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Author	Family Name	**Cindio**
	Particle	**De**
	Given Name	**Fiorella**
	Suffix	
	Division/Department	Department of Informatics and Communication
	Organization/University	University of Milan
	Street	Via Comelico 39
	City	Milan
	Postcode	20135
	Country	Italy
	Email	fiorella.decindio@unimi.it
Author	Family Name	**Peraboni**
	Particle	
	Given Name	**Cristian**
	Suffix	
	Division/Department	Department of Informatics and Communication
	Organization/University	University of Milan
	Street	Via Comelico 39
	City	Milan
	Postcode	20135
	Country	Italy
	Email	cristian.peraboni@unimi.it
Corresponding Author	Family Name	**Cerri**
	Particle	
	Given Name	**Stefano A.**
	Suffix	
	Division/Department	LIRMM: Montpellier Laboratory of Informatics, Robotics and Microelectronics
	Organization/University	University Montpellier2 & CNRS
	Street	UMR 5506 - CC 477, 161 rue Ada
	City	Montpellier
	State	Cedex 5

Postcode	34095
Country	France
Phone	+33 467 41 85 09
Phone	+33 678 79 13 54
Email	cerri@lirmm.fr

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Network Communities

Fiorella De Cindio[1], Cristian Peraboni[1], Stefano A. Cerri[2]
[1]Department of Informatics and Communication,
University of Milan, Milan, Italy
[2]LIRMM: Montpellier Laboratory of Informatics,
Robotics and Microelectronics, University Montpellier2 &
CNRS, Montpellier, Cedex 5, France

Synonyms

Social network; Wireless community network

Definition

Network communities as well as social networks sites are special cases of online social interactive environments. According to Rheingold (1993), who chose the term "community" (*Gemeinschaft*) to denote the early experiences of online aggregation, De Cindio and Peraboni (2010) suggest to name *Gemeinschaft* the free interactions among people; while the term *Gesellschaft* denotes the corpus of rules that govern the online life, i.e., the normative aspects typical of a society.

Network communities differ from social networks sites in the sense that "Social Networks Sites are primarily organized around people, not interests" (Boyd and Ellison 2007), while network community/ies members more explicitly recognize a common interest that holds people together for sharing knowledge and experiences (DeCindio and Ripamonti 2010) and goals (Preece 2000). Moreover, the rules of behavior of the *Gesellschaft* dimension of any online social interactive environment in network communities identify more explicitly a social structure, as (De Cindio et al. 2003) shown in the case of the Milan Community Network.

Theoretical Background

Human learning occurs often in a serendipitous way as a side effect of interaction with knowledge sources, human or artificial (see, e.g., learning as a side effect). Social networks (on the Web) have been developed with a variety of purposes, but the net effect is that people use them and by using them overcome many of the previous barriers that have to do with isolation and the feeling of being insufficiently equipped in order to be of any value. This self-value effect of social networks is one major reason for their success and may be exploited for human learning: Incidental, informal learning occurs as a side effect of interaction in social networks. However, we may enhance also formal learning by means of the more organized *Gemeinschaft* and *Gesellschaft* dimensions typical of the communities.

A theoretical background helps to focus on the essential elements of social knowledge creation and acquisition. In (Nonaka and Takeuchi 1995) we find a distinction between *Socialization, Externalization, Combination*, and *Internalization* (the SECI model presented in Fig. 1). *Socialization* refers to sharing *implicit* knowledge by means of sharing feelings, emotions, experiences, and mental models. *Externalization* follows in the sense of "making explicit what is implicit": in a personal context of knowledge construction. *Combination* is the process transforming the private knowledge made explicit by externalization into socially shared knowledge. Finally, *internalization* reshapes the shared, collective knowledge into a personal, tacit one (a kind of knowledge compilation) in order to exploit it when needed.

Online network communities' dialogs favor socialization and externalization: both are prerequisites for the full cycle of knowledge acquisition–construction, though they are not exhaustive, i.e., more personal, constructive work is needed in order to build shared knowledge (combination) and compile it internally for exploiting it in generic situations (internalization). In the following we will particularly insist on combination since it seems to us particularly relevant both for learning and with respect to the available Web.

Important Scientific Research and Open Questions

In order for these processes to be effective, mutual trust is a necessary precondition (Wenger et al. 2002). One of the factors positively influencing trust is a shared interest or goal or commitment. Let us for the moment call "context" this interest, goal, or commitment.

The context influences significantly the interpretation of messages exchanged by the participants. The meaning of words is not independent from an interpretation context. Years of work around the most important human effort in generating standard meanings – the CYC project (http://en.wikipedia.org/wiki/Cyc) – has demonstrated that nontrivial meaning (i.e., knowledge for deciding) is heavily context dependent.

Since it is the interpretation of messages that enables to converge into shared knowledge, it is clear that communities have a chance more than social networks to foster the acquisition–construction of knowledge because of the existence of some common interest/goal/commitment.

One may question whether it is a necessary condition (or not) that knowledge is shared in order it to be effective. Indeed that depends on the context: in science this is certainly the case (Lemoisson and Cerri 2005), in politics it seems to us that we have the "opposite" case as we try hereafter to outline briefly.

Science has the ambition to cumulate propositions that represent observable phenomena, generic rules, and forecasted events, using words and symbols that are assumed to have a well-defined meaning. One would wonder every time that scientists do not agree on the interpretation and forecast of natural phenomena, as it the case when different "scientific schools" argue with each other. Any scientific paper assumes the shared validity of the "state of the art" and attempts to show that the authors went beyond.

On the opposite side, the basic premise of the parties in a court case is that they do not share the assumptions, thus the conclusions are opposite. Both scientists and jurists argue with the purpose to reach as much as possible a consensus or a shared view of the facts and their inferred abstractions (rules). On the contrary, politicians wish to stress differences in the appreciations of the same facts in order to gain some share of votes that may support a different viewpoint and proposal; they argue continuously in a debate concerned with what may be convenient vs. dangerous as a political decision rather than what is true or false (scientists) or where is the reason or the fault (jurists).

Actually, in any context, argumentation, negotiation of meaning, and convergence by groups of participants are at the source of any learning. These are processes that we may find (in the previously outlined SECI model) mainly in the phase of combination, but also in the previous phases. For this reason, we may conclude that network communities do foster learning.

Finally, concerning "convergence" toward socially shared meanings, let us note that extracting, abstracting, negotiating concepts and relations are utmost facilitated by the availability of tools such as ontologies and folksonomies that enable to organize and retrieve viewpoints of the participants as well as arguments and counterarguments during the conversations.

Concerning ontologies, metadata, and classification processes in communities, it is more and more evident from real experiences (Lemoisson and Cerri 2005) that the collaborative construction of shared knowledge (in the case of ontologies, also formal, explicit and suitable for automatic reasoning) enhances awareness and learning, a phenomenon that transforms the Web and its network communities into the most powerful natural laboratory for the construction of knowledge that human history has ever conceived and realized.

Cross-References

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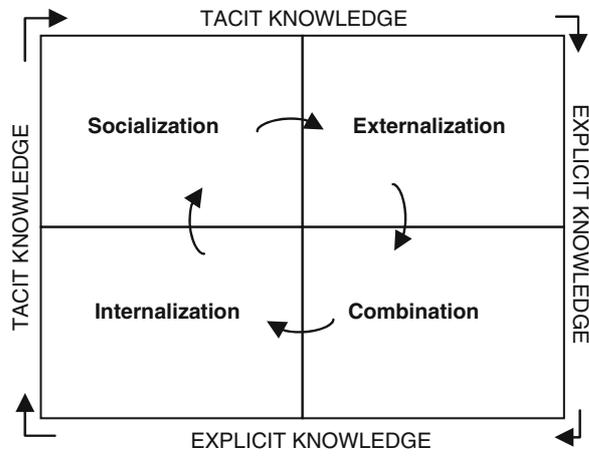
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TACIT KNOWLEDGE

Socialization   **Externalization**

Internalization   **Combination**

EXPLICIT KNOWLEDGE

TACIT KNOWLEDGE (left axis)

EXPLICIT KNOWLEDGE (right axis)

Network Communities. Fig. 1 The SECI model