



Virtual Communities and Society: Toward an Integrative Three Phase Model

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Virtual communities are groups of people who communicate with each other via electronic media and are a relatively new phenomenon. Despite the short time that virtual communities have been in existence, they have been attracting much attention by researchers. The purpose of this paper is to review the theoretical and empirical work that has been conducted in relation to virtual communities in society, using it as a basis for an integrative three phase Virtual Communities in Society model. Following a short introduction which deals with some issues of categorization and definition, the paper proceeds to discuss the three building blocks of the proposed model, including: (1) variables that *affect* individuals' decision to join virtual communities; (2) variables that explain how members of virtual communities *affect* their immediate environment; and (3) variables that describe how virtual communities are *transforming* society. The paper is concluded with suggestions for possible future extensions and empirical testing of the model. © 1997 Elsevier Science Ltd

Introduction

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The term "virtual communities", which refers to groups of people who communicate with each other via electronic media, is relatively new, describing an emerging and not yet well defined social phenomenon. Despite the short time that virtual communities have been in existence, it is, however, already possible to identify several central research themes that have attracted significant attention by scholars.

The objective of this paper is to use the major themes in the literature as a basis for a comprehensive model which conceptualizes the relationship between virtual communities and society. In the first section of this paper we deal with some issues of categorization and definition. The paper describes three types of variables which characterize the major stages in the life cycle of virtual communities. The three types of variables are: (1) variables that **affect** individuals' decision to join virtual communities; (2) variables that explain how members of virtual communities **affect** their immediate environment; and (3) variables that describe how virtual communities are **transforming** society. The three types of variables are combined to form the proposed Virtual Communities and Society model. The paper is concluded with suggestions for possible extensions and empirical testing of the model.

¹Rice, R. E., Communication technologies, human communication networks and social structure in the information society. In *Competing Visions and Complex Realities: Social Aspects of the Information Society*, ed. J. Schement and L. Livrou. Ablex, Norwood N.J., 1987, pp. 107–120.

²Cerulo, K., Ruane, J. and Chayko, M., Technological ties that bind: media generated primary groups. *Communication Research*, 1992, 19(1), 109–129.

³Wellman, B. and Gulia, M., Net surfers don't ride alone: virtual communities as communities. In *Communities in Cyberspace*, ed. P. Kullock and M. Smith. University of California Press, Berkeley, 1995.

⁴*Op. cit.*, Ref. 1

⁵Sudweeks, F. and Rafaeli, S., How do you get a hundred strangers to agree: computer mediate communication and collaboration. Paper presented at the Information Systems and Human Communication Technology Divisions, 1994 ICA Annual Conference, Sydney Australia as part of the Network and Netplay Panel.

⁶Falk, J., The Meaning of the Web. 1995. <http://www.uow.edu.au/public/faculties/arts/sts/www/jfalk.html>-Jim Falk Home Page

⁷*Op. cit.*, Ref. 3.

⁸*Op. cit.*, Ref. 6.

⁹Rice, R. E., Impacts of organizational and interpersonal computer-mediated communication. In *Annual Review of Information Science and Technology*, ed. M. Williams. Knowledge Industry Publications, White Plains, NY, 1980, 15, pp. 221–249..

¹⁰Culnan, M. J., The dimensions of accessibility to online information: implications for implementing office information systems. *ACM Transactions on Office Information Systems*, 1984, 2(2), 141–150.

¹¹Rice, R. E., Computer mediated communication and organizational innovation. *Journal of Communication*, 1987, 37(4), 65–94.

¹²Eveland, J. D. and Bikson, T. K., Work group structures and computer support: a field experiment. *ACM Transactions on Office Information Systems*, 1988, 6(4), 354–379.

¹³Pliskin, N., Ball, L. D. and Curley, K. F., Impediments to proliferation of electronic mail: a study from the users' perspective. *Human Systems Management*, 1989, 8(3), 233–241.

¹⁴Pliskin, N., Interacting with electronic mail can be a dream or a nightmare: a user's point of view. *Interacting with Computers*, 1989, 1(3), 259–272.

¹⁵Pliskin, N. and Romm, T., Design of charging mechanisms according to the interaction between information technology type and diffusion life cycle phase. *Database*, 1990, 21(3), 34–40.

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Defining and categorizing virtual communities

An issue that has been central to many papers on virtual communities is the question of definition^{1–3} Are virtual communities “true” communities? What qualifies them as communities? To resolve this issue, we would like to start by acknowledging that virtual communities are not all the same. Consequently, any definition that attempts to capture their essence beyond the simple fact that their members do not communicate face-to-face, may not apply to all varieties of virtual communities. Beyond the simple categorization on the basis of the media used (radio, telephone, fax, TV, video, or computers), these communities have been categorized on the basis of their “robustness”, namely, the degree to which they are characterized by shared goals and ideals, a high degree of stability, growth, loyalty and commitment by their members^{4–6}.

To go back to the question of definition, we, in agreement with other recent authors⁷ believe that even though the majority of virtual communities are not as “robust” as face-to-face communities, many of them qualify as “ephemeral” communities. Following Falk's criteria⁸, they can be said to have: shared goals and ideals; some degree of stability; growth; and loyalty and commitment by their members, thus meeting the minimum criteria for ephemeral communities.

Variables that affect individuals' decision to join virtual communities

Most of the research that can be linked to variables that affect individuals' willingness to join virtual communities has actually addressed this issue in a **negative** way. Thus, researchers during much of the 1980s focused on the question of resistance to diffusion or why members of organizations **refuse** to join virtual communities rather than agree to do so. As indicated in *Figure 1*, the variables in this category include: (1) technological; (2) motivational; (3) task; and (4) system level explanations for resistance.

The variables that were initially listed as undermining implementation of email were **technological**. Thus, much of the early literature in this area focused on ways of improving email's “friendliness”, making it more accessible, reliable, and flexible^{9–12}. As data accumulated on the technical impediments to proliferation of email^{13,14} some authors suggested that innovative measures, such as rewarding users for using email, must be applied by management to convince users to adopt new communication technologies¹⁵.

As email became more user friendly, a new trend in the literature has begun to emerge. From considering technological difficulties as major reasons for problems in diffusion, researchers turned to non-technological variables^{16–20}. Markus²¹ in particular, categorized non-technical explanations for resistance as being either of the individual or the collective level type.

According to Markus' review, the individual level issues listed by researchers as explanations for difficulties in diffusion were mostly related to **motivation** and included users' conservatism, fear of change, lack of involvement, and incompatible cognitive style.

One of the most influential individual-level theories which emphasized the attributes of the **task** rather than the motivation of the individual, is richness theory^{22,23}. According to this theory, individuals will resist a

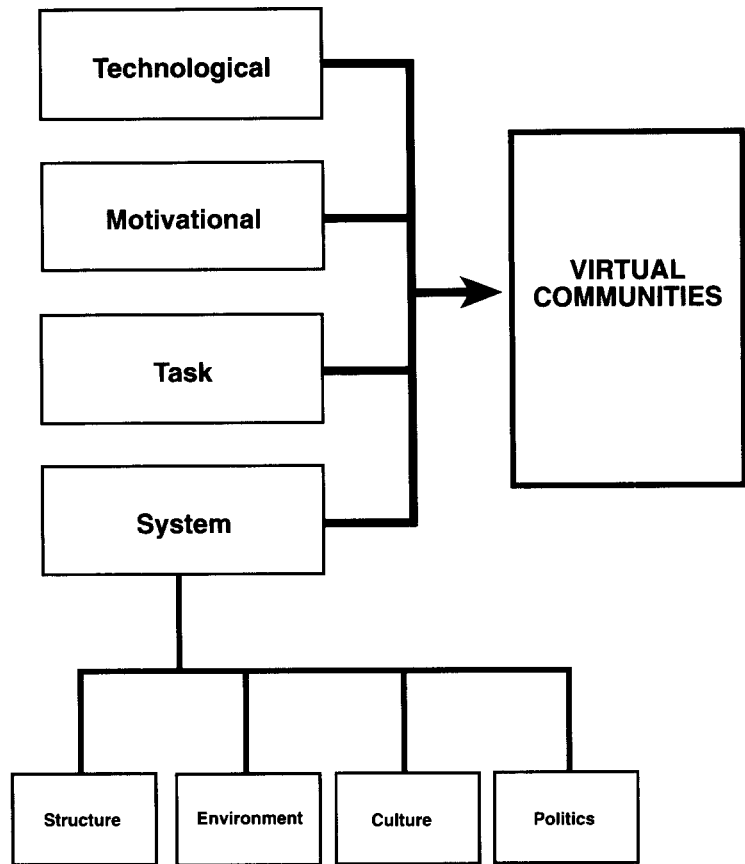


Figure 1 Variables which affect individuals' decision to join virtual communities

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¹⁶Markus, M. L. and Robey, D., The organizational validity of management information systems. *Human Relations*, 1983, 36(3), 203–226.

¹⁷Rice, R. E. and Case, D., Computer based messaging in the university: a description of use and utility. *Journal of Communication*, 1983, 33(1), 131–152.

¹⁸Rice, R. E., Grant, A., Schmitz, J. and Torobin, J., Individual and network influences on the adoption and perceived outcomes of electronic messaging. *Social Networks*, 1990, 12(1), 27–55.

¹⁹Pliskin, N., Romm, T., Lee, A. S. and Weber, Y., Presumed versus actual organizational culture: managerial implications for implementation of information systems. *The Computer Journal*, 1993, 36(2), 1–10.

²⁰Romm, T., Pliskin, N., Weber, Y. and Lee, A. S., Identifying organizational culture clash in mis implementation: when is it worth the effort?. *Information and Management*, 1991, 21, 99–109.

²¹Markus, M. L., Electronic mail as a medium of managerial choice. *Organization Science*, 1994, 5(4), 502–527.

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communication technology when they consider it inappropriate for a given task. The appropriateness of a communication media is based on its “information carrying capacity”. Thus, some media are perceived by users as “rich” because of their ability to carry large amounts of complex information, while others are seen as “lean” because of their inability to do so.

Daft and Lengel²⁴ were among the earliest researchers to rate communication alternatives on a richness scale. According to their scale, face-to-face interaction is the richest communication alternative because it provides varied opportunities for immediate feedback and multiple cues in natural language that is tailored to circumstances. The telephone was rated as lower than face-to-face encounters because of its inferiority in terms of multiple cues. Finally, written media were ranked as leanest of all communication media. Later research^{25–28} suggested that the fax and email should be added to the richness scale, placing them in between the telephone and written communication.

Critiques of richness theory have offered, over the years, a series of revisions that expanded the theory. Sproull and Kiesler²⁹ for example, questioned the mid-range ranking of email on Daft and Lengel's³⁰ richness scale, indicating that email is probably richer than assumed by the scale. Other critics suggested that situational constraints, symbolic considerations, and social contexts should be added to richness theory's initial concern with uncertainty and equivocality^{31–35}. Since such expan-

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²²Daft, R. L. and Lengel, R. H., Organizational information requirements, media richness, and structural design. *Management Science*, 1986, **32**(5), 554–571.

²³Daft, R. L., Lengel, R. H. and Trevino, L. K., Message equivocality, media selection, and manager performance: implications for information systems. *MIS Quarterly*, 1987, **11**(3), 355–366.

²⁴*Op. cit.*, Ref. 22.

²⁵Rice, R. E., Hughes, D. and Love, G., Usage and outcomes of electronic messaging at an R&D organization: situational constraints, job level, and media awareness. *Office, Technology and People*, 1989, **5**(2), 141–161.

²⁶Rice, R. E., Hart, P., Torobin, J., Shook, D., Tyler, J., Svenning, L. and Ruchinkskas, J., Task analyzability, use of new media, and effectiveness: a multi site exploration of media richness. *Organization Science*, 1992, **3**(4), 475–500.

²⁷Rice, R. E., Using network concepts to clarify sources and mechanisms of social influence. In *Progress in Communication Sciences*, ed. W. Richards, Jr. and G Barnett. ABLEX, Norwood, NJ, 1993, **12**, 43–62.

²⁸Rice, R. E., Media appropriateness: using social presence theory to compare traditional and new organizational media. *Human Communication Research*, 1993, **19**(4), 451–484.

²⁹Sproull, R., and Kiesler, S., eds., *Connections: New Ways of Working in the Networked Organization*. MIT Press, Cambridge, MA, 1991.

³⁰*Op. cit.*, Ref. 22.

³¹Fulk, J., Steinfeld, C. W., Schmitz, J. and Power, J. G., A social information processing model of media use in organizations. *Communications Research*, 1987, **14**(5), 529–552.

³²*Op. cit.*, Ref. 19.

³³Saunders, C. and Jones, J. W., Temporal sequences in information acquisition for decision making. *Academy of Management Review*, 1990, **5**(1), 29–46.

³⁴*Op. cit.*, Ref. 2.

³⁵Yates, J. and Orlikowski, W. J., Genres of organizational communication: an approach to studying communication and media. *The Academy of Management Review*, 1992, **17**(2), 299–326.

³⁶*Op. cit.*, Ref. 21.

³⁷*Op. cit.*, Ref. 16.

³⁸*Op. cit.*, Ref. 20.

³⁹*Op. cit.*, Ref. 19.

⁴⁰*Op. cit.*, Ref. 16, p. 209.

⁴¹*Op. cit.*, Ref. 9.

⁴²Olson, M. M. H. and Lucas, H. C. Jr., The impact of office automation on the organization: some implications for research and practice. *Communications of the ACM*, 1982, **25**(11), 838–847.

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sions cross the line between individual and collective level theories, we now turn to review the latter.

The main argument behind the collective school of thought is that the diffusion of any technology is a matter of social rather than individual choice and depends on whether the technology is perceived as appropriate by the **community** of potential users³⁶. Collective level theories have been classified as related to structure, environment, culture, or politics^{37–39}.

Structure-oriented theories concern “the match between the structural characteristics of an organization and different system design attributes”⁴⁰. Thus, a system might be resisted when its implementation is seen as threatening the current structural characteristics of the organization^{41,42}. For instance, installing email on the computers of all members of a unit within an organization may mean that from now on members can directly communicate with the head of the unit without having to go through his or her secretary. This could represent a change in the communication channels within the department, i.e. its formal structure, causing individuals, who are threatened by the change, to resist it..

Environment-oriented theories concern “the fit between system design characteristics and the environment of the organization in which it is used”⁴³. For example, the decision of academics in many countries outside the US to use email was triggered by the fact that US Academics have joined the network in large numbers. Once email became widely diffused in American universities, academics in other countries joined the network, realizing that resisting the trend would jeopardise their research and networking options.

Culture-oriented theories concern “the fit between the organizational culture presumed in the design of the system and the actual organizational culture in the implementing organization”⁴⁴. A match between the actual and presumed cultures is likely to have a positive effect on the prospects for implementation success, while a cultural clash is likely to have a negative effect on the implementation prospects. Since members of the organization are believed to develop shared beliefs about the value of a technology, the level of cultural fit is likely to affect their perception of the system as socially appropriate.

Politics-oriented theories concern resistance to implementation of an information system (IS) “because it causes a redistribution of power unacceptable to those losing power”⁴⁵. These theories assume that individuals are likely to consider systems more or less appropriate depending on whether they stand to gain or lose power from the system’s implementation. For successful implementation to take place, the politics-oriented theories assume that key members of the organization must be satisfied that their power base is not going to suffer as a result of the implementation.

Variables that explain virtual communities’ effect on their environment

It is only in recent years that researchers have started to consider membership in virtual communities as an independent variable that **affects** rather than is being **affected** by the environment in which it takes place⁴⁶. Figure 2 presents the four major types of variables that have been identified in the literature in regard to this issue, namely: (1) linguistic; (2) performance; (3) social; and (4) political variables.

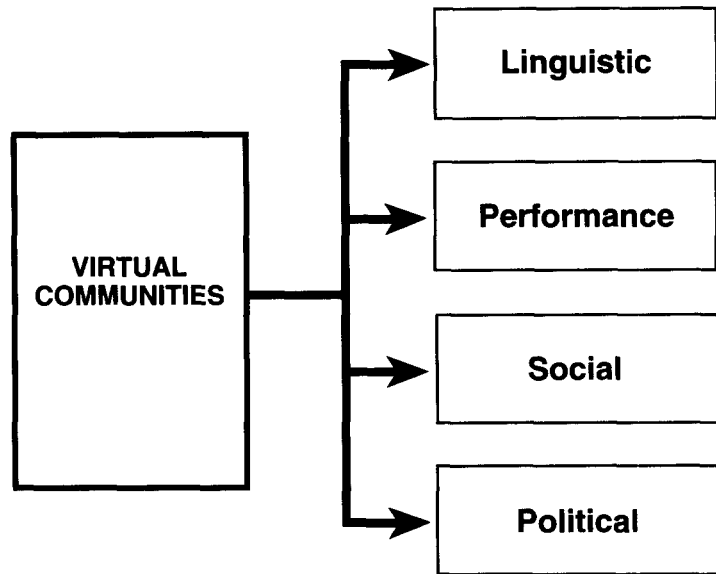


Figure 2 Variables which explain virtual communities' effect on their immediate environment

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⁴³*Op. cit.*, Ref. 16, p. 211.

⁴⁴*Op. cit.*, Ref. 19, p. 2.

⁴⁵*Op. cit.*, Ref. 16, p. 210.

⁴⁶Rice, R. E., Network analysis and computer-mediated communication systems. In *Advances in Social Network Analysis: Research in the Social and Behavioural Sciences*, ed. S. Wasserman and J. Galaskiewicz. Sage, Newbury Park, CA, 1994, pp. 167-203.

⁴⁷Berthold, M., Sudweeks, F., Newton, S. and Coyne, R., It makes sense: using an autoassociative neural network to explore typicality in computer mediated discussions. Paper presented at the Information Systems and Human Communication Technology Divisions, ICA Annual Conference, Sydney, Australia, 1994.

⁴⁸Rafaeli, S. and Sudweeks, F., Interactivity on the nets. Paper presented at the Information Systems and Human Communication Technology Divisions, ICA Annual Conference, Sydney, Australia as part of the Network and Netplay Panel, 1994.

⁴⁹Finholt, T. and Sproull, S., Electronic groups at work. *Organization Science*, 1990, 1(1), 41-64.

⁵⁰*Op. cit.*, Ref. 1.

⁵¹Rice, R. E. and Aydin, C., Attitudes toward new organizational technology: network proximity as a mechanism for social information processing. *Administrative Science Quarterly*, 1991, 36(June), 219-244.

⁵²*Op. cit.*, Ref. 26.

⁵³*Op. cit.*, Ref. 27.

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The first set of variables that has been identified as an area where virtual communities are affecting their immediate environment is **linguistic** variables. In fact, it can be argued that virtual communities have created a language that is uniquely theirs. With spoken, face-to-face language, paralinguistics (such as facial expressions, proxemics and dress codes), as well as the use of shared materials and objects, enable additional layers of meaning to co-occur with speech. Virtual communities had to invent alternatives to these. An obvious example has been the development of "smiley faces" to act as markers for facial expression, intonation, humour, and so on⁴⁷.

Another interesting linguistic issue that has drawn attention by researchers is linguistic Interactivity. As indicated by Rafaeli and Sudweeks⁴⁸, interruptions, though easier to accomplish in computer mediated communication, are less disruptive than in face-to-face communications. Consequently, conversations (or "threads") between large number of users can continue for a long time without people intruding on each other's 'linguistic space' as is often the case with face to face interactions. Rafaeli and Sudweeks note that the less competitive style of interactions in virtual communities is a result of the fact that members do not belong to the virtual community in any officially sanctioned way.

Another set of variables that has been identified as an area where virtual communities are affecting their immediate environment are **performance** related variables. Laboratory based experimental work has uncovered a series of effects that membership in virtual communities can have on the performance of groups in organizations. Finholt and Sproull⁴⁹ investigated how email can facilitate group decision making and bring about group unity and cohesion. Rice's series of studies⁵⁰⁻⁵³ have been important in demonstrating the effect of networks on group behaviour, with particular emphasis on how membership in networks affects members' attitudes about the new technology and promotes group innovation. Other studies⁵⁴⁻⁵⁶ have highlighted the administrative

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⁵⁴Rafaeli, S. Sudweeks, F. Konstan, J. and Mabry, E., Project H technical report, University of Minnesota, 1994.

⁵⁵*Op. cit.*, Ref. 5.

⁵⁶*Op. cit.*, Ref. 48.

⁵⁷Kling, R., Social relationships in electronic forums: hangouts, salons, workplaces and communities. Lead Article for Section IV. In *Computerization and Controversy: Value Conflicts and Social Choices*, ed. R. Kling. Academic Press, San Diego, 1996.

⁵⁸*Op. cit.*, Ref. 29.

⁵⁹McGuire, T. W., Kiesler, S. and Siegel, J., Group and computer mediated discussion effects in risk decision making. *Journal of Personality and Social Psychology*, 1987, 52(5), 917-930.

⁶⁰Siegel, J., Dubrovsky, V., Kiesler, S. and McGuire, T. W., Group processes in computer mediated communication. *Organizational Behaviour and Human Decision Processes*, 1986, 37(2), 57-187.

⁶¹Hiltz, S. R. and Johnson, K., Experiments in group decision making: disinhibition, deindividuation, and group process in pen name and real name computer conferences. *Decision Support Systems*, 1989, 5, 217-232.

⁶²Matheson, K. and Zanna, M., Impact of computer mediated communication on self awareness. *Computers in Human Behaviour*, 1989, 4, 221-233.

⁶³Markus, M. L., Finding a happy medium: explaining the negative effects of electronic communication on social life at work. *ACM Transactions on Information Systems*, 1994, 12(2), 119-149.

⁶⁴Pliskin, N. and Romm, C. T., The role of e mail in an industrial dispute. *The Australian Journal of Information Systems*, 1996, 3(2), 47-56.

⁶⁵Romm, C. T., Pliskin, N. and Rifkin, W., Diffusion of email: an organizational learning perspective. Forthcoming in the *Information and Management Journal*.

⁶⁶Romm, C. T. and Pliskin, N., Battle of the sexes on email—or is it? Forthcoming in the *Information Society Journal*.

⁶⁷Pliskin, N. and Romm, C., The harnessing of email for power and politics: a cross-cultural comparison. The University of Wollongong Department of Management Working Paper 1995, 95-3 ISBN No. 0 86418 331 3.

⁶⁸Romm, C. T. and Pliskin, N., Virtual politicking: toward a theory of email use for political purposes within and between organizations. In *Handbook of Administrative Communication*, ed. James L. Garnett and Alexander Kouzmin. Marcel Dekker, New York (forthcoming).

⁶⁹*Op. cit.*, Ref. 6.

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and ethical issues that are involved in establishing computer mediated groups, and the patterns of communication typical of such groups.

A third set of variables that have been identified as related to virtual communities effect on their immediate environment are **social** variables. In a recent review, Kling⁵⁷ singles out several studies as the major contributions in this area. The first among these is the book *Connections* by Sproull and Kiesler⁵⁸. These authors were among the first to argue that email facilitates communication between people at the bottom of the organizational hierarchy and those at the top, thus having a democratizing effect on organizations. Other authors uncovered a series of dysfunctional attributes of email. These include flaming effects^{59, 60}, as well as dis-inhibition and de-individuation effects^{61, 62}. One of the most important contributions in this area is a recent study by Markus⁶³ on the negative effects of email on social life at work. In this study the author describes a series of social abuses that email can lend itself to ("manipulative forwarding", "compulsive documentation", "aggressive accountability games" etc.) even with management's best intentions to eradicate or control these abuses.

Finally, a fourth area in which membership in virtual communities is affecting organizations is the **political** arena. On-going research has described several contexts in which email can be put to use for political purposes. These include: the industrial relations arena⁶⁴, the intra-organizational arena^{65, 66} (and the international arena⁶⁷). Recently, this on-going research has been integrated into a model of Virtual Politicking⁶⁸ which outlines a matrix of intra-and inter organizational political uses of email.

Variables that describe how virtual communities are transforming society

The third building block of the proposed model consists of variables which describe how virtual communities are transforming society. Based on a recent paper by Falk⁶⁹, we identify four transformational processes that are related to the effect of virtual communities on society, namely: (1) integration of production systems; (2) integration of national identities; (3) community integration/fragmentation; and (4) redefinition of personal relationships. *Figure 3* presents the four processes as mediating the relationship between virtual communities and society.

The most important way in which virtual communities are changing society is by facilitating an **integration of production systems** beyond national borders⁷⁰⁻⁷². This trend is already making the distinction between "our" products, and "theirs" irrelevant. The spread of virtual communities is likely to continue this process through support of newly emerging, government created, supra-national organizations such as the European Community. These organizations, which are intended to regulate the infrastructure and activity of the increasing global network of organizations, will use the network as a major communication tool. Finally, government controlled virtual communities can play an important role in bridging the technological gaps between countries over issues that require global policies. Such issues may include weapon control, climate control, overpopulation, the spread of diseases, and monetary control of global markets.

The second way in which virtual communities are changing society is

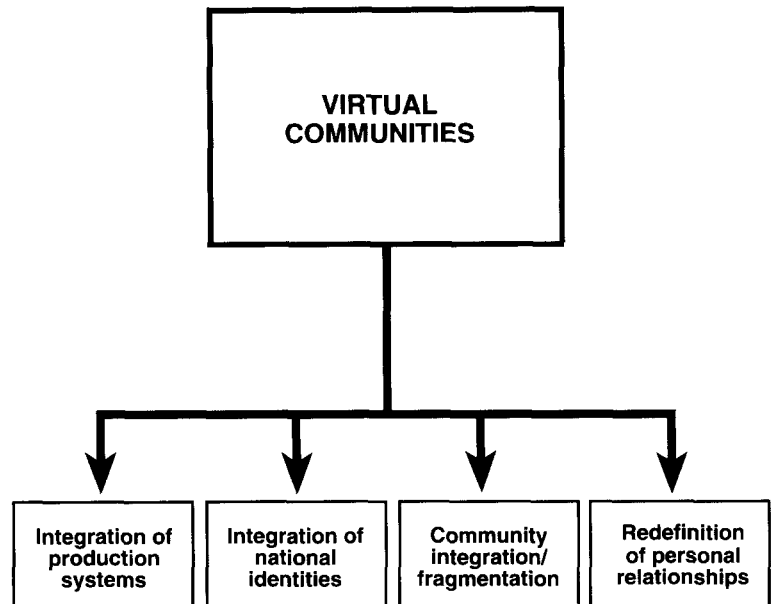


Figure 3 Variables which describe how virtual communities are transforming society

through **integration of national identities**^{73, 74}. Virtual communities can have two different effects on national identities. On the one hand, they can lead to greater **blending** of national identity. Not only goods but also cultural values can be exchanged across national borders, exposing large sections of the world population to values that are part of other national cultures. As a result of this trend, defining oneself as a member of a particular national culture, i.e. American, Australian, or Japanese, would make little sense as cultures become more and more blended.

It is also possible, however, for virtual communities to help consolidate group identities **within** nations, rather than disrupt them. For example, the use of electronic media can change the area of enterprise bargaining as we know it today. As demonstrated by Pliskin and Romm⁷⁵, Israeli academics used their membership in a virtual community to turn their otherwise ignored industrial action into a large scale, national level political campaign. A similar example of email use to consolidate national identity is reported by Ogan⁷⁶ in a paper which describes the use of listserver communication by Americans during the Gulf War.

The third way in which virtual communities are changing society is through **community integration/fragmentation**^{77, 78}. As indicated above, on the Internet, national entities do not have any advantage over other interest groups. Groups whose political agenda conflicts with their governments can effectively mobilize support for their causes from outside the country, without their governments being able to prevent or curtail their activities. Examples of this phenomenon are already available, including the Tiananmen Square uprising in Beijing in June 1989, which was largely planned by an email linked group of Chinese students in China and the US. Other examples are the Palestinian Lobby and the Lobby of the Israeli settlers in the Golan Heights which have both been supported by strong international email based networks. In all of these cases, it can be argued that email networks provide users with commu-

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⁷⁰Korac-Boisvert, N. and Kouzmin, A., From the "Captains of the Ship" to "Architects of Organizational Arks": IT innovation, globalization and the "withering away" of leadership steering. Paper presented at the Australian and New Zealand Academy of Management (ANZAM) Conference, Wellington, New Zealand, 1994.

⁷¹Kouzmin, A. and Korac-Boisvert, N., From phobias and cognitive failure: towards effective management transfer agendas for pan-slavic transitions. Paper presented at the International Conference of Management Education in Countries in Transition. Academy of National Economy. Moscow, Russia, 1995.

⁷²*Op. cit.*, Ref. 6.

⁷³*Op. cit.*, Ref. 71.

⁷⁴*Op. cit.*, Ref. 6.

⁷⁵*Op. cit.*, Ref. 67.

⁷⁶Ogan, C., Listserver communication during the gulf war: what kind of medium is the electronic bulletin board?. *Journal of Broadcasting and Electronic Media*, 1993, **Spring**, 177-196.

⁷⁷*Op. cit.*, Ref. 6.

⁷⁸*Op. cit.*, Ref. 70.

nities that are more socially “real” than the national, professional, or local communities to which they formally belong.

Note that the process of community fragmentation outlined in the previous sections can have both negative and positive effects. On the negative side, the lack of member identification with their community may lead to community break-up and individual alienation. However, there could also be positive effects to this trend, particularly in the political arena. Thus, email can be used in many innovative ways at the regional, municipal, or even suburban level. Local communities can run email referendums on issues that are of importance to their members, such as closing a school, changing road signs, starting a public or private funded development project, or introducing a new public health policy. The effect of using email for communication at the local level can result in a much more informed, responsive and, consequently, more democratic political process at the local community level.

Finally, and perhaps as an accumulative result from the above processes, virtual communities are changing society through redefinition of **personal relationships**^{79–80}. Not just national but also personal boundaries collapse in virtual communities. Virtual communities offer their members total freedom to describe themselves to others as they wish in terms of age, looks, gender, social status, location etc. This enables members to develop “virtual identities” that are completely removed from their real life identities. The freedom to re-create one’s identity, coupled with the total anonymity that is offered by the network can lead to highly intimate and yet “unreal” relationships between individuals. Note, that the “unreal” relationships that are possible in virtual communities can lead to many negative organizational consequences. These may range from high levels of employee demoralization, mobility and turnover, failure to comply with rules and regulations, corruption and organizational collapse⁸¹.

An integrative model of virtual communities in society

Figure 4 presents our integrative Virtual Communities in Society model. The three building blocks that constitute the model describe three types of relationships between virtual communities and society. In the first relationship, membership in virtual communities is considered a **dependent variable** that is affected or caused by a series of externally imposed independent variables, i.e. technological, motivational, task-related, and system-related. In the second relationship, membership in virtual communities is seen as an **independent variable** that has a series of effects on its immediate environment, i.e. linguistic, performance, social, and political effects. Finally, in the third relationship, membership in virtual communities is seen, again, as an **independent variable**, but this time, as one which affects society as a whole through changing production systems, national identities, community integration/fragmentation, and personal relationships.

We believe that the proposed model has a potential to advance theoretical research on virtual communities in the following ways:

First, the literature review which is the basis for the proposed model, suggests that many of the variables that can serve as building blocks for a comprehensive model of virtual communities and society **are already in existence**. Virtual communities are no longer the mystery that they used to be 10 or 15 years ago. Our predecessors in this area have identified many

Op. cit., Ref. 6.

⁸⁰Korac-Boisvert, N. and Kouzmin, A., The dark side of info-age social networks in public organisations and creeping crises. *Administrative Theory and Praxis*, 1994, 16(1), 57–82.

⁸¹*Op. cit.*, Ref. 80.

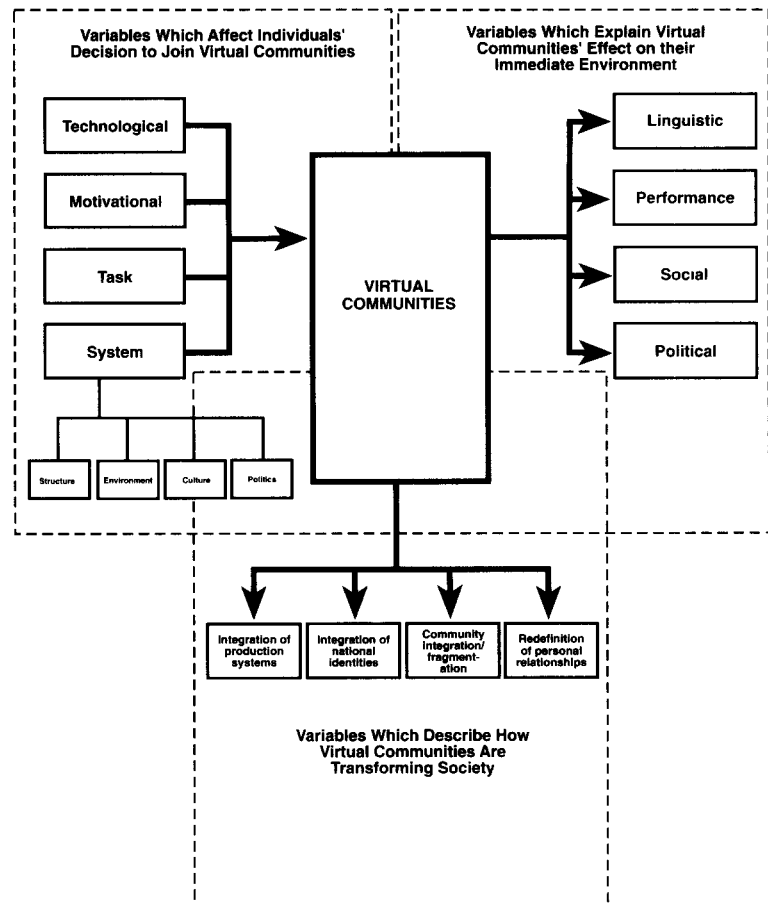


Figure 4 Virtual communities and society: an integrative model

of the attributes that attract or repel potential members from joining virtual communities. Previous research has also identified many of the elements that produce the unique social and psychological reality of virtual communities. Finally, many of the contributions that we have reviewed in the previous sections made major progress in charting the possible transformational effects of virtual communities on society as a whole.

Second, the three elements of the proposed model can be seen as reflecting not just phases in the history of the research on virtual communities, an idea that has been recently proposed by Rice⁸², but also as actual **developmental stages** of the virtual community itself. In other words, the model can be interpreted to suggest that in the early stages of their development, the main issues members of virtual communities are concerned with are issues of survival: do they want to join the community? Do they want to remain its members? As the community gains a sense of security and continuity, members begin to be more concerned with the **nature** of their newly created community. Issues of language, relationships, and political manipulation become paramount. It is only at the later stages of the development of virtual communities that they may or may not choose to influence their external environment at the local, national, or global level.

Finally, given that many of the variables that describe the relationship of virtual communities to their environment have been identified in previous research, our model suggests that they should be integrated in

a more flexible manner. For example, a variable such as “power” that has been considered in past research mostly as **affecting** diffusion (the first element in our model) should be seen as **affected** by the social processes of virtual communities (the second element in our model), or even as potentially **reflecting** the effect of virtual communities on their environment (the third element in our model). What we are proposing is a more holistic understanding of the relationship between virtual communities and their environment which allows for flexible, parallel processes, rather than strict linear relationships.

Note that our call to take a more flexible approach to research on virtual communities is supported by recent theoretical assertions by Soh and Markus who indicated in a recent paper⁸³ that cause and effect relationships are often impossible to demonstrate in IS research. A similar point was recently raised by Robey⁸⁴ who indicated that “efforts to encompass contradiction in theory reveal the difficulty and futility of making simple predictions about the organizational consequences of information technology”. Following this assertion, Robey advocates the adoption of less simplistic theories that put less emphasis on significant empirical associations between variables and more emphasis on plausible explanations of observed phenomena. Going back to our proposed model, this suggests a less linear, more circular approach to theory building.

Our proposed model also leaves ample scope for future **empirical** expansions and elaborations. Some of the major directions for future empirical work that emanate from the model include the following:

First, our model identified four independent variables which seem to affect potential members’ willingness to join virtual communities. Future research on organizationally as well as non-organizationally affiliated members of virtual communities, might add other variables to the list. These may include personality characteristics, characteristics of “leaders”, and characteristics of communities (national, ethnic, gender, professional) that may explain potential members’ willingness to join them.

Second, our model identified four areas in which virtual communities are affecting their immediate environment. Future research on virtual communities in western, as well as non western cultures, might add other effects to the list. These may include the effects of virtual communities in the areas of education, entertainment, consumer behaviour, values, etc.

Finally, our model specified four ways in which virtual communities are transforming society. Much of this speculative discussion is, of course based on current technological constraints. As we approach the twenty-first century, many of the technical aspects that constrain virtual communities are changing. For example, making email a multi-media facility, a development that is already with us but not accessible to all, will allow users to not just write but actually see and talk to each other. This will make many differences that now exist between face to face and virtual communities, irrelevant. It remains for future research to determine how these developments, once they occur, can be incorporated into our integrative Virtual Communities in Society model.

⁸³Soh, C. and Markus, M. L., How IT creates business value. In *Proceedings of the Sixth International Conference on Information Systems*, ed. J. I. DeGross, G. Ariav, C. Beath, R. Hoyer, and C. Kemmerer, Amsterdam, 1995, pp. 29–42.

⁸⁴Robey, D., Theories that explain contradiction: accounting for the contradictory organizational consequences of information technology. In *Proceedings of the Sixth International Conference on Information Systems*, ed. J. I. DeGross, G. Ariav, C. Beath, R. Hoyer, and C. Kemmerer. Amsterdam, 1995, pp. 55–64.