



# Sociability and usability in online communities: determining and measuring success

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**Abstract.** Little attention has focused so far on evaluating the success of online communities. This paper begins to identify some key determinants of sociability and usability that help to determine their success. Determinants of sociability include obvious measures such as the number of participants in a community, the number of messages per unit of time, members' satisfaction, and some less obvious measures such as amount of reciprocity, the number of on-topic messages, trustworthiness and several others. Measures of usability include numbers of errors, productivity, user satisfaction and others. The list is not exhaustive but it is intended to provide a starting point for research on this important topic that will lead to development of metrics. To avoid creating false impressions it is advisable to use several measures and to triangulate with qualitative data, particularly from ethnographic studies.

## 1. Introduction

The Internet enables us to chat with friends thousands of miles and several time zones away; to rally people with similar views to action; to offer support to fellow sufferers; or to find people with similar interests. We can also just 'hang-out' chit-chatting in one of the thousands of social cyberspaces. Low-cost Internet access has brought the Internet into many people's homes and made it a valuable medium for social discourse. For instance, communicating via the Internet is as normal for today's teens as chatting on the phone was for their parents' generation. Many teenagers chat to different groups of friends using four, five or even more instant messaging channels while, at the same time participating in a virtual chat and checking e-mail. Of course, a cell phone is also switched on at the ready just in case a friend calls and short messaging, or 'texting' as it is also known, is also becoming common in some countries. Millions of people of all ages are also learning to use e-mail, to browse and to surf the web.

The population using computers has changed dramatically during the last 20 years. This phenomenon has been most striking during the last five years, as millions of people with little or no experience of computers ventured online. While some of these users have fast Internet connections and state-of-the-art systems, millions throughout the world make do with old machines and slow connections. It is therefore essential for the human-computer interaction (HCI) community to continue to find ways to improve basic textual communication via e-mail, listservers, chat and message boards, as well as researching communication via state-of-the-art high bandwidth technology. One way to assess the value of all these technologies for supporting online communities is to identify the criteria that seem to determine success, i.e. 'determinants of success' and to start to measure them.

In this paper, I begin by defining the term 'online community'. I then discuss why online communities are important and provide evidence to justify why HCI specialists must ensure that online communities supported by low bandwidth technology should have good sociability and usability as well as those using high bandwidth. I then introduce a framework for sociability and usability that I use in the following section to identify determinants and measures of success. I use the term 'determinant' to refer to criteria that indicate success. A 'measure' is a quantitative measurement of the determinant that could lead to development of a metric.

## 2. Defining online community

There is no accepted definition of 'online community'. The term means different things to different people

(Preece 2000). For some, the concept creates fuzzy, warm, reassuring feelings; for others it conjures up concern about people operating at the margins of society to create networks of hatred or support for deviant behaviour. Some people view online communities as a social phenomenon, others focus on the structure of the supporting software. In 1994, Howard Rheingold wrote:

virtual communities are cultural aggregations that emerge when enough people bump into each other often enough in cyberspace. A virtual community is a group of people who may or may not meet one another face-to-face, and who exchange words and ideas through the mediation of computer bulletin boards and networks. (Rheingold 1994: 57–58)

This broad definition was based on Rheingold's experience of his seven-year involvement in the WELL (Whole Earth 'Lectronic Link), an early online community developed in the San Francisco Bay area.

It seems obvious to look to sociology for a definition of community but sociologists have defined and redefined the concept for over 50 years (Wellman 1982). Initially, communities were characterized mainly by their physical features, such as size, location and their boundaries. During and after the industrial revolution, cheaper transportation made it easier for people to move from place to place and physical characteristics provided a less reliable basis for defining community. Instead, definitions based on people's relationships were more promising (Wellman 1997, Haythornthwaite and Wellman 1998). Two types of relationships were identified. 'Strong-tie' relationships satisfy important needs and produce closely-knit groups as in family relationships. In contrast, 'weak-tie' relationships occur when people do not depend on each other for life-supporting resources. The focus of these weak-tie relationships is often information exchange, as in many special interest groups. (Sociograms, a form of graph theory used to represent relationships between people, can be used as a basis for measurement.)

Another way of defining online communities adopted by technically oriented people is to describe them in terms of their supporting software. For example, people refer to chat, bulletin board, listserver, UseNet News or web-based communities. Such descriptions are concise and instantly meaningful to those who understand the structure of the supporting software. Some people also believe that a sense of the spatial relations between people and the objects in their environment is essential for the success of MUDs (multi-user dungeons) MOOs (object-oriented MUDs) and CVEs (computer virtual environments).

E-commerce entrepreneurs take a very broad view of community. Any communications software that can be added to a website is regarded as an online community. The hope is that customers will be attracted to the site though social interactions with each other but this naive view often produces cyber ghost towns because inadequate attention is paid to the social interactions needed to build a community.

A variety of other terms are also used including 'community of practice' to connote a group of like-minded people (often professionals) whose purpose is to support each other, to learn and to promote their understanding via electronic collaboration in a group (Wenger 1998). Such groups benefit their members by providing physical, economic, cognitive and emotional resources (Sproull and Faraj 1997).

Not surprisingly, this array of terms creates some confusion and makes it difficult to make comparative measures or create comparative metrics. Consequently many researchers try to avoid the term 'online community' and instead prefer the term 'social cyberspace', which is more general and can include any of the definitions mentioned above (Farnham *et al.* 2001).

In this paper I use the term 'online community' to mean any virtual social space where people come together to get and give information or support, to learn or to find company. The community can be local, national, international, small or large. I continue to use 'online community' because it is the most widely used term.

### 3. Why online communities are important

Veteran Internet users are often surprised by the buzz generated by chats, bulletin boards and listservers because this software has existed for over 20 years and although it is now web-based it has changed relatively little. However, the following brief review of user numbers indicates the success of this software in the market place. The Internet providers America Online (AOL), for example, built a successful customer base of over 29 million people by understanding people's need to connect. Many AOL customers have registered to get their e-mail service. Microsoft Network supports 230 million unique users each month and hundreds of thousands of MSN communities. There are over 104 million ICQ users and 91 500 UseNet groups. Recently, IBM hosted an online forum in which 50 000 employees worldwide came online to propose and discuss new initiatives.

The buzz is not about technology, it is about the huge numbers of people who now have access to it and what they are doing with it. People of all ages are coming

online in large numbers to talk with friends, family, colleagues, people living near and far, some of whom they will never see, know or even have contact with again. People are joining discussion groups to pour out their hearts, debate issues, discuss a book or the latest events in a sitcom, catch-up with a missed episode of *Survivor* or *Weakest Link*. Emotions are stirred, tempers are raised, passions develop, romances start and end. Books and editorials abound with juicy tid-bits of Internet romance, the thrill of making new friends, and sometimes deception or sinister marginal activities. The thirst for making connections, for communication, is insatiable and that is why hundreds of new communities form every day.

Of course there is a dark side too. The Internet may contribute to homogenizing cultural differences—sometimes referred to as the Coca-Cola or McDonald's phenomenon. It may also encourage extreme narrow-mindedness due to people customizing their software so that they read only what they want to read and visit only sites that support their existing views (Sunstein 2001). Furthermore, by making it so easy to speak with like-minded people, the Internet encourages proliferation of hate groups, child pornography and other socially undesirable activities. These dark scenarios make it all the more essential for the HCI community to focus on the positive aspects of online community.

Research into computer virtual environments (CVEs) and the 150 or so immersive CAVE room environments is helping to inform software design for the fast Internet connections of the future, but research is also needed to improve online communities supported by low-bandwidth communications. Why? Because for the foreseeable future these are the technologies that billions of people around the world will be lucky to have access to. Billions more will not experience even these technologies for many years.

#### 4. A framework for sociability and usability

For over 25 years, HCI researchers and developers have been challenged with improving usability of products. More recently the Computer-Supported Cooperative Work (CSCW) community has focused on developing collaborative systems but even though social interaction was recognized the emphasis was on work (Olson and Olson 1997). The widespread use of the Internet by millions of diverse users for socializing is a new phenomenon that raises new issues for researchers and developers. Just designing for usability is not enough; we need to understand how technology can support social interaction and design for sociability.

Sociability is concerned with developing software, policies and practices to support social interaction online. Three key components contribute to good sociability (Preece 2000).

- *Purpose*. A community's shared focus on an interest, need, information, service, or support, that provides a reason for individual members to belong to the community.
- *People*. The people who interact with each other in the community and who have individual, social and organization needs. Some of these people may take different roles in the community, such as leaders, protagonists, comedians, moderators, etc.
- *Policies*. The language and protocols that guide people's interactions and contribute to the development of folklore and rituals that bring a sense of history and accepted social norms. More formal policies may also be needed, such as registration policies, and codes of behaviour for moderators. Informal and formal policies provide community governance.

Decisions about *purpose*, *people* and *policies* by community developers help determine the initial sociability of an online community. Later, as the community evolves an understanding of which social norms and policies are acceptable and which are not gradually becomes established.

Usability is concerned with how intuitive and easy it is for individuals to learn to use and interact with a product. Various definitions have been proposed. For example, 'usability means that people who use the product can do so quickly and easily to accomplish their own tasks' (Dumas and Redish 1999: 4).

While sociability is closely related to usability—and could be thought of as a new genre of usability—it also has significant differences. Whereas usability is primarily concerned with how users interact with technology, sociability is concerned with how members of a community interact with each other via the supporting technology. The focus of usability is therefore interaction across the human–computer interface. The focus of sociability is human–human interaction supported by technology.

The main usability issues for online communities are similar to those for most other web-based software but the following four components are particularly important because they are concerned with the software's role as a medium and a place for social interaction.

- *Dialogue and social interaction support*. The prompts and feedback that support interaction, the ease with which commands can be executed,

the ease with which avatars can be moved, spatial relationships in the environment, etc.

- *Information design.* How easy to read, how understandable and how aesthetically pleasing information associated with the community is, etc.
- *Navigation.* The ease with which users can move around and find what they want in the community and associated websites. Many online community users have suffered from the inconsistencies of data transfer and differences in interaction style between imported software modules and the website housing the community.
- *Access.* Requirements to download and run online community software must be clear. In addition, if high bandwidth and state of the art technology is needed to run the community there should be a low bandwidth text only versions and clear instructions about how to obtain it.

In practice, sociability and usability are closely related. Consider, for example, a decision about whether community members should register to join a community. This is a social decision that affects social interaction in the community. The policy will influence who joins the community, how easy it is to get into the community, what information is requested from registrants and how providing that information impacts their concerns about privacy and security. The ambiance of the community may also be affected. For example, hit and run flaming may be deterred or even eliminated by the burden of completing a registration form but this same procedure may also stop some other people from joining the community. Once the procedure for registering is determined, a form is usually created and the software design involves usability decisions. For example, it needs to have a clear, consistent design and whenever possible the opportunity for users to make errors should be engineered out.

## 5. Determinants and measures of success

The goal for software developers of the 1960s and 1970s was to provide increasingly sophisticated software with more and more functionality. At that time, they catered to the needs of a relatively small number of trained users. However, as computers became more widespread and user populations diversified, usability became important. It began as an ill-defined concept that was difficult to apply practically. Typically, usability was discussed in vague terms of 'user friendliness' or 'easy to use'. But gradually the definition was refined and operationalized (Bennett 1984, Shneiderman

1986, Shackel 1990) so that particular criteria could be evaluated and measured objectively. Typical criteria and measures included the length of time it takes typical users to learn to use the software to do a typical task, and the number of errors they make.

This testing approach was the predominant evaluation paradigm in HCI until the early 1990s when heuristic evaluation and other inspection techniques started to become popular (Nielsen and Mack 1994). At around the same time, computer-supported cooperative work systems became widespread and although usability testing and heuristic evaluation were useful for evaluating the interface design of these systems, they said little about how products integrated into real-world environments where multi-tasking was common practice. Understanding usability within workplace ecology requires ethnographic skills (Nardi and O'Day 1999).

The proliferation of the web in the mid-1990s further emphasizes the need for new evaluation techniques. Interaction in online communities, particularly those created for social interaction, pushes this need even further. Defining and operationalizing the concept of sociability is a step towards achieving this goal but measures of collective community satisfaction and success are also needed (Preece 2001). Until now ethnography has been the most widely used technique for studying online communities and the rich descriptions generated help us understand both individuals and collective behaviour within online communities. Techniques for visualizing activity in online communities are also being developed (Erickson *et al.* 1999, Viegas and Donath 1999, Sack 2000, Smith and Fiore 2001) that are starting to be used to generate measures of community activity.

### 5.1. Sociability determinants of success

The framework for sociability (i.e. purposes, people, policies) and usability (i.e. dialogue and social interaction support, information design, navigation, access) provides a basis for identifying characteristics and measures that help to describe success of online communities. The examples discussed below are intended as a starting point for work on this new topic. Eventually more complex measures and metrics could also be devised.

5.1.1. *Determinants and measures related to 'purpose'.* The number of messages per member or per active member relates activity to membership and indicates how engaged people are with the community, which is in turn indicative of how well the community serves its

purpose. The idea can be extended to examine the number of messages over a certain period of time. For example, a day might be appropriate for a chat community or a week for a bulletin board community. However, these measures say nothing about the quality of the social interactions, which can be at least partly addressed by a measure of the amount of on-topic discussion, which also indicates how well a community maintains its focus.

Another perspective is brought by considering *interactivity*. Thread depth has been used as a measure of interactivity (Rafaeli and Sudweeks 1997). It is interesting to note that thread depth appears to vary according to the type of comment (Seabrook and Preece 1999). For example, broad shallow threads are characteristic of empathic discussions whereas narrow deep threads are typically generated in discussions of factual information. This suggests that interactivity will look different for different types of communities. For example, many patient support communities are strongly empathic compared with scholarly discussion groups where debating issues is important. Consequently, we can hypothesize that patient support communities will have a large number of shallow threads compared with scholarly discussion communities, which will have deeper threads. Therefore, both thread breadth and depth could be used to assess how well the communities support empathy and discussion of factual issues. Crossing over between threads has also been used as an indicator that new content has been brought into a conversation (Whittaker *et al.* 1998). Might this also form the basis of a useful metric?

*Reciprocity* is concerned with giving to a community as well as taking from it. Some researchers are concerned that online communities are particularly vulnerable to social dilemmas in which members take from the community but do not give back (Kollock 1998). A measure of reciprocity should therefore take account of the ratio of giving to and taking from a community; for example, the number of questions an individual asks compared with the number of responses she makes to others. Another measure could be produced by asking individuals to rate their own reciprocity by assessing what they get from the community compared with what they contribute to it.

The notion of rating *quality of contribution* can be taken a step further to develop systems like Amazon's readers' rating scheme or e-bay's reputation management. However, there are good reasons to be concerned about employing such schemes in online communities. What happens if people feel their contributions are not valued? Do they become disheartened and leave? Can the community be trusted to rate contributions fairly?

Perhaps an author's writing style, wit or the length of the message influences participants' opinions? Adapting face-to-face techniques such as polling members for their opinions using questionnaires could be used to determine such things as the amount of empathy or social satisfaction online.

5.1.2. *Determinants and measures related to 'people'*. The *number of participants* in a straightforward indicator of a community's success as already mentioned in section 3. Refinements of this idea could include the number of different types of members; for example, people who are active over a certain period of time, lurkers, question askers, those from different professions, etc. Average percentages of lurkers are frequently said to be in the high 90s but in patient support communities, the average number of lurkers during a three-month period was around 55% compared with around 82% in software support communities (Nonnecke and Preece 2000). Having this kind of information is helpful because the effects of lurkers on a community vary according to the critical mass members. In a small community, the effect of say 50% of the population lurking is likely to be devastating and may kill the community because insufficient new content is generated to draw people to the community. However, in a large community of many thousands or millions, the effect of as much as 90% of the population being lurkers may not be noticed because the volume of messages will still be large. Other measures could be based on people's experience online, or expertise in a topic, or the age profile of members, etc.

5.1.3. *Determinants and measures related to 'policy'*. Determinants could be linked with policies to show their efficacy. *Flaming and uncivil behaviour*, such as abusive language or harassment, are not acceptable in most communities and many have specific policies to control such behaviour. Classifying and counting incidents of uncivil behaviour would indicate adherence to a policy, the effectiveness of moderators and would also contribute to information about the success of a community.

*Trustworthiness* is another important issue, which is currently receiving considerable research interest. At least three different kinds of trust can be identified. The first is concerned with the security of credit card details, medical or other personal information. Various forms of encryption are used for securing the data but the reliability of promises that this data is secure could be measured.

The other two trust issues involve being able to trust people's actions or what they say; e-bay leads the way in implementing a procedure to make vendor's trust-

worthiness explicit. The system works by purchasers rating vendor service on a number of dimensions such as value for money, timely delivery, packaging etc. Using this information, a reputation system awards a rating to the vendor. Different coloured stars are used to report vendors' ratings to future purchasers. However, there are problems for first-time vendors because they do not have a trust rating. Furthermore, there is a danger that vendors can find ways to manipulate the system to ensure that their ratings are good.

The role of trust in a community in which emotional support is important is more complex to assess. Reports of people feeling duped by false hard-luck stories are quite common. Consider, for example, the potential impact of a mother telling lies about her experience of a stillbirth to gain sympathy. When a community populated with people who have similar but genuine sad stories discovers that the person has lied, they are likely to feel hurt, angry and distrustful. Their ability to trust will be shaken. How could trustworthiness be measured? A rating system such as the one used in e-bay is much too simplistic and potentially dangerous.

Perhaps rating trustworthiness could be linked with a registration policy. The number of people who get into the community via the registration policy and then turned out to trustworthy would indicate how effective the policy is for keeping out untrustworthy people. However, this 'after the fact' measure does not protect the community from a potentially devastating experience.

## 5.2. Usability determinants of success

Determinants of usability have been thoroughly documented for a range of applications, though not for online communities. Some well-established measures that can be applied to the usability framework (dialogue and social interaction support, information design, navigation, access) for online communities are speed of learning, productivity, user satisfaction, how much people remember after using the software and how many errors they make. Because these are much better known than for sociability they are listed and described briefly. Furthermore, although these measures are discussed in relation to each part of the usability framework, in practice there is a strong relationship between the components of the framework when it comes to actually doing usability testing. For example, testing the navigation support of a community is likely also to reveal problems with the dialogue and social interaction support. Therefore, the descriptions for the later parts of the framework are briefer to avoid redundancy.

The following discussion also does not distinguish between different types of communications software, or even between communications software and the website in which it is usually embedded. There are, of course, strong differences that affect which determinants of success are most significant and how they are measured. There is insufficient space for this discussion here but it is discussed in my book on sociability and usability in online communities (Preece 2000).

5.2.1. *Determinants and measures related to dialogue and social interaction support:* The prompts and feedback that support interaction, the ease with which commands can be executed, the ease with which avatars can be moved, how spatial relationships in the environment are handled by the software, etc. can be evaluated using each of the measures mentioned, as follows:

- *Speed of learning.* How long does it take to learn to read and send messages, to use emotes, to gesture with avatars, to access help messages, etc.? This can be measured by recording the time it takes typical users to achieve error-free or almost error-free performance on typical tasks, i.e. to become experts.
- *Productivity.* How long does it take to send or read a message, perform or achieve a particular action or goal, etc.? This is measured by timing how long it takes users to perform one or several tasks.
- *User satisfaction.* How satisfied are community participants with the dialogue and interaction support? Typically, this is evaluated with a user satisfaction questionnaire, which addresses the whole interaction experience.
- *Retention.* How much do users remember about how to operate the software after using it? This can be measured by asking users to perform specified tasks, measuring and observing their performance, and then asking them to perform the same tasks several days or weeks later. The two sets of data can then be compared. Components that support dialogue and interaction can be identified along with navigation and other important design features.
- *Errors.* How many errors do users make related to dialogue and interaction support? These can be assessed by counting the number of errors users make when doing tasks that involve using particular parts of the dialogue and interaction support, for example, finding information, or moderating, etc. Ideally, however, interfaces are engineered to prevent users from making errors.

### 5.2.2. *Determinants and measures related to information design.*

- *Speed of learning.* How long does it take to read and understandable information in a window, a message or any other information associated with the community, etc.?
- *Productivity.* How long does it take to find, read and understand information?
- *User satisfaction.* How satisfied are users with the information design, e.g., the help system, registration procedure, etc? How aesthetically pleasing is the design? How easy it is to find relevant information?
- *Retention.* How much do users remember about the information design next time they visit the community?
- *Errors.* How many errors do users make when doing a task that involves finding or using information related to the community?

### 5.2.3. *Determinants and measures related to navigation.*

The ease with which the user can move around and find what they want in the community and associated web site is an important determinant of its success. Many online community users have suffered from the inconsistencies of data transfer and differences in interaction style between imported software modules and the web site housing the community. These changes (i.e., breaks) in the look and feel of the interaction design are confusing and disorienting to users. Furthermore, they can have a big impact on users' ability to navigate through the software and on their enjoyment.

- *Speed of learning.* How long does it take to learn to navigate around the community, including the associated web pages, to achieve what users want?
- *Productivity.* How long does it take to get to a particular part of the community or find information?
- *User satisfaction.* How satisfied are community participants with navigation support?
- *Retention.* How much do users remember about how to navigate through the community software?
- *Errors.* How many times do users go down the wrong path, fail to get where they want to be or fail to find what they want?

5.2.4. *Determinants and measures related to access.* It is helpful if the technical requirements and instructions to download and run online community software are clear but often they are not. This causes users to waste time and get very frustrated. Furthermore, if an applet or module will only run with high bandwidth and state

of the art technology users should be warned. Better still, low bandwidth text-only versions could be provided for the huge number of users who can only use this kind of software.

- *Speed of learning.* How long does it take to learn to download a software module or applet?
- *Productivity.* How long are response times and what is the impact on productivity? What is the response time when sending messages or moving around the community, etc.?
- *User satisfaction.* How satisfied are participants with the responsiveness of the software they use? How satisfied are they with their experience of downloading community software?
- *Retention* is not specifically relevant to access issues.
- *Errors.* How many errors do users make when downloading software? How long does it take to recover from those errors? How good is the error-support?

Although the discussion tends to assume usability testing with user satisfaction questionnaires, other evaluation techniques such as heuristic evaluation, walkthroughs and ethnography are also valuable approaches for understanding usability and its relationship with sociability.

## 5.3. *Different types of communities*

So far, determinants and their associated measures have been discussed in a general way but different types of communities have different needs. For example, educational communities may be strongly goal-directed and controlled by an instructor. For these communities measures of information exchange and collaborative working are likely to be more important than measures of social chitchat.

Communities in which social support is important, such as mother and baby communities, patient support community, bereavement communities, etc., will have a very low tolerance for aggressive, critical or harsh comments. In contrast, academic discussion groups, and political, religious and debating communities tend to have high tolerance for argumentation and home truths that would be construed as harsh and unacceptable in the support communities. Measures that provide information about these different needs are therefore needed.

It is obvious that there are many differences between communities with different purposes. What is less obvious is that there are differences between commu-

nities with similar purposes. No two communities are the same, just as no two people are the same. Therefore, it is essential to recognize the uniqueness of each community when identifying determinants of success and devising measures.

#### 5.4. *Success for who?*

Another question to ask is 'from who's perspective is success being judged?' A manager of an e-commerce site will judge success of an online community in terms of how many people are drawn to the site, how long they stay, how often they come back and, ultimately, how much they spend on goods or services. A teacher will judge success of a learning community by how well students perform their work, the quality of their projects and what students say about their learning community. Sick or unhappy people will judge a support community

by the help and empathy they receive from others and the information they get that enables them to deal with their predicament.

There is also an issue of which measures are most convincing. A business manager will prefer objective measures that compare, for example, sales before and after the online community was added to the site. Customers, however, may find the subjective ratings of other customers and anecdotes more convincing.

## 6. Summary and conclusions

Usability describes the nature of human-computer interaction, whereas sociability describes the nature of social interaction in an online community. A community's focus, the people who belong to it, and the policies that guide social interaction are key components of sociability. Dialogue and social interaction support,

Table 1. Examples of determinants and measures of success.

Framework	Design criteria	Examples of determinants of success
Sociability	Purpose	How many and what kinds of messages or comments (or comments per member) are being sent? How on-topic is the discussion? How much interactivity is occurring? How much and what kind of reciprocity occurs? What is the quality of the peoples' contributions and interactions?
	People	How many and what kinds of people are participating in the community? What do they do and what roles are they taking? How experienced are they? What are their ages, gender and special needs, etc.?
	Policy	What policies are in place? For example, registration and moderation policies to deter uncivil behaviour. How effective are the policies? How is relationship development being encouraged? For example, what kinds of policies encourage trustworthiness and how effective are these policies?
Usability	Dialogue and social support	How long does it take to learn about dialogue and social support? How long does it actually take to send or read a message, or perform some other action, etc.? Are users satisfied? How much do users remember about the dialogue and social support, and how many errors do they make?
	Information design	How long does it take to learn to find information (e.g. help)? How long does it take to achieve a particular information-oriented goal? How satisfied are users? How much do users remember after using the system? Can users access the information they need without errors?
	Navigation	How long does it take to learn to navigate through the communication software and web site or to find something? Can users get where they want to go in a reasonable time? How much do users remember about navigation? How satisfied are they? How many and what kind of errors do they make?
	Access	Can users get access to all the software components that they need? Can they download them and run them in reasonable time? Are response times reasonable? What problems do they encounter when trying to download and run software?



information design, navigation support and accessibility are key components for good software usability. Various techniques exist for evaluating sociability and usability but little attention has so far focused on identifying and measuring the determinants of success for online communities. This paper starts to fill this gap by identifying key determinants of sociability and usability for online communities. Measures of sociability include numbers of participants, amount of reciprocity, trustworthiness and others. Measures of usability include numbers of errors, productivity, user satisfaction and others. Table 1 provides a summary of examples of sociability and usability determinants of success.

The next step is to apply the determinants and measures to a selection of communities and to compare the findings with other types of evaluation, particularly the rich descriptions generated by ethnographic studies and questionnaire data. Used individually some measures can be misleading so several different determinants and measures are needed to gain an honest picture of a community. It is also important to triangulate this data with data from other evaluation techniques. As the discussion above hinted, there are many facets to consider. The sociability and usability framework helps to structure the process of identifying determinants and deciding on measures. In addition the type of community being evaluated and who needs the data influences which measures are collected and how the data will be interpreted.

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