Not the least of the impacts of the Information Age were its effects on communities and cities. The following was a paper I delivered at the Third International Convention on Urban Planning, Housing and Design organized by the National University of Singapore School of Architecture and the Singapore Institute of Planners for the fall of 1997. The Proceedings were published as Cities for the 21st Century, *in which my paper was on pages 155-164.*

At the conference, I learned about Malaysia's plans to convert to a high-tech economy; the plans did not seem to embrace the whole society. In more than one place there was an air of ambition outrunning prudence. At the time I gave the paper, Singapore was covered by a haze coming from out-of-control forest fires in Indonesia. Soon after, when I flew to Jakarta, the haze there was so thick that I could not go out of doors at first. The gap between rich and poor in Jakarta seemed sharp and brittle. Not long after, this air had more concrete manifestations when an economic meltdown raced across Southeast Asia. As historic changes were taking place, community life seemed to be in some jeopardy. Most places began to recover from the economic meltdown by 1999. The full impact of the digital revolution was yet to come in countries like Indonesia, the Philippines, and China.

CHAPTER 28

The Impact of the Internet and World Wide Web on Community Life

Introduction

Early in 1996 there were, of record, 238 150 country codes for the Internet and more in the offing.[1] Governing regimes all over the world clearly understand the benefits of the Internet (using the word in its generic sense) and World Wide Web. Still, many are afraid that local culture and community life may be adversely affected. Because widespread use of the Web dates back only to 1994, after the availability of the Mosaic browser, and of the Internet to the mid-1980s when desktop computers were becoming popular, few systematic studies have been done of their local impact. How much will they help localities reap benefits from the globalized world? Will they contribute to the breakdown of local communities? Can they be used to help reinforce distinctive local culture and community?

Such questions arise in many countries. In the People's Republic of China, 1996 was the year of the Internet, yet barely one out of 10,000 Chinese people is actually wired. State Council Order No. 195 on February 1, 1996 mandated: "Any direct connection with the Internet must be channeled via international ports established and maintained by the Ministry of Post and Telecommunication. No group or individual may establish or utilize any other means to gain Internet access." While Internet cafes flourish in China, only certain websites can be visited. The government thinks of the Internet as a *deus ex machina,* an "information colony" of the West.[2]

Singapore, "the Intelligent Island," plans to interconnect the computers which will be in "virtually every home, office, school, and factory" and at the same time hopes to preserve its distinctive culture, perhaps through controls made possible by licensing service providers.[3] Germany and Australia have taken steps to limit exposure to pornography. France, as usual, is concerned about erosion of its Frenchness. Middle Eastern countries exhibit a similar mixture of attraction and wariness. So do other countries.[4]

The greatest concentration of Internet users is in the U.S., so that Americans, outnumbering the others, have the least to fear from foreign influence. However, Americans have a history of being concerned about the impact of outsiders on local community since 17th-century Massachusetts Bay Puritan settlements refused to include Quakers or Methodists.

The history of the Internet is well known. It began in the late 1960s.[5] More general use did not increase until a domain name system was developed in the early 1980s. Then takeoff began and recent growth in use of the Internet has been spectacular. Minoli claims that by the end of 1991 "the Internet had grown to include some 5000 networks in over three dozen countries, serving over 700,000 host computers."[6] Between December, 1995 and June, 1997 there were an estimated 20 to 30 million users. By the summer of 1997, use was doubling every 40 days.[7] In May/June, 1997 *Boardwatch* magazine's bimonthly directory of Internet service providers listed some 3747 providers in the U.S. and Canada. Providers were proliferating in other countries.

The chief characteristics of the World Wide Web are its multimedia content and hypertext links between documents. The Web began in 1989. Use of the Web grew rapidly after the Mosaic graphical browser was introduced in 1993. By October, 1996 there were over 275,000 Web servers.[8] Computerworld's *Electronic Commerce Journal* reported in April, 1996 that companies were spending $840,000 to $1.25 million to develop Internet-based interactive commerce sites. Electronic commerce—called e-tailing—is expected to have 100 percent compounded annual growth in the next few years.

New technologies and the convergence of telephone, television, and computer companies in the U.S. promise further changes. The U. S. Telecommunications Act of 1996 set off a wave of consolidation. Radio broadcasting is merging with the Internet. Over 1000 radio stations have Web sites. There are some Internet-only stations.[9] Major TV and cable television programs also have Web sites.

Definitions

Obviously, any assessment of the effect of the Internet and Web on community life must start by defining community. This is not easy because of the wide range of different types of community. Not all communities are locality-bound. For Muslims, community means the *umma,* the whole body of believers in Islam. For people going on religious pilgrimages, it means the bonding that arises during the religious experience. It can mean an ethnic diaspora that remains interconnected despite geographical dispersal, or may mean a chat group on the Internet.

Definitions vary in different parts of the world and change over time. Even if we narrowed the focus to place-based communities, it must be noted that patterns of culture (national, ethnic, local), military situation, economic structure, social stratification, and transportation and communication vary not only from country to country but also within a single country. There have been many different types of cities and towns: the temple-city, the imperial, national, or provincial capital, the frontier bastion, the cosmopolitan port, the county seat, the company town, the factory or railroad town, the university or resort town,

the suburb or exurb, the isolated small town, and so forth. John Ardagh has concluded that no city could be called "typical" in Europe.[10]

Political circumstances have varied. Historic Muslim cities were not a single juridical entity but a composite of subcommunities. In Europe, before the French Revolution, different parts of town were often under the jurisdiction of different rulers. The degree of local self-rule has varied in different parts of the world.

It is commonplace for towns and cities to contain a certain number of strangers and transients. Sometimes such people belong to subcommunities of their own whose boundaries do not coincide with the boundaries of the host community.

Undoubtedly, some towns and cities can be found which are not true communities because such a high proportion of their people are strangers to one another or have loyalties to other places. Such towns may play a needed role as transit or brokerage centers. Ordinarily, a town or city is not a satisfactory place to live or do business unless a significant proportion of its people have some rootedness and share a common set of values and symbols.

When too many people migrate in or out too rapidly, when there are radical economic and demographic upheavals, when there are too many diverse group identities not functionally integrated into the local economic structure, when too many cultural influences come from the outside too rapidly, when owners and employers are too absentee, then the requisite common values, symbols, and rituals that sustain community may be missing. Could the same be said if too many local citizens orient themselves primarily to virtual communities on the Internet?

Americans are sensitive to these issues because of the threats to local community they have experienced since the beginning of their history: the waves of immigration difficult to assimilate, the long westering process, migration from small towns to cities, the absorption of local small businesses into national or international big businesses, the gradual concentration of money and power in the hands of the federal government, mass media's invasion overwhelming local culture.

Place-Based Systems

Since World War II, American scholars have offered four different definitions of community. In the 1950s, the emphasis was on place and system. Political scientists wrote: A community system is formed by a "number of interacting people whose relations with one another are regulated by common symbols or values" because "they share the same geographical area for residential and sustenance activities."[11] "The truly distinguishing feature of a community is a mental attitude, a sense of loyalty and identification directed toward a specific area."[12]

Sociologists, influenced by Talcott Parsons, defined communities as systems or parts of systems. Philip E. Jacob wrote in 1964: "Social norms, that is, values which permeate widely throughout the society, are the bedrock within the community that holds them." In the same book, it is written that social values help determine the distribution of resources in a society and that this distribution reinforces existent social values. Symbols and images are important for identity and role. Community exists when people are held together by mutual ties that give the group a feeling of identity and self-awareness. "The more widely diffused and the more firmly implanted the social norms of a community, the more stable, predictable, and cohesive it is likely to be."[13] However, such a community may resist change to its own detriment.

In *The Eclipse of Community,* published in 1960, American Maurice Stein wrote: "It almost seems as if community in the anthropological sense is necessary before human maturity or individuation can be achieved, while this same maturity is, in turn, a prerequisite for community."[14]

Psychologist Erik Erikson wrote that "identity has to be confirmed by environing community." Roles have to be available which significant others will accept. "In the absence of identity models with which to experiment, the adolescent is compelled to adopt a set of role personalities compulsively. These allow him to participate with others in various areas of endeavor without really being committed or in communication."[15]

The 1960s were traumatic years for some Americans. Socioeconomic changes undermined community life. The decades since then have also witnessed rapid change. When online support groups became possible, some Americans joined these virtual communities as a way of cushioning change. As global trade increased and businesses were increasingly multinational, business elites relied increasingly on electronic communication.

Using the place-based systems model, one could measure the degree of community in a locality by looking at its collective memories; its values, symbols, and images; the degree of community integration; the amount and kinds of social pathology. The influence of the Internet and Web could be measured in terms of how they affect these things.

The Network of Networks Model

The problem is that definitions of community have changed. By the 1970s and early 1980s, American scholars were beginning to abandon the systems model in favor of network models. Community was being redefined as an attribute of networks or as the locale where networks converged. There were case studies of personal communities in Toronto, Detroit, Kansas City, Northern California, black Los Angeles, Mexico, France, London, Hong Kong, India. Barry Wellman

argued: "The network approach enables analysis to get beyond broadly vague arguments about whether community has fallen apart, held together at the core, or is really a heterogeneous sparsely knit set of friends."[16] "Clusters of community relations can be seen as a network of networks."[17] More recently, Graham and Marvin have concluded that "cities are being restructured from internally integrated wholes to collections of units which operate as nodes on international and increasingly global economic networks."[18]

Using the "network of networks" definition, the Internet is community, or is one of the elements of community. However, Wellman believes that "users of computerized conferencing need the . . . interactions of in-person meetings as much as they value the easy connectivity of electronic mail."[19] To neo-Confucians or Muslims who have a normative definition of community, Wellman's model probably will not suffice.

Disparity Between Global Networks and Place

Writing in the 1980s and 1990s, Manuel Castells offers still another model. He depicts a clash between two types of community—as he puts it, a clash between the space of flows and the space of places. He says that dominant managerial elites in the global economy and society form transnational and translocal networks with a culture of endless construction and deconstruction. The most basic network is the financial sphere.

Castells warns: "The global multimedia networks constitute a digital universe. The global city is not a place, but a process." People not party to the network still function within geographic spaces where life is based on physical contiguity. "Unless cultural and physical bridges are . . . built between [the space of flows and the space of places], we may be heading toward life in parallel universes." Because of modern telecommunications, the megacities in the world are "globally connected and locally disconnected physically and socially." According to Castells, place-bound societies and unwired people—e.g., those not globally connected—are or soon will be backward and marginal.[20]

If a community is defined simply as a group of people held together by mutual ties that give the group a feeling of identity and self-awareness, then members of the community need not all reside in the same area. From the earliest days of merchant caravans, the world has known itinerant communities. Since early history, there have been diasporas, such as those of the Jews and Armenians and—later—those of the overseas Chinese, maintaining a common identity over wide spaces and long periods. From the late medieval trading companies to more modern multinational or global corporations, business organizations have found ways to maintain a common culture and coherence despite dispersal. Now the Internet and Web can be helpful.

The Amalgam Model

Howard Rheingold, in *The Virtual Community,* describes how he had participated for an average of 14 hours a week since 1985 in a global electronic community.[21] By 1993 there were 8000 people in this virtual village. His conclusion: "People in virtual communities do just about everything people do in real life, but we leave our bodies behind . . . the richness and vitality of computer-linked cultures is attractive, even addictive."[22] He suggests self-monitoring. "Virtual communitarians . . . must pay for our access to each other by forever questioning the reality of our online culture."[23]

Rheingold believes that such virtual communities do not distract from local community: "There is an intimate connection between informal conversation, the kind that takes place in communities and virtual communities, in the coffee shops and computer conferences, and the ability of large social groups to govern themselves without monarchs or dictators."[24] This, of course, is no solace to monarchical or dictatorial regimes. He also acknowledges that the Internet and Web can become—are in the process of becoming—another instrument for commodification and reinforcement of consumer values. This is no solace to societies which wish to maintain other kinds of values.

Traditionally, localities dealt with sojourning visitors by ghettoizing them. Social separation was reinforced between people who were purely local and those whose work or other activities carried them frequently elsewhere. Today, physically dispersed Net-based communities ghettoize themselves, if not entirely, at least partially, from geographically-defined local communities. The question is, do they damage or enrich the place-based community?

A variation of the amalgam model is the one suggested by Graham and Marvin: "The city is an amalgam of urban places and electronic spaces."[25] Silicon Valley, California, is an example. In this model, place-based community and virtual communities reinforce one another.

Silicon Valley, like Singapore, has large numbers of users of pagers and cellular phones. Its people stay connected much of the time. Large numbers of its people use the Net and Web. New companies in Silicon Valley often become global companies early in their history, dependent on global telecommunications. Despite all of the electronic communication—or because of it—there is a high degree of personal networking. Despite intense competition, there is a high degree of cooperation. Despite global orientations, companies have a strong commitment to the place-based community. Consultant Tom Peters has said in jest, but also in earnest, that Silicon Valley succeeds because of its bars: "Information flows informally after the fourth glass of Chardonnay."[26]

The Valley, of course, is not only dependent on an Information Age economy; it played a pivotal role in creating the Information Age. The most important fact about the Valley pertaining to community is that—for a long time—high-

tech businesses in the Valley have formed a community based on rapid change. This is one of the chief reasons for their success. "The Valley is full of people who believe they can reinvent the future."[27]

The Valley developed its unique culture, based on a combination of entrepreneurship and risk-taking, but also cooperation, early in its history. Annalee Saxenian claims that the cultural homogeneity of Silicon Valley's founders strengthened their sense of community and identity. "Virtually all were white men; most were in their early twenties. Many had studied engineering at Stanford or MIT, and most had no industrial experience. None had roots in the region; a surprising number of the community's major figures had grown up in small towns in the Midwest and shared a distrust for established East Coast institutions and attitudes."[28]

The "habits of informal cooperation among Silicon Valley engineers predate[d] the semiconductor industry . . . Entrepreneurs came to see social relationships and even gossip as a crucial aspect of their businesses."[29] The Homebrew Computer Club, which played such a pivotal role in the evolution of personal computers, was founded in 1975 "by a group of microcomputer enthusiasts who had been shaped by the counterculture ethic of the sixties."[30]

To repeat: Silicon Valley succeeds because so much information flows informally. "The region's social and professional networks [are] not simply conduits for the dissemination of technical and market information. They also [function] as efficient job search networks."[31] Job-hopping among small firms' employees averages as high as 59 percent a year.

"As individuals [move] from firm to firm . . . their paths [overlap] repeatedly." "As a result, Silicon Valley's engineers [develop] stronger commitments to one another and to the cause of advancing technology than to individual companies or industries." "This decentralized and fluid environment [accelerates] the diffusion of technological capabilities and know-how within the region."[32] The velocity of information flow is very high.

Venture capital firms, law firms, and educational institutions all supply a reinforcing infrastructure. The region has "developed a diverse and adaptable industry ecology." "Technology exchange agreements and joint ventures were . . . commonplace in Silicon Valley long before they became staples of American industry."[33] Business associations play an important role. Trade unions are virtually absent.

Because of its electronic and software companies, the Valley's economic fortunes rise and fall with the boom and bust cycles of the semiconductor industry. The semiconductor industry typically has six-year business cycles. The Valley's economy declined between 1985 and 1992; then it recovered quickly, adding over 125,000 jobs between 1992 and 1997.[34] The "venture capital community promoted interactions by encouraging the companies in their portfolios

to work together."[35] Nevertheless, some of the old quality of a tight-knit technical community has been lost.

A new wave of startup companies appeared in the 1980s. The Valley became "a complex of computer-related specialists."[36] Through the 1980s and into the '90s, jobs shifted from manufacturing to the service sector until the two were almost in balance.[37] Nevertheless, in 1990, "computer manufacturing businesses alone employed close to 60,000 workers in the Valley."[38]

The 1990s boom in the semiconductor industry (with a brief 1996 downturn) rested on a strong export base. Growth in the use of the Internet and the multimedia Web promised to keep the good times rolling because it placed a premium on bandwidth, which meant a change to higher speed modems and increased demand for routers and switchers. The need for more cable networking products would also help the Valley.

One of the effects of rapid growth was to create a demand for technical workers for which the locally produced supply was inadequate. Workers poured in from various parts of the U.S. and other countries, creating a multiethnic, multicultural environment. Because business competition put a premium on product cycle time, everything was quick-paced. Time was being compressed anyway, in the Information Age. Peters refers to the "nanosecond nineties."

To become "instantly global," new companies often relied on partnering and joint venturing with foreign businesses that could supply access to markets. A premium was placed on continual innovation. The sudden growth of the Internet added to the speed and commotion.

Over 37 percent of the Valley's workforce is concentrated in technology clusters, compared to some six percent for the U.S. as a whole.[39] Yet, in the Valley, as elsewhere in the world, the fortunes of computer-literate people diverge sharply from the fate of those who are not. Those who own computers are more highly educated and affluent, on average, than those who do not. Despite the optimism of the amalgam model, there is continued concern about social polarization. Tapscott asked in 1996: "Is there an emerging 'revolt of the elites' who will use the new infrastructure to further cocoon themselves from the broader community?"[40] Graham and Marvin refer to "information apartheid."[41]

Silicon Valley is composed of the city of San Jose and a number of small- and medium-sized towns. They differ from one another, but are internally relatively homogeneous. Problems of maintaining community differ from one to the next.

Community Use of Electronic Communications

When the Web became usable and popular, like other cities in other countries, American cities—already using the Internet—began creating Web pages to attract tourists, shopping, skilled workers, or business investment. Sometimes

the purpose was simply to project a good image. Cities used electronic communication to dispense services and information at a time when libraries, schools, and museums were being defunded. Sometimes social assistance programs were administered electronically. Citizens could access government databases. At the end of 1996, there were over 25 municipal Freenets.

Some communities went further. Santa Monica and some other California cities were developing Public Information Utilities allowing electronic communication between municipal departments and citizens on key local issues. Santa Monica installed a system for electronic town meetings.[42] In Silicon Valley, all kinds of entities and individuals had websites.

[**Section omitted**]

Conclusions

It is too soon to say what the ultimate effects of the Internet and Web will be vis-à-vis community in individual towns. The subject is far more complex than space allows for discussion here. And it is far too soon to offer conclusions about patterns in the world at large. A vast amount of research has yet to be done.