also each one of his/her aspects; that is to say “what is inside”, what forms part of our lives; 4) the increasing conflicts or social integration due to the increasing limit situations generated by the media activity carried out by this *plutarchy*, where, using the term of Sacristán (2003), the attitude of cooperative integration of social groups gets closer which originates a space marked by an asymmetric or symmetric relation of different cultural norms; 5) the non passivization of individuals facing the CIS and the set of executed processes, since they have found rational ways and life rhythms to see the world and to relate to others, which make cultures acquire new dimensions characterized by confluence and clashes of global and local processes, and 6) communities gain influence in the constitution of global social spaces and additionally in their corresponding local or national contexts.

For this reason, globalization should not only be understood in terms of flux of information and the establishment of global norms of action in economy through anonymous economic actors, but it should also be globally understood, from processes such as cultural hybridization (García Canclini, 1989), the constitution of megalopolis (Olalquiaga, 1991) and virtual simultaneousness of non-simultaneous events that play a major role in it. This coincides with what was previously stated by Beck (1998): “With globalization, localization runs at hand”.

We live in a society which makes us feel as if we were on a training band whose off button is broken and makes us progressively go faster up to non-experienced levels, forcing us to the maximum limits of perception and resistance.

Information and knowledge technologies. Convergence and interactivity

One of the main supporters of the IKS is technological advances, more specifically those framed within what is called *information and knowledge technology (IKT)*.

The main role of information and its interactions take up new dimensions thanks to the multiplication of technical possibilities we have today at home and at the industry. These IKTs have made possible, for the one hand, a faster flow

of the information and knowledge through the different transmission channels existing in the complex telecommunication networks; but on the other hand, they also bring the problem of the “noises” carried along, which distract our attention at the moment we try to have access to useful information. In many cases, our environment is totally saturated with “trash information”, which even with the quantitative change offered by this new PTE, the quality is still in need. Quantity does not necessarily mean quality. We should not remain in this complaint, because we still have the increasing digital gaps among the ones who can have access to these resources and those who not.

One of the main processes of development of the IKS, and above all in the IKTs is technological convergence, which is the product of the association of the set of processes coming from the union of telecommunications and computer science with – following Mato (2007) - the industries producing audiovisual contents and multimedia.

This convergence process has contributed to change the forms of social and media inter-relations as it allows the development of activities through technological advances in a more efficient and competitive way. One example of this is found in the progressive development of new telematic support in the areas of mobile phones with the appearance of the G3 technology (Solórzano, 2007) the advance of the new generation of portals in internet with a greater integration capacity, as for example the development of the web 2.0 (Eikelmann et al., 2007), P2P [*Peer to Peer*], IPTV [*Internet Protocol Television*], (Peñas, 2006; Harte, 2005), digital television (Ramonet, 1992, Bustamante, 1997; 1998; Bustamante y Alvarez, 1997, Alvarez, 1997; 2005) and the development of new convergent spaces through internet where new virtual realities are being opened, specialized professional branches and the use of digital systems in the social and cultural areas. For example *el pais.com*, *toutube.com*, *kiva.org*, *microplace.com*, *secondlife.com*, *vside.com* and other advances in the telematic area.

This way new systems and innovation services are created which are used to access information and knowledge as well as for the elaboration of new products and professional profiles, which will be oriented towards the needs and the requirements of the information access, knowledge and the opening of new ways of economical exploitation in this ever increasing digital era.

Technological convergence has produced a scenario where internet approaches even more traditional audiovisual supports (radio and television), which brings along that this process of technological integration becomes the total metaphor of multimedia and the information highway development from the apparition and diffusion of internet in contemporary society. We share with

Bustamante (1999, p. 23) that we are in "... a long and complex process that today only appears pre-figured by some enterprise strategies and some inter-sector alliances whose profitability and capacities to mix very different jobs is yet to be seen..."

The Society of Information and Knowledge and the progressive access to new generations of supports framed within the IKTs make social contexts to be dominated by the distinct levels of expectations concerning *the potential interactivity of the new information media*.

There are infinite ideas about interactivity. The most important one is oriented towards the change of the passive role of individuals. According to this, the alternatives of goods and services personalization as well as that of knowledge, entertainment and news are adapted by people according to their interests, as is stated by Landow cited by Lister (2003):

Interactivity meant that users of the new media would be able to navigate their ways across uncharted seas of potential knowledge, making their own sense of a body material each uses following new pathways through the matrix of data each time they set out on their journey of discovery.

Interactivity consists in the imitation or reproduction of the new processes of communicative interaction developed between two or more individuals in the real world by means of a mechanical or an electronic system whose objective in a communicative function making possible the transformation of the original message into a new one, non foresighted a priori, at least in all its extension.

The new frontier that starts to get clearer, real or not, offers new potential opportunities for the individual to leave his/her passive position in front of the traditional communication media (radio, television and press) and to adopt a more participative and dynamic attitude in these moments of a technoeconomic paradigm.

What is considered by many specialists of technological advances as a novelty within the current telematic area (interactivity) is part of the different communicative processes developed by man through his individual and social evolution.

In the case of IKTs the interaction possibilities in real time are high but they are still as limited and precarious as the former scenarios since currently the main communication media do not have the corresponding technical resources to make use of them without given responses or options. This makes that the fundamental condition of interactivity become lost.

What we currently buy as cutting edge technology to many theorists and entrepreneurs of sectors related to the IKT (Dobarro, 1998; Martin, 2000; Naisbitt, 1983; Pineda, 1996; Alvarez, 1997; Bustamante, 1998; Fernández, 2005; Diazhandino, 2002, among others) was already at hand and was also limited. The *new interactive world* is framed within a scenario where the implicit value of this condition for the viewing, retail or service provision limits these perspectives even more.

The interactivity concepts we take as reference today are not so much technical or textual descriptions or experimental properties, but more claims concerning the visions generated in this new technological models, marketing strategies and sophisticated visions generated by academic groups about the new, real or imaginary spectrum of possibilities in contemporary individuals.

Even though it is true that the new modalities of access to information or knowledge increase the technical potentiality of action of the individuals who enter in contact with them, as well as the characteristics exposed by researchers who have analyzed and developed theories about mass communication (McQuail, 1991; Toffler, 1992; Horkheimer, 1973) and the possibilities of alterations of the message at a limited level, this does not mean it is the so promoted interactive maximization, nor the conversion of the receptor or spectator in emissary or user, but only a greater capacity of options and responses in front of a greater number of pre-designed solutions.

The development of a real interactivity in the communicative fields of our societies through IKTs will depend on the viability and economic evolution of each of the technological supports that are currently making their way and of the nets that support them as well as of the processes of cultural, political and social transformations caused by the impact of technological advances in the digital field and their consequences in the integration of what has been mentioned before.

The active participation of individuals is irrelevant if it does not include benefits for the economic actors of the telematic sector at the moment of making possible the development of contents that nourish the technological supports which make possible to have contact in the present and in the future. Here is where the future of interactivity in the audiovisual sector stands. It is only a question of waiting how each field of technological action attains this development and is expressed in the greater interest of individuals to access these resources and therefore, generating enough critical mass to allow the presence of a solid base not only to the generators of these advances, but also to this concept in fashion nowadays.

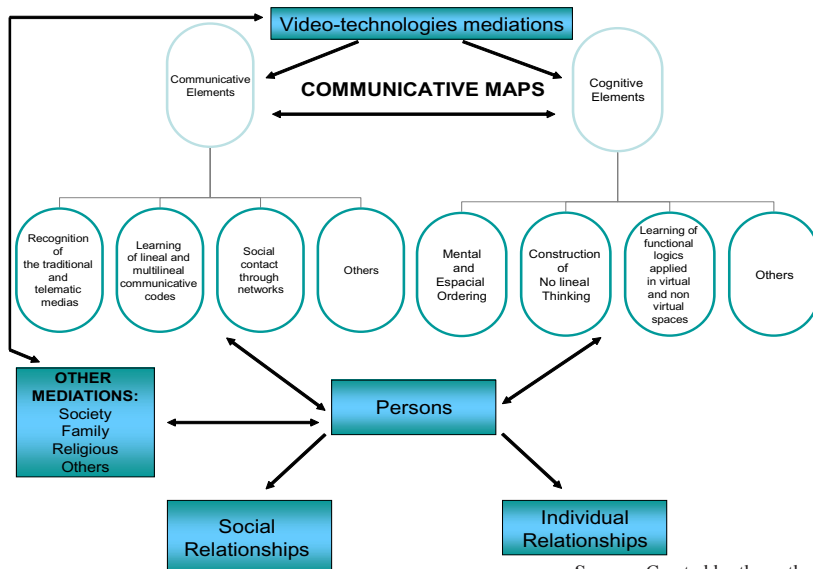
Maps and communicative challenges in the digital era

The horizons opening in front of our eyes bring a series of impacts in the communicative environment that invite and force us to take them into consideration for a pertinent approach to mediated communication through the new digital fields in contemporary societies. With that aim in mind we will analyze these aspects from two perspectives: as an incidence in the design and adjustment of the communicative and enterprise model of the sector facing the telematic pathway and from the adjustment and configuration of the communicative map of the citizens who establish contact with the different communicative devices in force.

In relation with the changes in the communicative maps, the changes that we face today are not unimportant. They must be understood in an integral way with the rest of the processes involved in the topic we are dealing with.

The “communicative maps” account for the set of communicative (recognition with the environment, for example) and cognitive elements (mental order and reasoning construction, for example) which allow individuals and societies to locate and think themselves in a given time determined by the physical and virtual processes and spaces occupied by them as members of a group or as autonomous individuals (See diagram no. 1).

Diagram no. 1: Communicative map model



Source: Created by the author.

The elements forming the communicative maps are characterized by the organic dynamics of the conflict-agreement relations before urban and communicative video-technological mediations established by each individual (Barbero, 1994)

Starting from this dynamic where we think and understand communicative maps of individuals and societies as undergoing a process of constant and complex change becoming increasingly faster, we can construct this cartography understood as the study and art of elaborating maps (RAE, 2007) coming from processes analyzed by researchers in the sociological and communicative fields, as for example in Ong (2002), García Canclini (1989), Levis (1999), Echevarría (2000) and Maffesoli (2004). Among other aspects we can mention the increase of virtual environments, transformation of narrative modalities, appearance of plusmediatic spaces and/or times, as are called by Gómez Monpart cited by Alsina (1999) (visual space added to real) to mention some.

Communicative maps are not static. The referents exposed in the traditional communicative processes confronted and readjusted through digitalization are shown there.

Starting with our considerations, here we could establish a series of challenges contributing to the consolidation of the concept proposed by assuming the digital from a perspective where not only the communicative and entrepreneurial dimension is approached, but also the incidence it has on the individual Cebrián (2003, p. 119):

Research of the reception processes to qualify what is received, how it is culturalized, and above all, the experimentation of a social pedagogy to form the new spectator in the same way it is being prepared in the analysis and comment of written texts.

Among the challenges we put into consideration in this article, we would like to concentrate in three:

- The need to think the new individual typologies arising from the digital with communicative cartographies where narrative modalities promoted from printed literature and individual audiovisual production are permeated by the modalities imposed by computer science. The pop-ups, windows and other resources make it a requirement to focus on the digital impacts concerning the support of new approximation strategies and construction of reality through the reality bites previously selected and or with contact possibilities by individuals as they relate with the contacts emitted through the different technological supports that exist today and those that will exist in the future.

- To think the digital impacts in terms of promoters of new dynamics of tribal grouping between the individuals accessing virtual environments that consolidate each day in our societies. This makes that what is perceived by Maffesoli (1994) as “urban tribes” loses or diffuses the urban for an empathy or not towards technology since the advancement of the digital will bring a constitutional opening of tribes which will share codes, values and socio-cultural norms without geography being the node point for the conformation or belonging. Starting with this, we could not only readjust typologies derived from the principles proposed by Maffesoli, integrating them with the proposals of Griffith as cited by Fernández (2005). They are: from *today* (those people wishing more access to technology novelties which are offered in the current market) *great consumers* (people with less loyalty to technological advances in telematics) *indifferent to the digital* (people rejecting the use of the telematic tools) and *young people* (highly promiscuous and undisciplined at the moment of establishing their strategies of content satisfaction exposed through telematic support).
- The need to approach the contents integrating communicative models (Berlo, 1990) taking into consideration the technological advances and their incidence in the communicative scenarios in the digital era, since this will contribute to understand or at least to be more conscious, on the one hand, of the degree of complexity generated as the result of the increase and integration of mediated communication sources by technological convergence and the increasing number of potential supports (channels) used for the transmission of a message. And on the other hand, of the increasing difficulties at the moment of encoding the purpose of all communicative acts in messages to increasingly diverse receptors as a result of the new spaces and/or plusmediatic times.

The technological capacities in communicative fields are and will be elevated, but the path we still have to walk still requires much time to be able to foresight how much of what we use or is sold will end up being a reality or not. The only certain thing is that “we entered a magma of changes and we do not know where things will lead us to” (Alvarez, 2005, p. 129).

Even though that researchers such as Dobarro (1998) tell us of the beauty of digital advances in increasing not only information plurality among citizens, but also quality of production, distribution and diffusion of a wider gamut of image, voice and texts contents, we still have to see how these technological

advances are defined and inserted in the different dynamics and socio-cultural realities in the different societies. And also, how citizens and professionals involved in this process make this right effective as well as the possibilities of a plural and informative access in favour of the reduction of the *info-poor* and *info-rich* gap that becomes larger day by day and whether this ends up being a quantity or a quality perspective. As part of these topics are solved, it will be possible to generate real signs of acquisition of citizens' participation channels and articulation of social movements through the current and future digital nets which will give a base, not only to the economic frame of the development of the telematic sector, but also to enhance the generation BIT (Sartori, 2002), conscious and in capacity of pedagogical training in favour of the production of greater levels of collective conscience about the different social issues existing in their environment (Esteinou, 1994).

What has been exposed here will contribute to illustrate the consideration of Arnanz (2002), who approaches this participation in economical terms and possibilities of diversification of resources for benefit extraction on the side of the economic actors involved in the telematic sector.

Here we share what has been reported by Bustamante (1997):

Digital technologies act definitely as catalysts of an economic de-regularization and convergence process, of proliferation of offers and segmentation of the already existing markets. It is a typical evolution – more than a revolution – where technological innovation is inserted in a social process, even though they accelerate it and condition them as it expands in society.

Concerning communicative and enterprise models, the digital advancement starting from the IKTs have contributed to the transition process where there will be an increase in the complexity of the horizons where the production relations, distribution, and diffusion of the communicative messages are transmitted through increasingly multimedia and integrated communicative systems.

According to Light (2007), we are in a space of technological convergences where there is a tension, on the one hand between formalization at the moment of understanding the contributions brought by digital advances in the comprehension of the world by the citizens, especially those concerning the potential ways to use them to attain this aim, and on the other, the processes of technological inclusions and appropriation for a greater number of people through their use in socio-communicative activities.

The digital has allowed the impact increase referring to the transformation of communicative and enterprise models present in the traditional

communication supports with more than 5 decades of social presence. This way we have challenges which deserve to be enhanced. Some of them are:

- To understand the progressive positioning of spaces where citizens exchange roles (passive-active) constantly when accessing the transmitted messages or when acquiring them through the different services offered by current supports in the world, regional, national and local telematic scenarios.

According to the medium used, interactivity will be expressed at different depth levels (Castells, 1996; Dobarro, 1998; Lans, 2000; Morse, 1998), and they will come in conflict with the social and cultural factors of each of the persons who will get in contact with certain services and contents offered in the telematic fields. We will be present in a moment where the potentialities of active participation start to be greater, without this meaning that that we have arrived to total or/and real concretion.

What we have presented urges us to this process of roles' exchange, not only from the position of spectators/users, but also from the position of spectators/clients. This illustrates the potential active role acquired by individuals who access to new telematic support within the financing model of the production, distribution and diffusion process of the contents they wish to have access to. This means the need on the part of the entrepreneurial actors involved, to keep in mind the social differentiation implied in their – increasingly larger – target population (spectators/users/clients), on facing the generation of needs of its members, by creating the argument to give support to their participations in the processes presented here.

- To understand that the (traditional) editing model of communication point-mass leaves more spaces for action with the advance and application of the IKTs to the point to point model promoted from internet and computer field and translated to other well socially based supports (radio and television) which means a flexibilization and confection possibility of a greater communicative specialized menu according to the interests of each of the individuals that contact an even greater gamut of services promoted from a greater diversity of supports with the development of the digital field in communications.
- To think communicative markets from a new rules of the game, using a term proposed by Eco (2007), communicative chains become more complex due to the increase in competence and transversality of the actors implied in the process. This would set the basis of the new frame of struggles: on the one hand, with the new technological advances favouring the development of new advertising services and financing

sources through the increasing presence of “pull” strategies (where each person is sent the messages of his/her interest) in the advertising communication model of the telematic scenario chosen in greater or lesser degree and according to the socio-cultural realities where the process is taking place, and on the other hand, the contents each time more diverse, that give solid basis to enterprise interests in favour of the generation of new arguments sustaining the potential interest of the individuals to have access to a new generation of services.

This will imply a growing demand of conceiving – using the term employed by Alsina (1999) – mediated communications (characterized by the development through a technological medium, where there is a mediation in the production of the message) without clear divisions between the different actors and supports involved in this process, as well as to think it as a wider frame; this is to say, not remaining in the simple technological fields, but integrating it to knowledge perspectives becoming more interdisciplinary (sociology, anthropology). Its foundations will be given through the creation and adjustment of contents according to the needs and singularities of some individuals inhabiting a space and/or time each time more plusmediatic.

These are only some of the examples giving account of the increasing re-dimension of communicative fields due to the digitalization generated by the advances in the field of IKTs and the need to approach them from an interdisciplinary perspective and consciousness of this global change to ensure an efficient comprehension. With this it will be possible to level the sensation many researchers have of being thinking new scenarios that start to be opened in front of our eyes, from a position where we follow their path, when we should try to do it in parallel or at least with this aim, dwelling into topics of interest, such as citizen participation, social movements, among others, that would then allow the integration in the analysis currents of a greater number of pros and cons carried along by the IKTs.

As a conclusion

Starting with the set of elements of reflection here considered, we take a step forward not only in favour of generating the conceptual framework required for approaching the central topic presented in the title by taking advantage of the establishment of our position in relation with the IKS, the IKTs, glocalization and interactivity but also a step forward towards the recognition

of the complex net of processes that digitalization and technological advances do influence contemporary societies and individuals who establish contact with the current, expanding resources.

The road is long, and we are in the middle – or, maybe at the beginning –. This is why, more than solving what we have ahead, the most important is to assume the greatest number of challenges that all the processes here considered present in the strengthening of the enterprise telematic model and of the communicative maps we all have inside. We have also to consider that in spite of the central character of technology, it is of utmost importance to consider transversality in the approach of a greater number of perspectives and interdisciplinarity at the moment of designing the proper strategies for the best approach to what is presented and sold to us. This sometimes with a very deceitful wrapping or progress meaning, increase in informative plurality and the possibility of access of any interested person, to information transmitted through the new supports which start to integrate in the world communicative fields according to realities and potentialities of each of the countries of the world. Therefore, what we have today should not be seen as apocalyptic (critical of all technological advances in this field in our society) or integrated (apologetic of the advantage and possibilities of technology) (Eco, 1977) but from intermediary positions, where the consciousness of the strengths and weaknesses of the IKS, the IKTs, technological convergence and digitalization, for example end up by constructing more critical senses and multi-paradigmatic visions that would ensure the best perception of the new telematic and digital environments before us.

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