

Online communities: A systematic review of factors contributing to sustainability

Abstract

News publishers experimenting with paywalls and subscription business models are essentially seeking to set up their own online community of audience members. Online communities are also growing up around collectives of citizen journalists. Both of these phenomena make research into such communities potentially valuable. Online communities are being used to complement or replace face-to-face interactions, especially between widely distributed individuals. Organisations and individuals tend to have high expectations towards such computer-mediated communities, expecting low costs, increased interactivity and participation, open boundaries and in commercial models, the flow of revenues. However, the mere setting up of a platform to establish online interactivity is often not enough to promote the maintenance of virtual communities. This study explores the theoretical and practical factors that contribute to the sustainability of such communities. The combination of a systematic review and meta-analysis of relevant case studies carried out in online contexts provides qualitative insights to the multiple facets of this kind of interaction. The findings suggest that online communities are likely to lack theoretical foundations. Additionally, the results suggest that such communities end up being as hierarchical as classical communities can be, and that whatever benefits there might be in invisibility might be lost on members. Moreover, analysis suggests a discrepancy in the expectations members and organisations have about building identity in online communities. Although the former perceives the community as a pool of goodwill, the latter sees it as a website or a system. Organisations planning to establish online communities should dedicate considerable time to reflect on the motives for this pursuit, as the

meaningfulness of such communities to their members is crucial to overall sustainability.

Keywords: online communities, journalism, collectives, sustainability, communities of practice, online communities of practice, hierarchy, invisibility, computer-mediated communication

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Introduction:

The sense of belonging to a community has always been at the core of human existence. Scientific knowledge suggests that the first people constituting all of humankind lived in Africa 60,000 years ago and consisted of approximately 150 individuals, who were probably forced to leave their homeland in search of food and water (Davis, 2008). These individuals spread around the globe, with small groups settling down and others continuing their journey until all continents in the world were populated. Their connectedness played a crucial role in succeeding against all sorts of adversities imposed by life in the ancient world.

Among many examples, this effort of establishing and sustaining communities around the globe can be observed in the history of Christianity. The church uses the Greek term *ekklēsia* to describe a 'social or empirical entity in which certain people come together who, however, also maintain community connections beyond the actual assemblies' (Stegemann & Stegemann, 1999, p. 262). These early Christian communities were established in urban regions of the Roman Empire and composed of Jews and Gentiles, who had Christianity in common (Stark, 1996; Stegemann & Stegemann, 1999). The rapid spread of Christianity is described as 'something really extraordinary', with studies estimating a yearly 40 percent growth rate from the AD 30 (Stark, 1996, pp. 3-13). The fact that Christians were in communities and had connections with other villages may explain the speed at which the religion spread around the world. The apostle Paul of Tarsus is an example of how the written word and the chances of mobility at hand were used to connect to different communities and consequently increase the number of followers of Christianity (Rosseau, 2002; Stegemann and Stegemann, 1999; Stark, 1996). His letters reveal a 'missionary network of itinerant helpers, who bound together growing a commonwealth of local churches' (Rosseau, 2002, p. 27).

Medieval cathedrals, basilicas and even temples in ancient societies played a significant role in sustaining and keeping communities together. Functioning as the 'meeting point', 'a microcosm', a 'center for existence' and a 'symbol of immanence and transcendence' (Han, 2002; Turner, 1979, cited in Han, 2002), temples were built at the center of communities and tied people together (Marinatos, 1993), serving as a source of support (Smith, 1987, p. 14, cited in Han, 2002). Meeting points were crucial to helping the church sustain existing life patterns and social structures in ancient societies, maintain the loyalty of people, trust in its protective power, besides serving the needs of communities and their city-states (Han, 2002).

The colossal crusade of Christianity, the work of missionaries and the functions of the temple in building and perpetuating communities show that efforts towards keeping people close, even if not in the same geographic areas, have dominated the history of humankind. Although there is evidence that ancient *ekklēsia* did not necessarily share the same meeting points, it is clear for researchers that they were bound together through reciprocal social interaction (Stegemann & Stegemann, 1999).

Although geographic boundaries or meeting points were not essential to characterize early communities, in modern research the task of investigating groups of people who may not share the same location is a challenge. The use of computer-mediated communication to connect individuals or facilitate and complement face-to-face communication has resulted in the burgeoning establishment of online communities, which have the Internet as a 'meeting point'.

At this point online communities become theoretically and commercially interesting to journalists and news publishers. Terrestrial and analogue media such as newspapers and broadcast radio and television were limited by geographic territory and the exigencies of physical delivery but conversely allowed journalists to target the citizens of each territory and build up at least a feeling of physical community. Slogans proclaiming 'Our News' and 'News for Queenslanders (*insert your own region*)' are well distributed throughout the business. Hyperlocal news emphasis tends to try to exploit the same emotions. Online, however, the story is completely different and requires research into building online communities. This research typically discusses communities based on interest or location and 'communities of practice' (*q.v.*): journalists might find it helpful to understand 'communities of interest or location' as *audience communities*, and 'communities of practice' as *newsrooms* or *citizen journalist collectives*. Examples of such interest or location-based news communities are online publications such as city, suburban or regional news websites and specialized magazine-style websites, such as automobile, craft or sports sites. Examples of communities of practice in journalism are the large corporate local-area networks and wide-area networks operated by News Corporation (see Cokley 2002), the BBC and the ABC, and the online content-management systems run by citizen journalism enterprises IndyMedia¹, Demotix² and NoozDesk³.

¹ <http://www.indymedia.org/en/index.shtml>

² <http://www.demotix.com/>

³ <http://noozdesk.com/>

For a communication researcher to investigate virtual communities, it is necessary not only to understand the implications of computer-mediated communication for social structures, but also to explore a range of other disciplines, such as computer science, business administration, psychology (Wellman et al., 1996), social learning theory (E. Wenger, 1998), and last, but not least, sociology. Such varied approaches and perspectives on the topic generate a myriad of adjectives attributed to communities, their interactions, aims and objectives, which all make up an interesting equation of different research foci.

Since the first computer-mediated social network – Advanced Research Projects Agency Network (ARPANET) – was established in the US in the 1960s (Wellman, et al., 1996), a number of concepts and debates on online communities have emerged. Their members may participate in one or several networks of interest, social networks, communities of practice, distance learning or knowledge management communities. Some will even take part in unintended interest communities, as is the case of patients who are about to die and seek social support from people in the same situation (Josefsson, 2005).

Offering an alternative to face-to-face interactions, online communities have become more popular since 1991, when the Internet became domestically available (Holmes, 2005). Organisations report that such communities provide an affordable and convenient way of communicating with their employees and clients (Venters & Wood, 2007). Some companies go further and include virtual groups in their knowledge management strategy (Ardichvili, Page, & Wentling, 2003; Probst & Borzillo, 2008). Educational institutions offer distance-learning education that suits busy students (Molphy, Pocknee, & Young, 2007; Yuan, Gay, & Hembrooke, 2006). Marketing campaigns posit that those courses are at the cutting edge of learning. Even some communities that share the same geographic area are now wired, that is, connected to an online platform (Hopkins, 2005; Kavanaugh, Carroll, Rosson, Zin, & Reese, 2006).

Problem statement

When faced with the need or trend of connecting people through computer-mediated interactions, it is common for organisations to be concerned about which Information and Communication Technologies (ICTs) to employ. In the search for a ‘system’ that will offer tools for interactions, some organisations soon realise that something might have been missed in this modern process of connecting people and hopefully fostering relationships.

Although ICTs play an important role in this journey, it is paramount to investigate to what extent they are able to sustain ‘voluntary, ongoing and meaningful discussions’ (Brown, 2002, p. 94). Otherwise, organisations and individuals will keep trying to maintain platforms that serve as a marketing tool, a website or a cheap and convenient way of managing knowledge. Although organisations should not neglect the importance of infrastructure, capacity building, computer hardware and software to establish online communities, the sustainability of such structures cannot be taken for granted.

This research explores the theoretical and practical factors that enhance the sustainability of online communities. A social learning perspective frames the theoretical approach of this investigation. The literature review explores the body of research concerning virtual communities and provides a panorama of how computer-mediated communication shapes relationships in virtual contexts and the implications this has for the sustainability of such groups. A systematic review of selected relevant case studies offers a panorama of the multiple factors impacting the maintenance of online structures, in particular in the context of organisations and institutions. It is expected that the recommendations of this study will help stakeholders interested in establishing communities online to optimise their efforts and expenditures.

This study seeks to answer the following problem: What are the theoretical and practical factors that enhance the sustainability of online communities? We then translate those factors into concepts useful for news workers and their audiences.

Theoretical Framework

Social Learning Theory

In the context of online communities, communication explained through the lens of Social Learning Theory is perceived as a ritual. This ritual is described as a process in which ‘individuals exchange understandings not out of self-interest or for the accumulation of information but from a need for communion, commonality or fraternity’ (Carey, 1989, cited in Holmes, 2005, p. 6).

For social learning theorists, learning is a fundamentally social phenomenon. It reflects ‘our own deeply social nature as human beings capable of knowing’ (Wenger, 1998, p. 3). This theory was first put forth by Bandura

(1977) and further adapted by Wenger (1998), who emphasises participation as an action and a form of belonging. For Wenger, participation shapes who we are and how we interpret what we do. Social participation, therefore, is ‘the process of being active participants in the practices of social communities and constructing identities in relation to these communities’ (Wenger, 1998, p. 4).

Wenger’s social theory of learning has four premises. The first is that we are social beings and this constitutes an essential aspect of learning. Next is the idea that knowledge is a matter of competence with respect to valued activities, such as fixing machines, singing in tune, etc. The third argument is that knowing is an issue of participating in the pursuit of such activities, that is, of active engagement in the world. Finally, there is the proposition that the learning experience is to produce meaning, defined as our ‘ability to experience the world and our engagement with it as meaningful’ (Wenger, 1998, p. 4).

Wenger’s theory integrates four components that shape social participation, being (a) meaning, (b) practice, (c) community and (d) identity. Meaning is used to define our ability to experience our life and the world as meaningful and can be done individually or collectively. Practice is the shared historical and social resources, frameworks, and perspectives that can maintain collective cooperation towards action. Community is the social settings in which our pursuits are judged worth striving for and our participation is considered as ability. Finally, identity is defined as how learning changes who we are and creates personal histories of becoming in the context of our communities. These components underpin what Wenger, McDermott and Snyder (2002) call communities of practice. This theoretical approach to social structures shapes the way online communities are studied in this research. The next section briefly presents the concept of communities of practice, its forms, structures and stages of development.

Communities of Practice

From the rise of Christianity to the gatherings in temples, schools and clubs, communities of practice (CoPs) are described as ‘groups of people who share a concern, a set of problems, or a passion about a topic, who deepen their knowledge and expertise in this area by interacting on an ongoing basis’ (Wenger, McDermott, & Snyder, 2002, p. 4). CoPs were the first knowledge-based social structures and they are present in every person’s life, whether they recognise it or not. They shape the learning process, an integral part of our everyday lives (Wenger, 1998; Wenger, et al., 2002). Learning takes

place all the time, in every situation and is synonymous with participation, happening through our engagement in actions and interactions. This intrinsic link between learning and participation has deep significances for individuals, communities and organisations.

Placing learning as a central concept of communities of practice means that individuals need to be engaged in and contribute to the practices of such communities. Wenger (1998) explains that, for communities, this means that practices need to be constantly improved, so as to guarantee new generations of members. He also argues that, for organisations, learning is an issue of maintaining the interconnected communities of practice so as to ensure their effectiveness and aggregate value to the company and the CoPs themselves.

Forms. Communities of practice can have various forms. They are important to help people recognise such communities, independently of the names they are given (Wenger, et al., 2002). CoPs can be small or exceed a thousand members. Table 1 demonstrates the level of intimacy according to the number of members in a CoP.

Table 1
Size of Communities of Practice

Number of members	Level of intimacy
< 15	Very intimate.
Between 15 and 50	Relationships become more fluid and differentiated.
Between 51 and 150	Tendency to divide into sub-groups around topics of interest or geographic location.
> 150	Subgroups usually develop strong local identities.

Another characteristic of CoPs is that they can be long- or short-lived and their life span will depend on the activity they organise themselves around. The interactions can be co-located or distributed, with members living in the same area or distributed across the globe. The authors argue that what allows participants to share knowledge is not the choice of a medium of communication, but the fact that there is a practice being shared – defined as

‘a common set of situations, problems and perspectives’ (Wenger, et al., 2002, p. 25). CoPs can be homogeneous, when composed of individuals who perform the same or similar functions, or have people who share different practices, but have a common problem that brings them together.

Another feature of CoPs is that they can exist inside organisations, across business units or across organisation boundaries. In the first case, they are constituted by people who face the same problems and work together towards a solution. When cross-functional teams need to keep in contact with others in different parts of the company in order to sustain their expertise, they constitute CoPs across business units. Finally, in fast-moving industries, some professionals feel the need to keep up with constant changes and might join CoPs that are not linked to organisations.

In addition to the forms presented above, CoPs may also be nurtured intentionally or spontaneously. Members might come together because they need each other to learn (Wenger, et al., 2002) or because the organisation they belong to has identified a need to develop some sort of capability. Whether a CoP is spontaneous or intentional does not reflect its level of formality (Wenger, et al., 2002). Wenger et al. (2002) explain that it is also important to observe the relationships communities of practice have with organisations. They can be completely unrecognised or largely institutionalised. Members may not even be aware of their membership in a community, as in an example of teachers who share stories during a lunch break and have the group as a source of knowledge that reflects their practice. In this case, neither the school where these educators work, nor the teachers themselves might know of their meeting’s learning role. There is not a kind of relationship that is better than others, but it is important to be aware that, as the relationship changes, distinct issues may arise (Wenger, et al., 2002).

Structures. Communities of practice have three fundamental structural elements (Wenger, et al., 2002). The first is the domain, that is, the set of issues with which the community is concerned. It is the domain that gives the community a sense of identity; an inspirational purpose that confers value and meaning to participants and that encourages their participation. The domain provides a common ground to members and can evolve with time, that is, it is not fixed (Wenger, et al., 2002). The most successful communities are those that manage to strike a balance between the goals and needs of the organisation and the aspirations and passions of participants

(Wenger, et al., 2002). In sum, a mature domain becomes a statement of what knowledge the community will manage.

The second element of a community of practice noted by Wenger et al. (2002) is the community itself, composed of people who care about the domain. In a community of practice, ‘learning is a matter of belonging as well as an intellectual process, involving the heart as well as the head’ (Gersick, 2000; Whetten, 2000, cited in Wenger, 2002, p. 29). For this reason, it is essential that an atmosphere of trust and mutual respect is developed so that members feel free to ask questions, share concerns and expose their *ignorance* [emphasis added]. Wenger et al. (2002) also argue that the success of a community of practice depends a lot on the passion of its members, which leaves no room for authoritarianism in terms of membership. Furthermore, they note that, regardless of a voluntary affiliation, the level of engagement is a personal matter. Therefore, participation cannot be forced, but encouraged. Another success factor noted by the authors is the energy generated by the community, driven by the passion of its members. Consequently, when it comes to leadership, it is important that roles (i.e. community organisers, experts, thought leaders, pioneers, administrators and boundary spanners) are assigned across the community. These roles can be formal or informal, widely distributed or concentrated in a small subgroup. Wenger, et al. (2002) argue that external leadership is also relevant, as some CoPs depend on external sponsors and resources and therefore need to build credibility with these. In a sustainable CoP the community is seen as a *pool of goodwill* [emphasis added], reinforcing the ideas of social capital presented in the literature review. It is crucial that the community provides the base for communal investigation and, regardless of having an atmosphere that is laid back or intense, formal or informal, hierarchical or democratic, it should be open to learning and have relationships grounded on trust (Wenger, et al., 2002).

Thirdly, a key structural element of a community of practice is its shared practice. Practice denotes a ‘set of socially defined ways of doing things in a specific domain: a set of common approaches and shared standards to create a basis for action, communication, problem solving, performance and accountability’ (Wenger, et al., 2002, p. 38). Members define a baseline of common knowledge that should be of full understanding to all participants and that allows them to work together effectively. As Wenger et al. (2002) explain, besides the current existing body of knowledge, it is part of the practice to explore the most recent advances in the field of interest and regularly produce documents and tools that codify aspects of both the tacit and the explicit knowledge of the CoP. The authors argue that knowledge within the context of these communities is constituted of models, best

practices, principles, cases and stories, theories, lessons learned, rules, frameworks and heuristics. Websites, books, articles and knowledge platforms work as repositories of the practice shared by members. Practice tends to evolve with the community as a collective product (Wenger, et al., 2002).

Stages of Community Development. Communities of practice go through five stages of development (Wenger, et al., 2002), as table 2 indicates.

Table 2
Stages of community development

Stage	Characteristics
Potential	Movement of networked individuals towards becoming more connected and a more important part of the organisation.
Coalescing	Members interact and build connections. At this stage they form a community.
Maturing	Growth in participants and depth of knowledge shared. Moments of high and low activity.
Stewardship	Communities take active management of the knowledge and the practice they have and members are aware of how these are being developed.
Transformation	Activities and shared practices change. At this stage, communities can fade away, merge with another community, or die.

Literature Review

Since 1991, when the Internet became domestically available, the world has experienced tremendous development in computer-mediated communication literature (Holmes, 2005). Despite the advances in literary production, descriptive studies of online interactions tend to dominate the scenario of

human-computer interfaces. In the attempt to identify factors influencing the sustainability of online communities, this review taps into how communities are perceived and analysed in contemporary society. Additionally, it presents an overview of how identity is built in virtuality. Finally, the connectedness and sustainability of online relationships in the context of community are explored.

The features and possibilities that Information and Communication Technologies may attach to the concept of community are promising. There is a body of researchers who share an enthusiastic view on this debate. Patton (1986) claims that the Internet has put us *in control* [emphasis added] of the vehicle. Barlow (1995) argues that it is the most transforming technological event since the capture of fire; while Walker (1993) sees it as a revolutionary method of communication. Critics such as Fox (1995) believe that the Internet may cause people to lose touch with reality and disconnect them from one another. Others are radical and state that going online is a way of escaping the problems and issues of the real world (Slouka, 1995, cited in Barlow, 1995, p. 43). Utopian and dystopian visions of online communities, likewise, have existed since then. Nevertheless, as Kollock and Smith (1999, p. 4) point out, 'the kinds of interactions and institutions that are emerging in cyberspace are more complicated than can be captured in one-sided utopian and dystopian terms'. Online communities depicted nostalgically as entities 'are no more than managerial constructs' (Huysman & Wulf, 2005, p. 84). There are two sides to the equation of online communities: one is the implications and advantages of computer-mediated communication; the other is the relational base that fosters online relationships. A cohort of researchers has attempted to explain how they interplay and contribute to the sustainability of online communities.

Communities as social networks

From the 1960s, interpersonal relations within communities started being studied as social networks. In other words, community was transformed from spatial to a 'social phenomenon', which means that it is currently conceptualised as a 'person's set of ties with friends and relatives, neighbours and workmates' (Wellman, 1999, p. xv). These ties form the relational base of any community and are the glue that brings and holds communities together (Cohen & Prusak, 2001, cited in Huysman & Wulf, 2005; Huysman & Wulf, 2005).

To understand intricate interactions among people, especially those who do not share the same geographical location, communities are studied as

networks. In modern Social Sciences, a network 'is a loose metaphor that can mean quite different things' (Takhteyev, 2009, p. 571). Networks are seen as 'nebulous, far-flung and sparsely knit, but real and supportive' (Wellman, 1999, p. 37). Despite the wide use of the term, it is important to note that networks are a relatively new branch of science originated from Leonhard Euler's Graph Theory (1736, reviewed in Biggs, Lloyd & Wilson, 1977). A whole range of fields of study such as biology, mathematics, physics and sociology (Newman, Barabási, & Watts, 2006) can make use of its properties since networks are regarded as a 'key to understanding the complex world around us' (Barabási, 2003, p. 12). In mathematics, these properties are described as 'a set of discrete elements (the vertices), and a set of connections (the edges) that link the elements, typically in a pairwise fashion' (Newman, et al., 2006, p. 2).

In real-world networks, the vertices are called nodes, or agents (that is, people), and the connections are the interactions among individuals (Ramalingam, 2011). As networks, online communities resemble offline social structures in which people interact and are involved in social activity (Preece & Maloney-Krichmar, 2003). They are defined by Porter (2004) as 'an aggregation of individuals or business partners who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols and norms' (Defining virtual communities section, para. 2). Kollock and Smith (1999) suggest that online communities are distinguished from many face-to-face communities by their open boundaries, the relative anonymity of computer-mediated communication and the possibility of great social diversity, factors that could be favourable to an organisation willing to initiate online interactions.

Identity in online communities

Identity has a crucial function in communities and the understanding of how it is formed online is a decisive factor in sustainability. In the virtual world, information constitutes the matter present in the physical domain. As Donath (1999) notes, in cyberspace information spreads and diffuses with the command of its inhabitants, *the body at the keyboard* [emphasis added]. The author claims that the physical and the virtual worlds are not disjointed and that while information disseminates free from the body's unifying anchor, it is also equivalent to the identity of the one who circulates it. Authors tend to agree that the building of an online community, however, does not always rely on personality and social cues existing face-to-face (Donath, 1999; Holmes, 2005; Kollock & Smith, 1999). This aspect makes the awareness of one's identity and one's reputation in the online context necessary. Kollock and Smith (1999) throw light upon the construction of virtual communities

by stressing the importance of the reliability of information and the trustworthiness of the confidant.

Similarly, Constant, Sproull and Kiesler (1996) put forth the idea that in an online atmosphere, identity is built by the provision of support, the recognition of others, the desire or obligation to help the groups and individuals. The researchers go on to explain that individuals establish their own reputation based on their claims of real-world expertise and, with time, a history of accurate online contributions. Wellman and Gulia (1999) complement the ideas of Constant et al. (1996) and argue that in cyberspace, those inputs are a means of expressing one's identity. A researcher in the sociology of the Internet (Castells, 2000), Barry Wellman and colleagues claim that in a community, 'whatever is given ought to be repaid, if only to ensure that more is available when needed' (Wellman, 1999, p. 342). However, the issue of reciprocity in online interactions is likely to become what Axelrod (1984) and Kollock (1998) have defined as a 'social dilemma'.

The dilemma lies in whether or not to contribute online. One reason for becoming a 'free rider' is that the chances of meeting face-to-face someone you interact with online are low or non-existent (Wather, 1995). Therefore, some members might take resources from the community and not reciprocate (Wather, 1995; Wellman & Gulia, 1999). Wellman and Gulia (1999) argue that there is a pessimistic assumption that the social and physical distance brought by virtuality might diminish reciprocity. As the study of Constant et al. (1996) suggests, there are reasons to be positive towards online mutuality: virtual sharing is a way of increasing self-esteem, respect from others and to attain status. The authors claim that the more an individual is attached to an organisation, the greater the chances of participating, giving assistance and helping others.

Small acts of help are seen by the entire group and perpetuate an image of generalised reciprocity and mutual aid (Constant et al. 1996). As Rheingold (1993), Barlow (1995) and Lewis (1994) have shown with their studies, people know that they may not receive help from the person they helped last week, but they are confident that they may be helped by another network member when in need. Thus, it is a consensus that the sustainability of online communities lies in the level of reciprocity shared by members.

The need for reciprocity indicates that online exchanges are based not only on information, but also on non-material resources. According to Wellman and Gulia (1999), online communities offer non-material resources other than information. People are after companionship, social support and a sense of belonging (Wellman & Gulia, 1999; Wellman, et al., 1996). The idea of

belonging to a community that can be long lasting encourages participation (Donath, 1999; Kollock, 1998), which may consequently lead to the sustainability of the virtual network. The feeling of belonging to a group has a great impact on its social capital.

Social capital

The connectedness of communities, explained as social capital, has been given great importance throughout the history of sociology. Under different labels, the concept has gained more visibility in the past two decades and it has challenged claims that economy is separated from social aspects (Huysman & Wulf, 2005). The first ideas of social capital were proclaimed by Bourdieu (1979, 1980) and given larger dimensions by Putnam (1993, 2000) in recent years. For Bourdieu (1979; 1980), social capital is 'the ability of persons and families to command resources through their membership in networks and other social structures' (Portes & Vickstrom, 2011, p. 462). Huysman and Wulf (2005) argue that Bourdieu's definition sees social capital as a form of capital, in that it emphasises the need to accumulate relationships, networks and contacts, so as to establish or reproduce social relationships which are 'directly usable in the short or long term' (Bourdieu, 1986, cited in Huysman & Wulf, 2005, p. 83).

In opposition, Putnam (1993, 2000) sees social capital as 'a public good – the amount of participatory potential, civic orientation, and trust in others available to cities, states and nations' (Portes & Vickstrom, 2011, p. 462). For Putnam, social capital is intrinsically linked to the level of civic engagement of a community and his views shift the focus on the individuals to an institutionalised perspective. In between Putnam's and Bourdieu's ideas are Coleman's (1988, 1993) concerned with the role of social capital in the enforcement of rules of conduct and the density of social ties between community members.

Whether it is a way to accumulate social relationships to obtain benefits, a strategy to involve institutions on behalf of a public good, or a way to keep the status quo of control and density within social interactions, theorists tend to agree that social capital underpins relations with other people in a social structure and creates a *competitive advantage* [emphasis added] in the achievement of mutual and individual goals (Lee & Lee, 2010). Identity, the sense of belonging to the community and its connectedness are essential to the sustainability of online communities.

Sustainability of virtual communities

Sustaining online communities is of great concern, especially in the context of organisational communities, in which a lot of resources and time need to be invested. Authors such as Beniger (1987), Jones (1995) and Stoll (1995) suggest that the low bandwidth of computer-mediated communication cannot sustain strong ties by itself, as the medium does not allow for physical and social cues, neither does it provide instant feedback. Stoll (1995, p. 24) suggests that electronic communication is 'an instantaneous and illusory contact'.

Taking a more optimistic perspective, Wather (1995) argues that relationships are socially close and take time to be built. The researcher acknowledges that there is less verbal and non-verbal information per exchange, and that, because computer-mediated communication is asynchronous, this construction process may be delayed. Nevertheless, these factors do not prevent relationships from flourishing; neither do they determine success or failure of communities.

The lack of exposure offered by the virtual world can be used in favour of its sustainability. By becoming 'invisible' in the community, members might feel encouraged to contribute, without peer-pressure and feeling free to ask *stupid questions* [emphasis added] (Haythornthwaite, Kazmer, Robins, & Shoemaker, 2000). Jordan (1999) suggests that being 'anonymous' might mean that off-line interactions are not transferred to the online context, which could prevent differentiation based on status. Conversely, Hallinan (2003) detected significant hierarchical structures in a study of an Internet Relay Chat network. The author argues that the findings provide evidence that online communities can have structures, despite the anonymity offered by the Internet.

There is a body of researchers that claims that the sustainability of online communities can be enhanced if the virtual space of interactions reflects and resembles offline structures (Haythornthwaite, et al., 2000; Kavanaugh, Reese, Carroll, & Rosson, 2005; Wellman, 1999; Wellman & Berkowitz, 1988). The characteristics that could increase the levels of reciprocity and therefore sustainability are shared objectives, a strong commitment to the purpose and quality of the community (Baym, 1995, p. 4; Curtis, 1997; Donath, 1999; King, Grinter, & Pickering, 1997; Reid, 1995; Rheingold, 1993), membership definition, areas of expertise and manners of expression (Marvin, 1995; Sproull & Kiesler, 1991).

Additionally, Haythornthwaite et al. (2000) note that the sharing of a common meeting place, the construction of rules and behaviours and their

application in the online community (Bruckman, 1998; Fernback, 1999; Jones, 1998; S. G. Jones, 1995; Kollock & Smith, 1999; McLaughlin, Osborne, & Smith, 1995; Mynatt, O'Day, Adler, & Ito, 1998; C. B. Smith, McLaughlin, & Osborne, 1996), as well as a shared history give identity to the group and establish a way of knowing how to behave and how to anticipate behaviour of others (Donath, 1999; Mynatt, et al., 1998). These characteristics are to be observed by organisations willing to nurture online relationships with and among its stakeholders.

Although the literature provides useful concepts and theoretical elements that shed light on the dynamics of online communities and possible elements that contribute to sustainability, many authors tend to agree that few studies have empirically examined the issue (Ardichvili, et al., 2003; Huysman & Wulf, 2005; Lin & Lee, 2006; Probst & Borzillo, 2008). In this research, online communities are assessed as communities of practice (Wenger, 1998; Wenger, et al., 2002), whose interactions are boosted by the Internet.

Methodology

Research methods

The investigation of the theoretical and practical factors that contribute to the sustainability of online communities is illustrated in this research by a systematic review and meta-analysis of relevant case studies carried out in such contexts. A qualitative approach to the analysis of the cases helps to shed light onto the multiple facets of online communities' sustainability. This interpretative work is influenced by the tradition of Phenomenology, which attempts to generate knowledge about individuals' lived experience in relation to virtual communities (Cresswell, 2007; Daly, 2007; Hesse-Biber & Leavy, 2005).

A case study offers a 'detailed, intensive study of a particular contextual, and bounded phenomenon that is undertaken in real life situations' (Luck, Jackson, & Usher, 2006, p. 104). Thus, a multiple analysis of existing case studies allows for more in-depth insights into the factors that might influence the sustainability of online communities. The studies selected for this research show different perspectives on the processes and maintenance demands of virtual communities. The sample consists of 13 case studies about online communities published between 2000 and 2008 (see appendix A, page 40). The studies were selected according to their availability in online journals such as the *Journal of Computer-Mediated Communication*,

Info Systems, the *International Journal of Knowledge and Organisational Learning Management, Behaviour and Information Technology* and *The Information Society*. All communities investigated in the studies share a common practice that sustains their engagement into some sort of action (Wenger, et al., 2002) and fit into Wenger's description of communities of practice.

The strategy was to find case studies which represented different sorts of online communities and then capture and examine 'central themes that cut across a great deal of variation' (M. Patton, 2002, p. 234). There are four kinds of online communities examined in the sample and each provides different insights into the development and the factors that contribute to the sustainability of such communities, as table 3 displays.

Table 3
Case studies investigated

	Online Community	Focus of the case study	Location
1	Swinburne University	Successful establishment of an online CoP	Melbourne, Australia
2	Knowledge Portal in the agricultural industry	Factors contributing to success and failure	The Netherlands
3	British Council	Failure of online community	Multinational
4	Hewlett Packard	Successful online community	Japan
5	CoP Leaders	Factors contributing to success and failure of online communities	Europe and the USA
6	Caterpillar Inc.	Motivation and barriers to	Multinational

		participation	
7	Library Education Experimental Program	Community development among students	Illinois, USA
8	Distributed Learning Community	Development and sustainability of social capital	USA
9	MBA students	Members' perception of building community online	USA
10	Atherton Gardens	Sustainability of wired community	Melbourne, Australia
11	Blacksburg Electronic Village	Sustainability of wired community	Blacksburg, Virginia, USA
12	BlackPlanet	Sustainability and civic engagement of members	USA
13	Successful Online Communities	Factors contributing to successful communities	Taiwan

Note. The first six communities are inserted in organisational contexts. Communities 7, 8 and 9 are distance-learning courses. Communities 10 and eleven share the same geographic location in addition to being connected online. The last two communities are social networks. *Location* refers to the geographical setting of community members or organisation.

Table 4 illustrates the bibliographical reference of the case studies.

Table 4

Bibliographical reference of the sample

	Online Community	Reference
1	Swinburne	Molphy, M., Pocknee, C., & Young, T. (2007). <i>Online communities of practice: Are they principled</i>

	University	<i>and how do they work?</i> Paper presented at the ICT: Providing choices for learners and learning. Singapore.
2	Knowledge Portal in the agricultural industry	van Baalen, P., Bloemhof-Ruwaard, J., & van Heck, E. (2005). Knowledge Sharing in an Emerging Network of Practice: The Role of a Knowledge Portal. <i>European Management Journal</i> , 23(3), 300-314.
3	British Council	Venters, W., & Wood, B. (2007). Degenerative Structures that inhibit the emergence of communities of practice: a case study of knowledge management in the British Council. <i>Info Systems</i> , 17, 349-368.
4	Hewlett Packard	Kohlbacher, F., & Mukai, K. (2007). Japan's learning communities in Hewlett-Packard Consulting and Integration: challenging one-size fits all solutions. <i>The International Journal of Knowledge and Organizational Learning Management</i> , 14(1), 8-20.
5	CoP Leaders	Probst, G., & Borzillo, S. (2008). Why communities of practice succeed and why they fail. <i>European Management Journal</i> , 26, 335-347.
6	Caterpillar Inc.	Ardichvili, A., Page, V., & Wentling, T. (2003). Motivation and Barriers to participation in virtual knowledge-sharing Communities of Practice. <i>Journal of Knowledge Management</i> , 7(1), 64-77.
7	Library Education Experimental Program	Haythornthwaite, C., Kazmer, M. M., Robins, J., & Shoemaker, S. (2000). Community Development Among Distance Learners: Temporal and Technological Dimensions. <i>Journal of Computer-Mediated Communication</i> , 6(1), 0. Retrieved from http://jcmc.indiana.edu/vol6/issue1/haythornthwaite.html
8	Distributed Learning Community	Yuan, Y. C., Gay, G., & Hembrooke, H. (2006). Focused Activities and the Development of Social Capital in a Distributed Learning 'Community'. [Article]. <i>Information Society</i> , 22(1), 25-39. doi:

		10.1080/01972240500388347.
9	MBA students	Liu, X., Magjuka, R. J., Bonk, C. J., & Lee, S. (2007). Does sense of Community Matter? An Examination of Participants' Perceptions of Building Learning Communities in Online Courses. <i>The Quarterly Review of Distance Education</i> , 8(1), 9-24.
10	Atherton Gardens	Hopkins, L. (2005). Making a Community Network Sustainable: The Future of the Wired High Rise. <i>The Information Society</i> , 21, 379-384.
11	Blacksburg Electronic Village	Kavanaugh, A. L., Carroll, J. M., Rosson, M. B., Zin, T. T., & Reese, D. D. (2006). Community Networks: Where Offline Communities Meet Online. <i>Journal of Computer-Mediated Communication</i> , 10(4), 00.
12	BlackPlanet	Byrne, D. N. (2008). Public Discourse, Community Concerns, and Civic Engagement: Exploring Black Social Networking Traditions on BlackPlanet.com. <i>Journal of Computer-Mediated Communication</i> , 13, 319-340.
13	Successful Online Communities	Lin, H. F., & Lee, G. G. (2006). Determinants of success for online communities: an empirical study. <i>Behaviour & Information Technology</i> , 25(6), 479-488.

Characteristics of the sample

The sample was composed of 13 case studies about online communities. Almost half nominated the communities researched as a community of practice (46%), followed by distance learning courses (23%), networked communities (15%) and two social network sites (15%). The majority of the studies in this research (69%) did not provide information on the demographics of the online community members.

Most communities (70%) were investigated at a stewardship phase. A few studies were conducted at a coalescing stage and others during a transition period. Transition studies were more common among distance learning

courses. There is evidence that communities with 150 members or more are more likely to be researched (61%). In over half of the cases (53%), the sample did not either represent the community (15%) nor was this information clearly stated (38%).

Analytical procedures

The case studies were subjected to close textual analysis, characteristics were coded individually, and this resulted in a fairly complex set of both unrelated and interrelated categories and subcategories (Mason, 2002). These categories were comprised of data such as the kind of interaction established by members in a given community, demographics of the online network, the model upon which the platform had been established, the object of the study and the phenomena investigated. Categories obtained were not uniform, but there was evidence of consistent features (Mason, 2002) allowing insightful discussion for the purposes of this research.

A second stage of the coding process consisted of finding in the case studies the constituent elements of online communities (such as size, life span, interactions, composition, boundaries, nurturing, kind of relationships) and structures (such as membership, leadership roles), based on Wenger et al.'s (2002) approach presented earlier.

The case studies were then analysed as a whole, with similarities, differences and patterns in factors that may influence the sustainability of online communities being identified and reflected upon.

Measures

Following Wenger et al.'s (2002) description of online communities and the elements cyberspace attaches to communities noted in the literature review, the case studies were examined in the categories below. For a summary of classifications, see appendix A.

a) Self-nomination. The name used by each original author of the case study to describe the community.

b) Kind of interactions. This category looks at the way members interact within the group.

c) Object of the study. Presents the subject of the case study investigated. In some cases, more than one subject was researched.

d) Phenomena investigated. This category looks at the phenomena investigated in each case study.

e) Demographics. Indicates whether the case study presents the demographics of the online community studied.

f) Invisibility. Specifies whether the settings of the online community allow anonymity to its members.

g) Theoretical foundation. Identifies whether theoretical foundations underpin the online community.

h) Stage of Community Development. Provides an analysis of the stage of development in which the community under investigation was at the time it was studied. It follows Wenger's (2002, p. 11) classification. In some cases, there was a disparity between the stage at which the community itself was and the stage in which its members were. Additionally, some communities were investigated during a transition phase. Thus, there was the need to add two more categories to complement Wenger's stages.

i) Community Size. Looks at the size of the community as presented in the case study. The size is classified according to Wenger's (2002) explanation of communities' forms and it also reveals the level of intimacy of members.

j) Sample size. Refers to the size of the sample of the case study and follows the same standards of the community size.

k) Representativeness of sample. This category looks at the representativeness of the sample in relation to the community.

l) Composition of the community. Investigates the composition of the community in terms of participants.

m) Boundaries. Boundaries are the limits that distinguish the practice of the community.

n) Nurturing. The nurturing of communities refers to the process of bringing a community to be. In other words, it relates to its generation.

o) Relationships of communities to official organisations. These relationships are classified according to Wenger's (2002, p. 28) study. In the case of networked communities, the relationship refers to the one established with the geographical community itself. For the purpose of this study, only legitimised, supported and institutionalised communities were sampled.

Table 5

Relationships of communities to official organisations

Relationship	Definition
Unrecognised	Invisible to the organisation and sometimes even to members themselves.
Bootlegged	Only visible informally to a circle of people 'in the know'.
Legitimised	Officially sanctioned as a valuable entity.
Supported	Provided with direct resources from the organisation.
Institutionalised	Given an official status and function in the organisation.

p) Community membership. Refers to the way members join the community.

q) Leadership roles. Can be assigned by community members or the supportive organisation.

r, s) Perceptions of the online community. As the literature stresses the importance of social capital for a community, this category aims to identify how members and organisations see the commune: as an opportunity to share, a pool of goodwill (Putnam, 2000); or a tool from which they can obtain information and gain competitive advantage (Lee & Lee, 2010).

t, u) Atmosphere. This category is an attempt to recognise, based on the description of the community under study, the mood or feeling shared by its members.

v) Hierarchy. Refers to the structure of the online community, drawing on details provided by the case study.

Findings

The results obtained from the systematic review and meta-analysis of the case studies indicated that there are major theoretical and practical factors

that can be associated with the sustainability of online communities. The scope of this study does not allow for a broad discussion of such findings, hence only the results that were most evident are presented.

Theoretical factors

Among the theoretical factors that may affect the sustainability of online communities, the most significant finding of this research is that almost 70% of the virtual groups investigated did not have a theory grounding their practice. Most members (54%) saw online communities as a pool of goodwill. For a great number of organisations (46%), the perception they had of the online community was unclear. A key finding was that 38%, however, saw the online community as a website, a portal or a system. More than half of the communities (54%) in the sample relied both on face-to-face interactions and online interactions. In 30% of the cases, the interpersonal meetings happened at the establishment of the community, while in 23% members met regularly on and offline. The majority of online communities in the sample (46%) had an intense practice atmosphere.

Practical factors

The results of this study show that over half of the online communities (54%) did not allow invisibility to their participants. In other words, most members of the communities investigated in this study did not have the option of becoming invisible when interacting online. A hierarchical structure was present in 61% of the communities in the sample, which also had leadership roles concentrated within a group (62%). Leaders had been formally chosen in 62% of the communities, however the selection process was not clearly explained in 76% of the cases. Over a third of the communities in this research established boundaries across the organisation and the vast majority (85%) were generated intentionally. The results showed that 38% of the communities were given official status and function in the organisation – that is, they were institutionalised – and almost a third were legitimised. Membership was voluntary in almost 70% of the communities. There was a balance between communities led internally (38%) and the ones that were subordinated to external members or sponsors (38%). The majority of the online communities analysed in this study (80%) were composed of a heterogeneous group of people, that is, of individuals who shared different practices, but had a common problem that brought them together.

Discussion

The results of this research suggest it may be possible that a theoretical framework might not underpin the practice of online communities. Most case

studies in the sample presented Wenger's Social Learning Theory (1998) and Wenger, McDermott and Snyder's Communities of Practice (Wenger, et al., 2002) as the guiding principles for the analysis. However, only four of the communities studied made it clear that they are based on theoretical foundations. It could be the case that, because most studies were conducted at a stewardship phase of the online community development, the cornerstone of such groups was not considered relevant for the research. Another possibility is that those theoretical drivers were not actually embedded in the generation of such communities; this finding could indicate that online communities may lack a core identity. Consequently, the absence of identity may affect the sustainability of virtual structures, particularly in terms of participation and engagement.

These issues of engagement and participation are central in the discussion of online communities and their sustainability. Over half of the case studies in this research show that virtual interactions are sustained parallel with face-to-face encounters. Educational institutions, for instance, often hold one or two weeks of intensive face-to-face classes, which aim to promote an initial bonding that will hopefully be maintained online (cases 7 and 9). This suggests that computer-mediated communication has not yet completely replaced face-to-face interactions. It may be the case that technology does not yet have the impact of a live, personal experience and that online communities have not yet been able to actually play a supportive and meaningful role in the learning process, as Wellman and Gulia (1999) suggest. Yet, it appears that they are an alternative way of interaction that has been taking shape and being adapted to serve companies' demands in terms of knowledge management.

The burgeoning popularity of online communities in all levels of society, particularly in the organisational area, raises concerns about the overarching role of such structures. This study suggests that it is likely that they reproduce the status quo, rather than being a tool for promoting communication as a ritual (Carey, 1989). This finding supports Hallinan's (2003) study, which holds evidence that online communities reproduce offline hierarchies. It also challenges Jordan's (1999) arguments that virtual communities are non-hierarchical structures. Most communities in the sample had a hierarchical structure, with leadership roles concentrated within a small group of members. It seems that, for organisations, the establishment of an online community is a way of obtaining competitive advantage (Kohlbacher & Mukai, 2007; Venters & Wood, 2007) and fostering the sort of social capital that can be used in the short or long term (Bourdieu, 1986) to maintain this advantage (Lee & Lee, 2010).

Furthermore, the literature suggested that roles and norms are important in virtual communities. In the majority of cases in this research, however, it was not clear how these roles were assigned. Perhaps this issue is taboo, as it could be a sensitive subject to organisations, a topic not yet open to discussion. This connection between hierarchy and role assignment in online communities is unlikely to be openly debated in the studies researched. This could indicate that organisations are not comfortable discussing power distribution issues, either with researchers or employees. Alternatively, it may be the case that this subject is not an issue of concern, since power structures are bound to be reproduced in all realms of society. Notwithstanding, the impact of power holders over online communities cannot be neglected, particularly in building identity.

Additionally, it seems that there may be a discrepancy in the expectations organisations and members have about building identity in online communities. Over a third of the cases examined indicated that communities were often seen by *organisations* [emphasis added] as a website or a portal (Brown, 2002), whereas most *members* [emphasis added] tend to perceive them as pools of goodwill (Putnam, 2000). This tension can possibly impact the connectedness of such structures. Organisations may see this space of interactions as a way of accumulating capital and therefore, it is likely that its sociability is forgotten. It may be possible that members' attempts to interact more freely do not correspond to organisational expectations towards individuals' behaviour and use of the 'system'. Another possibility is that the online community becomes a results-oriented tool or a way of monitoring and evaluating employees' performance. In this case, it would seem probable that the meaningfulness of the experience of the community (Wenger, 1998; Wenger, et al., 2002) is lost. If participation in online communities is a requirement for its sustainability, then the lack of meaning in this experience appears to be a reason for discontinuity. In other words, if members expect an exchange that goes beyond that of information and the *system* [emphasis added] does not provide it, then it would seem as though there is no reason for individuals to participate.

Moreover, the findings suggest that membership was voluntary in almost two-thirds of the online communities in this research, which indicates that people might have a positive attitude in being part of something that can possibly suit their professional, educational or social interests, whilst being convenient to a busy lifestyle. Hence, it is also possible to imply that such an optimistic approach is embedded in high expectations about what to get from and what to contribute with in an online context. On the one hand, this could be seen as a good beginning of an experience that has the potential of bringing results to the individual and consequently to the community. On the

other hand, high expectations may have a negative impact in the maintenance of online communities because the effort demanded by the practice can eventually be perceived as a burden. The stigma around virtual communities is still strong, reflecting both the miraculous meaning attached to *online* and the *romantic* [emphasis added] connotation of communities (Huysman & Wulf, 2005). Consequently, it may be the case that both members and organisations get frustrated with the practice they need to revolve their encounters around.

As the above results demonstrate, the atmosphere of online communities can indeed be intense. This could bring some excitement into people's engagement with the shared practices, but it could also mean another commitment in their busy lives. For instance, in the context of distance learning courses, it is very common for students to mention all the competing factors that could justify their disengagement with the virtual community. Concurrent activities vary according to participants' maturity and the phase they are facing in life. Therefore, it cannot be forgotten that the online community is just another of the many activities in a person's life. For this reason, it is important to keep in mind that members may fade back at times and participate more at others, as it is observable in face-to-face interactions as well.

Fading back from online interaction, however, may not always be negative to the sustainability of virtual communities. Members' disappearance from cyberspace might be a sign that they are turning to existing offline networks in the search for information and support. Most studies in this research suggested that co-workers, friends, local churches, universities, clubs and societies are still a great source of support to people. Having said that, existing networks could also be seen as powerful ingredients in making online exchanges more meaningful, for they can provide individuals with input and therefore motivation to keep returning to virtuality. What is not clear, however, is the extent to which offline networks have been valued by organisations that aim to develop online communities.

Even in cases where computer-mediated communication is supported by offline gatherings, the evidence in this research suggests that the sociability of such encounters can be taken for granted. Interviews with students suggest that these moments of interpersonal interaction are unlikely to be designed to promote a strong and impacting experience (cases 7, 8 and 9). Instead of using face-to-face encounters to start a history and memories that later on will be remembered and are likely to create an identity for the group, it seems that most institutions could be somehow missing an opportunity to make the online community more sustainable. Similar to what happens in

organisations (case 3), these findings suggest that there is a tendency to stress the technical and instrumental role of online communities in opposition to boosting sociability among members. Research with students showed that the initial face-to-face interactions are a great opportunity to identify patterns of participation that are bound to be reproduced once students begin the online exchanges (case 7). If anything, this offline phase is crucial in starting a change in these patterns. However, if the environment in which contributions happen is subordinated to a context of repression, it is probable that online communities might not be a meaningful way of fostering participation, in particular of individuals who tend to be excluded from such discussions. This exclusion issue was evident in the networked community in the United States studied by Kavanaugh, Carroll, Rosson, Zin & Reese (2006). The team found that those who are more likely to engage into online interactions are extroverted, well educated and either young (aged 16-40) or older (aged 65-80). People not included in that profile were likely to refrain from online discussions and face-to-face engagement.

Although it can be difficult to change behaviour and patterns of participation in online communities, it may be the case that the benefit of invisibility offered by computer-mediated communication has been lost on members. The literature suggests that the anonymity given by the Internet can encourage contribution, without peer pressure (Haythornthwaite, et al., 2000). Nevertheless, very few of the communities investigated in this case study review give their members the chance of camouflaging (cases 7 and 12). It is probable that organisations and educational institutions, in particular, are concerned that some members may take advantage of the situation and express opinions that could possibly offend the company and the group.

Similarly, it could be argued that in the cases where online interactions are sustained together with face-to-face relationships, it would not make sense to allow hidden engagement. In spite of that, this finding might reflect some sort of resistance in giving a share of ownership and responsibility to community members. Perhaps this could discourage participation in the virtual realm, as well as in face-to-face interactions. All in all, preventing invisibility can affect not only the development of an online community, but its sustainability.

Limitations

There are a number of limitations in the methods chosen for this research. First and foremost, it is recognised that the samples chosen for this study represent their own authors' sets of perspectives and epistemic positions towards the cases studied. The current researchers in this investigation

acknowledge that they layered their own interpretations on the findings and discussions put forth by the cases, using the limited literature available about the sustainability of online communities. Secondly, the sample in this research is not representative of the total world of online communities. Despite attempts to find cases carried out in developing countries, very few virtual communities in such contexts have been empirically researched and published in English or the lead researcher's native language, Portuguese. Additionally, time constraints did not allow for a more purposive search of case studies to be investigated. Lastly, the coding process – from establishing categories to categorising elements in the cases – although jointly overseen, was physically conducted only by one member of the research team, due to time constraints and the lack of availability of another coder, thus limiting its reliability.

Conclusions and recommendations

Maintaining relationships and keeping the connectedness of groups has always been at the core of humankind. This research aimed to investigate the factors that enhance the sustainability of online communities. First and foremost, the findings indicated that virtual communities often lack a theoretical base; principles that guide its practice and give meaning to the interactions promoted by the Internet. It is time that organisations and individuals envisaging going online reflected on the motives for this pursuit. The process of reasoning and understanding what characterises and makes an online community meaningful to members are crucial to its sustainability.

Translation for journalists and publishers: this study suggests that the virtual communities which are 'audiences' or 'collectives of journalists' would do well to focus on the reason for their existence in order to enhance their sustainability. The whole ontological question of why journalism and journalists exist has been addressed in other literature⁴ but the online communities involved should not neglect these questions but rather, should research and reflect deeply on them. How this focus might be instigated and carried through calls for further research.

This study also suggests that there is a tendency for online communities to replicate offline hierarchical structures. The issue of power distribution in online contexts should be a priority in the reflective process of identity building. Organisations that have the opportunity to bring individuals face-to-face in parallel with online interactions should not miss the chance of making the most of such encounters. In other words, this research suggests

⁴ In the writing of Jay Rosen, for instance

that there is an urge for transforming vertical and binary-powered interactions, both on and offline, into opportunities to truly listen to the quietest voices. Particularly in the context of organisations, social capital can be seen as an intrinsic and crucial component of the so-called competitive advantage.

The avoidance of letting people become *invisible* [emphasis added] online, together with organisations' perception of online communities as websites or systems suggest that power holders or sponsors neglect the ownership members have over virtual groups. People and their contributions are the energy of any commune. Individuals are the fuel that sustains online interactions; therefore it is essential that they be allowed to camouflage, to freely express opinions. Taking advantage of online features should not threaten online relationships, as long as the individuals constituting the community have been involved in building the identity of the group. As long as power remains concentrated within few individuals, the sustainability of online communities cannot be guaranteed.

The understanding of the dynamics of online communities and the realisation that power structures are dominant in cyberspace are the initial steps into the investigation of what elements can enhance the sustainability of virtual communities. However limited the findings of this research can be, it is clear that computer-mediated communication is part of everyday life and that, just as people have adapted the telephone, the fax and other tools to their own needs over time, so have they been shaping technology to serve their demands (Castells, 2000). There is no doubt that individuals may soon discover ways of organising around their own issues to revert the status quo of hierarchical online communities. For organisations, it is never too late to catch up and revert the tendency of ignoring the power of collective and individual identity.

Translation for journalists and publishers: terrestrial and traditional media enterprises have strong tendencies towards hierarchical structures and these are likely to be repeated in the online environment. However, should those individuals who comprise the new communities seek to disrupt those structures, then the moment of transition from hard-copy or analogue to digital and internet seems to be the most appropriate time. In the same way as above, how this disruption and transition might take place calls for further research.

Future research

As well as the above two recommendations, there are several issues to be explored in future research about the sustainability of online communities.

The first is whether and how interactive technologies can *increase* the sustainability of online communities. It would also be beneficial to investigate how organisations can develop virtual communities in a way that hierarchical structures are diminished or excluded. The body of research on computer-mediated communication would also be expanded with more reflexive studies analysing the development of online communities and which techniques could assist individuals to become more participative and take ownership over the process, therefore guaranteeing the sustainability of such structures.

It might be worthwhile for future research to investigate in-depth the power relationships in online communities and whether and how they relate to their successful maintenance. Finally, the investigation of the importance of existing networks in assisting both the sustainability and the successful practice of virtual structures would enrich this field of study.

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Appendix A

The measures used to analyse the online communities in the sample are detailed below.

a) Self-nomination

1. Community of Practice
2. Networked communities
3. Distance learning
4. Social Network

b) Kind of interactions

1. Online only
2. Face-to-face at the establishment and then online only
3. Online with the purpose of engaging members offline
4. Mixed: both online and face-to-face
5. Not clear

c) Object of the study

1. People, that is, members of the community.
2. Community as a group.
3. Organisation hosting and giving support to the community.
4. Both members of the community and the organisation.

d) Phenomena investigated

1. Knowledge and skills and how they were created and transferred within the community.

2. Reasons for success and failure of the online community.
3. Sense of community, social capital and support.
4. Involvement, engagement and participation of members in the community.

e) Demographics.

1. Yes.
2. No.

f) Allows invisibility?

1. Yes.
2. No.
3. Not applicable to the case study.
4. Not clear.

g) Theoretical foundation

1. Yes.
2. No.

h) Stage of Community Development

1. Potential.
2. Coalescing.
3. Maturing.
4. Stewardship.
5. Transformation.
6. In transition.
7. Members being guided through the stages of community development.

i) Community Size

1. Less than 15 members.
2. Between 15 and 49 members.
3. Between 50 and 150 participants.
4. More than 150 members.
5. Not mentioned.

j) Sample size

1. Less than 15 members.
2. Between 15 and 49 members.
3. Between 50 and 150 participants.
4. More than 150 members.
5. Not mentioned.

k) Representativeness of sample

1. Yes.
2. No.
3. Not indicated.

l) Composition of the community

1. Homogeneous.
2. Heterogeneous.

m) Boundaries

1. Within businesses.
2. Across business units.
3. Across organisation boundaries.

n) Nurturing

1. Spontaneous.
2. Intentional.

o) Relationships of communities to official organisations:

1. Legitimised.
2. Supported.
3. Institutionalised.
4. Not applicable to the case study.

p) Community membership

1. Voluntary.

2. Mandatory.

q) Leadership roles

1. Assigned across the community.
2. Concentrated within a small group in the community.
3. Formally established.
4. Informally assigned.
5. Internal.
6. External.
7. Not applicable to case study.

r) Perception of the online community from member's perspective.

1. A 'pool of goodwill'.
2. Website/portal/system.
3. Not identified.

s) Perception of the online community from the organisation's perspective.

1. A 'pool of goodwill'.
2. Website/portal.
3. Not identified.

t) Atmosphere i:

1. Laid back.
2. Intense.
3. Not mentioned.

u) Atmosphere ii:

1. Formal.
2. Informal.

v) Hierarchy:

1. Hierarchical.
2. Democratic.

3. Not indicated.

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