Encyclopedia of Multimedia Technology and Networking

Second Edition

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Volume I
A–Ev

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Development of IT and Virtual Communities

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INTRODUCTION

The notion of **community** is pivotal in the sociological tradition. According to Nisbet (1966), "the most fundamental and far-reaching of sociology's unit ideas is community" (p. 47). Yet, it is not easy to define what a community is. Though in everyday life the concept of "community" is widespread, nonetheless this concept is very problematic in scientific reflections, partly because of its strongly interdisciplinary nature. As long ago as 1955, Hillery could list and compare 94 different definitions of "community," finding only some common elements among them, such as social interaction, area, and common ties.

Generally speaking, a community can be defined as "a group of persons who share something more or less decisive for their life, and who are tied by more or less strong relationships" (Cantoni & Tardini, 2006, p. 157). It is worth noticing here that the term "community" seems to have only favorable connotations. As observed in 1887 by Ferdinand Tönnies, the German sociologist who first brought the term "community" into the scientific vocabulary of the social sciences, "a young man is warned about mixing with bad society: but 'bad community' makes no sense in our language" (Tönnies, 2001, p. 18; Williams, 1983).

Two main ways of considering communities can be singled out:

1. Communities can be intended as a set of people who have something in common, and
2. Communities can be intended as groups of people who interact.

The distinction between the two ways of conceiving a community is very well illustrated by an example provided by Aristotle. In his *Politics* (3.1.12), the Greek philosopher tells that, when Babylon was captured by an invading army of Persians, in certain parts of the city the capture itself had not been noticed for three days.

This is the reason why Aristotle considers Babylon not a *polis*, but an *ethnos*. In fact, according to Aristotle, what distinguishes the *polis*, that is, the perfect form of community (see *Politics* 1.1.1), from the *ethnos* is the presence of interactions and communications among the citizens. In a *polis* citizens speak to each other, they interact and communicate, while in an *ethnos* they just have the same walls in common.

In the sense of the *ethnos*, we speak, for instance, of the community of the linguists, of the community of Italian speaking people, of the open source community, and so on. The members of such communities usually do not know each other, they do not communicate each with all the others, but they have the perception of belonging to the community, they are aware of being part of it. According to Cohen (1985), such communities are symbolic constructions. Rather than being structures, they are entities of meaning, founded on a shared conglomeration of normative codes and values that provide community members with a sense of **identity**. In a similar way, Anderson (1991) defines the modern nations (the Aristotelian *ethne*) as "imagined communities":

[They are] imagined because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion. [...] In fact, all communities larger than primordial villages or face-to-face contact (and perhaps even these) are imagined. (pp. 5-6)

Borrowing the linguistic terminology of structuralism (de Saussure, 1983; Hjelmslev, 1963), the two different typologies of communities can be named "paradigmatic" and "syntagmatic." The former are characterized by similarity: members of paradigmatic communities share similar interests or have similar features. The latter, on the contrary, are characterized by differences: they are built up through the combina-

tion of different elements that carry out complementary functions, that is, through the succession of concrete interactions among the members (Tardini & Cantoni, 2005).

COMMUNITIES AND ICT

The concept of community is strictly related to that of "communication," as it is shown by the common root of the words. Community and communication entail each other, being each a necessary condition for the existence of the other. On the one hand, communities are built and maintained through communicative interactions, which can take place both within a community and toward the outside. On the other hand, even a minimal form of community must exist in order to make any communicative event possible. Every communicative act presupposes that among the interlocutors a more or less extended common ground exists (Clark, 1996).

Communication technologies play a fundamental role in the relationship between communication processes and communities. From writing to letterpress print, from mass media to digital technologies, new "technologies of the word" (Ong, 2002) have always given rise to new forms of communities. **Virtual communities** are the new kind of communities that emerged thanks to ICT.

Two different situations that represent the relationship between social groups and new media can be singled out: on one side there are groups that have been created thanks to ICT, and on the other there are groups that already existed in the real world and employ ICT as a further communication tool. In the former case through ICT, social relations are created among people who had no previous mutual relationships; the community is *constituted* by employing the same medium. In the latter, already constituted groups, organizations, associations, and communities use new media and virtual environments to foster and increase their communication processes; media *facilitate* communities (Lechner & Schmid, 2000). The expression "virtual communities" in its original sense referred to communities constituted by the use of ICT.

Exactly as for the concept of "community," it is very difficult to give a precise definition of what a virtual community is. We can supply a provisional definition of a virtual community as a group of people to whom interactions and communications mediated by ICT

play an important role in creating and maintaining significant social relations.

THE EMERGING OF VIRTUAL COMMUNITIES

The term "virtual community" is attributed to **Howard Rheingold**, an American writer who in 1993 published a book that became a milestone in the studies on virtual communities. In this book, titled *The Virtual Community. Homesteading on the Electronic Frontier*, Rheingold told his experience in the Whole Earth 'Lectronic Link (WELL), an **online community** created in 1985.

In defining virtual communities, Rheingold stresses the close connection that exists between them and **computer mediated communication** (**CMC**). He defines virtual communities as "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (Rheingold, 1993).

Other early definitions emphasize the importance of communicative interactions for the emerging of virtual communities. For instance, Baym (1998) defines them as "new social realms emerging through this on-line interaction, capturing a sense of interpersonal connection as well as internal organization" (p. 35). Fernback and Thompson (1995) stress also the spatial aspect of online communities and define them as "social relationships forged in cyberspace through repeated contact within a specified boundary or place (e.g., a conference or chat line) that is symbolically delineated by topic of interest."

In early definitions of online communities, some features were acknowledged as constituent aspects of them:

- A shared communication environment
- Interpersonal relationships that emerge and are maintained by means of online interaction
- A sense of belonging to the group
- An internal structure of the group
- A symbolic common space represented by shared norms, values and interests (hence sometimes they are also called "communities of interest" [Clodius, 1997]).

The debate about virtual communities soon arose in the broader context of **cyberculture** studies (Silver, 2000), which focused on the new culture that was emerging in the virtual world of the Internet. In these studies two different and opposing approaches were popular:

One highlights the positive effects of networks and their benefits for democracy and prosperity. (…) At their best, networks are said to renew community by strengthening the bonds that connect us to the wider social world while simultaneously increasing our power in that world. Critics see a darker outcome in which individuals are trapped and ensnared in a 'net' that predominantly offers new opportunities for surveillance and social control. (Kollock & Smith, 1999, p. 4)

When it came to virtual communities, people "on either side of this debate [asserted] that the Internet either will create wonderful new forms of community or will destroy community altogether" (Wellman & Gulia, 1999, p. 167).

Very strictly related to the discussion about these new forms of community is that on the corresponding new forms of identities (Turkle, 1995). As a matter of fact, identity plays a key role in the cyberculture. Due to the absence of many of the basic cues about personality and social role we are accustomed to in the physical world, "in the disembodied world of the virtual community, identity is also ambiguous" (Donath, 1999, p. 29). Online identities have an ultimate linguistic nature, being the outcome of language; identities that are built in cyberspace coincide with the assertions a single makes about him/herself. In fact, in the virtual world everybody can assume the identity they want, can change and disguise themselves, can assume more identities at once, can express unexplored parts of themselves, and so on. Online surfers can play at having different genders and different lives, thus making it more and more difficult for them to distinguish between the real life and the virtual world. "Such an experience of identity contradicts the Latin root of the word, *idem*, meaning 'the same'. But this contradiction increasingly defines the conditions of our lives beyond the virtual world" (Turkle, 1995, p. 185).

Early virtual communities relied on different Internet-based communication technologies, both synchronous and asynchronous, such as **multiuser dungeons (MUDs)** and **MUD object oriented** (**MOOs**), news-groups and bulletin board systems (BBS), and chat and instant messaging (IM) systems.

MUDs played a very important role for studies on virtual communities, since they acted as real laboratories where communicative interactions over the Internet and CMC could be tested and observed, and such notions as "virtual space" and "virtual identity" could be dealt with in depth. Basically, MUDs are virtual environments created by the interactions of their users. In a MUD, users can not only talk to each other, but also move and visit the virtual space where they are immersed, interact with the objects situated in it, and create new objects. All this is done by means of lines of written texts. Technically, "a MUD is a software program that accepts connections from multiple users across some kind of network (e.g., telephone lines or the Internet) and provides to each user access to a shared database of "rooms," "exits," and other objects" (Curtis, 1997, p. 121). Originally, MUDs were only textual, any kind of multimedia was banned, and interactions took place only by means of written texts. Later, MUDs with graphic interface appeared as well, also thanks to the integration of MUDs in the World Wide Web (WWW).

Among the different newsgroups and BBS that fostered the emerging of virtual communities, it is worth mentioning user network (Usenet), a worldwide BBS accessible through the Internet and through other online services, which contains more than 14,000 news-groups that cover every imaginable topic of interest. When it comes to chat systems, an important role has been played by Internet Relay Chat (IRC), developed in Finland in the late 1980s, which had the feature of allowing synchronous discussions among more than two participants, thus helping the building of online communities.

COMMUNITY BUILDING ON THE WEB

The worldwide diffusion of the WWW in the mid-1990s marked an important evolution in online communities. In this phase, different portals or Web services provided Web spaces for building and/or hosting online communities. For instance, MSN created MSN Web Communities (in June 2002 the name was changed from "communities" to "groups"), Yahoo! acquired in 2000 eGroups, creating Yahoo! Groups. These and other similar services allowed both the constitution of **Web communities** (by supporting Web users in the creation

of their group of interest) and the facilitation of the communication activities of groups that already existed in the real world. Each virtual community hosted on these services has its own space available for its members. Usually, in the community's space members can send messages to the forum of the community, so that other members can read and answer them at any time. Web spaces for communities, then, often allow members also to share documents, create polls and vote, share a common calendar, and in some cases communicate synchronously in chat or IM systems. Some of these Web services for communities were free and allowed communities' administrators to set different levels of privacy; others provided tools for communities for a fee, usually for working groups (these services are very similar to platforms for computer supported collaborative work [CSCW]).

As concerns technology, this phase is not characterized by the invention of new tools for communities, rather by the integration of existing technologies into one single virtual environment. Each Web community has at its disposal well-known technologies, such as discussion forums, chat systems, poll systems, and so on. In this phase, a broader development of computer graphics made also emerge some graphical environments for communities, such as chat systems where participants are represented by graphic (sometimes 3D) avatars and can move in a graphic virtual environment and talk to other avatars.

Going back to the distinction between paradigmatic and syntagmatic communities, proper virtual communities—intended as social relationships created by online interactions—are to be considered syntagmatic communities. However, in cyberspace, paradigmatic communities exist as well. It is not only the well-known case of "lurkers," that is, "people who access a chatgroup and read its messages but do not contribute to the discussion" (Crystal, 2001, p. 53), but also of another way of considering online communities, which emerged in these years: the regular visitors of a Web site as well as the habitual users of a Web service are considered a community. According to Tardini and Cantoni (2005):

This kind of online communities is mainly paradigmatic: users normally do not interact with each other, but share the fact that they interact with the same Web site; moreover, they usually have no perception at all

of being part of a community. This is another case of imagined communities, or ethnos. (p. 376)

This kind of imagined communities is gaining more and more importance in the Web. For instance, Internet search engines rely more and more on the behavior of the community of their users in order to provide them with as relevant information as possible (Cantoni, Faré, & Tardini, 2006). Again, more and more Web sites (e.g., e-commerce Web sites, such as Amazon) and Web services (e.g., Alexa) are monitoring the behaviors of the imagined community of their users in order to improve their functionalities and services (e.g., they cluster users with similar interests and recommend to buyers articles that are related to the ones they are buying).

COMMUNITY-DRIVEN WEB SERVICES

This way of considering communities paved the way to the third phase of virtual communities: **community-driven Web services**. In this third phase, the diffusion of so-called **Web 2.0** fostered the participation of Web users to the creation and sharing of content. In other words, rather than only providing users with information, Web 2.0 tools "enable user participation on the Web and manage to recruit a large number of users as authors of new content," thus obliterating "the clear distinction between information providers and consumers" (Kolbitsch & Maurer, 2006, p. 187). Thus, in a sense Web 2.0 tools are socializing also the activity of publishing on the Web.

The most known tools of Web 2.0 are **blogs** and **wikis**. Blogs (short for *Web logs*) are Web pages that serve as a publicly accessible personal journal for an individual or a group, a sort of Web-based electronic diaries. Blogs are very useful tools for micropublishing, since they "enable the process of quickly and easily committing thoughts to the Web, offer limited discussion/talkbacks, and syndicate new items to make it easier to keep up without constant checking back" (Hall, 2002). The rapid spread of blogs has given rise to the creation of a real network of more or less loosely interconnected Weblogs (the *blogosphere*), where the author of one blog can easily comment on the articles of other blogs.

Wikis (from the Hawaiian word "wiki wiki," which means "quick") are collaborative Web sites where any-

one is allowed "to edit, delete or modify content that has been placed on the Web site using a browser interface, including the work of previous authors" (http://www. webopedia.com/TERM/w/wiki.html). The most famous wiki-based Web site is the Wikipedia, the "free encyclopedia that anyone can edit" (http://en.wikipedia. org/wiki/Main_Page), whose success "builds on the tight involvement of the users, the sense of the community, and a dedication to developing a knowledge repository of unprecedented breadth and depth" (Kolbitsch & Maurer, 2006, p. 195). Wikipedia started in 2001 and in April 2008 it had more than 2,300,000 articles only in the English version.

Very important for the emerging of new virtual communities are *social network services* and *community-based networking services*. The former are Internet services that "offer friends a space where they can maintain their relationships, chat with each other and share information. Moreover, they offer the opportunity to build new relationships through existing friends" (Kolbitsch & Maurer, 2006, p. 202). The most famous of these services are Facebook, Friendster, MySpace, and Orkut. Basically, these services are an evolution of Web-based services for virtual communities such as the abovementioned MSN Web Communities and Yahoo! Groups. Community-based networking services are Web-based services that rely on the community of their users in order to let them store, organize, and share different kind of documents, such as photos (e.g., Flickr – http://www.flickr.com) and bookmarked Web pages (e.g., del.icio.us – http://del.icio.us). Users of such services can add their documents to their online space in the service, tag them, comment on them and share them with other users. The key element of the system is the tagging activity (*social tagging*), since the tags added by one user to the user's documents are used for describing the documents, thus making them available for other users' searches. Such services can be seen as a Web-based evolution of file sharing systems (such as Napster and Kazaa), which allow users to share their files by means of a peer-to-peer architecture. Community-based networking systems are conceptually similar to the abovementioned features of some Web sites and services like Amazon and Alexa. Furthermore, community-based networking services are often used as an alternative to Internet search engines.

A more complex interaction environment is that of 3D **multiuser virtual environments** (**MUVE**), that is,

3D virtual worlds (also called *metaverse*) that can be seen as the most recent evolution of MUDs. The most known and diffused of such environments is Second Life (http://secondlife.com), a 3D online digital world imagined, created, and owned by its residents. On March 9, 2007, Second Life had more than 4,400,000 residents, 1,600,000 of which logged in the last 60 days. Its virtual environment is being more and more exploited by companies, businesses, universities, and other institutions that want to expand and support their commercial, educational, and institutional activities. Some authors have started to refer to these environments as the Web 3.0 (e.g., Hayes, 2006).

CONCLUSION

To summarize the history of the development of virtual communities in relation to ICT, three phases can roughly be singled out:

1. The first stage, the pioneer phase, is when virtual communities emerged and started being investigated in scientific studies. These communities emerged spontaneously as a sort of side-effect of CMC and of its different technologies, in particular discussion forums, MUDs, and chats.
2. In the second phase, the worldwide spread of the WWW has brought to the creation of specific Web spaces for building online communities by making members interact and communicate around common topics of interest. In parallel, paradigmatic communities were acknowledged as well, intended as the communities of the visitors of a Web site or of the users of a Web service.
3. The attempt to transform these paradigmatic communities into syntagmatic ones marks the third phase of virtual communities. Trying to make the visitors of a Web site communicate with one another and share their information has led to the emerging of social networking and community-driven services. In this new approach, virtual communities are no longer only the target of all the information available over the Web, but more and more the subjects that create new information.

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KEY TERMS

Avatar: A virtual representation of a person in a virtual environment.

Computer Mediated Communication (CMC): Interpersonal communication that takes place by means of networked computers.

Cyberculture: The form of culture that emerges by users' interactions in virtual environments. Since its origin, it has become subject of scientific studies that focus in particular on the features of virtual communities and virtual identities.

Multiuser Dungeons (MUD)/Multiuser Virtual Environments (MUVE): Virtual environments to which more users can be connected simultaneously in order to explore them, interact with one another, and operate according to the environments' rules.

Social Networking Services: Online services that focus specifically on maintaining social relationships and on building new ones for whatever purpose.

Virtual (Online) Communities: Groups of people to whom interactions and communications mediated by ICT play an important role in creating and maintaining significant social relations.

Web 2.0: Evolution of the World Wide Web that aims at enabling user participation on the Web and at recruiting a large number of users as authors of new content.

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