

Digital communication technology use in a spatially distributed interest network

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ABSTRACT

This paper discusses the digital literacy of and the communication technologies used to sustain and generate a global social interest network. Keys to the findings of the work are: the high computational skill base found within this particular network; the pervasive use of digital communication technologies; and the multifaceted integration of these communication modes with pre-existing technologies and face to face interactions. The digital literacy and social imprint of this particular social form indicates: the potential diversity and volume of online behaviours practiced; the balance of mundane technology use within the network across the spatial boundaries of home, work, and in-between places that generate synchronicity requirements of the technologies themselves; and the social reach of the respondents across the mosaic interconnections of mundane technologies in everyday life.

General Terms

Human Factors, Theory

Keywords

Digital literacy, spatially distributed social network, information communication technologies.

1. INTRODUCTION

This paper discusses the communication technology skill base, access patterns and social reach of survey respondents within a particular spatially distributed social interest network. This network is representative of the new forms of social organization characteristic of contemporary social life that are augmenting practices of community maintenance (Touraine 2003, Wellman 2001). This particular network is characterized by constellations of mundane communication technologies that sustain and develop the transmission of knowledge, social capital and sociability across the three domains of social cohesion that incorporate multi-scalar experiences of time, space and communal form. The digital literacy (Hargittai 2005) and social imprint of the respondent population across these constellations indicate: the potential diversity and volume of online behaviours practiced; the balance of mundane technology use within the network across the spatial boundaries of home, work, and in-between places that generate synchronicity requirements of the technologies themselves; and the social reach of the respondents across the network. A discussion of these aspects of this interest network supports a larger ethnographic and empirical study that models the three domains of social cohesion (ego-relations, group level interactions and macro social structures) across these new communal practices.

2. METHODS

The data was collected from an online survey conducted during August to September 2006. This survey targeted people with herpetological interests (a range of involvement types relating to interests in reptiles and amphibians) around the world. 1602 responses were received from 47 countries and all data is non-random. All percentages used in this paper are valid percents. In the section of the survey relevant to this particular presentation, participants were asked to self report on their years of internet use, their hours online, their internet user skill levels, and where and what type of internet connection they use. In addition to this, a further section asked for the number of people that they had contacted in the preceding week through a variety of communication media. In particular reference to this social form, participants were also asked to indicate if they maintained their own herpetological website. See questions in section 6.

3. RESULTS

3.1 Univariate analysis

3.1.1 Years of internet use

Hargittai (2005) argues that the years online that a user has experienced is directly correlated with their digital literacy. It is this literacy that the respondent brings to the generation of and social participation within the social form under characterization. The years of internet use for the respondent population are best described through either the median of 9 years or the mode of 10 years (SD=3.79). This indicates the thorough embedding of the internet through these users into the social form. It is therefore an established communicative and information seeking technology within this interest network.

3.1.2 Hours online in a 7 day week.

This question assesses the average amount of time that a member of the respondent population spent online in the week of the survey. Hargittai (2005) argues that this is an indication of conversance with the online environment (their digital literacy). The average hours online in the period investigated is bi-modal and is therefore best described through the bi-modal peaks of 10 hours (11.8%, n=177) and 20 hours per 7 day week (10.8%, n=162). Within this frame of online time use, the diversity of virtual domains utilized by this population becomes an indicator of the depth of access and diversity of online behaviours that the respondent population has the capability of experiencing. This is evidenced by the over 1000 discrete websites utilised (with a modal average of 3 websites used per respondent, email use by 83.7% (n=1228), other internet communication platforms

(74.7%, n=1067), and personal website maintenance (26%, n=404).

3.1.3 Self-assessed internet skill level

This question relates to the skill level or level of conversance that the user approaches the internet resources available to this interest network. Like the previous two digital literacy measures, it relates directly to the capabilities of the respondent population to participate and generate a social form through the digital environment. Self-assessed Internet skill use levels have a mean of 3.55 (SD=0.84), (which is between fairly skilled (3) and very skilled (4)) in comparison to the Hargittai (2005) study mean of 2.88 (SD = 0.73). To provide a further insight into this data, over 80% of the respondent population had good internet use skills [fairly skilled (42.9%, n=654), very skilled (36.3%, n=567), expert (13.7%, n=214)].

3.1.4 Internet access locations

This question discusses where people log on to the internet (where their computer terminal is physically located) and what access speed they have. Access speed is a direct correlate to the diversity and volume of activities undertaken online (Horrigan & Raine 2002). Physical location indicates the dispersion of the computer terminal into the spatial behaviour patterns of the respondent; and thus the spatial reach of this network in its interactions between the virtual content and physical world infrastructure. Just about all of the response population had internet access at home (99%, n=1483) and over 80% of the population (88%, n=1033) had internet access in the workplace. Other locations of internet access were utilized by the 10.1% (n=59) of the respondent population. The large drop off in respondent numbers to this question indicates that such 'in-between' spatial internet use is vastly less prevalent. ADSL/Cable broadband is the main form of connection in the home (61.1%, n=915) and either ADSL (36.6%, n=430) or a LAN Ethernet (30%, n=352) in the workplace. The in-between spaces were mostly characterized by highspeed access (57.4%, n=336) with the highest percentage of wireless access (26.8, n=157) in terms of spatial location access. This allows for the possibility of mobile access locations such as wireless hotspots to play a role in the virtual-spatial experience of the network. Overall these results suggest that the respondent population accesses high speed internet largely in the home, but also at a significant level at work and a small group also does so in 'in-between' spaces.

While connection in these spaces is moving towards being 'always on', it is likely the virtual domain is characterized by a mosaic of temporal rhythm patterns of use dictated by the lifestyle behaviours (around work, home, family and leisure pursuits) and geographic time-zones of the globally distributed population. This re-enforces the demand for communication platforms to be both synchronous and asynchronous. The following section details the prevalence of these platforms across this particular network.

3.1.5 Modes of social contact

This question discusses the media of communication practiced within the respondent population and indicates the integrated communication pathways across which information, social capital and sociability flows over the social network.

3.1.5.1 Face to face

The weekly face to face interaction within the interest network is on a small scale with a mode of 1-2 people (42.8%, n=628 SD=2.76) and 63.8% of the respondent population (n=937) with 5 or fewer people. About one fifth of the population has no physical interaction with other members of this interest group (18.9%, n=277).

3.1.5.2 Landline telephone

Approximately half of the respondent population (48.6%, n=658) still used landline telephones to communicate with 5 or fewer people on a weekly basis, with the number being more likely to fall between 1-2 people (38.2%, n=517). Interestingly there was a substantially higher percentage of non-landline users (36%, n=487) than those who did not physically interact with others from this interest network.

3.1.5.3 Mobile phone

As with landline use, around a third of the population (32.5%, n=434) did not use mobile phones to contact other people within the interest network. The modal reach through this medium was 1-2 people per week however there were slightly more people contacting 3-5 people per week (14.3%, n=191) than through landlines. This may have something to do with the mobility and personal access features of the technology (Wellman 2001).

3.1.5.4 Email

83.7% (n=1228) of the population used email to contact others, with 52.2% (n=766) contacting 5 or fewer people weekly. It is significant however that greater numbers of people (between 6-10) are more regularly reached through this medium (15.5%, n=228). This is indicative of the technological environment in which the wider networks within this social form are cultivated.

3.1.5.5 Internet (not including email)

There are more people reached through other online platforms than through email, with the median being 10-15 people (SD=2.57) and about a fifth (17.8%, n=254) reaching over 20 people in the week. This demonstrates the wider social reach capacity of online communication platforms and also indicates the environment through which wider social contact is made within this social network.

3.1.6 Website maintenance

A quarter of the respondent population maintains a personal website (26%, n=404). This is in contrast to data where the respondent population indicated 93 discrete personal homepages were used (out of the 1000 discrete websites curated). These websites were listed 284 times out of the 5100 listing of sites used by the respondent population. This indicates that the respondent population is characterized by active social profile creation in line with the high internet skill conversance of the respondent population.

4. Conclusion

The digital literacy of the respondent population is high and this appears to provide a foundation for the spatial distribution of the network across multiple modes of physical and digital interactions. The social reach of this population is skewed towards small-scale physical interactions with a broader population reach online. This directly indicates the active presence and maintenance of a spatially distributed

social network that is substantially embedded in a digital environment.

5. REFERENCES

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6. Survey questions

6.1.1 Digital literacy

Q. How long ago did you start accessing the internet?

Q. In the last 7 days, how many hours did you spend on the internet?

Q. In terms of your Internet skills, how skilled do you consider yourself to be?

The above three questions were drawn from the measures recommended by Ezsther Hargittai (2005) in her work on the measurement of digital literacy for the GSS 2000, 2002.

6.1.2 Digital Social imprint

Q. Where and how do you access the internet?

At home, At work.

Q.22: In the last 7 days, approximately how many people did you contact about herpetological subjects using the following means of communication?

Face to Face, Fixed Landline telephone, Mobile phone, Email, Over the Internet

Q. Do you maintain a herpetological webpage?