

The virtual research community: a new arena of scientific communication

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Abstract

Over the last 30 years, the introduction of new communications techniques and information has generated a historical rupture, a paradigm break, resulting from innovative technological transformations. In this context, the virtual research community appears as a new cognitive social grouping for collective, interactive and interdisciplinary scientific practices, establishing selective patterns of relationships in the academy. Those new patterns are substituting the contact territory boundary, giving larger reach and speed to research, starting with their authors' interaction, independent of time and space. It is in this virtual arena that researchers feel changes in experiences, sharing of information, and mutual collaboration in research. The present study approaches the transformations of the scientific communication and points out the virtual communities' role in the current social context.

Keywords

Virtual community, scientific communications, cyberculture

The influence of information technology and communications in contemporary society has resulted in innovative forms of human interaction. The growth of the computer and telecommunications, the development of user friendly interfaces and the Internet's expansion have broken the barriers imposed by space and time, transforming the daily lives of citizens, especially in reference to communications and data storage and recovery.

Since the beginning of the 90s, the Internet's dissemination as a communications and information access system, combined with the massive use of other computer-based communications and information technologies, has stimulated the transition of society from its classic form to a new one, the net society, generating a new cul-

ture, cyberculture, understood here as the environment created by digital technologies where they develop and establish new forms of social relations, in a kind of virtual projection of reality. The expression cyberculture refers exclusively to social relationships that are placed in virtual reality, or cyberspace, using computers. Cyberspace can be understood as an immense network composed of computers, telecommunications, programs, interfaces and data, forming an intricate base of dynamic and interactive information. It represents the maximum expression of new forms of human communication, generated by the development of computation technologies and data transmission (MACHADO, 2002, p.2). For LEVY, it is the communications space opened by the global

interconnection of computers and computer memories and, for the first time, humanity has the opportunity to see using an existence transforming project, based on knowledge and the collective imagination, which the author calls collective intelligence, having the speed of the evolution of knowledge as a reference. This brings the great mass of people together to learn and produce new knowledge and tools.

The article's objective is to present the project approved by the Technology Development and Research Induction Program - PIPDT 2005-2007 of the Institute of Scientific and Technological Information and Communication in Health - ICICT of the Oswaldo Cruz Foundation - Fiocruz with the goal of delineating a model for the organisation of virtual community research. The research's starting point was to investigate new information technologies where they had been inserted into the virtual community environment. In dealing with a new theme, we start with preliminary mapping, identifying literature concerning the subject. The authors identified in the systemised preliminary mapping, thought regarding the influence of communications, and information technologies, which are relevant to the configuration of the new culture, but are still shrouded in an informational fog. Among these authors we highlight LEVY (1999), who points to cyberculture as a partial solution for the problems that have emerged together with the new paradigm. From this new reality, the relation of citizens to knowledge, work, employment, currency, democracy and state are being reconsidered and recreated. The new paradigm results from a historical rupture - a break in old paradigms that has resulted from untold technological transformations over the last 30 years. LEMOS (2001) affirms that "the end of the millennium was marked by an information and technology revolution that is reconfiguring the set of human societies in all their aspects, imploding the barriers of time and space, placing information as a central element of the articulation of human activities" (LEMOS et al., 2001, p.5).

The trilogy's first volume "The Information Age: Economy, Society and Culture", "Net Society", CASTELLS (1999, p.78), cites five main features of this new paradigm: technologies acting on information, and not just information acting on technologies, as was the case in previous technological revolutions; the pervasiveness of the effect of new technologies in society; networking logic; flexibility; and the convergence of specific technologies in a highly integrated system - the Internet. In this new configuration, the Internet is the technical environment which, for the first time, allows various people to communicate simultaneously and on a global scale. This communicational, original and innovative device is the base that enables carrying out the collective intelligence project proposed by LÉVY because it permits the construction of virtual communities that are progressive and cooperative in a common context. In addition to information devices, the Internet is the new form for communicating cultural mutations in society, and not only the support for multimedia, hypertext, mixed text, image and sound content (LÉVY, 1999,

p.63). With all this apparatus, a new space for the differentiated community of the classic concept emerges (constituted using the principle of the geographic unit); virtual communities. These appeared with the first users of computer networks, such as Usenet News, Fidonet and BBS in the 80s, resulting in the creation of values that up to the present still mould users' behaviour (CASTELLS, 2003, p.46). In 1993, RHEINGOLD popularised the term virtual communities to name sociocultural groups that appeared in the Internet when a sufficient number of individuals, after some time, participated in public discussions in networks of human relations in cyberspace. For CASTELLS (1999, p.385), it deals with self-defined electronic networks of interactive communication, organised around a common interest or shared purpose. In some cases the actual communication is transformed into the objective.

Cyberspace encourages a style of independent relationship from geographic places. It does not represent absolute newness, as the telephone and post office had already accustomed people to long distance communication, making reciprocal relations between participants possible, however, only for "one to one" contacts. The innovation of the virtual environment is the possibility for various people to communicate simultaneously, independent of where they are. In the fields of information and knowledge, the distance and time between the information source and its addressee cease to have any importance; "*people do not need to dislocate themselves because it is the data that travels*" (SANTOS, 2004, p.8). For the author, these changes bring new requirements, strategies and actions on the part of institutions facing the dissemination of information, opening up new possibilities for the performance of professionals and users of the sector. In contraposition to the idea regarding the end of the frontier - supported by Paul Virilio, Zygmunt Bauman, among other contemporary authors -, resultant from globalisation and the intensive use of information technologies and communication, CASTELLS (1999, p.385) defends the thesis of redefinition of the distances without cancelling geography.

For him, the Internet has its own geography, which is one made up of networks and users that process the flows of generated and managed information to and from places.

CASTELLS (1999, p.385) also maintains that communications mediated by computer is not a hegemonic means, and nor will it be in the near future.

In this context, it is possible to highlight the appearance of virtual community research as a new cognitive social grouping for practical scientific, interactive and interdisciplinary collectives. It is this virtual environment that enables the exchange of experiences, the sharing of information - in the sense of spreading by pairs - mutual contributions in research and interconnection of ideas that can be relayed by various dominions of knowledge. This sharing would be the guiding element of the scientific community - understood here as a set of social relations at the heart of which it assimilates,

produces and propagates knowledge, whose identity is sociocognitive as well as political. According to Freitas: "the necessary requirements for the participation of a scientist in the virtual scientific community are not presented in a rigid manner nor are intensely related to the elements that have characterised the position of the scientist in the hierarchical institutional structure of the field of scientific knowledge production" (FREITAS, 1998, p.1). According to the author, it is worthwhile highlighting that in this virtual environment resides the possibility of diluting hierarchies.

It is understood that virtual community research is the new arena for the production, circulation and appropriation of directions. Individuals are not merely senders and receivers of information, but active participants. However, the environment created by these technologies is still seen as a social space that inhibits or terminates old practices. For Lemos, it deals with an erroneous vision, which consists of viewing technologies as substitutes for classic instances of social life. The virtual community in his view fits this analysis. "*It deals with, therefore, in insisting, not in an exculpatory, but in a dialogic complimentary logic*" (LEMOS, 2001, p.23).

Another approach taken by this project is of communication as the interchange between individuals that share a language. This communication can be a formal one; that uses ways and processes of registering and recording script, and an informal one; which is based on the direct and synchronous communication between participants who share some form of time and space experience. In scientific communications - that which occurs between scientists and in the activity of research - informal communication has a fundamental role. It begins before a research process or in its initial developmental phase, as a basic form of exchange and aggregation of information, and as part of the research planning process. This communication is amplified in the investigative process, in which the scientist modifies ideas, processes and methods etc., creating the necessity to pass their constructions and discoveries to the community, so long as its pairs have the conditions to issue trustworthy judgments concerning their scientific value. For ZIMAN (1969), the informal cannot be defined by rigid and specific criteria. The author explains that:

"One of the major purpose of the whole scientific enterprise is to draw from the confused, vague, inchoate "stuff of experience" a few precise, clearly defined, "objective", concepts, principles, or observations. It is essential that scientific work should be "written up" in full, with all the details of technique, interpretation and logical limitation necessary to persuade the reader of the truth of the conclusions" (ZIMAN, 1969, p.320).

Informal communications in research groups, according to MEADOWS (1999, p.142), consists of two stages: the first one occurs inside its own group and the second one between groups, the ones that do more consultations in order to meet their interest are more actively involved with the question of information, which unites their information demands. "The active

researchers in the subject of information - many times the same people are highly productive scientists [...] are the main participants in the research groups." (MEADOWS, 1999, p.142)

From this analysis it is clear that the researcher who is at the forefront of a major project or research group does not need dissemination vehicles made available through library services because they have knowledge of their scientific field and know who works within that area. Today they make use of technological resources that dynamise and potentialise their contact strategies with their pairs. For better understanding concerning the possibilities of the virtual environment, LATOUR (2000) states that the records of one research project, brought together in a unique place, allow the observer the privilege of "simultaneously meeting in all places where, however, [they] do not reside" (LATOUR, 2000, p.39). In this context, the virtual community can enable scientific communication; virtual space benefits, naturally, the exchange of experiences and mutual contribution gives greater reach and speed to the research by the interaction of its participants.

For the creation and development of this environment, where it can constitute a virtual community, according to TEIXEIRA FILHO (2002, p.62), some basic tools are needed, such as: HTML pages, chat room services, e-mail, instantaneous communication and search engines. However, these tools are not the driving force for making this environment dynamic. It becomes important to emphasise that the life of a community exists through the fact that the individuals relate to each other by having similar objectives and interests. Inserted in this scenario, according to TEIXEIRA FILHO (2002, p.61), are the phases of a community, which are: appreciation (conception, catalysation, connection of people and sharing), critical point (confidence building), and co-creation (contribution, creation of knowledge and regeneration). The phase's critical point is considered, by TEIXEIRA, the moment in which obstacles reside. To overcome them, it is necessary to cease the participant's disbelief, the tendency of isolation, the feeling of not-belonging to the environment and the lethargy of giving replies. On the other hand, strengthening the process may be achieved through the perspective that they can gain profit from consolidated relationships that are the driving force '*confidence building*'. We can infer, from TEIXEIRA FILHO (2002, p.62), that to nullify these obstacles is the fundamental condition for the survival of the community. One already knows that building confidence does not happen quickly regarding new technologies. On this issue, a mediating figure is highlighted, who, ideally, must possess the abilities to negotiate, contemporise and act as a catalyser by giving incentives to stimulate the participants in the virtual environment. For TEIXEIRA FILHO (2002, p.93), the mediator has the arduous task of relating to the people connected, connecting not people and data, but people to people regarding the data, building, extending and keeping of a well-circulated flow of information. We can understand, based on TEIXEIRA FILHO (2002, p.93) that, if the mediation is "*attentive,*

competent and comprehensive”, it is an essential and vitalising component in a virtual community. The mediator, according to TEIXEIRA FILHO (2002), in order to operate in an efficient way, must have some actions in mind, such as; shared short and long term vision; to stimulate interpersonal communication; to facilitate the natural dynamics of those interactions; and to create a stimulating environment.

Analysed literature enables the understanding of the success of virtual communities by harnessing some factors that can be crucial to the question of content, coverage, participation, dissemination and mediation. In order to cultivate this process, active participation allows the complete development and dynamism of this environment, keeping the virtual community alive, active and brilliant, with rich content and current forums, forming then a repository of ideas and enlarged and rich constructs. It was found that research of virtual communities established new selective standards of relations in academia, substituting limited contact territoriality, affording greater reach and speed to research due to the interaction of its participants, independent of time and space. This represents an extension of scientific life throughout its dimensions and under all its modalities, however it is one that favours a new notion of space, in that physical and virtual are mutually influenced.

Currently the virtual environment pilot for the test is being implemented. It consists of the identification of the technology to be adopted and its customisation for the ICICT environment, on the basis of features built from the preliminary mapping of scientific literature, considered relevant to the proposal’s construction specifications, that is: deterritoriality; to be motivational (to give reason, to stimulate, to provoke, to induce); non present; informal, but with a certain formality; (formality concerning the availability of explicit knowledge); scientific character; and dynamic interactivity (intensive use of technology). These characteristics will encompass the concept regarding research of the virtual community, as well as tracing the guidelines that will direct virtual community research in the unit and circumscribe the applicability of this environment in Fiocruz. One hopes that the dissemination of this project can, moreover, provoke reflection at an institutional level regarding actions and policy guidelines that endorse this implementation, and the use of this environment to complement and interact with and between the institution’s various niches.

Bibliographic references

BRAZIL Centro de Informação Científica e Tecnológica (CICT). Fundação Oswaldo Cruz. Ministério da Saúde. [site]. Rio de Janeiro: Fiocruz; 2006. Available at: <<http://www.fiocruz.br/>>. Accessed: 30 Oct. 2006.

BAUMAN, Z. **Globalização: as consequências humanas**. Rio de Janeiro: Jorge Zahar, 1999.

CASTELLS, M. **A sociedade em rede**. 6 ed. São Paulo: Paz e Terra, 1999.

CASTELLS, M. **A galáxia da Internet**. Rio de Janeiro: Jorge Zahar, 2003.

FREITAS, C.S. de. **Ciência na Internet: Novas práticas e relações no campo científico**. 1998. 1 v. Dissertação (Mestrado em Sociologia) - Universidade de Brasília, Brasília, 1998.

LATOURET, B. Redes que a razão desconhece: laboratórios, bibliotecas, coleções. In: BARATIN, M.; JACOB, C. (Orgs.). **O poder das bibliotecas: a memória dos livros no Ocidente**. Rio de Janeiro: Editora UFRJ, 2000. p.21-44.

LEMOS, A.; PALACIOS, M. (Orgs.). **Janelas do ciberespaço**. 2. ed. Porto Alegre: Editora Sulina, 2001.

LEMOS, A. **Cibercultura, tecnologia e vida social na cultura contemporânea**. Porto Alegre: Sulina, 2004.

LÉVY, P. **Cibercultura**. São Paulo: Editora 34, 1999.

MACHADO, J.A.S. **Cyberespaço e esfera tecno-social: uma reflexão sobre as relações humanas mediadas por computadores**. Available at: <<http://cibersociedad.rediris.es/congreso/>>. Accessed: 2 Jun. 2006.

MEADOWS, A.J. **A comunicação científica**. Brasília: Briquet de Lemos/Livros, 1999.

RHEINGOLD, H. **A comunidade virtual**. Lisboa: Gradiva Publicações, 1996. 367p.

SANTOS, P. X. A dimensão política da disseminação da informação através do uso intensivo das tecnologias da informação e comunicação: uma alternativa à noção de impacto tecnológico. *Datagramazero*, Rio de Janeiro, v.4, n.5, p.1-13, Aug. 2004. Bimensal. Available at: <<http://www.dgzero.org/ago04/>>. Accessed: 2 Jun. 2006.

STOCKINGER, G. A interação em ciberambientes e sistemas sociais. In: LEMOS, A.; PALACIOS, M. **As janelas do ciberespaço**. 2. ed. Porto Alegre: Sulina, 2001. p.106-127.

TEIXEIRA FILHO, J. **Comunidades virtuais: como as comunidades de práticas na Internet estão mudando os negócios**. Rio de Janeiro: Senac, 2002.

VIRILIO, P. **The art of the motor**. Minneapolis: University of Minnesota Press, 1995.

ZIMAN, J. Information, communication, knowledge. *Nature*, v.224, p.318-324, 1969. 

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