

Community networks today: Analysing new media for local social networking and community engagement

Angela Button & Helen Partridge

Queensland University of Technology

Community networks that incorporate emerging social media features have the potential to encourage civic engagement and create rich, meaningful social interaction within geographical communities. Recently, new forms of neighbourhood websites have emerged, prompting the question: what are “community networks” today? New forms of these sites include high-end commercial websites, developed by local newspaper companies and web entrepreneurs. This is in marked contrast to the relatively simple, non-profit community networks that were created by grassroots community organisations in the late 20th century. Content analysis was performed on twelve diverse neighbourhood websites in order to reveal the similarities and differences between their key social, discursive and technological features. This analysis led to an enriched understanding of the contemporary usage of the term “community networks”. The resultant analytical framework provides a useful scaffold for the discussion, comparison and evaluation of community networks. Conscientious analysis of the components of neighbourhood websites, combined with reflection on their correlation with the local communicative ecology, can potentially improve the outcomes of community networking initiatives for not-for-profit organisations, government and industry, across diverse local contexts.

Keywords: communicative ecology, community informatics, community networks, interaction design, online communities, urban informatics.

INTRODUCTION

The key question underpinning this research is: what are “community networks” today? Community networks aim to connect people that live in a defined geographical location, for example, a city, neighbourhood or small town. The users of these sites share both physical and virtual space, providing opportunities for both online and offline social interaction and the sharing of relevant, localised everyday life information. Community networks are currently being built and operated not only by community activists and government agencies, but also by companies in the newspaper, property and advertising industries. They can no longer necessarily be described as poorly funded and laying outside the mainstream technology industry (Carroll and Rosson 2001). This paper analyses neighbourhood websites that, while fitting the preceding description and exhibiting similarities with traditional community networks, push beyond the limits of established definitions (Schuler 1994; Carroll and Rosson 2001). This indicates that a review of the term “community network” may be necessary. This paper does not intend to formulate a new definition, but instead to evoke debate regarding the current understanding of the term.

In order to identify the key elements of contemporary community networks, we analysed 12 neighbourhood websites that exhibited a rich array of communication themes and interaction design features. A content analysis was performed using the three layers of the communicative ecologies model—social, discursive and technological—as a structure (Foth and Hearn 2007). Cataloguing the websites’ features in each of these categories led to the creation of a scalable framework that is able to incorporate new developments as they emerge, along with the myriad differences between neighbourhood websites originating within diverse local contexts. We anticipate that this preliminary framework will prove useful in the analysis of community networks and help scaffold discussion surrounding their definition, purpose and key characteristics.

COMMUNITY NETWORKS – THEN, AND NOW?

In 2003, Carroll and Rosson argued a need for the analysis and reconstruction of the definition of “community network”, citing that their context had been irreversibly transformed through advances in the World Wide Web, network communities and computer-supported cooperative work. With the emergence of Web 2.0, rapid advances in social software and the soaring popularity of social networking platforms, both large-scale, such as facebook.com, and niche, for example deviantart.com, we argue that it is again time to review the definition of “community network” (Donath and Boyd 2004; Musser 2007).

In order to do this, it is necessary to first look at established definitions and purposes of community networks. Community networks are socio-technical infrastructures that connect neighbours, have a local focus and support neighbourhoods (Schuler 1994; Carroll and Rosson 2001). They are designed to allow residential community members to communicate and interact with other users. User propinquity is seen as an advantage as it affords the potential to build a bridge between people and spaces both online and offline, and to foster social capital and network identity (Foth 2006). There is a great diversity in the user group of community networks as they span all occupations, personal roles and ages (Carroll and Rosson 2001). In contrast to other types of online communities, the users of community networks are relatively small in number, people’s commonality is geographic rather than interest-based, and encountering other users offline is highly likely (Arnold, Gibbs et al. 2003).

Community networks have their roots in 1970s community activism. Early community networks included Berkeley’s Community Memory, the Santa Monica Public Electronic Network and Cleveland Free Net. Their core purpose was to advance social goals, strengthen social cohesion and democracy, and, in many cases, to support disadvantaged communities. They aimed to accomplish this through the facilitation of information exchange, discussion and collective activities within local geographical communities. They incorporated broad communication themes, ranging from the pragmatic to the communitarian, including matters pertaining to local government, events, community issues, regional economic development, public schools, and social services (Schuler 1994; Carroll and Rosson 2001; Carroll and Rosson 2003). Social activism was a strong theme in community networks and their potential to encourage participation in the community was seen as their most important aspect (Schuler 1996). They also aimed to provide citizens with access to education and training, and in some cases computer hardware, Internet access and technical support services. Ideally, citizens would participate in the design and take on ownership and management of community networks (Schuler 1994; Hopkins 2005).

In 2003, Carroll and Rosson contrasted “network communities”, what we may today call social network sites, with “community networks”. They stated that network communities are communities whose interactions are mediated *primarily* by the Internet (Carroll and Rosson 2003). This statement no longer holds true on two levels. Firstly, it is countered by more recent research into large-scale online social network sites that demonstrates that people are using them to replicate both their existing proximate and distributed social networks (Donath and Boyd 2004). Also, social network sites are increasingly being targeted at specific geographical communities. They are intended for both general audiences, which are the types of sites we chose to analyse for this paper, and also niche audiences that reside within geographical communities. For example, 944.com and Detroitcity.com target a young adult demographic with interests in the local music and fashion scenes that are embedded in their cities and neighbourhoods.

One type of new neighbourhood website has emerged due to the decline in readership of print newspapers. A large percentage of advertising revenue has shifted to online advertising, so in order to counter this market change some newspaper companies are experimenting with the creation of neighbourhood-based online news websites. This media trend has been termed “hyperlocalism”. While many of these sites contain content written by professional journalists, many items are also contributed by “citizen journalists”, community members that choose to contribute or link to their own online content, including text, images and video. These hyperlocal media sites also provide many features that allow users to participate in their community through interaction with content and communication with other community members (Howe 2007).

Carroll and Rosson (2003) prophesied that the community networking movement would face the challenge that there was a profitable aspect to community networks and that it could well be “harvested right out of the networks” (p. 382). While these new locally focused social network sites have many similarities in both form and function with community networks, profit is their key aim rather than achievement of social goals, in many, although not all, cases. It is important that these new developments are scrutinised and taken into account when planning new community networks as they will compete strongly for community members’ attention, in some local contexts.

Carroll and Rosson (2003) also expressed a fear that the emergence of digital cities services could “undermine the original communitarian goals and values of community networks” (p. 382). With the emergence of new forms

of community web services, we must again question if they pose a threat to or an opportunity for traditional community networks. While the positive and negative consequences must certainly be subjected to debate, we suggest the first step must be to develop a way to analyse and compare these new forms of community websites. This is an essential precursor to the analysis of their similarities and differences to traditional community networks, their evaluation and any predictions we might make regarding their effects in our communities.

In order to avoid confusion with traditional community networks, we will refer to these emerging websites as “neighbourhood websites”. Due to the variety of origins of these sites there are a plethora of terms used to describe them, including community networks, hyperlocal media, community intranets, local social networks, community portals and place blogging sites etc. We acknowledge the terminology is problematic and encourage debate regarding a term that can more clearly differentiate these emerging sites from what is currently understood, in the field of community informatics, by the term “community networks”.

CONCEPTUAL FRAMEWORK

We apply the communicative ecologies model to structure our analysis of neighbourhood websites (Foth and Hearn 2007; Hearn and Foth 2007). A communicative ecology is conceived as having three layers. Firstly, a social layer which consists of people and the groups into which they may be organised. This encompasses a broad spectrum of groups ranging from informal friendship networks to formal community organisations. Secondly, a discursive layer, which includes the communication themes and content discussed and exchanged between members of the communicative ecology, both mediated and unmediated by technological tools. Finally, a technological layer, which consists of devices and media that enable social interaction and communication (Tacchi, Slater et al. 2003; Foth and Hearn 2007). In the context of this paper, the communication themes and technological features of neighbourhood websites are of key interest.

All three layers are integral to the holistic view taken by the communicative ecology model. This model is able to take into account the dynamic interplay that exists between information and communication practices, which are both embedded in social practices and intertwined with our use of technological tools. As each instance of communication or information exchange within a local community takes place within a pre-existing communicative ecology, we need to recognise and understand its nature and complexity before attempting to design and implement new technological interventions. While it is challenging to discuss each layer in isolation, this paper takes this approach in order to enable a clearer analysis of the component parts of community websites. This can be beneficial as an initial step, prior to the examination of the complex, mutual shaping relationships that form part of the holistic view of a local communicative ecology.

In any community setting, a broad understanding of the existing structures of communication and information in people’s everyday lives will help to gauge the potential and real impacts of individual media technologies. It is vital that any new neighbourhood websites introduced into the communicative ecology interconnect in some way with existing, locally appropriate systems and structures for them to achieve optimal impact (Schuler 1994; Hearn, Tacchi et al. 2008, forthcoming).

METHODOLOGY

In the initial stage of data collection, approximately 50 local neighbourhood websites were identified through web searches and technology blogs, for example techcrunch.com. The great majority of these originate in the United States. We believe this could reflect both the source of the trend, the primary focus of the search engines and blogs used to find these sites, and also our personal language barriers. While the over-representation of U.S.-based websites in our study may be considered a limitation, we must point out that these websites were often found to have the most innovative use of design features. Regardless of origin, it was important to use sites on the cutting-edge of web development in order to develop an analytical framework that encompasses the latest trends. However, we are by no means suggesting that the latest features are the key to creating a neighbourhood website that effectively meets the needs of its users, nor that these sites are exemplars.

The original list of websites was progressively narrowed down, using the criteria outlined below, to a final set of 12 sites (Table 1). In June 2007, we found most community websites are created either as news/citizen journalism websites, local business directories or for the specific purpose of community networking (Schuler 2001; Tremayne 2007). Although the majority of the selected sites are commercial and may at first appear irrelevant to grassroots

information and communication technology projects, there is much we can learn from their rich and varied array of features.

The three criteria used to select these websites were that they must have a local geographical focus, a broad range of communication themes and an advanced set of interaction design features. The geographical coverage of the selected websites varies in size and nature from a rural county, to a small town, to the suburbs or neighbourhoods of large cities. Relative to the global expanse of the Internet, these types of geographical areas could be considered to be “local”. The sites’ content is aimed towards local residents. Only sites using a broad range of communication themes that target a wide demographic were selected. Together, the 12 selected sites were found to offer the widest range of combinations of interaction design features, essential to enable the development of a comprehensive, up-to-date framework of neighbourhood websites’ technological characteristics.

TABLE 1. Neighbourhood Websites Selected for Analysis.

Website	Location(s)	Core Function
backfence.com	7 suburbs near Washington, MD/VA, USA	News/citizen journalism
baristanet.com	Essex County, NJ, USA	News/citizen journalism
citysquares.com	25 neighbourhoods in Boston, MA, USA	Business directory
digphilly.com	Philadelphia, PA, USA	Mixed functions
eneighbors.com	18 neighbourhoods, USA	Community networking
frontporchforum.com	130 neighbourhoods, VT, USA	Community networking
h2otown.info	Watertown, MA, USA	News/citizen journalism
i-neighbors.org	1000s of neighbourhoods in all 50 US states & 10 Canadian provinces	Community networking
outside.in	3300 neighbourhoods in 54 cities, USA	News/citizen journalism
peuplade.fr	Paris & Grenoble, France	Community networking
smalltown.com	5 towns, Bay Area, CA, USA	Business directory
yourhub.com	155 neighborhoods in 8 states, USA	News/citizen journalism

The neighbourhood websites’ key features were catalogued using the three layers of the communicative ecology model—social, discursive and technological (Foth and Hearn 2007). While this paper does not aim to examine the communicative ecology surrounding each website, this model was found to be useful in providing a scaffold for the content analysis of the websites. It is suggested that the resulting framework could be used, in conjunction with existing methods for examining a communicative ecology, as outlined in Tacchi et al. (2003), in order to better understand neighbourhood websites already in use or intended to be introduced into local communities.

For this study, it was not feasible to analyse the social layer of the communicative ecology in depth. No contact was made with the users of these sites in order to determine their social networks or groupings. However, some generalisations arising from content analysis are discussed below. A far more extensive understanding of the social layer underpinning these sites could be drawn from a study of a local neighbourhood website’s user community in situ, taking into account both online and offline interaction.

The discursive and technological layers of the websites were subjected to extensive content analysis. Firstly, the discursive layer was analysed to determine its communication themes. This produced a topic list of 36 broad themes that were further divided to comprehensively represent the content identified in the sample websites. Next, the technological features were examined. A list of all features present in the websites was made and these were then organised into a framework comprising nine key categories. The findings of the content analysis are presented and discussed below.

FINDINGS

The three layers of the communicative ecology model—social, discursive and technological—have been used to structure an integrated presentation of the findings and related discussion.

Social Layer

The content analysis of the websites revealed that users are generally co-located in the geographical area at which the site is targeted or, otherwise, they have a specific interest in that area, for example, it is their hometown or they may be planning a visit or move to this location. Within the sites, members are generally organised by their geographical location, identified during the site registration process. Some sites, for example frontporchforum.com and yourhub.com require users to enter a valid local address, while most just require the user to select their preferred neighbourhood. Other sites, such as peuplade.fr, allow the user to place a pin on a map to identify their location. By providing their location, users are effectively connecting their offline physical existence with their online identity. This has the potential to enable other users who live in a common space, for example in the same apartment building to identify their closest neighbours. However, some people may feel that providing this information might lessen their sense of physical security and be discouraged from participating in a site. A choice in the level of disclosure of this type of identifying information could be a solution to this issue.

Proximate communities generally welcome and support diverse groups (Carroll and Rosson 2003). Community websites can allow users to create groups for different purposes or areas of interest, for example, a group of parents with children at a certain school or of people who share a common interest in hiking in the local area. However, only four out of the 12 sites analysed provided interaction design features that enabled the creation of self-organising sub-groups within their communities.

Discursive Layer

The content analysis of the selected websites identified 36 broad communication themes (Table 2). These were further broken down into sub-topics. This list is limited to the content that was actually found on the 12 sites and is therefore not intended to be exhaustive. It is hoped that it will be used and built upon by those interested in the analysis and enrichment of the discursive layer of their own local neighbourhood websites.

The communication themes discovered relate closely to those identified in studies of information seeking in everyday life (Savolainen 1995; Agosto and Hughes-Hassell 2005). Savolainen suggested that a person's everyday life information-seeking habits and attitudes assist them to make meaningful life choices consistent with their own beliefs and values. The broad content base found in neighbourhood websites can play a role in local people achieving what Savolainen termed "mastery of life", that is, a general preparedness to solve everyday problems (Savolainen 1995).

Local neighbourhood websites, designed to support online and offline social interaction, are capable of putting people in contact with other people that may have the everyday life information they need to achieve "mastery of life". Studies have shown that when seeking everyday life information, people prefer human sources rather than printed or digital sources (Savolainen 1995; Julien and Michels 2000; McKenzie 2003). Although more research is required, it is possible that the newest technological features of social networks, in combination with locally meaningful content, may be able to effectively support the everyday life information-seeking behaviour of local residents.

TABLE 2. Communication Themes Identified in Selected Websites.

Communication Theme	Related Topics
Automotive	Dealerships, private sales, second hand vehicles, mechanical repairs
Building and Development	Building plans, approvals
Classifieds	For sale, wanted, services, announcements, free goods, goods and services for trade
Community Organisations	Charities, sporting clubs, neighbourhood associations
Crime	Bulletins, warnings, safety advice and education
Culture	Art exhibitions, artist listings, concerts
Dining	Restaurants, cafés, cheap eats
Education	Childcare, schools, technical colleges, universities, community colleges, classes, private tuition
Employment	Job listings, career advice, issues with local employers, unions
Entertainment	Music, films, television
Environment	Local issues, suggestions for green living

Communication Theme	Related Topics
Events	Get to know your neighbours events, games nights, dinner dances, group walks, tours
Family	Family friendly activities, parenting advice
Finance	Banks, lenders, advice, investment clubs
Government	Local, state and federal issues, advocacy, activism
Hobbies	Clubs, supplies, exhibitions, swapmeets, activities
Health, Wellness and Beauty	Fitness clubs, hair and beauty services, therapies
House and Garden	Home improvement, gardening, trade services
Legal Issues	Lawyers, advice, ongoing disputes, cases
Local Business	Listings, reviews, offers, coupons, home-based businesses
Local History	Museums, monuments, exhibitions, walks, tours, books, talks
Local Services	Listings, reviews, local council services, utilities
Lost and Found	Reports, requests for assistance
Medical Services	General practitioners, specialists, hospitals, dentists
People	Local figures, celebration of life events, feature neighbour
Pets	Veterinary services, pet stores, parks, training, clubs, accommodation
Photo Galleries	Pictures of the local area, its people and events
Public Spaces	Parks, playgrounds, squares, green spaces
Real Estate	Sales, real estate agents, open houses, homeowners' associations, property management, commercial property
Religion	Religious services, activities, meeting places
Roads and Traffic	Accidents, issues, parking
Shopping	Reviews, coupons, offers, specialty stores, sales
Sports and Recreation	Amateur teams, visiting teams, events, results, opportunities to participate, seeking players, walking and bicycle trails, impromptu games
Transportation	Public transport, timetables, issues
Travel and Tourism	Accommodation, suggested activities and routes, sights
Volunteering	Opportunities to support non-profit initiatives, requests for donations

Technology Layer

Analysis of the technological features of the 12 websites identified 57 key features that were subsequently organised into nine categories (Table 3). Table 3 contains only those features found in two or more of the selected websites. Features unique to a particular website or not found in any of the selected websites are mentioned in the discussion.

In the context of the examination of a local communicative ecology, one must question if these individual features, or certain combinations of these features, actually support or hinder social interaction and the exchange of everyday life information. The following section endeavours to elicit discussion as to why and in which cases these particular technological features should be selected for use in local community websites across various contexts.

TABLE 3. Interaction Design Features Identified in Selected Websites.

	backfence.com	baristanet.com	citysquares.com	digphilly.com	eneighbors.com	frontporchforum.com	h2otown.info	i-neighbors.org	outside.in	peuplede.fr	smalltown.com	yourhub.com
Membership and Identity												
Member profile		●	●	●	●	●	●	●	●	●	●	●
Portrait/avatar		●	●	●			●	●	●	●	●	●
Personal information disclosure management		●		●	●					●		
Location indicators		●	●	●	●	●		●	●	●	●	●
Relationship Management												
Friend list		●	●	●			●			●		
Neighbour list/resident directory		●	●		●			●	●	●		
Block user		●		●	●							
Social Interaction												
Invitations – internal				●				●		●		
Invitations – external	●					●	●	●		●		
Message exchange		●		●						●		●
Email exchange		●				●		●				
Interactive email lists						●		●				
Forums/discussion boards		●	●	●						●	●	
Groups		●		●	●					●		
Events listings/calendar	●	●	●	●	●		●	●		●	●	●
Support for organisation of offline gatherings					●					●		
Types of Media												
Text	●	●	●	●	●	●	●	●	●	●	●	●
Images	●	●	●	●			●	●	●	●	●	●
Video		●		●			●			●	●	●
Content Forms												
Blogs	●	●		●			●		●			●
Email newsletter	●		●	●	●				●	●	●	
Photo gallery	●			●				●			●	●
Maps	●	●	●	●					●	●	●	●
Repository for uploaded documents		●			●			●		●		
Classifieds	●	●		●	●					●	●	●
Coupons/vouchers			●	●							●	●
Advertisements	●	●	●	●	●	●	●			●	●	●
Business directory listings	●	●	●	●					●	●	●	●

	backfence.com	baristanet.com	citysquares.com	digphilly.com	eneighbors.com	frontporchforum.com	h2otown.info	i-neighbors.org	outside.in	peuplade.fr	smalltown.com	yourhub.com
Content-based Interaction												
Comments	•	•	•	•			•		•	•	•	•
Reply back	•										•	
Reviews/Ratings	•	•	•	•			•	•		•	•	•
Favourites	•		•	•					•		•	•
Contests/games		•		•			•	•			•	•
Search	•	•	•	•	•		•			•	•	•
Email export of content	•	•	•				•			•	•	•
Subject categories/tags (site-generated)	•		•	•			•				•	•
Printable documents								•		•	•	
Digital Lifestyle Integration												
RSS feed subscription	•	•		•			•		•	•		•
Embeddable buttons and widgets									•	•		
Social bookmarking			•									•
Email participation						•		•				
Management/Security												
Moderation		•			•	•				•		
Report misconduct	•		•		•			•		•	•	•
Support												
Help files/FAQs	•	•				•		•	•	•	•	•
Email support					•	•		•		•		
Video tutorials					•						•	•
Offline person-to-person help						•						•

Membership, Identity and Relationship Management

The most common feature for facilitating expression of user identity is a member profile with an accompanying portrait/avatar. While these profile forms are relatively uniform across the majority of sites, peuplade.fr takes the unique approach of facilitating users to develop a profile by answering their own choice of questions from an eclectic selection. Peuplade.fr's questions range from "Which businesses do you prefer in your neighbourhood?" to "If an angel offered you immortality, what would you do?" This more playful and varied approach results in increased personalisation and often highly entertaining profile pages. Only digphilly.com provides members with a richly featured, customisable home page. While customisation is an effective means of encouraging identity creation and self-expression amongst users, it can be taken to aesthetically displeasing extremes. Digphilly.com retains control of formatting in a similar way as to facebook.com, maintaining a clean design while still encouraging user creativity, in terms of content.

Five of the selected sites allow users to maintain a friend or buddy list. Digphilly.com provides the user with the ability to organise relationships into categories. Six sites facilitate users in the creation of a personal neighbour's list or provides a directory of residents. It is important to note that the sites providing a resident's directory that use real names rather than usernames, require a much more stringent registration process. For example, enighbors.com is intended for neighbourhood homeowner associations and restricts membership to people that appear on a current residents' list. Frontporchforum.com requires a real name and a valid residential address for registration and members are restricted to their particular neighbourhood's forum. The impact of the form of identification required,

and also displayed, by a website on an individual's privacy and sense of security is an important issue for further consideration as it may impact on a user's decision to participate.

None of the sites allow users to tag themselves with personal information, for example tennis or photography, so others with similar interests could locate them easily. Access logs, a feature that allows a user to see who has been viewing their profile and content, and status updates of friends' or neighbours' moods or activities, were also not found. While the ability to block users was a feature of three sites, none of the sites provided reputation indicators.

Due to recent advances in technologies that support pervasive locative media including mapping, geotagging and mobile geographical positioning systems (GPS), the location indicators used by these sites are likely to become increasingly sophisticated in the near future. Currently they are limited to text and 2D maps. A 3D map that takes into account the vertical dimension could be a useful addition for residents of high-rise apartments.

Social Interaction

While social interaction could easily be assumed to be of prime importance for neighbourhood websites, on the whole it is only weakly supported in comparison to the strong support provided for content-based interaction. Studies have suggested that community networks have the capacity to increase social ties and interaction both online and offline (Hampton and Wellman 2003; Wellman, Quan-Haase et al. 2003). It is crucial that the types of features that can most effectively support this aim are incorporated in their design.

The most common feature in this category is a calendar or events list. However, only two sites, *peuplade.fr* and *neighbors.com*, provide specific features to encourage the organisation of offline gatherings amongst members, including offering printable flyers to post in the local area and the ability to RSVP to events. This potential for offline social interaction is a major advantage for websites that are locally focused. People that meet online are also in a proximate location that enables them to meet face-to-face, and people that meet offline can have further social interaction online. Face-to-face contact remains an important criteria of friendship (Spencer and Pahl 2006).

None of these sites support synchronous communication, such as chat. The lack of presence indicators, with the exception of *baristanet.com*, appears congruent with the inability to communicate immediately with people currently online. Asynchronous communication is supported through message or email exchange, email lists and discussion boards. Invitations are supported by several sites and are an important feature to facilitate the integration of a user's existing offline social network. None of the sites support sharing of favourite content or websites, although *smalltown.com* does allow the user to send recommendations to other users.

Types of Media and Forms of Content

All sites support text-based contributions and the great majority also support images. Six sites support video-based content, but none of the sites permit the uploading of audio files. The most prevalent forms of content on these sites are advertising and business listings. This is not surprising as most are commercial sites and rely on income from these features. Sites with other income streams, such as *peuplade.fr*, which has local government and industry sponsors, and *i-neighbors.org*, which has research funding, have limited to no advertising. Eight sites have map-based content, intended to assist users in finding local businesses or so they can indicate their own location as part of their member profile. Approximately half the sites have classified advertisements, email newsletters, photo galleries and blog content. While some sites, for example *h2otown.info* and *digphilly.com*, facilitate onsite blogging, other sites, such as *outside.in*, draw content from users' blogs hosted offsite, potentially providing a cost saving while still encouraging user creativity. *I-neighbors.org* provides a facility for surveys and polls. None of the sites enable micro-blogging, similar to *twitter.com*.

Content-based Interaction

The most popular means of supporting user-interaction with site content are reviews and ratings, comments, search and the ability to email content items. The most common form of content organisation is subject categories determined by the site. Only *outside.in* supports user-generated content tags and only *smalltown.com* supports the linking of internal content by users. The use of folksonomies in local websites deserves further consideration as it has the potential to facilitate navigation of information, and further increase the meaningful nature and sociality of content (Vander Wal 2007).

Two under-utilised features are reply back, which notifies users when someone responds to a comment they have made, and follow topic, which delivers a feed of internal site content to the users' personal area of the site. None of the sites provide wiki spaces where users could collaboratively create and edit content. Both *peuplade.fr* and *i-neighbors.org* offer printable documents, including flyers and sign up sheets, to encourage residents to join the sites or attend offline events. One unique feature of *i-neighbors.org* is that it enables users to send faxes to their local political representatives, encouraging collective action at the local level.

Digital Lifestyle Integration

The selected sites provide minimal support for digital lifestyle integration features. Frequent users of the Web are usually members of several websites and may access these sites using multiple devices. Looking to the future, it will be increasingly important for neighbourhood websites to aim to integrate themselves into the users' existing online, distributed communicative ecology and digital lifestyle. Users are rapidly tiring of having to enter profile details and re-establish friend networks for every new social network site they join. In the current age of ubiquitous data, there are many interesting methods under development that will facilitate more seamless integration of data across sites, such as OpenID and microformats (Allsop 2007; OpenID Foundation 2007).

In this category, the only strongly supported feature was Really Simple Syndication (RSS) feeds (Hammersley 2003). Other features deserving further consideration include social bookmarking, represented in two sites, and address book import. Cross community displays could be supported through the provision of methods to embed content from other sites into the local site, for example the bookmarklet and geotagging tools provided by *outside.in*. Additionally, links and content that users can embed in other social networking websites or on their own blogs could be provided, for example the buttons and banners offered by *peuplade.fr*.

Cross platform compatibility allowing access from multiple devices, particularly mobile phones, is essential for an inclusive neighbourhood website. *Peuplade.fr* currently offers users the unique feature of being able to upload video messages from their mobile phone into certain areas of their site. Unfortunately, you must be a customer of the French SFR 3G mobile phone network with a compatible phone in order to participate.

Management/Security and Support

It is difficult to determine the actual moderation practices of these websites. Four of the sites express that they moderate content routinely. Seven sites give users the option to report misconduct. Giving the users power in this area appears sensible, as active moderation of a site can be expensive in terms of the time involved, unless volunteer moderators can be recruited. It also has the potential to increase members' sense of social ownership of the website and collective community efficacy (Kavanaugh, Reese et al. 2005).

While eight of the sites offered help or FAQ files of varying degrees of complexity, it was surprising to see that four offered members no help whatsoever. Most sites did not actively encourage questions regarding the site via email, although contact details were provided in all cases. Three sites offered brief video tutorials but none offered live online help via chat. Two sites offer person-to-person support. *Frontporchforum.com* designates a local resident as a neighbourhood volunteer who people can contact if they require help. It is also their duty to seed the forum with posts in order to stimulate discussion. Neighbourhood volunteers enjoy special status in their online community and participate in a meta social network of fellow volunteers where they can share ideas on building a successful and active neighbourhood network. *Yourhub.com* offers personal help via a web host on some of its local hubs. The web host is a local employee of the site owner, The Denver Newspaper Agency, who can be contacted via phone or email.

When a new technology initiative is implemented, it is important to consider whether or not it will perpetuate the access, skill or psychological digital divide (Lenhart, Horrigan et al. 2003; Hargittai 2005; Partridge 2006). Adequate context-appropriate support and educational opportunities should accompany the implementation of neighbourhood websites, as it is an important determinant of the degree of inclusiveness of the technology. The propinquity of the site's members offers opportunities to educate and empower a diverse user base that genuinely reflects all facets of a community. Unfortunately, while this is a priority of traditional community networks, for commercial community websites these services may be seen to cut into profit margins. However, this may be short-sighted, as they may attract even greater participation and loyalty through the support of community skill development programs.

Another method for increasing the inclusiveness of local community websites is to offer a print edition of selected content, for example, *yourhub.com* distributes a weekly print newspaper edition. *Peuplade.fr* users advertise local social gatherings via flyers and registration sheets posted in various locations including cafés and building

lobbies. An inclusive site could also offer a means by which community members can contribute content that originates in non-digital form. For example, they could tell a story through another person or have their artwork scanned at a local technology access centre and uploaded on to the neighbourhood website.

TOWARDS A COLLABORATIVE RESEARCH CULTURE

While many of the features of neighbourhood websites appear to be well suited to promoting social interaction within local communities, their value is yet to be confirmed by academic research. There is still much to be learned and many failures lay ahead. Transferability of our results between diverse local contexts amongst people of many sociocultural backgrounds with differing computer literacy levels, levels of motivation to participate and purposes, will always be problematic. However, we believe the more people interested in community networks and neighbourhood websites experiment and share their knowledge, the more effectively we can learn to create successful online experiences for our community members.

Both free and inexpensive tools have recently become available that enable moderately skilled Internet users to create their own niche social network sites. These are able to be used to experiment with interaction design features and engage community members in the participatory design of modern neighbourhood websites or the reconstruction of community networks. By far the most feature rich and simple to use of these is ning.com. [Crowdvine.com](http://crowdvine.com) is another platform that provides simple features such as profiles, blog posts and public messaging. It does not support rich media sharing, which may be advantageous for community projects relying on basic rather than high-end infrastructure. Hendrickson (2007) provides a comprehensive review and comparison of these services.

By suggesting experimentation with interaction design features, we are by no means advocating a technological cure-all for community network operators that fear competition from cutting-edge neighbourhood websites. The needs of the community must always be carefully considered before appropriate technologies can be selected. We also acknowledge that there are many other factors beyond design features that influence the success of a community network (Arnold, Gibbs et al. 2003). With this in mind, we strongly suggest careful examination of the communicative ecology into which a new neighbourhood website will be embedded prior to design and construction. Tacchi et al. (2003) provide an excellent set of resources to support this process. The framework presented in this study can then be used to guide the discussion and selection of the most appropriate set of communication themes and technological features for the individual community context. Templates and a discussion space to support this aim are available at urbanstring.com.

CONCLUSION

This paper has provided a starting point for discussion regarding the definition, purpose and key features of community networks today. Community networks and neighbourhood websites are similar in their intent to connect people that live in a defined geographical area, provide opportunities for residents to exchange essential everyday life information and participate in online social interaction. However, many emerging neighbourhood websites differ from community networks in terms of their core values or purpose. This leaves us with the question: should the established definition of community networks be expanded to include these emerging websites or should we aim to differentiate community networks from what we describe here as neighbourhood websites? A preliminary analytical framework has been presented to enable the comparison of key features of neighbourhood websites and community networks. This framework is intended to provide a toehold for interested parties to commence analysis and discussion around similar websites that operate in their own local contexts. In order to deepen understanding of neighbourhood websites and the local communicative ecologies in which they are embedded, we have made practical suggestions to involve local communities in content analysis, ethnographic action research and participatory web design (Tacchi et al., 2003). We invite you to share your own thoughts, discoveries and questions at urbanstring.com.

ACKNOWLEDGMENTS

This research was supported by the Queensland Government Department of Housing and the Australian Research Council's Discovery Projects funding scheme (project number DP0663854). The authors would like to thank Marcus

Foth, Greg Hearn and Larry Stillman, as well as our anonymous reviewers for valuable comments on earlier versions of this paper.

REFERENCES

- 944.com. (2007). "944life your clique here." Retrieved June 1, 2007, from <http://www.944.com/>.
- Agosto, D. and S. Hughes-Hassell (2005). "People, places, and questions: An investigation of the everyday life information-seeking behaviors of urban young adults." *Library and Information Science Research* 27: 141-163.
- Allsop, J. (2007). *Microformats: Empowering your markup for Web 2.0*. Berkeley, CA, Apress.
- Arnold, M., M. Gibbs, et al. (2003). *Intranets and local community: 'Yes, an intranet is all very well, but do we still get free beer and a barbeque? Communities and technologies*. M. Huysman. Amsterdam, Kluwer Academic Publishers: 185-204.
- Backfence Inc. (2007). "backfence.com." Retrieved June 1, 2007, from <http://backfence.com/>.
- Baristanet. (2007). "Baristanet." Retrieved June 1, 2007, from <http://www.baristanet.com/>.
- Button, A. (2007). "Urbanstring." Retrieved June 1, 2007, from <http://urbanstring.com>.
- Carroll, J. and M. Rosson (2001). Better home shopping or new democracy? Evaluating community network outcomes. SIGCHI Conference on Human Factors in Computing Systems. Seattle, ACM Press. 3: 372-379.
- Carroll, J. and M. Rosson (2003). "A trajectory for community networks." *The Information Society* 19: 381-393.
- Citysquares Online Inc. (2007). "Citysquares: Buy local." Retrieved June 1, 2007, from <http://www.citysquares.com/>.
- CrowdVine. (2007). "CrowdVine Social Networks." Retrieved June 1, 2007, from <http://www.crowdvine.com/home>.
- Denver Newspaper Agency. (2007). "Yourhub.com." Retrieved June 1, 2007, from <http://www.yourhub.com/>.
- Detroitcity.com. (2007). "Detroitcity.com." Retrieved June 1, 2007, from <http://www.detroitcity.com/>.
- deviantArt Inc. (2007). "deviantArt." Retrieved June 1, 2007, from <http://www.deviantart.com/>.
- digphilly.com. (2007). "digphilly." Retrieved June 1, 2007, from <http://digphilly.com/>.
- Donath, J. and D. Boyd (2004). "Public displays of connection." *BT Technology Journal* 22(4): 71-82.
- eNeighbors. (2007). "eNeighbours." Retrieved June 1, 2007, from <http://www.eneighbors.com>.
- Facebook. (2007). "Facebook." Retrieved June 1, 2007, from <http://www.facebook.com/>.
- Foth, M. (2006). "Analysing the factors influencing the successful design and uptake of interactive systems to support social networks in urban neighbourhoods." *International Journal of Technology and Human Interaction* 2(2).
- Foth, M. and G. Hearn (2007). "Networked Individualism of Urban Residents: Discovering the Communicative Ecology in Inner-City Apartment Complexes." *Information, Communication & Society* 10(5).
- Front Porch Forum. (2007). "Front Porch Forum." Retrieved June 1, 2007, from <http://frontporchforum.com/>.
- h2otown. (2007). "h2otown: Watertown's watercooler." Retrieved June 1, 2007, from <http://h2otown.info/>.
- Hammersley, B. (2003). *Content syndication with RSS*. Farnham, UK, O'Reilly.
- Hampton, K. and B. Wellman (2003). "Neighboring in Netville: How internet supports community and social capital in a wired suburb? ." *City and Community* 2(3).
- Hargittai, E. (2005). "Second level digital divide: differences in people's online skills." *First Monday* 7(4).
- Hearn, G. and M. Foth (2007). "Communicative ecologies: Editorial preface." *Electronic Journal of Communication* 17: 1-2.
- Hearn, G., J. Tacchi, et al. (2008, forthcoming). *Action research and new media: Concepts, methods and cases*. Cresskill, NJ, Hampton Press.
- Hendrickson, M. (2007). "Nine ways to build your own social network." Retrieved July 24, 2007, from <http://www.techcrunch.com/2007/07/24/9-ways-to-build-your-own-social-network/>.
- Hopkins, L. (2005). "Making a community network sustainable: The future of wired high rise." *The Information Society* 21: 379-384.
- Howe, J. (2007). Breaking the news. *Wired*. 15.08: 86-90.
- Julien, H. and D. Michels (2000). "Source selection among information seekers: Ideals and realities." *Canadian Journal of Library and Information Science* 25: 1-18.
- Kavanaugh, A., D. Reese, et al. (2005). "Weak ties in networked communities." *The Information Society* 21(2): 119-131.

- Lenhart, A., J. Horrigan, et al. (2003). The ever-shifting Internet population: A new look at Internet access and digital divide. Washington, DC, The Pew Internet and American Life Project.
- McKenzie, P. (2003). "A model of information practices in accounts of everyday life information seeking." *Journal of Documentation* 59: 19-40.
- Musser, J. (2007). *Web 2.0 principles and best practices*. Sebastopol, CA, O'Reilly Media.
- Ning Inc. (2007). "Ning." Retrieved June 1, 2007, from <http://www.ning.com/>.
- OpenID Foundation. (2007). "OpenID.net." Retrieved June 1, 2007, from <http://openid.net/>.
- Outside.in. (2007). "Outside.in." Retrieved June 1, 2007, from <http://outside.in>.
- Partridge, H. (2006). *Redefining the digital divide in the 'smart state'*. 13th Australasian World Wide Web Conference. Coffs Harbour, Australia.
- Savolainen, R. (1995). "Everyday life information seeking: Approaching information seeking in the context of "way of life"." *Library and Information Science Research* 17: 259-294.
- Schuler, D. (1994). "Community networks: Building a new participatory medium." *Communications of the ACM* 37(1): 38-51.
- Schuler, D. (1996). *New community networks : wired for change*. Reading, MA, Addison-Wesley.
- Schuler, D. (2001). "Community networking versus community networks: A short note on their interrelationships." *The Electronic Journal of Communication* 11(2).
- Smalltown Inc. (2007). "Smalltown." Retrieved June 1, 2007, from <http://www.smalltown.com/>.
- Spencer, L. and R. Pahl (2006). *Rethinking friendship: Hidden solidarities today*. Princeton, NJ, Princeton University Press.
- Tacchi, J., D. Slater, et al. (2003). *Ethnographic action research handbook*. New Delhi, UNESCO.
- TechCrunch. (2007). "TechCrunch." Retrieved June 1, 2007, from <http://www.techcrunch.com/>.
- Tremayne, M., Ed. (2007). *Blogging, citizenship, and the future of media*. London, Routledge.
- Twitter. (2007). "twitter." Retrieved June 1, 2007, from <http://twitter.com/>.
- University of Pennsylvania. (2007). "I-neighbors: Your neighborhood's home on the Internet." Retrieved June 1, 2007, from <http://i-neighbors.org/index.php>.
- Vander Wal, T. (2007). "Vanderwal.net: Folksonomy." Retrieved June 1, 2007, from <http://vanderwal.net/folksonomy.html>.
- Wellman, B., A. Quan-Haase, et al. (2003). "The social affordances of the Internet for networked individualism." *Journal of Computer-Mediated Communication* 8(3).