

8. North, Central, and South America

Discussion Leader: C. Richard Neu

Rapporteur: Martin Libicki

Approach

This breakout group was tasked to look at the impact of information technology on both North and South America. Roughly speaking, it spent 70 percent of the time on the United States, 5 percent of the time on Canada, and the rest on Latin America.

The United States

Three broad but interrelated areas attracted the bulk of the discussion: the future ubiquity of the Internet, the impact of information technologies on societal disparities, and the potentially disruptive consequences of e-commerce.

The Future Ubiquity of the Internet

How deeply will the Internet penetrate? Will it be a plaything of the top 60 percent of the population (as cable is today) or will it be as ubiquitous as over-the-air broadcast television? Economics drove the group to a mixed answer. Low-bandwidth over-the-phone services that required no more than a fancy handset to acquire would be universal. The higher-bandwidth entertainment-level services that would likely be billed separately would have statistics similar to cable in 2020; it might be considered near-universal at perhaps the 70 to 80 percent level. That said, some urban poor would sooner buy cable than telephone service.

The group consensus saw the Internet of 2020 as driven by entertainment (more than half of all Internet bits today are streaming media: telephony, audio, video) and not necessarily news, shopping, or knowledge in general. Left unknown was whether the services that piggyback on entertainment -- e.g., e-commerce, or

even browsing -- will be used by those who bought into the Internet for other reasons. Feelings seemed to be that, by 2020, what is exciting and still being discovered today will be considered utilitarian tomorrow, with people having long ago made up their minds on whether to enjoy this or that service. Left to be determined is whether the Next Generation Internet project will develop Internet uses not yet anticipated today.

Will some technologies be stopped? Despite possible concerns over privacy (and thus some requirement to protect data), there was no indication that information technology would be slowed down any. What public backlash may ensue is likely to be small-scale and disassociated and have little ultimate effect. There are few levers for halting those technologies that no longer depended on government support or even much government approval. Biotechnology is another story, with existing limitations already on genetic research in Europe and research using stem cells and fetal tissue in the United States.

Potential Impacts on the Construct of Society

The disenfranchisement of the information-poor will continue and likely exacerbate.³¹ This, despite the probable emergence of easy-to-use applications that require less sophistication to get something useful from it. Five years ago, for instance, one had to fly frequently to understand how to garner the best airfares; today, priceline.com substitutes for sophistication.

Will the public information spaces today erode in the face of small exclusive groups? Tomorrow, so-called "inside/insight clusters" may resemble today's The Well: a 5000-person by-invitation-only group founded by Stewart Brand and originally limited to Northern California. Select people in such clusters would trade inside information and insights to each other without letting the greater public into their discussion.

The decline of democratizing institutions led to the question: whither trade unions? Even though unions are fading in importance, the inequality that unions were established to mitigate is increasing: does this suggest a role for some substitute institution? And if so, what kind? No one in the group could come up with any substitutes that were credible.

³¹ For instance, the common practice of UPS to drop expensive packages on suburban doorsteps without getting a signature would not work in the inner city; thus e-commerce becomes more expensive there.

How will the virtualization of commerce also affect other critical values such as governance or culture? No one expected the Government to be an important factor in technological development anymore; it is, at best, irrelevant, and, at worst, a nuisance. But if governance erodes, who will be doing the regulation? Can industry be counted on to self-regulate in ways that are considered legitimate by the public? Again, the group could more clearly see institutions in sunset than assess the character of those whose sun might be rising. So, it was feared that although the public would be deeply skeptical of self-regulation, it would also be skeptical of external regulation (a response that echoes the polling data on the Microsoft antitrust case).

As a general rule, the prior totems of national cultures seem to be eroding as well, and today's fads are increasingly global in character. According to one study, only 48 hours are required for a fad to spread around the world in the population of hip 12 to 14 year olds. One result may be that while we do not share the same education (e.g., Milton) we do share the same corporate-derived cultural icons. But this is culture at the superficial level. In the main, information technology enhances factionalism. For instance, the one oddball in each town with an esoteric interest (e.g., old reruns of "Car 54, Where are You") can find similar oddballs in other towns; hitherto, each was isolated.

Much of the discussion also returned to the impact of information technology on privacy and security. A salient issue may be the deliberate use of personal information. There is a sea-change underway not only in the amount of information collected on individual consumers, but also in the degree which such information can be exploited, and the values to which the market is putting on such data for the purposes of micro-marketing. Indeed, efficiencies in exploiting personal data will become a major battleground for corporate preeminence. This leads to a paradox: we want personal service (that is, we want those who would sell us goods and services to know what we want), but we feel less comfortable about the giving up of privacy that goes along with being more well known. And it will become increasingly hard to opt out of a system that traces one's every financial move.

Many forces other than e-commerce are turning the United States into a glass-walled society. Cell phones will routinely have GPS devices built into them. (Current technology already allows them to indicate which cell they are closest to.) Four to five million surveillance cameras are already at work in the United States, with public places accounting for an increasing percentage of them. The marriage of IT (in the form of smaller and more powerful sensors) and biotechnology may result in the wiring to the Internet of those under institutional or medical watch. For instance, someone who earlier would have

been incarcerated for having committed a crime would, instead, be wired so that increased hormone levels associated with impending violence would precipitate a warning to headquarters coupled with the release of a calming agent into the bloodstream. Will sensors be something that only the powerful control? The most likely answer was that sensors would be controlled by those who had interests that sensor information would serve, and that, yes, they would tend to be (but would not have to be) the powerful.

Worse may be the possibility that surveillance and classification technologies that are used more-or-less benignly in the United States, may be used in less friendly fashions when sold to third world governments. In the meantime, the longer the U.S. environment remains benign, the longer surveillance technologies will be allowed to advance without being stopped by public opposition.

Another threat may come from criminals who use computer hacking to steal data from original collectors. The former may be fastidious about its use; the recipients of purloined data, meanwhile, are less likely to be bound by such restrictions. In the meantime, consumer resistance to sending one's credit card number through the ether is rapidly fading, and so one potential barrier to e-commerce in its present form is coming down. Although the financial industry is confident that it can reduce unintended leaks of information, someone who ran big networks muttered darkly that there was a lot that a hacker could do to them. Their security problems are worse than DoD's because they invite the potential adversary into the system -- only they are called customers.

Security policy is intimately connected with customer trust and how much one empowers the customer. The answer is not to cut off all the links but to find ways of exercising damage control. Risk control has to become an important and everyday aspect of doing business -- and risk profiles change every quarter. Overall, "back ends" (that part of a computer system that does the internal processing rather than interacting directly with the consumer) are hard to protect. Only time will tell whether bad guys or good guys pull ahead. In the last three years at least, functionality has been purchased at the expense of security. Business people, themselves, have to be able to know whether they have been attacked by individuals or nation-states (and if the latter, then all bets are off and corporations are likely to call on their government to help them).

Side-Effects of E-commerce

Another question was how far e-commerce would transform the U.S. landscape (almost literally). Business-to-business transactions are already squeezing out the ranks of purchasing managers. *Webvan* estimates that every warehouse it

establishes eliminates 30 supermarkets -- and their goods turn over far faster, leaving a net reduction in floor space. Banks, for instance, have 6000 acres under roof nationwide -- who will need that kind of space in a future in which people need no longer appear in public areas to acquire goods? So the question recurred: what communities are likely to be hollowed out as the e-commerce wave rolls on? One answer might be: fewer than expected because most commercial jobs are spread more-or-less evenly in proportion to the number of consumers in an area. Instead, the hollowing-out would be everywhere, but more likely to be noticed in slow-growing areas while fast-growing areas quickly filled in the surplus floor space with new activities.

Where might virtual clustering replace physical clustering (e.g., Silicon Valley) -- or will physical contact retain its importance (especially in cultures where face-to-face contact is still key to managing the trust relationship)? The tendency was to believe that face-to-face still mattered. Yet, face-to-face needs would more likely spur get-togethers for meetings rather than the concentrating of workers for getting routine jobs done. One consequence of widespread e-commerce may be a shift away from sales and/or value-added taxes and towards income taxes as a funding source for the government -- posing particular problems for regions (e.g., Latin America) where such taxes are hard to collect.

Techniques of consumer manipulation are growing more sophisticated. Supporting technologies include data mining, a better understanding of how adaptive agents work, and even knowledge of how the human brain works. Thus, the best producers speak of putting consumers on a "journey" that lets them off at a decision to buy a product. But NGOs are also proving adept at pointing out what they call the "con job" that consumers are subject to. Take the controversy over genetically manipulated foods that started in Europe and then migrated, in part, to the United States. Although the reactions of farmers and consumers were intensively modeled by adaptive agent techniques, NGOs started talking about "demon seeds," a potent psychological talisman. So even Archer-Daniels Midland, a giant U.S.-based food processing company, is segregating genetically modified from "natural" farm products. Even in the regulatorily benign United States, some forms of product-based coercion may arise: notably anti-smoking pressures.

Increasingly, the rest of the world is beginning to regard the United States as a big and not necessarily welcome data sink. Europeans, for instance, are very upset about the newly-discovered capability of the NSA (working in concert with its counterparts in other English-speaking countries) to intercept anyone's telephone conversations and fax transmittals. (Whether they have the trained manpower to actually listen to what they intercept remains a different issue.)

Perhaps more controversial is the way that the United States is being increasingly used as a data center in ways that may violate privacy norms overseas.

Europeans (and Canadians) feel that corporations are using global networking to get around EU (or Canadian) rules regarding what information may be collected and for what purposes. The U.S. tendency is to leave privacy issues to voluntary self-regulation, counting on honest disclosure and the (residual) ability of individuals to withhold private data and walk away from transactions that require it.

Over the next twenty years, the privacy violations that gain attention may come less from curious governments than from quasi-legitimate businesses who can exploit personal information for blackmail and coercion. Meanwhile, everyone would have to put up with everyday violations as anonymous others know and exploit for marketing purposes personal features that not everyone is comfortable revealing to the world.

But the government will not be entirely innocent. Surveillance technology may be used to facilitate the work of agencies such as the Immigration and Naturalization Service -- raising, again, the issue of a national identity card (even as the credit card itself moves closer to becoming a private national identity card). The dispossessed may come to be known as the "sin tarjetas" (without cards).

Latin America

Although the penetration of the Internet into Latin America is likely to run at least ten years behind the United States (and some rural areas are unlikely to see much service at all unless cellular telephony becomes very inexpensive), many of the same issues -- such as disenfranchisement -- are likely to become, if anything, even more salient. Indigenous people, for instance, have almost no hope of being IT participants. The privileged, largely urban classes are likely to move closer to the United States. Thus new cleavages may form and old ones cut deeper.

The initial question addressed by the group was what contribution information technology would play in the development of Latin America. Answers were mixed. Countries such as the Dominican Republic had deep-seated woes that IT was unlikely to do much for. Other countries, such as Costa Rica, had inherent advantages and would be able to participate much more widely. Countries that have the Internet connectivity and can therefore better host retired and quasi-retired Americans will benefit.

Which is not to say that Latin America is ignorant of IT. Allende, in the early 1970s, started to implement a cybernetic centralized control planning system for the Chilean economy -- then the Chicago free-market model took over. Today Chile is using auctions to bring about universal telephone service; this is having the ironic result that Chileans may rise in revolt against companies such as Bell Atlantic. Narcoterrorists are very savvy in leveraging technology. Dollarization is also proceeding apace. By 2020, Latin America is likely to have open telecommunications markets.

Overall, the region is likely to be disadvantaged in IT (relative to the West or East Asia); they'll be takers not makers.

First, Latin America has no regional organizations. Indeed, the continent has very little interior with almost every country oriented towards their coastline, and having better communication pipelines to the West (i.e., North America and Western Europe) than they have with each other.³²

Second, Latin America has no lead country doing anything really innovative. Chile might be were its sudden ascent to riches not feeding regional resentment.

Third, Latin America enjoys an awkward and dominating relationship with the United States.

Fourth, Latin America still has a last mile problem, especially outside the urban areas (again, wireless may provide the silver bullet). Overall, integration into the world economy will remain problematic.

Still, the common language (except for Brazil) and culture of the area may lead to a regional identity proportional to and prompted by the fact that everyone can access the same media (and on-line communities) at the same time. Conversely, there is increasing likelihood that the United States will be intertwined with Latin American problems for demographic if not other reasons.

In briefing the results of the group discussion to the entire conference audience, several respondents in the larger audience took issue with the supposition that Latin America was especially hostile to technology, afflicted with sharp divisions, or even particularly backwards. One offered the opinion that Latin America was certainly further ahead than Africa, the Middle East, and South Asia. Another observed that the ABC countries (i.e., Argentina, Brazil, and

³² This phenomenon is broader than just Latin American. Two random countries anywhere in the world are likely to switch their packets to each other in the United States -- a state of affairs resented in Europe and Japan and one which is bound to undergo change.

Chile) had achieved an urban civilization that would not be out of place on the European side of the Mediterranean.

Canada

A brief discussion of Canada raised the question of what aspects of Canada's social model can be preserved in the onrush to globalization. As barriers around the world go down, the top-level logic by which Canada's institutions deal with the outside world would have to conform. This would limit the scope of independence (or Government social regulation), but it was unclear how that would affect the relationship between institutions and the Canadian consumer (e.g., in health care, or community banking).

The consensus seemed to be that Canada would try to preserve its culture. Yet, it was not clear how it would do that when restrictions on broadcasting, mail deliveries, or book sales that apply to physical space cannot be applied in cyberspace. Indeed as the scope for serious social governance differences with the United States narrowed, cultural distinctions (often token ones) would be created in its stead.