Examining Community in the Digital Neighborhood
Early Results from Canada's Wired Suburb[1]

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Abstract. Can supportive, sociable and meaningful relations be maintained online? Will life online replace, complement, or supplant life in the flesh? Netville is a residential development located in suburban Toronto equipped with a high-speed network as part of its design. The clustering of homes within this area allowed us to study the social networks, civic involvement, Internet use, and attitudes of residents. We are interested in how living in a residential community equipped with no cost, very high speed access to the Internet affects the kinds of interpersonal relations people have with coworkers, friends, relatives, and neighbors. This paper explores the research goals and methods used in the Netville project and introduces preliminary results on the effect of living in a new residential development equipped with no-cost, very high-speed access to the Internet on neighborhood social relations.

1   Introduction

A connected society is more than a populace joined through wires and computers. It's a society whose people are connected to each other. For the past two years we have been looking for community online and offline, locally and globally, in the wired suburban neighborhood of "Netville." We want to find out how living in a residential community equipped with no cost, very high speed access to the Internet affects the kinds of interpersonal relations people have with coworkers, friends, relatives, and neighbors.

Advances in personal computer technology, and the rise of computer mediated communication (CMC), have ignited a debate into the nature of community and the effects of cyberspace on social relations. Despite the breathless "presentism" of the current discourse [33], scholarly debate on the nature of community did not originate with the introduction of new computer technologies, but arose out of earlier concerns about the transition from agrarian to urban industrial societies [3] [23]. The discourse surrounding this debate has argued community to be *lost*, *saved*, and even *liberated* in the industrial city [26] [35]. The effect of new communication and information technologies on community and society is the latest chapter in this ongoing debate.

Early urban theorists[2] worried about the effects of urbanization on community just as modern dystopians suggest that the lure of new communication technologies will withdraw people from face-to-face contact and further disconnect them from their families and communities [7] [20]. Yet, several scenarios are possible, indeed each scenario may happen to different people or to the same person at different times. In an "information society" where work, leisure, and social ties are all maintained from within the "smart home," people could completely reject the need for social relationships based on physical location. They might find community online, or not at all, rather than on street corners or while visiting friends and relatives. New communication technologies may advance the home as a center for services that encourage a shift towards greater home-centeredness and privatization. At the same time the location of the technology in the home facilitates access to local relationships, suggesting that domestic relations may flourish, possibly at the expense of ties outside the household.

Whatever happens, new communication technologies are driving out the traditional belief that community can only be found locally. Cyberspace has enabled people to find each other through electronic mail (e-mail), group distribution lists, role-playing games, and Web chat rooms (the list is incomplete and obviously evolving). For more than one hundred years, researchers have confronted fears that community is falling apart by searching for it in localities: rural and urban villages. For the most part, their investigations have adhered to the traditional model of community as little groups of neighbors intensively socializing, supporting and controlling one another [31]. Since the 1970s, some of us have argued that community does not have to be local. It is the sociable, supportive, and identity-giving interactions that define community, and not the local space in which they might take place [22] [25].

We are not members of "little-box" societies who deal only with fellow members of the few groups to which we belong: at home, in our neighborhoods, workplaces, or in cyberspace [34]. Social ties vary in intensity, are multistranded, crosscutting, and

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[2] For example see Park (1925) and Wirth (1938).

diverse. They extend across our environment to kinship and friendship relations that traverse a variety of social settings and are maintained through a multiplicity of means that include direct physical contact, telephone, postal mail, and more recently fax, email, and online environments.

Our research has been guided by a desire to study community offline as well as online. We are interested in the totality of relationships in community ties and not just in behavior in one communication medium or locale. In this we differ from studies of "virtual community" that only look at relationships online[3] and from traditional sociological studies of in-person, neighborhood-based communities [10] [15] [37]. The former overemphasizes the prevalence of computer-only ties while the latter ignores the importance of transportation and communication in connecting community members over a distance. Unlike many studies of CMC that observe undergraduates in laboratory experiments,[4] we are keenly interested in studying people in real settings. We are taking into account their social characteristics (gender, socioeconomic status and the like), their social positions (prominence, power), and the broad nature of their participation in social networks. We wonder how the tie between A and B is affected by the presence of absence of their tie with C [28], and how their community involvement intersects with their institutional involvements (work, unions, church, bowling leagues, etc.) and their attitudes toward society (social trust, alienation, etc.) [19].

This paper looks at the research goals and methods of the Netville project and explores preliminary results on a subsection of the total social relations maintained by the residents of Netville, those within their local neighborhood.

2   Research Goals

The Netville project addresses the following questions:

1. Can supportive, sociable and meaningful relations be maintained online as they heretofore have in public (such as cafes, street corners) and private (such as homes, clubs).
2. How do online relationships articulate with offline relationships? Will life online replace, complement, or supplant life in the flesh? How do ties with the same persons incorporate online and offline relationships?
3. What will be the fate of community? Will it atrophy as people stay home to work, learn, and entertain themselves online? Will it foster new solidarities as people get drawn into compelling virtual communities? Will it encourage limited involvement in specialized, partial communities as people surf between interest groups?
4. Will the Internet amplify "glocalization": on the one hand, intensely local – indeed, domestic – involvement; on the other hand, wider ranging social ties maintained in part through computer-mediated communication?
5. Will the Internet encourage social integration and civic involvement? Will it foster social networks and transitive relationships ("friends of friends") that cut across group boundaries, build online institutions, and articulate pressing concerns?

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[3] see some of the chapters in Smith & Kollock, 1999
[4] see the review in Walther, et al., 1994

3   Netville: The Research Setting

Netville is a good place to investigate these questions. It is a newly-built development of approximately 120 homes, most with three or four bedrooms plus a study.[5] These are detached, closely-spaced, single-family homes in the outer suburbs of Toronto.[6] The typical Netville house, 2,000 square feet on a 40 foot lot, costs about CDN$228,000 in 1997 (US$171,000). The price is 7 percent less than the average price in 1997 for a new home in the same area[7], or 13 percent less than the fourth-quarter median for the Metropolitan Toronto new-home market [2]. Netville is similar to other developments in the area and is in an area of rapid population growth and home construction.

Netville looks like many other developments except that as you enter you pass a chuckwagon[8] with the saying "Canada's First Interactive New Home Community, *Welcome Pioneers*" written across it's canvas. It is one of the few developments in North America where all of its homes were equipped from the start with a series of advanced communication technologies supplied across a high-bandwidth local network. For two years the local network provided residents with high speed Internet access (including electronic mail and Web surfing), computer-desktop videophone (but only within Netville), an online jukebox, a number of entertainment applications, online health services, and local discussion forums, all provided free of charge.[9] In return for all of this free, very high-speed access to the information highway, the residents agreed to be studied by the corporate and nonprofit members of the "Magenta" consortium. This agreement was only lightly enforced and often forgotten by the residents. No resident was ever denied service for refusing to participate, and no data were ever collected without the residents' knowledge.

Netville's local network is a dual hybrid fiber coax technology with an ATM (asynchronous transfer mode) backbone. A coaxial cable drop wire from a coax node was brought into the home where it connects to a PCCU (Personal Computer Connection Unit) located in the basement. The PCCU connected a minimum of five computer ports within each home to the local network. Unfortunately the PCCUs installed in homes were limited in that they only allowed one household port to connect to the local network at a time. A substantial number of households installed independent software, or rigged up internal networks, to circumvent this limitation. Users could reliably expect a bit rate of 16.96 Mbps upstream and 13.57 Mbps downstream across the network. The Magenta consortium provided computer and

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[5] To protect privacy, "Netville" is a pseudonym as is the "Magenta" consortium. The final number of homes is in flux as new ones continue to be built.

[6] Quite "outer": It takes an hour to drive to downtown Toronto without traffic; two hours during rush hour. This may have increased the attractiveness of using computer-mediated communication with friends, relatives and coworkers living in the main centers of Toronto.

[7] Based on unpublished data provided by the Canadian Mortgage and Housing Corporation, 1999.

[8] The chuckwagon was a covered wagon used on long journeys as a frontier kitchen on wheels by early homesteaders of the Canadian and American west.

[9] In addition to the free services, approximately 20 percent of residents purchased additional in-home computer-based technologies, such as: within-household networks, advanced home security systems, and "smart home" technologies.

software support and the major telecommunications member of the consortium staffed 24-hour help lines to support the network.

As technology developed and fashions changed, the telecommunications company responsible for the network decided that the hybrid fiber coax technology used in the development was not the future of residential Internet services. As the telco viewed Netville as a site for technical rather than social research[10] they terminated the field trial early in 1999 to the dismay of the residents who had grown to love the system and assumed it would be there indefinitely [13].

The people living in Netville are largely lower-middle class, English-speaking, and married. About half have completed a university degree [11]. Some are first-time home owners, others were looking for a convenient suburban home, while some were attracted by life in a wired suburb. Those with older children often moved to Netville from a nearby suburb and plan to remain there for the foreseeable future. Those in the early stages of raising a family have less settled plans. More than half of all couples had children living at home when they moved into the community, but as with most newly occupied suburbs a baby boom has since ensued. Most are white, but an appreciable number are racial and ethnic minorities. However, race and ethnicity is less an organizing factor in Netville than lifestyle, stage in the life-cycle, and to a lesser extent socioeconomic status. Residents work at such jobs as technician, teacher, police officer, and small business person. Their median household income in 1997 was CDN$75,000 (US$50,000).

Only a minority of Netville residents were experienced with technology when they moved in. Yet these families are somewhat more involved with home technology than most Canadians. Seventy-eight percent had a personal computer in their homes prior to moving to Netville, as compared to 57 percent of Canadians in 1997 [4]. The great majority of Netville homes have more than one television, own a videocassette recorder, and own a compact disc player: these rates are higher than the Canadian average [11].

Approximately 65 percent of Netville homes participated in the high bandwidth trial and had access to the network for up to two years. To our surprise, the other 35 percent of households were either unable, or unwilling, to participate in the trial despite the no-cost, low-fuss manner in which equipment and service were provided. These households provide a convenient comparison group for studying the effects of computer-mediated communication.

4   Research Design

Our research objectives led us to gather information about the residents' community ties online and offline, globally and locally. We have concentrated on learning about residents' interactions within Netville, personal networks (which extend well beyond Netville), civic involvement, Internet use, and individual attitudes. We have relied on a variety of research methods to increase the validity and reliability of our research

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[10] To our dismay, and surprise, we could never interest the engineering-driven arm of the telco responsible for this experiment to see this as a window into how people would use technology of the future.

including ethnographic observation, surveys, monitoring an online community forum, and focus groups.

4.1 Ethnographic Observation

Netville's small and compact area made it feasible and desirable to live in the research setting. In April 1997, one of us, Keith Hampton, began participating in local activities (community barbecues, meetings, etc.,). Hampton moved into Netville in October 1997 (living in a resident's basement apartment) for a stay that extended until August 1999. He identified himself to all residents he encountered informally and in groups as a student and researcher interested in Netville. Given the widespread public interest in Netville, residents were not surprised about his activity. They treated him kindly and respected his decision to live in Netville as a full participant.

Hampton worked from home, participated in online activities, attended all possible local meetings (formal and informal), walked the neighborhood chatting, and completed a community ethnography similar to that of Gans (1967) in the New Jersey suburb of Levittown. Observations of the day-to-day experiences of the community provided details about how residents used the available technology, information about local social networks, information about domestic and neighborhood relations, and details of the residents' use of time and local space.

Survey data is useful in tapping information on individual behavior, preferences, and opinions. Yet, the ethnographic observations tell much of Netville's story. The ethnography serves as a record of the group perspective, not in the aggregate reporting of statistics, but in a contextual historical account of the day-to-day events and activities of local residents. The ability to have a participant observer physically present in Netville provided first hand access to information that would have been difficult to collect through surveys, or it would have gone unreported, unobserved and unquestioned during surveys or through the online forums.

For example, residents frequently talked online about burglaries in the community: who was robbed, who witnessed what on the night of the burglary, and future plans for prevention. When a suspicious fire burned down a house one week before its new occupants were scheduled to take possession, nothing related to the fire was ever discussed online. Over the following days, when residents were approached by Hampton on the street, they each recounted a similar story surrounding the house fire, revealing a network of community information that existed externally to the online forum. Residents also wondered why the fire was never discussed online: We believe that it would have crossed an invisible line between the provision of support and aid and community gossip. The online forum was almost exclusively used for the search and provision of various types of support. Since the owners of the burnt-out home were not yet community residents they were not members of the local email list and could not benefit from online offers of support. This suggests that Netville's email list goes a long way in meeting expectations for increasing local support and interaction, but may avoid the sometimes repressive nature of local gossip.

Netville was damaged by a major storm in June 1998 that caused power outages and the shutdown of the local network. Residents mobilized offline, when in the past similar activity had largely been achieved online, to check on the safety of their neighbors and their property, as a series of car prowlings and attempted burglaries were discovered from the same night. Community cliques and organizers were

identified. These were based on geography and not on the friendship and interest groups observed online. The observation of, and participation in, mutual support and cooperative strategies in face of what was a relatively small scale disaster revealed the seeds and context to how residents would react to future problems.

The opportunity to conduct a detailed ethnography provided a unique source of information and played a key role in developing rapport with participants. The insights gained through observation and daily interaction were instrumental in developing the kinds of questions asked in our surveys. Moreover, Hampton's visibility and credibility in Netville were vital to convincing many residents to take time from their busy lives to respond to our survey.

Hampton's relationship to community participants became particularly important when the field trial ended. Although most residents were angry at the telco partner and Magenta, because Hampton was a Netville resident – and subject to the same loss of high-speed service – our research was able to continue. Residents continued to be interviewed, and our research goals took on an additional dimension as we studied how residents responded to the threat, and subsequent fact, of the loss of their high-speed service.

4.2   Surveys

Our survey obtained information on geographic perception, personal and neighborhood networks, neighboring, community alienation, social trust, work, experience with technology, time-use, and basic demographics. Learning about the residents' social networks – in Netville and outside of it – is a central concern. It is the nature of these networks that will show if personal communities are abundant, strong, solidary-fragmented, and local-nonlocal. Hence the survey used modified versions of social network protocols used by Wellman in earlier research [27].

To obtain information about network ties within Netville, we presented residents with a list of up to 271 adult residents of Netville, asking them "do you recognize this person?" [5]. In addition to asking whom they recognized we were able to collect more detailed information on each name selected, such as: if they socialized, how often they socialized, and how they kept in touch. Reaction to this question type was very positive, almost all seemed to enjoy the exercise, and many reported how interesting they found the question type [12].

To elicit information about socially close members of the residents' personal networks, wherever they live, residents were presented with thirteen "name-generator questions" [6] [27] [1]. For each question, respondents were asked to provide a list of names, using only first names and last initials to create a sense of anonymity and reduce any fear that we would attempt to contact those people listed. There was no limit on the total number of names that a respondent could provide. Once respondents listed names, the survey software created a master list of all the people listed and asked for more detailed information on each member of the personal network: demographics, where and how they met, how often they communicated, and through what means.[11]

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[11] For a complete discussion on social network questions and the use of computer assisted interviewing (CAI) in the Netville project see Hampton, 1999.

The survey was launched in April, 1998 with intentions to administer the survey to all household members 18 years of age or older during both a pre-move and post-move interview. The pre-move survey was to be administered approximately three months prior to moving into Netville, and the post-move survey approximately one year after living in the community. An adapted version of the pre-move survey was to be administered to all residents who had moved into Netville before they could be contacted for a pre-move survey. Unfortunately, we were forced to move from a pretest-posttest survey design to a single cross-sectional survey of people already living in Netville. There were a series of construction problems, and the telco partner unexpectedly announced plans to withdraw from the field trial and discontinue supplying Netville with access to the high-speed local network. The discovery that a sizeable minority of homes were not connected to the network made comparative analysis possible and the loss of longitudinal information more palatable. We modified the survey for use with people already living in Netville and continued interviewing.

When the Magenta consortium and the telco partner publicly announced the end of the experiment, Netville residents quickly mobilized and used their networked connectivity in an unsuccessful attempt to obtain the continuation of the field trial. Netville residents did not become complete technological have-nots when the trial ended. They are using 56Kb dial-up service (provided free for six months by the telco partner), waiting and hoping for ADSL service, or they have signed up with the high-speed "@Home" cable modem service. This means that a few interviews undertaken in 1999 are more retrospective than is usual in survey research, reporting about past experiences with the local network as well as their continued experience with high-speed Internet access via the @Home network.

As all of our surveying has been computer assisted, data preparation for statistical analysis largely avoids the data entry phase. *SAS* and *SPSS* are being used for statistical analysis, including special procedures developed by our group for personal network analysis [29] [17].

In an ideal situation it would be appropriate to collect survey data at least twice, pre and post-move. Given the potential complications of doing research in a setting with many factors beyond the immediate control of the research team it may only be possible, and indeed prudent, to complete one wave of surveys over as short period of time as possible. In the end, we were able to interview a cross-section of residents, including a small number of people who "intended" to move into Netville but never did, in addition to those who had lived in the community for up to two years and had access to the high-speed network for none to two years.

4.3   Focus Groups and Monitoring of the Online Community Forum

As ethnographic observation and surveying have taken the bulk of our time and attention, here we briefly review two other data gathering techniques.

Online Community Forum: The community email list has been one of the more detailed and revealing sources of information. All Netville residents participating in the field trial were automatically subscribed to it. The list provided information on community activities, social networks, the provision of local support and aid, and proved to be a forum for community issues. The list was publicly available to Netville residents and messages were easily recorded without interfering with residents'

activities. Since the list was publicly available, and participating residents agreed to have their online activities monitored in exchange for access to the local network, there are few privacy issues beyond protecting the identity of participants in publications. The content of these forums has been completely saved and will be analyzed using *Nud.ist* textual analysis software.[12]

Focus Groups: Focus groups were held by Magenta every six months starting in June, 1997. These groups discussed the challenges of living in a wired suburb, experiences with available technologies and services, and expectations for future technologies and services. Although aimed primarily at future planning for members of the Magenta consortium, the focus groups gave us opportunities to meet small numbers of residents, build rapport, and clarify information obtained through surveys and ethnographic observation. In March 1999 we interviewed key members of the Magenta consortium including the developer, the head of the consortium, and various trial managers.

5   Preliminary Results

Despite the availability of local ties, the majority of all active social relations are with those outside of the local area. In North America neighborhood relations typically represent less than one quarter of all active social ties [6] [32]. North Americans typically know about a dozen of their neighbors well enough to speak with them (usually on the street), but few know more than one neighbor well enough to consider them among their closest social ties [26] [30] [32]. The reasons for this lack of social contact at the local level are not directly associated with a loss of civic society or a decrease in community involvement. Rather, propinquity is a limited factor in determining friendship formation. People are much more likely to associate with those that are more like themselves in terms of lifestyle, stage in the lifecycle, beliefs, and participation in common activities, than what can be easily found through physical availability.

The car, telephone, and airplane are indispensable in the maintenance of contemporary social relations and in the provision of most companionship and emotional aid. Yet, despite the extent to which contemporary relationships have overcome the limitations of space, physical proximity still plays some role in the formation of social ties. Physical access promotes the sharing of small and large services, such as household items, aid in dealing with organizations, and help with housework and repairs [36]. Neighborhood relations are particularly important during the early stages of settling into a new housing development [6] [8] [9] [16].

When residents first move into a new residential development, the only thing that they knowingly share is that they have all chosen to settle in the same neighborhood. As a result physical closeness becomes the easiest and most available method for the formation of social contacts. Since all residents share the experience of being both

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[12] Although technically feasible, because of ethical concerns and because we feared it would upset the residents, we did not monitor private email messages within Netville or from Netville residents to members of their personal communities living outside of the neighborhood.

strangers and new home owners, they are likely to develop social contact with everyone who is easily accessible [9]. It is at this time that the location of front doors, kitchen windows, and porches help determine who is most accessible and with whom people are likely to develop early social contact. As relationships develop, the extent to which neighbors share common characteristics becomes more apparent and people are able to choose the degree of social closeness they wish to maintain in each relationship. As time progresses, children start new schools, people join organizations, and through a variety of different social settings people find others more like themselves to form lasting social relations outside of the local area. Gans (1968) suggests that the process of selecting neighbors for stronger social relations, from those with whom one will eventually only become "neighborly" (i.e., say or wave "hello" on the street), is typically completed within three months of social contact. Regardless, as time progresses, local spatial patterns become less important for friendship formation [16].
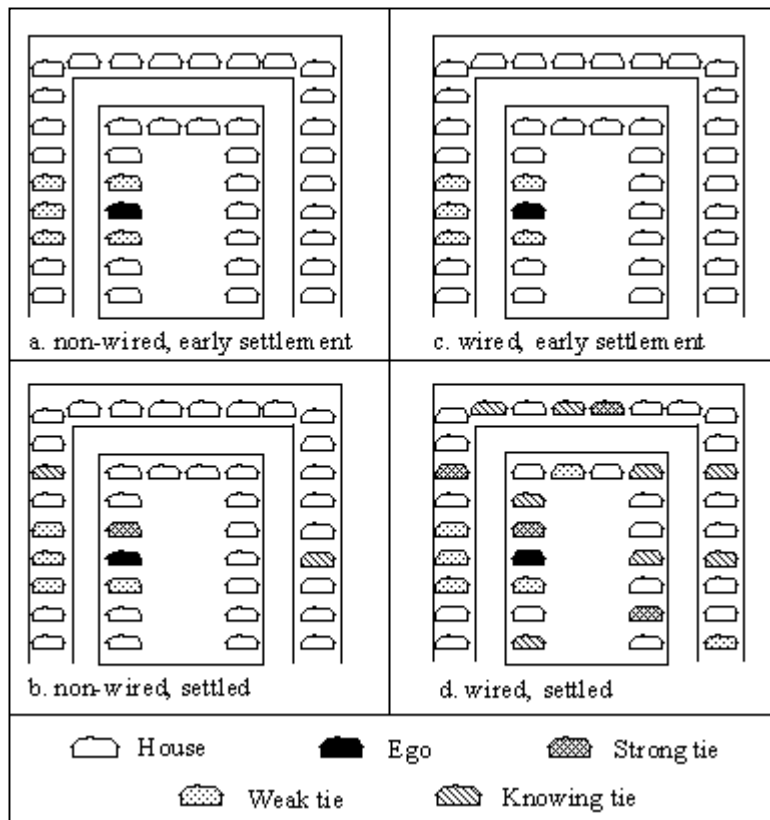

Fig. 1. Comparison of social tie formation in a newly built non-wired housing development to social tie formation in a newly built "wired" development.

Figure 1 is an example of how the formation of social relationships in Netville differs from relationships formed in traditional non-wired housing developments.

Figure 1a depicts a hypothetical example of how early social relations might form in a newly settled non-wired residential development. Social contact is with those who are most easily available and the strength of the social relation is relatively weak, based on the recency of tie formation. Figure 1b depicts social relations in the same non-wired setting at a time period greater than three months from that depicted in Figure 1a. At this time social relations in the immediate area vary in strength, extending to no more than the twelve houses in the immediate proximity to the home, and almost never extend around corners, or to the other side of the block [8] [9] [16]. Figure 1b also introduces a new type of social relationship, the "knowing tie." Knowing ties can be described as those people with whom you have never experienced any direct social contact, but yet you have some specific knowledge of their personal characteristics. Possible examples include knowledge, through information provided by another neighbor or through observation, of a neighbor's occupation or hobbies.

Figure 1c and Figure 1d are examples of the pattern of social relations found in Netville based on ethnographic observation, analysis of the community email list, and preliminary analysis of the network of neighborhood social ties. Figure 1c is identical to the initial stage of social contact found in the non-wired development. However, there are significant differences between what has been observed in Netville (Figure 1d) and what is typically observed in non-wired developments (Figure 1b). There are a greater number of strong ties, weak ties, and knowing ties within Netville. Social contact is no longer limited through accessibility, but extends around corners and to the other side of the block.

Table 1. Number of Netville residents recognised by name and socialized with depending on whether the respondent was connected to the high-speed network.

	Mean	S.D.	Min.	Max.
Number of people residents recognize by name in Netville:				
Wired	26.7	19.1	4	91
Non-wired	9.4	4.9	3	19
Number of Netville residents people talk to on a regular bases:				
Wired	6.8	7.3	0	38
Non-wired	3.7	3.3	0	11
Number of residents who have invited other Netville residents into their home in the past six months:				
Wired	4.1	4.3	0	16
Non-wired	2.9	3.0	0	10
Number of residents who have been invited into the home of another Netville resident in the past six months:				
Wired	4.1	3.7	0	18
Non-wired	2.7	2.9	0	10

Table 1 summarizes the difference between Netville residents who were connected to the high-speed network and those who were not, in terms of the number of Netville

residents that they recognize and socialize with.[13] Wired residents recognize almost three times as many neighbors, talk with nearly twice as many, and have been invited, and have invited, one and a half times as many neighbors into their home in comparison to their non-wired counterparts. These results suggest that there is something significantly different about wired Netville residents that makes them more likely to have a greater number of local social contacts, of various strengths, that aremore widely spread across the local area. These results are consistent with the following comments from Netville's community email list:

"I have walked around the neighborhood a lot lately and I have noticed a few things. I have noticed neighbors talking to each other like they have been friends for a long time. I have noticed a closeness that you don't see in many communities."

"I would love to see us have a continuation of the closeness that many of us have with each other, even on a very superficial level. Do not lose it, we know each other on a first name basis:"

"If this had been a regular subdivision no doubt I would know my neighbors but I would not know those of you around the corner and down the road"

One possible explanation for the higher levels of social interaction among Netville residents connected to the high-speed network is that they were somehow friendlier, or more community orientated, when they moved into Netville than those who were never connected to the network. However, this seems unlikely as everyone who moved into Netville had the same expectation of being connected to the network. There was no preset method in selecting who would, and would not, be connected to the network. Failure to connect all residents to the network was a result of organizational problems internal to the Magenta consortium. A more likely explanation is that there was something about being connected to the network that contributed to greater social contact. One possibility is the use of the community email list.

The community email list served a number of purposes in the community including early introductions, invitations to social events, the sharing of information on local services and organizations, and providing a forum for mobilization against the developer and eventually the Magenta consortium [13]. Preliminary analysis of the first ten months of email messages sent over the community list revealed that 80 percent of all messages dealt either with local activities or local support, 21 percent were requests for some type of aid or support, 21 percent involved selling items or services from the home, 19 percent were messages believed to contain information of a common local concern, 10 percent were offers of aid or support, and 7 percent were aimed at forming local activities [11].[14] In addition a number of smaller personal distribution lists were created allowing clusters within the community to maintain discussions about specific interests. The email list increased levels of communication, improved knowledge of each other (for example, occupations, hobbies, and individual

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[13] Note: Numbers reported in Table 1 represent preliminary findings and should be considered approximate until more detailed analysis can be performed.

[14] The discussion list was created in July 1997 and continues to be used as of this paper.

backgrounds), and increased the speed at which residents could mobilize to counter perceived threats.

The success of the community network and the local discussion list in encouraging social contact within Netville does not necessarily mean that the introduction of a similar technology in other neighborhoods will always increase social contact.[15] Netville is a unique situation in that it was a trial of a new high bandwidth technology, it was provided free of charge, and it was part of a new housing development. Existing neighborhoods have existing communication patterns and consist of individuals with established social networks. People have a limited amount of time to spend in social contact with others in a given day. If established social networks and existing means of communication provide much of the companionship, aid, and support individuals need, there is little incentive to divert time and energy towards new and less certain means of maintaining and forming these ties. The same can be said about any "virtual community," that unless it fills some missing need in the lives of the intended user group, it is unlikely that it will meet with expectations for high levels of social interaction.

6   Conclusion

This paper has focused on an introduction to the methodologies used in the Netville project and briefly explores some preliminary results. Key to the methodology behind this project has been the use of multiple data collection methods to increase the reliability and validity of our results. The use of surveys, an ethnography, online records and focus groups enabled us to clarify and refine our data continuously, as well as to collect the best information possible, given the evolving nature of our field site.

In studying community, on or offline, it is imperative to recognize that community does not have to be local, but that it is the sociable and supportive aspect of interaction that defines community and not the local space in which interaction may take place. It must be recognized that relationships extend beyond the neighborhood and include a personal network of friends, relatives, and coworkers that can extend across the city or around the world. Similarly, the study of virtual communities should not be limited to interactions that take place in that setting, but should look at how these interactions fit into the entire set of social ties that make up the multiple communities in which most of us are involved. That said, it is important to realize in assessing our early results that we have yet to analyze the social networks of Netville residents that extend beyond the local setting or into the very local setting of the household. How does the maintenance of a greater number of local social contacts affect relations with other network members? How does the availability of free, very high-speed, Internet access affect how people maintain ties with social network members?

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[15] Netville received much publicity. The publicity and the intrinsic sense of being involved in an innovative use of technology may have made some residents susceptible to the "Hawthorne effect": people self-consciously modifying their behavior on account of their being studied. Fieldwork suggests that only a small number of residents may have been affected in this way.

Preliminary analysis suggests that the Internet supports a variety of social ties, strong and weak, instrumental, emotional, social and affiliative. Relationships are rarely maintained through computer-mediated communication alone, but are sustained through a combination of online and offline interactions. Despite the ability of the Internet to serve as a global communication technology, much online activity is between people who live (or work) near each other, often in Netville itself. In Netville, the local network brought neighbors together to socialize, helped them to arrange in-person get-togethers – both as couples and as larger groups (barbecues, etc.) – facilitated the provision of aid, and enabled the easy exchange of information about dealing with the developer. The high rate of online activity led to increased local awareness, high rates of in-person activity, and to rapid political mobilization at the end of the field trial. The extent to which the use of no cost, very high-speed access to the Internet influenced the personal networks of Netville residents remains to be explored in more detail.

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