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Thinking About a Wireless Future
The Social Implications of Mobile Communications

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It's easy to get bogged down in the trees and forget about the forest.

So lets not worry about details and standards and protocols and spectrum and market shares and.

Imagine instead a future world where mobile communications are cheap and ubiquitous. Not to mention healthy. Assume away for the moment, cost and spectrum constraints.

Imagine a world where people can walk around with a lapel phone into which they can talk, with voice recognition doing the dialing. "Hello, connect me to X. Text could get transmitted as well, and displayed, perhaps in the special LCD glasses people could wear.

And video cannot be far behind, either.

What would such a world look like?

Of course, most people who bother to think about these things think it's a world where everybody would always be connected to anybody. I disagree. To the contrary, mobile communications will be a major tool of social isolation and of a fragmentation of many existing societal bonds. And I'm talking as a lover of over-the-air communications, as a card-carrying radio amateur, Advanced Class, who uses his 2-meter rig when driving around.

Precisely because mobile communications will be, in time, enormously successful and ubiquitous, it will create much more change than we imagine. To be optimistic about mobile communication also means to be realistic about its impact.

Marconi was once asked what the difference of radiotelegraphy and the Morse telegraph was. And he said, "Morse's telegraph is like a dog, you pinch him in the tail, and he barks in front. And my telegraph? It's the same idea, except without a dog.

It would be shortsighted in the extreme to think of mobile communications as just a dogless telegraph, a cordless phone, a

mere convenience. The wireless became radio and television, and it transformed culture and politics. The horseless carriage changed not just the cleanliness of streets, but also the citiscape and the way we live, shop, and procreate.

Why should mobile communications be just a convenience and stop there? Why should technical dynamics not be matched by social dynamics?

I'd like to propose as a basic principle that anytime one adds or enhances some informational flow, one subtract or reduces other informational flows. Of course, its not a zero-sum game, there is no ceiling, but there are tradeoffs, with only so much attention span to go around, only so many human relationships one can sustain. When the ratio of the cost of communication (including its convenience) to transportation changes, and when the ratio of the cost of having a distant personal and professional relationship changes relative to having a close one, the result will be changes in the pattern of economic and social interaction. If one develops new routes of communication, old ones atrophy. Just look at what happened to Venice after Columbus and Vasco de Gama. It would be naive to believe that widespread mobile communications would not similarly cause drastic change in established patterns of communication.

It is true that mobile communications provides, in terms of technical capability, a much wider and more convenient reach. It's not just temporal that is enhanced, but also geographic reachability. At present one can be reached by wireline phone only close to a wireline, which accounts for only about 2% of the land area of the US. Reaching a specific individual is only a fraction of that, close to infinitesimal. Which is why people mostly congregate around nodes called offices. Wireline telecommunications are still essentially territorial. But mobile communications will become non-territorial, and ubituitous.

Is it really true that everyone could call anyone else? (And let's ignore the 3/4 of humanity that wories about other things, such as food) Suppose that everyone else also wants to talk to Mr. X. First, friends and family. Then, acquaintances, then, very distant acquaintances. Then, long-forgotten friends across the ocean with an imperfect grasp on the difference in time zones. Then, credit card companies. Then, telemarketers. For all of these people, X is only as far away as a spontaneous mumble into their lapel.

The old wire technology provided its very non-ubiquity as a screening mechanism. No more. Now we need other screening mechanisms, such as restricted access codes, intermediary screening secretaries, computers, caller ID identifiers, or access charges.

Most importantly, there will be elaborate social protocols of who can get through to whom. Typically, those higher up the hierarchy can reach those below. Precisely because access will be so easy in technical terms, it will be highly structured in social terms. In consequence, there will be much less of the casual spontaneous chat at the water fountain, the elevator, or the college walk. The more communications becomes electronic, the more structured the communications process becomes. Thus, in no way can it be said that everyone will be reachable. It couldn't work.

Now this is true for point-to-point, or rather person to person communication. What about person-to-multiperson? We must stop thinking of mobile communications as a linear technology. It's just as much a group medium, a broadcast medium, a mobile bulletin board.

Eventually, telemarketer will call to hundreds of people at the same time, broadcast fashion. Or even send out fliers and video messages to them, broadcast fashion. It's like radio and tv, but targeted only to very specific group, by dialing their numbers. Or by reaching everyone who happens to be at a particular shopping mall or intersection. There is also the two-way capability: "order now by mumbling 'yes' into your lapel. We'll ship and bill."

Mobile communications will become a very powerful advertising medium, because there is less and less time to reach people's attention when they are not engaged otherwise. So why not reach them when they are driving or walking? Entertainment programs can't be far off, either. And then adult programs, telesex on the run. There will also be, no doubt, **personal broadcasting** where a person can simply call out to hundreds of often innocent tele-bystanders and transmit -- via voice, text, or video -- their views on any subject.

Personal broadcasting may vastly increase the number of people who practice creative story telling, and to a greater diversity of ideas.

But if everyone will talk, who will listen? It's like writing academic articles. There is only so much attention span to go around.

So the inevitable outcomes of personal broadcasting will be several: first, an escalation of the "heat" of presentations, in order to get attention, like those hyper-active disc-jockeys and talk-show hosts. Second, specialization into micro-casting, where people talk to highly specialized audiences.

There is nothing wrong with these tendencies -- which are also progressing, for similar reasons, on wireline networks. But the result is a loss of common messages, what used to be called the common denominator, and a de-massification of the public, whatever the term "public" may mean in the future.

Moving from tele-solicitation and tele-sex still further down on the ladder of respectability, we reach politics. It, too, will be transformed. Mobile communications will develop into a very powerful techniques of political mobilization. Also, the emergence of tele-cults, of "virtual communes" will be inevitable. This has some positive aspects, in terms of political participation of organizing groups to make their voice heard. Critical mass gets generated and produces energy. But it may be a case of too much of a good thing. People can be mobilized almost instantaneously to respond to an event, to march, to protest, to raise their electronic voice by calling instantaneously their representatives. The voice of the leaders is in the ear, his picture before his followers, giving instructions, exhortations, tactics. Political stability requires a certain inertia, too. And instant and constant communications reduces political inertia.

Political groups can become continuously connected to each other. The term "political network" becomes one of telecommunications

reality. Groups talking to each other become a form of community, despite physical distance.

Other, more benign groups emerge of people in regular contact with each other, either constant chat lines, or more likely groups with shared interests, whether social or professional. There is no need for these groups to be of people who are physically close to each other. They could be all over the country. And with automated translation, they could be all over the world. The pool of potential friends and neighbors increases from those in the surrounding communities to hundreds of millions.

In consequence, as one gathers distant electronic friends, the local and territorial bonds weaken. The new telecommunities become the new social environment. But these aren't just the electronic equivalents of physical communities. By their nature, the tele-communities would tend to be specialized and stratified. This will tend to generate narrow, specialized groups of people who share interests and views, and will generate inveritably lead to some intolerant and extreme groups. There is less of the averaging that goes on in the physical world.

In telecommunities, people would isolate themselves. Since social skills are acquired as a matter of socialization, there will be

less need for interpersonal skills, which will in consequence, atrophy.

Nervous parents would keep in touch with their children, retarding their independence. With limited skills of self-reliance, a retreat into comforting groups becomes more likely.

In some cases, one could even imagine entire groups electronically "seceding" from others by severing communication links, or by restricting the information flows from certain other tele-communities they don't approve of.

Naturally the workplace would also be transformed. In the past, jobs and work arranged in a way that assures physical access to the physical object of work, and of physical teamwork. So people worked close to each other and to the object of their physical labor.

Later, with informational occupations, reachability became the key, access to data files, information flows, and rapid processing.

Within an organization that meant substantial stationariness. But now, the need for physical presence declines. Face-to-face is still important, of course, but not at any cost, and commuting and

office space are expensive, so there will be less of it.

Being continuously electronically tethered to one's organization is more than telecommuting by calling and faxing in. Now we are talking about **continuous** participation in group work, information-sharing, talking to each other, even seeing each other, accessing documents, etc.

This does not necessarily mean working at home. There are intermediate arrangements possible, such as space at a suburban office park, still far from the main office of employment. Obviously, many people not change their life pattern radically. Change is always at the margin.

There are advantages to this. Flexibility, proximity to family, ability to travel, ability to uncouple locational decisions on place of residence from that on work.

In conseqence, the office will become virtual rather than physical. The company itself becomes a virtual organization, a network relationship.

Indeed, one may work for several such virtual organizations at the same time, and the classic employer-employee relationship may be

superseded by freelance type arrangements in which the organization

bids for particular skills it needs at that moment.

Not working physically at any particular place means that the

traditional separation of workplace and home, of worktime and free

time, of job and of private, becomes vague. One is always

reachable, at least by those above in the hierarchy, whether

superiors or customers.

One is always on, never away from it all. When can one be

interrupted? In a movie? At church? In a lecture on mobile

communications?

As the electronic community keeps intruding into the physical

community, in theory, one can escape continuous availability by

disconnecting. But in practice, one is expected to be reachable.

In practice one depends too much on the social and professional

ties to disconnect. It's like telling people in Los Angeles to

walk, because it's healthier. They understand that, but the life

and workstyle makes it impossible for them to do it anyway.

Work intrudes into leisure, but leisure can also intrude into work.

Even so, one should expect work to expand more aggressively into

leisure than the other way around. It can make more forceful

demands.

In this setting, mental work patters must change. There will be much more multi-tasking, and more concentration on the audio of mobile communications. This means a detached physical presence, with ones mind being elsewhere. Physical environments that do not distract would be favored. No visual disturbance, no noise. This will have architectural consequences of the use of physical space.

Simlarly, communications skills will change, with greater emphasis in interpreting audible clues and of transmitting them. Communication will become more audial-oral, and less visual. In Marshall McLuhan's term, it will become "hotter", more emotive.

And with physical surroundings less important to participation in a virtual community, how will people speak to each other? Specialized groups use specialized jargons and inside terminology, increasingly impenetrable to outsiders, like the CB-jargon of truckers. Tele-communications, in time, will evolve their own private quasi-languages.

As people work and relate to others in their telecommunitites, they also begin to drift out of their time zones to adjust to that of the group. Examples are the stockbrokers in California, who already

keep weird hours in order to trade with the east.

Under the pressure of information flows and the ease of transmission, attention span declines. Impulsiveness grows. People talk and order at a whim.

With less need to congregate at workplaces, and the ability to socialize and work wherever one is, population can disperse away from urban centers. Physical attributes become less important. After all, nobody sees you much.

Living patterns change. Some forms of crime become easier, as witnessed by the popularity of beepers among drug dealers. On the other hand, there is greater safety from personal violence with mobile communications, and a suspect could be tracked more easily by cops on the electronic beat.

The flip side of this is reduction in privacy. One can be tracked, and eavesdropped into.

In an environment of virtual communities, which is the main one? Is it the territorial nation state? That was only one way to slice the globe. In a virtual environment, territoriality becomes secondary. Instead of the twelve tribes forming a nation, telecommunities can

form a tele-federation. In the old days, if people wanted a change communities, they immigrated to America. In the future, they will simply join another telecommunity, as tele-immigrants. And what is the optimal size of these telecommunities?   Of these tele-federations?

The telecommunities themselves assume aspects of quasi jurisdiction. They mediate among their members, assign cost shares for the activities, contest control, hold elections, accept members, expel others, etc. Since these new communities are highly vulnerable to breakdowns of systems, they must institute security arrangements. They become like territorial jurisdictions.

And as this happens, territorial conformity declines. Commonality of experience declines. Grass roots become fiber- and radio-roots. Social centrifugalism increases.

Conclusion:

Communications technology connect people in new ways. Which also means it disconnects people from the old ways of linkage. In this case it helps people to form convenient new communities; but it also disconnects people in problematic ways from traditional community patterns. The transition will not be easy. Social,

political, and economic centrifugalism will abound. It means that we must think about where we want to go, and then conclude how to get there. Take universal service. Imagine a society as described with some people not able to afford to interconnect. They'll be like aborigines living in territorial reservations.

I have consciously painted an extreme picture. Reality has always been more gray than black and white. The changes suggested here are based on gradual rather than radical change in the ratio of transportation cost to communication cost and convenience, and, relatedly on a lowered marginal cost of communication. They will therefore affect people at the margin, and some will remain unchanged in their behavior. At present, we are barely at the beginning of this evolution, and there is time to think. But when one has no idea where one is going, one may actually end up there.