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The Meaning of the Web¹

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Abstract

Speculation about the meaning of the "Net" (the Internet and potentially associated networks), and its most rapidly developing dimension, the "Web" (the World Wide Web), are both symptoms and components of a broader reshaping of world politics, economy, and culture. These changes challenge many of the categories within which we have grown used to thinking about the shape and meaning of society and its future. For individuals and local communities, the promises, hopes and fears associated with the growth of the web have particular poignancy as they face the challenge of establishing and asserting their identity in a ever more complicated and interdependent world, and through that, finding a strategy for achieving the sort of future they would like to live.

The Net and the Web are technologies which promise us access to the world, but they and their associated social and economic trends challenge many of the premises upon which our identity is forged. The Net facilitates the development of new forms of

transnational community organisation, opening up the promise of more effective ways of acting as citizens across the broader social terrains in which it must be expressed.

This paper reconsiders the traditional theoretical tools which we have available to understand these issues. It addresses some of the central difficulties and possibilities available to us in re-thinking identity, exploring the new promising cultural potential of the Web and Net in a more integrated and simultaneously fragmenting world.

If we can judge it by its rate of growth, the World Wide Web is currently an extraordinary success.³ But what is the significance of that success in the context of a rapidly changing world? As a frontier development, enormous claims have been made about the power of the Web to transform civilisation:

The Internet is, by far, the greatest and most significant achievement in the history of mankind. What? Am I saying that the Internet is more impressive than the pyramids? More beautiful than Michelangelo's David? More important to mankind than the wondrous inventions of the industrial revolution? Yes, yes and yes. (Hahn and Stout 1994)

Attempts to describe the vast dimensions and potential of the Web reach towards the sublime. Hahn and Stout see the Net as an invention completely apart from all previous developments in communication, culture and social organisation which have made its invention both possible and necessary.

It is difficult even to define the Net. Is it the full set of protocols through which computers communicate with each other, together with the hardware links, or is it merely the set of communication hubs, the computers which connect those hubs? From the user's point of view, of course, it is none of these things. It is the resources and experiences which it makes available that give the Net its distinctive character and attraction and are the foundations of its meaning.

Communicating through the Web is a distinctive experience. The use of hypertext embeddable addresses enables browsers to create almost seamless pathways from one piece of information to another, wherever the information sites may be located on the Net. The architecture of browsers and the protocols they interpret allows the combination of text, graphics and sound. As a result the Web provides a graphic user interface which is both easy and attractive to use. Browsing the Web is a particularly accessible, comprehensible and transparent way of traversing a significant part of the Net.

However, the distinctive communication experience provided by the Web entails more than just ease of use. Although text is usually dealt with linearly, the use of hypertext links enables any word or graphic to be linked to any other point in Web space, laying out a multi-dimensional space. Through that space thematic pathways may be defined by a series of links, and, through their interconnection, surfaces also are laid out. As suggested by the many connotations of landscape that are used in describing the experience of the Web surface —the browser “Netscape Navigator”, “surfing the Net”, “geocities”, etc.— the result of browsing the Web is to experience movement over an information terrain, mapped not by geography solely or even particularly, but by a multi-dimensional set of categories and themes.

If the Web is considered as a landscape it is very clearly one that is under construction. When Christopher Columbus encountered an inhabited landmass, it was then *constructed*

in the minds of the Spanish and Europeans as a land newly ‘discovered’ and uncovered to their cultural appropriation. After much contest over what meaning this land was to connote, its meaning eventually stabilised (even in the minds of many ‘native Americans’) as modern “America”. The land had been rewritten and culturally reconstructed.

Exploration of the Web emphasises the dynamic nature of such “discovery”. By utilising “hot lists”, we may construct our own maps and landscapes of what is important for us. Publishing hot lists opens these new territories to others. By adding links to our own documents, home pages, supporting pages and resources we further shape and embellish our conceptions of what matters and embed that conception in the Web as new territory to be discovered and colonised by others.

To use the Web effectively we have to be prepared to explore. This makes clear a central point which is also true of the Net. Neither the Web nor the Net is just a data space. The Web is both an environment, and a mode, or set of modes of interaction between people. In order to use it we need to discover the sites of interest to us. Because of its complexity, effective personal use of the Web requires us to interact socially. Much of what we do in the Web is having encountered each other’s discoveries to utilise them to construct our own maps and signposts. The ways this is done depends to a considerable extent on the interactions between individual users. A social network binds together the nodes of the Web. “The Web” is thus embedded both in a technological Web (the protocols, data lines, modems, computer hubs and computer terminals which constitute the Internet) and a Web of social connections which construct and shape its meaning, use, and hence its usefulness.

The Net thus fits well within the currently popular approaches to the problem of explaining the evolution of technological and social systems by considering them as systems of seamlessly interpenetrating social and technical components, often described

in terms of socio-technical systems or networks (Bijker et al 1987). It is useful to consider Net protocols as part of the social process of interconnection via the Web (Abbate 1994). The Web provides a graphic illustration of the most basic insight to be gleaned from this body of theory: that the technical and social cannot be firmly separated (see for example, Summerton 1994, p. 3). Technologies are social, because they are produced by, facilitate, and shape human interaction. Correspondingly, the Web is a technology with social and technical dimensions and implications. And, consistent with this theory, it mediates and contributes to social as well as technological change.

The Web is a prime example of a socio-technical network, not only in this respect, but also because its very meaning is so obviously under construction. In the language of the “new sociology of technology” each actor entering the Web draws upon both external and existing Web resources to construct new “actor worlds” which jostle for position and legitimacy with pre-existing actor worlds within the Web. It is difficult to predict with any confidence the likely result of this interplay. The dominant actor worlds will not emerge and stabilise until all players have entered (particularly commercial players). In this sense, the Web is both a product of agents of change, and an agent of change in itself. And like the components that make up the Web, the Web itself is a component within a broader socio-technological network whose form and meaning both shapes, and is shaped by the Web. Most broadly, it is an inextricably intertwined part of a rapidly changing world system of intermeshed social relationships and technological components.

The Web as Symptom - A Changing Global Context

One simple illustration of the value of considering the Web (and Net) in their social contexts, is provided simply by examining the reasons behind their phenomenal growth. There is more to the successful growth of the Web than its technical features. What must be understood is the social causes of the rapid development of the entire assembly of

computer technology, and in particular, the intimate relationship between the development of information technology and global political, cultural and economic change.

The central consideration is of course that global social, political and economic structures are constantly being extended in ways which require more elaborate communication systems. I deal with this in far more detail elsewhere (Camilleri and Falk 1992). Here I will confine myself to pointing to four central trends in the extraordinary transformation of global social and technological structures:

i) Industrial organisation increasingly extends beyond national boundaries. We have seen a relentless increase in organisational scale and scope over the last century. As a consequence, many production systems have become integrated at a global level; it no longer means much to talk about products as ‘ours’ or ‘theirs’.

ii) Both in response and support of industrial reorganisation governments have been forced to create supra-national organisation. The role of national government instrumentalities has grown steadily (with a corresponding reduction in the power of regional administrations) in order to regulate the infrastructure and the activity of this increasing network of ever larger organisations. The trend has gone well beyond this with the emergence of larger multi-national regions (such as the European Community), the increasing size and scope of transnational corporations, and the emergence of a global market. In all of these developments, large scale organisation plays an ever more important and more overt role.

iii) The impact of technological change and organisation increasingly transcends national boundaries profoundly affecting such crucial areas as security, the environment, and currencies. For example, the enhanced greenhouse effect caused by the output of gases through modern industrial and agricultural production⁴ threatens

to change the climate of the entire planet. The frequent outcome of these developments in the increasingly global systems of technology is that national policy is reshaped to accommodate the requirements of the transnational technical systems as much as national governments implementing policy to shape the technology.

iv) Consequently, government now finds itself only one of many actors in what is increasingly a single, integrated world market. Government must compete with other global actors such as transnational corporations, some of whom may have equivalent, or greater, economic power.

In short, we are living at a time of rapid social transition, the effects and dynamics of which are global in reach. The entire world is undergoing a transformation which is simultaneously economic, political, cultural and technological in character. The emergence of this world system is both powered by, and has given rise to, the development of a corresponding global system of communication. The global communications system allows financial organisations to communicate internally across the globe, which facilitates a global market to serve global production systems, and allows the regulational infrastructure to monitor, organise and enforce the necessary preconditions for economic success.

The Net and the Web are clear symptoms (as well as facilitators) of this development. Born of a perceived need to develop a communication system between computers that was robust in the face of global weapons systems, and further developed by government and academic organisations to exchange information, the Net is relentlessly being shaped by the wider needs of global commercial and regulatory activity.

Because the Web is constructed by and serves a set of people and the institutions to

which they belong it incorporates the things they regard as being useful information linkages. The articles, data, discussion, pictures, songs, and commercial interchange which it supports provides both a picture of the world, and signposts of what is believed to be important, for the communities that construct and utilise it. In this sense it tells a story about the world as these users currently conceive it. That is, it provides one particular map of social and technical reality.

The current partial and incoherent map or constructed reality which the Web assembles is nonetheless changing rapidly. The meaning of the Web is in the process of being constructed. Its meaning will be shaped by the communities which participate in the Web and are constructed by it. The social and economic character of these communities will determine common frames of reference, patterns of discourse and stories that communities adopt about themselves and about the particular ‘world’ in which they exist.

It is to be expected that the map of the Web will tend to evidence the same stresses and clashes in understanding which the communities who use it are experiencing as the world around them metamorphoses. But because it is a cutting edge technology, operating globally and involving the community most acclimatised and empowered to use it, it tends to bring out some of the more problematic aspects of contemporary reality in a particularly stark and magnified form.

The Challenge to National Identity

From the point of view of political theory, one of the great contemporary challenges is the erosion of a tidy picture of the world which has served reasonably well over at least two centuries. The central idea of the sovereignty model — that national governments can be “sovereign”, with supreme power to shape what happens within their territorial domains— is increasingly challenged by the developments of which the Web is part symptom and part agent.

The central direction of the market is to increase world trade in mass goods, whether physical or cultural. The market divides communities, playing off one sector against another for economic gain. Community boundaries become transparent to communication media which mediate social interaction on a scale that far transcends that of the national community. The large, regional, or global electronic media corporations cast their services according to a logic which pays little attention to any national population's search for political and cultural community.

For example, the integration of national markets into a complex play of world commerce has undermined the ability of the English to see themselves as either merely nationals of the UK, or living at the centre of an empire. Instead they must now see themselves as members of a broader, more complex European community.

As a result of these global changes, communities can no longer be understood or understand themselves in simply national or nationalist terms. The world is increasingly composed of communities which experience shifting and conflicting allegiances, new forms of identity and who experience and participate in overlapping tiers of jurisdiction (Camilleri and Falk 1992, p. 256).

Australia is an interesting example of one region being transformed by the dynamics of a world in transition. It is no longer credible for Australians to see themselves as part of Europe. The growing importance of regional economic alliances across the world, and the rapid growth of economies in the Pacific basin force Australians to reconstruct their sense of identity, their goals as a community, and their sense of place. In particular, the Australian community looks to the Southeast Asian countries with which it has increasingly important economic ties to discover which communities within these countries share other common goals and values with communities in Australia, sufficient

to form the basis of extended communication and collaboration. Australians, as a collective national community, thus face the challenge of discovering how to understand themselves as part of a larger world where problems are shared across geographic boundaries. In Australia, as elsewhere, there is a need to know how to act effectively in a world in which the state is becoming just one actor in interplay with global corporations, transnational non-government organisations, supra-national governmental organisations and much else. And there is a need to discover how to rebuild and revitalise local community in a world where the former roots of national community are steadily being eroded by the process of globalisation.(Falk 1995)

The Web and Community Fragmentation

The above puts the often over-stated transforming potential of the Web, and indeed the Net, in perspective. The Web is both symptom and agent in the changing nature of world politics and culture. And clearly, in relation to dilemmas posed by the relentless processes of political and cultural integration, the Web or indeed any other communication system can at best only be part of the solution. At the same time, because the Web represents the cutting edge of some of the central integrative and transformative processes, it is also part of the problem.

In a world which is integrating rapidly, identity becomes a problematic issue. The notion of British citizenship, for example, as it existed under a sovereign state is being challenged by identities it formally subsumed or excluded (for example: Welsh, Scottish, European).

Benedict Anderson (1983) has described in detail how print technology has been important in creating prerequisites for the concept of the national community. The technology allowed the development and spread of national print media, and an audience for that media. The creation of this audience played a crucial role in allowing people

within the national borders to imagine themselves as having something in common with each other (both in terms of a collective history, and a shared present) — enabling them to constitute themselves in their collective imagination as a single national community. Forms of shared communication, then, are vital consolidating features of modern communities.

So as a new form of communication the Web (and its successors) might provide the basis for new senses of community which transcend the nation state, and challenge traditional identities. The reading public is now geographically distributed world-wide. The more fluid socio-technical space of the Web's challenges the more fixed constructions of national community. In the Web nations and their populations have no particular privileged position: national pages⁵ vie for prominence with pages representing very different communities.⁶

The communication space of the Web has the potential to be simultaneously more universalistic and more particularistic and this mirrors a world in which national boundaries are becoming more permeable. Thus, for example, the Web emphasises universalism by making available a picture of a world unconstrained by time delay between different locations. And the global spread of the Web, as with the print media that came before, encourages a monoglot reading public which is now world-wide. Although the Web does allow the development of other language sub groups, it is likely to further reinforce and emphasise a dominant trend. The critical mass of English amongst providers and users drives Web usage inexorably towards monoglot English.

There is thus a sense in which the Web will continue trends toward universalising community. But in another sense it is likely to also reflect, and perhaps even worsen, the fractures within geographical communities between rich and poor, and the highly educated, and those deprived of advanced education. It is important to remember that in

most places the Internet is still available to only a small but select fraction of the population.⁷ Simple considerations of the level of infrastructure currently available in such heavily populated countries as China and India suggest that it will be a long time, if ever, before the bulk of the world have access to the Net. So the community provided by the Web is likely at minimum to be a very constrained one: drawn from the rich and educated population of western countries.⁸ Everyone else— the bulk of the population—will be waiting for their telephone number. In short, the Web reproduces, and perhaps makes even more starkly polarised, the deep divisions created in the pattern of world political economy. Worse, by appearing to be universal, the Web actually hides its non-representativeness, in the same way that “world news” appears global in scale but gives priority to particular regions, sub-groups, and issues. In this sense the Web reinforces an ideology of universalism for the communities which have access to it, and masks some very particular and elite characteristics of those same communities.

Within the Web’s political economy which overemphasises and reinforces the western world of its originators, communities tend to be fluid in nature. Whilst there are universalising tendencies, at least amongst the whole community of users, the communities which are constructed themselves have a tendency to mirror the modern world - with all the characteristics of fluid membership, and overlapping allegiances, which are emerging within it. For example, a person may simultaneously identify with a professional group, an interest group, a group of like minded investors, and more. The Web provides the possibility of inserting and extracting yourself from a vast range of overlapping communities at will.

Robust and Ephemeral Communities

Clearly contemporary discourse about communities does not restrict itself to the traditional definition. The traditional concept of community, derived from sociologists such as Tönnies can be expressed as “a sense of interrelatedness and shared experiences

among people living in the same locality.”(Tönnies 1957) This sort of definition is useful because it evokes the (perhaps romanticised) coherency, stability, and commonality of the historical understandings, beliefs, communication and social relationships between the members of a pre-modern village or tribal community. If this is taken as a historical benchmark it becomes possible to discuss how various social and technological developments (for example, the advent of large cities, the breakdown of the extended family, the development of the detailed division of labour and knowledge, the fracturing of the nuclear family) has fragmented and eroded community. The definition has proved a useful starting point for understanding the imaginative process by which concepts of community are projected upon the diverse population groups which make up a nation, and then to discuss how that putative “national community” is challenged by changes in both political economy, and in communication technology, including the advent of the Web.

It seems inappropriate when discussing contemporary society and the Web to restrict the meaning of community to a geographically located one. Here Martin Webber’s concept of non-place realms which concentrates on the “city as a communication system” as opposed to the city ‘as place’ may provide a helpful beginning (Webber 1968a and 1968b; Little 1993). But extending the concept does not excuse us from answering some of the same questions that were relevant in the past. That is: what features which we regard as important to traditional community can be reconstructed within the new non-localised social spaces of the Web? And beyond that, what new important features of community can be invented and developed within these spaces?

These sort of considerations suggest a very simple question, but one which will not have a straightforward answer: how *robust* is any particular community created in the web, or more generally in the modern world? This question clearly invokes the notion that there are certain characteristics which we can agree are desirable in a community whether that

community is defined by locality or according to some other technologically mediated cohesion.

A '*robust community*' may be defined as one in which the members have not only a sense of interrelatedness and shared experience, but who also share common ideals and believe that membership of their community is more likely to lead to their own personal fulfilment than if they belonged to any other community. Members of a robust community will invest personal resources, energy and commitment into it because they consider it to be stable, growing, supportive and effective. As a consequence, most members of a robust community will gain broad emotional and intellectual support from the community, and associate it with their ideals and aspirations. And, when disaster strikes, a robust community will react with renewed effort to rebuild and recapture that which they have lost. According to these criteria, the nation state, although it is a development of both new technologies and imagination, has generally proved to be very robust.

In contrast, an '*ephemeral community*' is unstable and transitory. Its population may change rapidly, and interact chaotically, with little confidence that its members share common ideals, or could realistically advance the possibility of attaining them through the community. Relationships within an ephemeral community, whether emotional or intellectual, are likely to be partial; satisfying only one or a few of the members' needs. Members may share some interests in common, but their world views and historical perspectives may conflict markedly in other ways.

The above criteria only sketch the various parameters by which a community may be considered robust or ephemeral. It is apparent even when making this fleeting analysis that many of the communities which have been so far constructed in the Web lack key qualities which would make them robust.

Personal Identity and Community Roots

Traditional community communication depends almost entirely on face-to-face interaction. The oral culture transmits the stories, beliefs, ideals and interpretations by which members make sense of their collective life and join together in living it.

By comparison, elaborate Web texts and graphics use limited forms of interaction. The construction of robust Web communities requires more meaningful modes of interaction in order to reproduce the full set of social qualities of 'real life' community.

Further, whilst gaining access to any place in the Web, wherever located, is marvellously simple, navigating the Web is far from straightforward. The vast complexity of the network of information points confronts the apparent simplicity in accessing any particular point. And, since the number of nodes is growing exponentially, the complexity is growing super-exponentially. There is no cooperative planning as individuals, institutions and companies rush to erect Internet billboards which proclaim they to are up to date with the new technology.⁹ Indicatively, the number of web pages is currently growing at a faster rate than the number of users.¹⁰

There are search engines¹¹ which are useful if the users know what to look for, and have a lot of time to search the lists that result, often dealing with a lot of redundant material before finding what is needed. But, as noted earlier, navigating the Web remains a socially mediated experience, depending on other modes of communication between colleagues to determine the useful/cool sites.¹² As the complexity of the Web grows, the need for such guidance is likely to increase - requiring a more elaborate social architecture to support effective web navigation.

We already see the continued elaboration of this with the publishing on the Web of numerous indexes of “cool sites”¹³ and “hot lists,”¹⁴ the appearance in hard copy of the various Internet magazines (e.g. *Internet World*) and indeed the proliferation of Web conferences. For this reason, it is also naive to assume that the advent of the new communication options of the Web will necessarily lead to less face-to-face communication. It may actually generate a greater desire for such communication. The phenomenon of “flesh-meets” where electronic acquaintances meet up in real life may well be a harbinger of what is to come.

The original, primarily textual approach of the Web did not prove particularly good for social interaction, and new developments which incorporate technologies which can reproduce realistic or more imaginative social interaction have been taken up readily. Textually-based communication such as CyberSight Real-Time conversations¹⁵ are rendered quite clumsy by the constraints of hypertext, compared with other systems of interaction on the Net which more closely simulate face-to-face interaction. These include E-mail and the newsgroups, and more particularly Internet Relay Chat (IRC).¹⁶ Although it is still text based, IRC most closely resembles dialogue because it is a virtual place for real time chat. Its voice analogue Internet Telephony¹⁷ or VocalTec’s Internet Phone¹⁸ unite voice and data, their network and transport technologies and promises to lead to the development of new communication technologies. The descendants of the game-playing spaces —the MUDs (multi-user dungeons) and their successors — the MOOs (MUDs-object oriented) take Web communication in other directions. Cybersites have proliferated and the more sophisticated use highly imaginative 3-D worlds for their chat environments.¹⁹ Videoconferencing combining voice, text and video image has become more accessible with the worldwide distribution of free CU-SeeMe software which can be set up with a cheap “cam” video colour camera (such as the Connectix QuickCam) which come combined with a built in microphone.²⁰

MOOs²¹ seem to be the closest representations of traditional real-life communities on the Net. Players meet, and talk face to face, or in groups, in various textually described rooms and places of their own devising. Movement between locations may be instantaneous (“teleporting”) and players may remotely page each other, if desired. Players may furnish their rooms with many different textual objects, altering their clothing to change their identities, and “emote” by performing actions like smiling, crying and hugging. MOOs such as Lambda MOO²² have elaborate systems of social regulation based on citizen-initiated referenda.

The MOOs have two key features which makes them attractive. The first is that players may communicate either publicly in groups, or in private. Second, the players enter with a high level of anonymity. Even the e-mail addresses of the players are masked from each other, and the identity which a player creates, including such details as gender, geographic base, age, and looks may be changed at will. This creates a heady mix of intimacy and anonymity in which people may reveal to each other deep personal secrets, and play out desired acts and roles, which they would not easily admit to in their face-to-face “real lives”.

There is much that could be said about this. An exploration of the MOOs will reveal many stories of people who have explored what is for them new territory within human relationships. Yet the effect of this is to create a desire for something more “real”. The usual progression beyond this is towards ever closer forms of interaction - telephone chat - and sometimes face to face meetings. The kinds of interaction which results from this are those that would be expected from a party where people have let their inhibitions drop: - marriage, divorce, one-night stands, a great discussion about an area of professional interest, the development of deep and perhaps loving friendships, and waking up the next day and wishing you hadn't.

Thus the MOOs do provide a much better simulation of face to face interaction than do the normal pages of the Web, but ironically by replicating the more ephemeral aspects of normal community. They challenge the constraints and norms which structure traditional community, opening up the possibility of movement and fluidity in relationships.

Special purpose MOOs, on the other hand, provide a more restricted model of Web relationships. MOOs such as Biomoo²³ which are based around a specific technical theme and other MOOs which replicate institutions²⁴ have strengths and weaknesses which may be compared with those of the less interactive but more textually rich Globewide Network Academy.²⁵ It can be argued that these 'workplace' MOOs merely provide a space in which an existing de-localised professional or semi-professional community may interact in an additional or enhanced way. Whilst these MOOs are useful to their specialist members, they consolidate rather than create new robust communities. If MOOs are to provide the glue for the formation of new robust community their role will need to be developed in ways which are not yet obvious.

Constructing Robust Communities

The Web is a dynamically developing network of vast numbers of pages which combine text, graphics and sounds. They are transient; locations are shifted, altered, or erased at the whim of individuals. Groups that form within the Web may be even more mobile and fluid in membership than those of the MOOs. In these web groups there frequently is no real catalyst for focusing commitment. No single web community can serve all needs, and so the communities interact and overlap in dynamically shifting and changing patterns.

Given the limits of the Web, it is not surprising that the attempts to build community utilising the Web often contain (usually inelegant) gateways into IRC and the MOOs. The most developed of these include the possibility of real-life face to face interaction. (For example, E Cafe²⁶). However, such a strategy confounds the global

potential of the Web: the membership of a community which depends on physical meetings is restricted to those with access to the associated geographical location(s).

The overlapping nature of web interaction draws our attention to what may be an important distinction between robust and ephemeral community. To the extent that overlapping allegiances may conflict, a world of communities whose members possess diverse overlapping allegiances is disempowered. The strategy of divide and conquer is one which uses allegiances and it has been celebrated for many centuries. And, as the Web and Net demonstrate, ease of communication does not in any way ensure its opposite: the strength that flows from unity of purpose and collaboration.

In short, the structure of communication meeting places is not an adequate recipe for producing robust communities. Rather, form and community must develop together. So at a time when national community is eroding, if we seek to find the basis on which equally robust new community can be forged we need to look for not only the emerging technological basis but also the social basis for these new forms.

It is not easy to find the models, of delocalised, robust social formations, which can make use of these new technologies and provide the basis for equally robust community. One is the community which has been held together by a strong history of shared beliefs. Examples would include scattered ethnic groups - for example the scattered Chinese or Jewish communities. Another is the professional occupational community - chemists, biologists, cosmologists. These are existing communities which may be reinforced through the use of new communication technologies.

An emerging model of global organisation is provided by transnational corporations. These are undoubtedly the basis for a sort of community which is delocalised, but the

nature of membership - as consumer or employee - is highly restricted, and very disempowered.

Another recent development which has been propelled by global integration is the phenomenon of “new social movements”. Examples of these are the women’s, peace, safe-energy, consumer, aid, environmental, civil rights, and animal rights movements. There are many more.

The distinguishing feature of these movements is that they represent networks of social interaction stretching out from local community and frequently reach a global scale. They are motivated by not only the dynamics of physical meetings and the sharing of communication, but also by common ideals, a sense of empowerment, and a desire to reshape the future to a common purpose. Some of these networks are very informal, and others, such as Greenpeace, have given rise to organisations which are very tight-knit.

The Web, and more broadly the assembly of communication systems which constitute the Net are as relevant to constructing these new communities as they are to the development of more formal Web-worlds which serve business and supranational government. Thus, already we find Greenpeace with a global html-based intranet communication system (Greenlink3) and a public Greenpeace home page on the World-Wide Web.²⁷

If we are to look for the construction of new robust communities, then we need to look for the synergies between the roots of robust social organisation and the new developments in communication. Already we see some developments which attempt not merely to allow the existing networks to communicate more effectively, but to provide new communication spaces for their further development. One such example is Communications for a Sustainable Future²⁸ which seeks to combine web pages, bulletin

boards, and Hypermail gate-ways to electronic meeting places for discussing environmental issues.

In conjunction with colleagues at Macquarie University and the EPA (NSW) and Sydney University I pursued a similar experiment developing a prototype Environmental Education Information and Resource Clearing House²⁹. In its developed form it was intended to integrate Web pages, e-mail, Listservs, and citation databases together with more traditional fax, telephone, hard-copy and face to face contact at a physical centre. The Clearing House was designed to impart a greater shape and mutual assistance to the potential community of those concerned with environmental education in Australia. A central feature of this proposal has been to make that community more visible by requiring users to register not only their names but also environmental skills and interests, these being displayed on a Web page which will be accessible to those who have registered.

But these are small and very preliminary ventures into the area of community building on the Web. The central point is that a robust community cannot be built out of technology alone. It must retain community purpose to ensure its durability. Community will only be strengthened when its activities, and the technology which supports them, can be seen to be enhancing its ability to achieve its purpose. And, of course, if its objectives are not good, we would be better without it.

More broadly, and consistent with the insights of the new sociology of technology, we may conclude this way. We cannot understand the potential of the Web or Net in isolation. The potential of the web exists only in the context of the potential of society. Each can help the other work for a more attractive future. The Web is a system of information which tells a story. Who will tell that story, its themes, emphases, and direction, will be a matter of contest. The central issue is to provide the social

mechanisms and the technical support to try to ensure that the story is both helpful to large numbers of people, reflects and helps achieve their aspirations, and has a happy ending.

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¹ This paper, in an earlier draft, was first presented at AUSWEB95 and published in the proceedings of the conference. The earlier version may be found at

<http://www.scu.edu.au/sponsored/ausweb/ausweb95/papers/sociology/falk>

² Department of Science and Technology Studies Home Page: <http://www.uow.edu.au/arts/>

³ The Web has been subject to exponential growth. According to one survey core internet usage increased from 7.7 million users in October 1995 to 36 million users in January 1997 (Source: *Matrix Information and Directory Services* (www.mids.org)). Another survey estimates there are 102 million people with access to WWW, email, ftp, gopher, and telnet services (*Netree's Internet Statistics* www.netree.com/netbin/internetstats). The *International Data Corporation* (IDC) (www.idcresearch.com) predicts that the number of web users worldwide will increase from 50.2 million in July 1997 to 174.5 million in the year 2001 (www.idcresearch.com/f/Ei/gens15.htm).

⁴ See Falk and Brownlow, *The Greenhouse Challenge: What's to be done?* Melbourne: Penguin, 1989. See also the latest report of the IPCC: *Stabilization of Atmospheric Greenhouse Gases: Physical, Biological and Socio-economic Implications: IPCC Technical Paper III* Working Group 1, February 1997. The paper can be obtained from their website: <http://www.ipcc.ch>

⁵ See for instance Malaysia's official homepage <http://www.jaring.my/> Since this paper was originally developed, most national pages have been given over to tourist information and have lost their purely diplomatic intent to commercialism (e.g. <http://www.cs.ucl.ac.uk/misc/uk/intro.html> is now a .com site).

⁶ For example environmental communities: <http://envirolink.org/>

⁷ *Matrix Information and Directory Services* maps internet usage by country population and GDP in its regularly updated "State of the Internet" pages (<http://www.mids.org/mmq/401/pubhtml/ed.html>). Western countries continue to dominate the web, with developing countries being, unsurprisingly, the last to link up and when they do, their usage and presence are minimal.

⁸ Statistics provided by the *Global Interaction* site for "Wired vs Unwired Demographic" in the United States, the nation which dominates the Internet, record that the average household income for internet users is \$66, 700 compared with the national average of \$42, 400. The internet user in the US is 59% likely to be a white collar worker and 81% likely to be a college graduate, compared with national averages of 34% and 33% respectively (http://www.globalinteraction.com/gi/stats_sd/95wired.htm).

⁹ According to *Internet Information* (www.webcom.com/walsh/) of the 611,860 domains registered with the interNIC as of 27 September 1996, 89.7% were .com domains.

¹⁰ In August 1997 users number 42.3 million and URLs number 184 million according to the *International Data Corporation Web Index* (<http://www.idcresearch.com/f/win297f.htm>)

¹¹ Some useful and comprehensive indexes to search engines include *W3 Search Engines* (<http://cuiwww.unige.ch/meta-index.html>), <http://searchenginewatch.com/>, and Netscape's own search engine hyperindex <http://home.netscape.com/escapes/search/ntschrnd-1.html>

¹² Special interest search engines exist for regions (*WebWombat* serves Australian sites: <http://www2.webwombat.com.au>; multilingual *Euroferret* serves European sites: <http://euroferret.com>) and for interest groups (Women's Connection Online <http://www.womenconnect.com/>) and subjects (*Argos* claims with some irony to perform a "Limited Area search of the Ancient and Medieval Internet": <http://argos.evansville.edu>).

¹³ Some major indexes of 'cool' sites are: <http://guide.netscape.com/guide/whats=cool.html>, <http://www.projectcool.com/sightings>, <http://www.coolcentral.com>

¹⁴ A good list of hot lists is at:

http://www.nwrel.org/sky/Library/Subject_Search/Organized_by_Topic/Hot_Lists.html Subject-specific hot lists include the Architecture hot list <http://www.clr.toronto.edu:1080/VIRTUALLIB/arch.html> and the Online Educator Weekly hot list archive <http://www.ole.net/ole/LINKARCHIVE/>

¹⁵ <http://cybersight.com/cgi-bin/cs/ch/chat>

¹⁶ IRC was originally written in 1988 by Jarkko Oikarinen (jto@tolsun.oulu.fi). For more links and up to date information on IRC visit http://www.yahoo.com.au/Computers_and_Internet/Internet/Chat/IRC

¹⁷ See *Voice on the Net* <http://www.von.com>

¹⁸ Contact through info@vocaltec.com

¹⁹ See for example, *Etching Hill Studios* <http://www.net-world.com>

²⁰ For software, information and links see the CU-SeeMe homepage at Cornell University <http://cu-seeme.cornell.edu> and for another perspective see The CU-SeeMe Cool Site http://www.ROCKETCHARGED.com/cu_seeme

²¹ <http://www.cm.cf.ac.uk/User/Andrew.Wilson/VR/sites.html>

²² To visit Lambda MOO site telnet to <telnet://209.1.106.178:8888>

²³ <telnet://bioinfo.weizmann.ac.il:8888>

²⁴ CollegeTown MOO <telnet://next.cs.bvc.edu:7777>

²⁵ <http://uu-gna.mit.edu:8001/uu-gna/>

²⁶ <http://www.ecafe.org/~ecafe/ecafe/>

²⁷ <http://www.greenpeace.org/>

²⁸ <http://csf.colorado.edu/>

²⁹ [http://www.cs.su.oz.au/~gary/env/">](http://www.cs.su.oz.au/~gary/env/)

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