



Network Communities

Fiorella De Cindio, Cristian Peraboni, Stefano A. Cerri

► **To cite this version:**

Fiorella De Cindio, Cristian Peraboni, Stefano A. Cerri. Network Communities. Encyclopedia of the Sciences of Learning, Part 14, Springer, pp.2438-2440, 2012, <10.1007/978-1-4419-1428-6_62>. <lirmm-00670635>

HAL Id: lirmm-00670635

<https://hal-lirmm.ccsd.cnrs.fr/lirmm-00670635>

Submitted on 16 Feb 2012

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Metadata of the chapter that will be visualized online

Chapter Title	Network Communities		
Copyright Year	2011		
Copyright Holder	Springer Science+Business Media, LLC		
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

N

1

2 Network Communities

3 FIORELLA DE CINDIO¹, CRISTIAN PERABONI¹, STEFANO A. CERRI²

4 ¹Department of Informatics and Communication,
5 University of Milan, Milan, Italy

6 ²LIRMM: Montpellier Laboratory of Informatics,
7 Robotics and Microelectronics, University Montpellier2 &
8 CNRS, Montpellier, Cedex 5, France

9 Synonyms

10 Social network; Wireless community network

11 Definition

12 Network communities as well as social networks sites are
13 special cases of online social interactive environments.
14 According to Rheingold (1993), who chose the term
15 “community” (*Gemeinschaft*) to denote the early experi-
16 ences of online aggregation, De Cindio and Peraboni
17 (2010) suggest to name *Gemeinschaft* the free interactions
18 among people; while the term *Gesellschaft* denotes the
19 corpus of rules that govern the online life, i.e., the norma-
20 tive aspects typical of a society.

21 Network communities differ from social networks
22 sites in the sense that “Social Networks Sites are primarily
23 organized around people, not interests” (Boyd and Ellison
24 2007), while network community/ies members more
25 explicitly recognize a common interest that holds people
26 together for sharing knowledge and experiences
27 (DeCindio and Ripamonti 2010) and goals (Preece
28 2000). Moreover, the rules of behavior of the *Gesellschaft*
29 dimension of any online social interactive environment in
30 network communities identify more explicitly a social
31 structure, as (De Cindio et al. 2003) shown in the case of
32 the Milan Community Network.

33 Theoretical Background

34 Human learning occurs often in a serendipitous way as
35 a side effect of interaction with knowledge sources, human
36 or artificial (see, e.g., learning as a side effect). Social
37 networks (on the Web) have been developed with
38 a variety of purposes, but the net effect is that people use

them and by using them overcome many of the previous 39
barriers that have to do with isolation and the feeling of 40
being insufficiently equipped in order to be of any value. 41
This self-value effect of social networks is one major 42
reason for their success and may be exploited for human 43
learning: Incidental, informal learning occurs as a side 44
effect of interaction in social networks. However, we 45
may enhance also formal learning by means of the more 46
organized *Gemeinschaft* and *Gesellschaft* dimensions typi- 47
cal of the communities. 48

A theoretical background helps to focus on the essen- 49
tial elements of social knowledge creation and acquisition. 50
In (Nonaka and Takeuchi 1995) we find a distinction 51
between *Socialization*, *Externalization*, *Combination*, and 52
Internalization (the SECI model presented in Fig. 1). 53
Socialization refers to sharing *implicit* knowledge by 54
means of sharing feelings, emotions, experiences, and 55
mental models. *Externalization* follows in the sense of 56
“making explicit what is implicit”: in a personal context 57
of knowledge construction. *Combination* is the process 58
transforming the private knowledge made explicit by 59
externalization into socially shared knowledge. Finally, 60
internalization reshapes the shared, collective knowledge 61
into a personal, tacit one (a kind of knowledge compila- 62
tion) in order to exploit it when needed. 63

Online network communities’ dialogs favor socializa- 64
tion and externalization: both are prerequisites for the full 65
cycle of knowledge acquisition–construction, though they 66
are not exhaustive, i.e., more personal, constructive work 67
is needed in order to build shared knowledge (combina- 68
tion) and compile it internally for exploiting it in generic 69
situations (internalization). In the following we will par- 70
ticularly insist on combination since it seems to us partic- 71
ularly relevant both for learning and with respect to the 72
available Web. 73

74 Important Scientific Research and Open 75 Questions

In order for these processes to be effective, mutual trust is 76
a necessary precondition (Wenger et al. 2002). One of the 77
factors positively influencing trust is a shared interest or 78
goal or commitment. Let us for the moment call “context” 79
this interest, goal, or commitment. 80

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

89 Since it is the interpretation of messages that enables to
90 converge into shared knowledge, it is clear that communi-
91 ties have a chance more than social networks to foster the
92 acquisition–construction of knowledge because of the exist-
93 tence of some common interest/goal/commitment.

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

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

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

123 Actually, in any context, argumentation, negotiation
124 of meaning, and convergence by groups of participants are
125 at the source of any learning. These are processes that we
126 may find (in the previously outlined SECI model) mainly
127 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 view-
points of the participants as well as arguments and
counterarguments during the conversations.

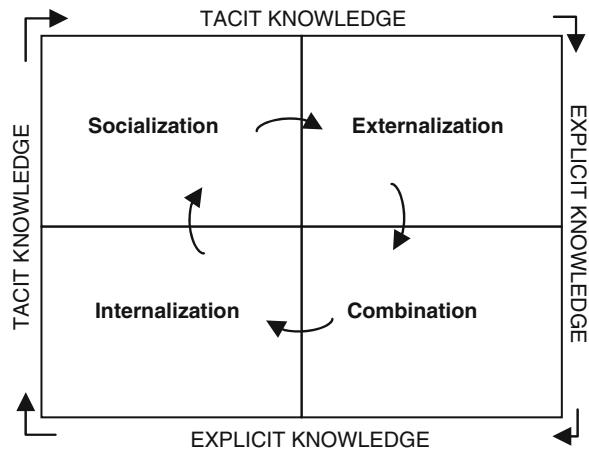
Concerning ontologies, metadata, and classification
processes in communities, it is more and more evident
from real experiences (Lemoisson and Cerri 2005) that the
collaborative construction of shared knowledge (in the
case of ontologies, also formal, explicit and suitable for
automatic reasoning) enhances 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

- ▶ [Advanced Learning Technologies](#) 148
- ▶ [Learning as a Side Effect](#) 149
- ▶ [Social Networks](#) 150
- ▶ [Theory Construction](#) 151

References

- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer Mediate Communication*, 13(1), 210–230. 153
- De Cindio, F., & Peraboni, C. (2010). Design issues for building deliberative digital habitats. In *Proceedings of the 4th international conference on online deliberation*, Leeds, 1–2 July 2010. 156
- De Cindio, F., & Ripamonti, L. A. (2010). Nature and roles for community networks in the information society. *AI & Society*, 25(1), 265–278. 159
- Springer London. 160
- De Cindio, F., Gentile, O., Grew, P., Redolfi, D. (2003). Community networks: Rules of behavior and social structure. *The Information Society Journal*, special Issue. In M. Venkatesh (Ed.), *ICTs and community networking* (Vol. 19(5), pp. 395–406). 162
- Lemoisson, P., & Cerri, S. A. (2005). Interactive knowledge construction in the collaborative building of an encyclopedia. *Applied Artificial Intelligence Journal*, 19, 933–966. 166
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge creating company*. New York: Oxford University Press. 169
- Preece, J. (2000). *Online communities: Designing usability and supporting sociability*. Chichester: Wiley. 171
- Wenger, E., McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Cambridge: Harvard Business School Press. 173



Network Communities. Fig. 1 The SECI model

Uncorrected Proof