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## 2 Network Communities

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## 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.

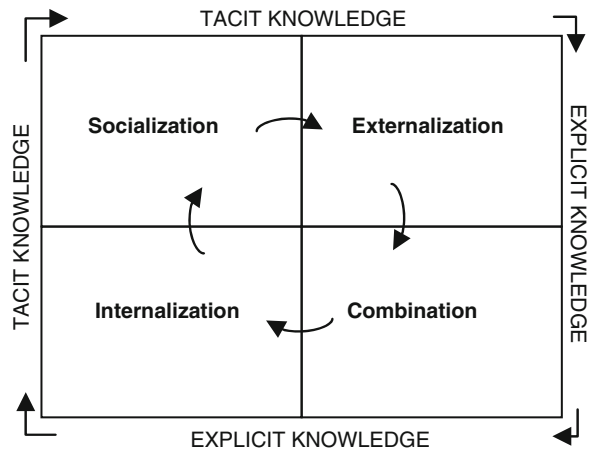
Concerning ontologies, metadata, and classification  
processes in communities, it is more and more evident  
from real experiences (Lemoisson and Cerri 2005) that the  
collaborative construction of shared knowledge (in the  
case of ontologies, also formal, explicit and suitable for  
automatic reasoning) 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](#)
- ▶ [Learning as a Side Effect](#)
- ▶ [Social Networks](#)
- ▶ [Theory Construction](#)

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Network Communities. Fig. 1 The SECI model

Uncorrected Proof