Antidote to the Anytime, Anywhere, Anything Syndrome

Book Review— *Telecommunications and The City: Electronic Spaces, Urban Places*

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Telecommunications moves information over any distance at nearly the speed of light. Transportation—now itself becoming more and more dependent on telecommunications—moves people and things over continental distances within hours, or, at most, overnight. Telecommunications and transportation, working together to bridge distances, make it increasingly possible to live anywhere and work anytime, along with providing rapid access to anything—at least anything that can be delivered by FedEx. We hear whispers that cities are becoming obsolete.

Yet, while the growth of telecommunications and transportation is relentless, so too is the urbanization of our planet. The United Nations reports that the population of the world's cities is growing at one million per week. Migration from rural areas is strong because of the greater opportunities in cities for social and economic advancement. The United Nations forecasts that, by 2025, two-thirds of the world population will live in cities, up from just one-half today. In the United States, the Census Bureau reports that the proportion of the population living in cities and their surrounding suburbs rose from 63% in 1960 to an estimated 80% in 1994.

What, then, is the relationship between this trend of urbanization and the technology of telecommunications that facilitates interaction among geographically-dispersed urban centers? In a new book entitled, *Telecommunications and the City*, authors Stephen Graham and Simon Marvin, lecturers in urban technology at the University of Newcastle in Great Britain, have written a definitive analysis of how "electronic spaces and urban places" co-exist and grow together.[1] This 400-page volume is comprehensive in its coverage and could just as fairly be entitled "Telecommunications in Relationship to Everything that Matters."

The book is a tour de force, shedding bright light on a seriously misunderstood topic. The authors

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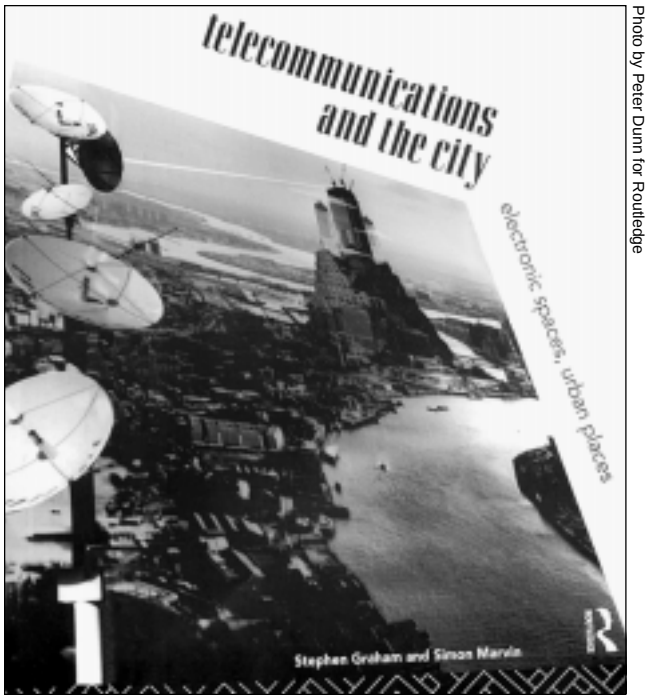

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describe "the overwhelming invisibility of the subject, the long legacy of neglect, and the powerful influence of the utopianists and futurists who have tended to fill the vacuum left by the neglect of telecommunications in urban studies" (page 8). To say the least, as the authors put it, "the effects of telecommunications on cities seem to be far more ambiguous and complex than many would have us believe" (page 10).

The book seems to be based not only on a thorough reading and synthesis of scholarly research, but also on a comprehension of influential popular writing from Alvin Toffler and others. About 700 books and articles are referenced, the most important of which are organized into a guide for further reading. Coverage of European literature is especially good.

Summary

The book is comprised of 10 chapters, the first three of which provide a conceptual framework for the more specific chapters that follow.

The introductory first chapter describes the transformation of telecommunications from Plain Old Telephone Service to telematics, and the parallel transformation of cities and surrounding regions into planetary urban networks. "Telematics" means the marriage of telecommunications and computers, a union now causing the so-called "digital convergence" of data transmission, storage, and processing with new forms of content.

The second chapter of the book describes telecommunications as a challenge to the mainstream paradigms of urban studies and policy-making, both of which tend to ignore or distort technology implications. The authors argue cogently that an improved understanding comes through exploring the interactions between "cities as fixed places where networks intersect" and "telecommunications as supports for a myriad of electronic spaces which operate free of time and space constraints."

Chapter 3 looks at city/telecommunications relations as part of the broader process of analyzing the relationships between technology and society. The authors are critical of the culturally dominant viewpoints of "technological determinism" and "utopian-futurism" wherein telematics technologies are said to drive inevitably toward changes in urban places. For example, say Graham and Marvin, "the anything, anywhere, anytime dream and the presumption that it will mean the collapse of the modern city is central to most futurist visions." The distinguished observer Peter Drucker has written of the central city as not needed and in decline because of the ability to move ideas and information through telecommunications.[2]

The authors prefer, instead, approaches that merge two lines of thought: political, economic, social, and cultural relations generally, and, specifically, the bias of the technology toward supporting existing power structures that use telecommunications to enhance their own mobility and control. The authors describe a study by Kendall Guthrie and William Dutton[3] of the development of telecommunications-based public information utilities in three California cities: the PEN system in Santa Monica, the PALS/PARIS system in Pasadena, and the Infonet system in Glendale. The book notes that these three systems of citizen access to information through computers "rather than being shaped by some predefined technological or economic logic, the varying capacities, configuration, information content, and orientation of the three systems were shaped by processes of decision-making that reflected the political culture and ideas of key individuals." The background and professional training of the technology designers in one city led to an electronic mail approach, in the second case to a broadcasting system, and in the third system to a database for information retrieval.

The conceptual framework of Graham and Marvin for analyzing cities and telecommunications is, as they put it, the simultaneous analysis of three tensions (page 113):

- The tensions between the traditional reality of cities as fixed places and the new mobility supported by telecommunications and electronic spaces. In other words, Wall Street as a place in New York City where people and organizations work, versus Wall Street as a set of people and organizations that operate and hold influence throughout the world.
- The social struggles which develop over the shaping of urban places and electronic spaces. For example, the approaches for dealing with rich versus poor, powerful versus weak, liberal versus conservative, and so on.
- The issues surrounding social representation, identity, and perception in cities and telecommunications. That is, the view of the world through a computer monitor screen versus standing in a physical location.

In each of these three tensions, and indeed throughout the book, the authors put electronic spaces (created by telecommunications) and urban places (cities) on an even footing. Before methods of telecommunications were invented, cities originated in human history as a way of bringing people into proximity for the purpose of easy and continuous face-to-face communications. Graham and Marvin present an elegant, parallel formulation of respective functions:

- Cities make communications easier by minimizing space constraints to overcome time constraints.
- Telecommunications makes communications easier by minimizing time constraints to overcome space constraints.

Thus, telecommunications and cities are both technologies of communication, working in complementary ways. This is especially well demonstrated when networks of cities arise from the effect of telecommunications and fast transportation. "Cities are being restructured from internally integrated wholes to collections of units which operate as nodes on international, and increasingly, global economic networks" (page 36). The authors conclude that the empty space between cities counts for less in economic and social relationships, because one cannot get there as easily as to a node. Hub and spoke systems of telecommunications and air transportation act like fast, exclusive tunnels between the leading cities. These tunnels reinforce the leadership role and influence of the people and organizations that use them often and well.

This raises as the second point in the conceptual framework the issue of social struggle. The authors emphasize that the "most powerful social, economic, and political groups tend to exercise and maintain their power through the production of interlinked systems of related electronic spaces and urban places." The Manhattan financial center is "closer" to London and Tokyo than it is to Harlem and the South Bronx.

And, on the third element in the conceptual framework for *Telecommunications and the City*—the issue of social representation—the authors see an emerging (but not yet reached) parallel between the structuring of human perception in the built environment and in electronic spaces like the World Wide Web. In the pre-video Internet, nobody knew you were a dog, to quote a legendary cartoon in *The New Yorker*. But, of course, video is being added.

One striking comparison Graham and Marvin make is between the virtual reality of on-line networks and corporate computer-based data warehouses on the one hand, and the actual reality of theme parks and malls with entertainment zones on the other. Virtual reality on the 'Net is foreshadowed by the new virtual cities that dot the modern landscape, ranging from the Disney and Great America parks to the Mall of America, a stone's throw from the main hub of Northwest Airlines in Minnesota. Closer to home, electronic game parlors in strip malls feature simulations with ever more realistic use of virtual reality technology.

The bulk of the remaining chapters organize and detail specific urban characteristics that cut across the three themes of the conceptual framework. These characteristics are:

- Urban economies as information-switching centers of the global economy.
- Increasing inequality and polarization in the social and cultural life of the city.
- Urban environments blurring the boundaries between the physical and the electronic.
- Urban infrastructure and transportation increasingly shaped and managed with telecommunications.
- The physical form of cities first centralizing and now decentralizing under the influence of changing telecommunications, beginning with the diffusion of the telephone in the 1920s.

- City planners and policy makers having an opportunity (so far, badly realized) to be shapers of telematics.

Analysis with Both Hands

A dominant characteristic of this book is a very two-handed approach to reflect the complexity and ambiguity the authors see. Between the one hand and the other, there is great potential for variations in outcome:

Urban Economies—On the one hand, there is a global scattering of previously urban functions, as exemplified by keypunching, forms processing, and software development in back offices located on Caribbean islands, in India, and elsewhere. On the other hand, telematics supports the centralization of headquarters and control function in global command centers and world cities like New York, London, Tokyo, Singapore, and Frankfurt.

Social And Cultural Life—On the one hand, "complex processes of social construction of technology are underway within which new social applications are being developed" (page 234). On the other hand, there is "social polarization and the commercialization of both electronic spaces and urban places" (page 234).

Urban Environments—On the one hand, "telecommunications technologies provide the tools for monitoring and mapping invisible environmental change" (page 276). On the other hand, "telecommunications are firmly implicated in the generation of physical environmental problems" (page 276).

Urban Infrastructure and Transportation—On the one hand, telecommunications can be a travel replacement, which is widely heralded because of the growth of telecommuting as a partial replacement for the daily journey to work. On the other hand, "telecommunications-based control systems increase the reliability and efficiency of [road] networks, which in turn may then make them more attractive to users and perhaps increase usage" (page 284).

Urban Physical Form—On the one hand, "decentralization is affecting routinized services" (page 333). On the other hand, "urban centrality is still important for high-level managerial functions that cannot be transferred into flows" (page 334).

In each area just given, however, the two hands are not equal. One hand is dominant, and it typically is not the first hand as typically described by technology companies, futurists, and the dominant political parties. Rather, the authors claim that the other hand, emphasized by social critics and political activists, is the direction of the technological bias.

Contingency with a Bias

Despite the bias of technology, an important message of this book is that the path of telecommunications development is not totally determined by the characteristics of the technology. Rather, the path is contingent upon the effects of its application in different places and under different groups and organizations, even while strong biases that are caused by the combination of technological characteristics and social-economic forces act relentlessly upon the contingent forces.

One contingent potential is that telecommunications can be a great force for social and economic equity, a means for the poor and disenfranchised to walk a new path to choices, wealth, and hope. But, there is a bias working against the potential that manifests itself in a vicious cycle of economic and social polarization, reinforced by the dynamics of telecommunications investment in the new competitive environment. The cycle goes like this:

(1) Disadvantaged people in poverty and unemployment have poor access to basic telecommunications and information services in their homes, schools, work places, and community in general.
(2) Poor access yields low demand for new and improved telecommunications networks and services.
(3) Providers are not interested in competing in these markets, when there is such high demand in wealthier communities that are on a learning curve toward higher telecommunications intensity.
(4) Without a continuation of the universal service requirements, there is an under-investment in disadvantaged communities as the national monopolies disappear.
(5) Combined with a physical withdrawal of retailing and banking services, these communities become ghettoes of the information have nots.

Choices in technological deployment can reinforce the polarization. For example, "New smart metering technologies enable premium customers to have increasing levels of choice while prepayment metering technology based on smart cards allows utilities to socially dump expensive, marginal, and poor customers" (page 40). Growing levels of closed-circuit television monitoring of public spaces and shopping

malls can be used to single out and block access by people who are perceived as not belonging. The process of separation may go further when "electronic immigration" is used to staff the consoles that provide monitoring. The book reports that U.S. organizations are exploring the use of offshore labor to monitor TV camera systems in American shopping malls (page 155).

Telecommunications and the City, to this reviewer, is overly gloomy in its outlook on the social implications. While the book leaves placeholders here and there for the possibility of using telecommunications for social and economic equity, it contains no recognition of the creative destruction and entrepreneurial dynamic that generates new business opportunities and new jobs even as old ways of doing business are obliterated.

Michael Rothschild, author of the book *Bionomics: Economy as Ecosystem*, provides us with a more optimistic view: "Imagining the future structure of an economy undergoing radical change is all but impossible. When George Washington took office, 97% of Americans were farmers. Today, fewer than 3% work the land. If an 18th century Jeremy Rifkin had asked President Washington to describe in detail the jobs that would absorb the talents of Americans about to be pushed off the land, could he have listed tractor mechanics, air traffic controllers, and telephone installers?"

Telecommunications and the City is quite good in covering both the travel saving and travel stimulating characteristics of telecommunications. The former effect is the conventional wisdom, but is in reality only a potential contingent upon policy action to make it come true, as recognized in a new telecommunications strategy designed by this writer for the Southern California Association of Governments to use in its battle against traffic congestion and air pollution. The Los Angeles basin is as much the product of telecommunications as it is the automobile. The travel-stimulation effects of telecommunications are legion, and represent the technological bias that needs to be overcome.

The book occasionally acknowledges the importance of physical presence and face-to-face communications. In shopping and entertainment, "the whole point is to leave the confines of the home to explore physically new consumer space in cities" (page 156). In non-routine business transactions, especially "in the highly uncertain world of the global command centers, tacit, informal, and clandestine information based on social networks and trust is extremely valuable" (page 142). Still, the book is weak in its recognition of the social-psychological and organizational development literature that has delved into the dynamics of telemediated interaction, as exemplified by works by Joseph McGrath,[4] the book of readings compiled by Galegher, Kraut, and Egido,[5] the more well-known work of Sarah Kiesler writing in the *Harvard Business Review*,[6] or Lee Sproull in *Scientific American*.[7]

Although the book is about cities, it also gives the reader more understanding of the potential for and limitations of telecommunications for rural development. Back offices for low-order, routine services are one potential. The other potential, reserved for rural areas that are environmentally attractive, is to attract working corporate executives and professionals for portions of their working time.

The book, of course, argues for the likelihood of the continued dominance of cities (page 138). As Graham and Marvin put it, "in a volatile and global economy, the development by corporations of a wide range of decentralized functions scattered across the globe demands a parallel centralization of corporate control and coordination functions on to ... global command centers" (page 140). The face-to-face environment of cities reinforces a concentration of specialized information.

The conclusion here is that it takes very special policies to make a rural region blossom under the influence of telecommunications. Success is contingent on finding the right formula. The same would be true of using telecommunications to spur the development of inner cities that are in the doldrums.

Throughout the book, the authors refer intermittently to the notion that human intent and intervention are capable of shaping what telecommunications mean for the life of cities. But they clearly hold the view that the bias of technology—as opposed to the ultimate potential—is strong in a direction that is bad for a just and sustainable society.

Making telecommunications the solution to the problem of economic disparity and polarization of society is viewed as an especially challenging problem, since telecommunications is so thoroughly implicated in reinforcing the expansion of the problem. The market-driven deployment of telecommunications is not seen by Graham and Marvin as providing solutions.

Solutions

As *Telecommunications and the City* concludes, the authors turn to the potential for solutions. "Urban planners, policy makers, and city managers can 'socially construct' telecommunications and telematics initiatives in a wide variety of ways which are geared to different needs and interests. Indeed, their often intimate knowledge of urban needs and contexts can give them advantages over either the crudity and polarizing effects of market forces or the distant imperatives of national policies in this regard" (page 341). Unfortunately, the siren song of technological determinism has taken over in too many cases, reminiscent of the unrealized faith of the 1960s and 1970s that the wiring of cities with coaxial cable TV systems would bring electronic democracy, unlimited interactive service delivery, and new economic opportunities.

Still, Chapter 9 of *Telecommunications and the City* provides numerous examples of policy-directed action, some at the national level as in Japan, France, and Singapore, but most at the metropolitan, multi-jurisdictional level in the three categories of teleports,[8] inter-urban collaborative networks letting cities cooperate through better communications, and electronic public spaces like the Free Nets first established in Cleveland. In single-city jurisdictions, municipal governments are testing electronic service delivery for information dissemination, interactive communications, and transactional services such as issuing licenses and permits.

In urban planning and governance, once again a two-handed analysis is presented. On the one hand, "considerable space remains at the urban level within which innovative telematics applications can be socially constructed which have more equitable and progressive results" (page 373). On the other hand, "the initiatives developed are often relatively insignificant compared to the broader forces" (page 373).

Still, the authors come out hopeful "that urban telematic policies will have a significant role to play ... whereby new, progressive urban visions can be developed that address the context of globalization, fragmentation, and polarization ... and within which, ironically, telematics are themselves heavily implicated." The clear message is that the solution to the problems of cities lies in redirecting the forces that have caused the problems.

Telecommunications creates a new type of urban world, not a post-urban world. *Telecommunications and the City* now stands as the single best source of information for understanding a morass of tangled issues and for building the policy approaches that will create a better global urban civilization than we can now expect. ntq

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[1] Stephen Graham and Simon Marvin, *Telecommunications and the City: Electronic Spaces, Urban Places* (London, Routledge, 1996).
[2] Peter Drucker, *The New Realities* (New York: Harper & Row, 1989), p. 259.
[3] Kendall Guthrie and William Dutton, "The Politics of Citizen Access Technology: The Fevelopment of Public Information Utilities in Four Cities," *Policy Studies Journal*, Vol. 20. No. 4 (1992):574-597.
[4] Joseph McGrath, *Groups Interacting with Technology* (Beverly Hills, CA: Sage, 1994).
[5] Galegher, Kraut, and Egido, *Intellectual Teamwork* (Lawrence Erlbaum Associates, 1990).
[6] Sarah Kiesler, "The Hidden Message in Computer Networks, *Harvard Business Review*, Vol. 64, No. 1 (1986):46-59.
[7] Lee Sproull, "Computers, Networks, and Work," *Scientific American* (September 1991):84-91.
[8] John G. Jung, "Telecommunications—The Seed, The Symbol, and The Focus," *New Telecom Quarterly*, Vol. 3, No. 2 (May 1995):4-10.