



OPTIONS IN TELECOMMUNICATIONS REGULATION

Ian Parker
University of Toronto

ABSTRACT

Definitions of “telecommunications” vary among authors and usually do not conform to CRTC or DOC usage. Since “myths” are essential strategies for uncertainty reductions, these definitions need reassessment. The paper offers a new definition and traces its application to patterns in the global political economy and as a heuristic device for communications planning in the twenty-first century.

Les définitions des “télécommunications” varient d’un auteur à l’autre et ne correspondent généralement pas à celles qu’utilisent le CRTC ou le ministère des communications. Etant donné que les “mythes” constituent des stratégies essentielles de réduction de l’incertitude, il importe d’examiner à nouveau de telles définitions. Cet article propose une nouvelle définition et en vérifie l’application en rapport avec des modèles reliés à l’économie politique globale de même que son utilisation comme moyen heuristique de planification dans le domaine des communications au vingt-et-unième siècle.

MYTHS AND REALITIES OF TELECOMMUNICATIONS FOR THE TWENTY-FIRST CENTURY

Enormous improvements in communication
have made understanding more difficult.

—H.A. Innis (1964:31)

Reality: what a concept!

—Robin Williams

Since 1945, the global telecommunications sphere has already undergone a number of major transformations—"improvements," in Innis' phraseology—and many of the technological preconditions for widespread and equally dramatic transformations in telecommunications before the year 2010 are also already now in place. Rapid technological and political-economic change, of the sort that has recently been and will continue to be experienced in the telecommunications sphere, tends—as Innis remarked—to make understanding more difficult. The element of paradox in his observation is more apparent than real. It is often assumed, at least in some quarters, that an increase in information flows provides an unalloyed social net benefit, and that the effect of an increase in information flows (of the sort associated with recent telecommunication developments) is typically to reduce uncertainty and increase general social-economic understanding. This assumption, however, rests on an image of the economic role of telecommunications which has always been questionable, and which has become increasingly tenuous as a result of developments in telecommunications since 1945.

The basic theses of this article, in the above context, are as follows:

1. The most strategically appropriate definition of telecommunications in long-run terms, does not correspond precisely to the definition currently adopted by the principal Canadian regulatory agency, the Canadian Radio-Television and Telecommunications Commission (CRTC), and implicit in the current organization of the federal government's Department of Communications (DOC).
2. Myths (in the sense defined below) are essential strategies of uncertainty-reduction. The demand for myths increases in periods of heightened uncertainty. Telecommunications developments since 1945 have contributed to a heightening of uncertainty, and hence to an increased demand for myths, including myths of telecommunications.
3. Most present myths of telecommunications involve serious limitations, as well as important partial truths.
4. There is currently an urgent need for a refined myth (or set of myths) of telecommunications, which comprehends the "realistic" elements of the dominant current myths; which also includes certain basic aspects of current trends and patterns in the global political economy inadequately incorporated within these myths; and which can provide a heuristic guide to telecommunications strategy for the twenty-first century.

The article hence contains a discussion of alternative definitions of telecommunications; an outline of the constructive role of myths in situations of high uncertainty; a sketch of the strengths and limitations of certain current myths of telecommunications; and a framework for analysis of telecommunications over the next decade or two, including some *obiter dicta* that are justifiable but that (for reasons of space) are not wholly documented here.

The current Canadian federal government definition of telecommunications (as embodied in the CRTC mandate and decisions and in the present division of labour within the DOC), roughly speaking, appears to treat telecommunications as the sphere of information-*distribution*, with broadcast radio and television by analogy being treated as spheres of information-*production*. The division, further embodied in the distinction between Class I and Class II carriers, is largely one of administrative convenience that also reflects the administrative history of Canadian media regulation, rather than one with solid analytical underpinnings. The separation of the telecommunications sphere—telephone, telegraph, microwave and telesatellite systems, and cable networks—from spheres such as radio and television broadcasting and film production could be said to have reflected a recognition of the greater importance of mass programming and programme *production* in the latter realms.

Yet this separation has also had its associated costs, from both theoretical and policy standpoints. The relatively sharp division within DOC between technical and broadcasting branches, notwithstanding the role of intra-ministerial coordinating committees and special task forces, has resulted in the independent (and relatively uncoordinated) development of distinct—and potentially incompatible—policies with regard to different subsectors of the Canadian cultural economy. The economically intelligible administrative biases implicit in the historical and current division of labour within DOC have thus tended to reduce the possibility of developing a *comprehensive, integrated, flexible, and feasible long-term cultural-economic strategy* for Canada into the twenty-first century (Parker et al., 1988:233–38). This problem has been exacerbated by the wide range of major technological possibilities that have become increasingly feasible economically over the past decade, including fibre-optical signal-transmission (which by the use of digitalization has significantly relaxed former capacity limits on the volume of signal-transmission imposed by the band-width requirements of broadcasting utilizing the electromagnetic spectrum directly); high-definition television, or HDTV (which requires a wider band-width in a broadcasting context, but which can be accommodated relatively easily within fibre-optical transmission systems); and interactive or “smart TVs” (involving computer links, and transmission as well as reception capacity).

These emerging developments enter a communications system that has already been radically altered since 1945 by the advent, widespread diffusion, and

rapid technological development of the familiar catalogue of innovations, including television itself; mainframe computers, printed circuits, microchips, and personal computers; large-scale data banks and increasingly powerful software; xerography; laser technology, including holography; long-playing and stereophonic audio records, tapes and compact discs; videocassette recorders; and telecommunication satellites. The systemic, interrelated and interdependent character of these developments has involved major externalities and synergistic possibilities; significant new forms of media-competition and media-symbiosis; and a radical alteration in the global economic structure of informational and organizational space and time.

These changes in turn have drastically curtailed the capacity of conventional economic theory to analyze, and *a fortiori* to develop policy prescriptions for, the Canadian cultural economy. Some of the difficulties posed for neoclassical economic theory by the quantitative expansion and qualitative or structural transformation of the commoditized cultural-communication sector are both fundamental and obvious: the absence of an adequate quantitative measure of information, and hence of the value per unit of information; the fact that the sharp division between "producers" and "consumers" necessary for the application of neoclassical efficiency and optimality (or "welfare") theorems is inapplicable in the process of production and distribution of knowledge; the fact that over 40 percent (almost half) of Canadian GDP as conventionally measured is devoted to communications activities such as advertising, education, communications media, and research and development, all of which demonstrate the empirical irrelevance of the neoclassical economic assumptions regarding perfect certainty, costlessly available information, given technology, and given tastes and preferences on which standard economic welfare-theoretic conclusions rest; and the fact that problems posed by the existence of fixed capital, indivisibilities, overhead costs, unused capacity, joint production, externalities, increasing returns to scale, and decreasing costs (any *one* of which raises serious conceptual and practical problems for the imputation of relative prices within conventional economic theory) are *all* endemic to the cultural-communication sector.

In this context, not only is conventional economic theory seriously flawed as a means of developing policy prescriptions for the cultural-economic sector itself; it is also, practically speaking, given the growing quantitative importance of the cultural sector, becoming increasingly irrelevant (and therefore potentially dangerous) as a guide in the determination of *overall* economic policy.

Insofar as the telecommunications sector itself is concerned, the current conventional definition of the sector exacerbates these problems. Viewed etymologically, "*tele*-communication" is simply *long-distance* communications. Broadcast media, and for that matter printed media and *all* communications

media, with the partial exception of direct, face-to-face oral and more intimate dialogue, therefore, to some degree, constitute forms of telecommunication in this broader sense. From this etymologically-based definitional standpoint, then, the "hiving-off" of certain components of the broader telecommunications sector to create a telecommunications sector for regulatory-administrative purposes can be seen as at best a matter of administrative convenience, rather than as one of inherent logical or theoretical necessity. This "hiving-off," however, restricts the capacity to see the cultural economy as a whole, and hence to develop an integrated, comprehensive industrial strategy for the entire cultural-economic sector.

There is obviously a need for *some* division of labour in the analysis, policy-determination, and regulation of the cultural economy. No one person can be expected to have *complete* mastery of the internal technological and economic workings of all of, say, the cable industry, the educational system, the fine arts, the independent film and television production subsector, the computer industry, radio-TV broadcasting, and the telesatellite subsector. Yet there is also a need for a better balance between such specialized and detailed subsectoral knowledge and a more comprehensive and integrated vision of the complex set of interrelationships and interdependences among the various subsectors of the cultural economy.

To take the newspaper industry as just one (deliberately off-centre) example, this print medium simply could not function in its present form without reliance on a communications system involving interlinked computers, telesatellites, telephone, TELEX, telefacsimile (FAX) and MODEM services, and printing systems. This combination is as essential for the *Winnipeg Free Press* or the *Calgary Herald* as it is for the (Toronto) *Globe and Mail* or *USA Today*. Given the current definition of the telecommunications sector, however, this set of elements is treated purely in terms of isolated external demands on the telecommunications sector narrowly defined, rather than as an integral and systematically related part of the telecommunications sector under a broader definition. The net result of such an approach hence tends to be to restrict the social capacity to develop an integrated vision and strategy for the cultural-economic sector as a whole, as manifested in the failure to take adequate account of intra-sectoral interdependences, externalities and synergistic possibilities; consequently incompatible or contradictory specific policies, designed largely in response to the short-run demands of interest groups within particular sub-sectors; and attendant efficiency losses and increases in uncertainty.

The global development of telecommunications since 1945 has likely contributed, on balance, to increased productivity growth, to an acceleration and reduction in the cost of information flows, and to an increase in global

uncertainty and insecurity. The reasons for this apparently contradictory set of effects are relatively straightforward. *Ceteris paribus*, the "improvement" of communications *within a given economic system increase* knowledge concerning the system and its environment; thereby enhances decision-making capacity; and hence increases efficiency and productivity.

This logical chain constitutes the core of the standard neoclassical-economic analysis of information as a commodity like any other commodity. The principal limits of the neoclassical-economic analysis of information stem from the inadequacy of these assumptions when *ceteris paribus* no longer holds. In the first place, changes in the cost and character of information flows are a major cause of structural economic change; new rules of the game; the systematic devaluation and revaluation of pre-existing stocks of knowledge; and consequent *increases* in uncertainty. Secondly, it is (although theoretically not impossible) historically extremely rare that a particular communications innovation affects all subsectors within a given communication network or system to an equal degree, and hence the typical effect of a particular communications innovation is to cause problems of unused capacity in some parts of the system, and severe pressures on capacity (bottlenecks and "information overload") in other parts of the system, of the sort that heighten pressures for technological and organizational change (to re-establish a balance among subsectoral capacities) and correspondingly increase uncertainty. These two factors, as well as alterations in the environment attributable to the effects of communications system change, are often also associated with shifts in the social distribution of effective access to information, on class, regional, sexual, ethnic, linguistic, or large-scale (government or private corporate) *versus* small-scale entrepreneurial lines. Such social-economic information-distributional shifts can alter the potential for the social monopolization of knowledge, wealth and power and hence contribute to increased uncertainty, insecurity and instability within a given political-economic system. For the foregoing reasons, telecommunications advances have contributed both to an increase in productivity and to a high overall level of uncertainty.

Periods of high uncertainty tend to generate an increase in the creation and dissemination of *myths*, as a strategy of uncertainty-reduction. Pure uncertainty arises most pervasively in situations where the old rules of the game no longer appear to hold, where levels of insecurity (and the associated levels of individual and social stress and contradiction) are high, and where the reduced effectiveness of existing social-homeostatic processes has increased the degree of instability within a social-economic system.

(Social myths) provide means of economizing on perceptual, conceptual and communication time, and thus provide increased individual and social control over time. "Myth" is not a synonym for untruth. On the contrary, historically the

most powerful myths owe their temporal longevity and spatial extent to their capacity to embody significant and strategic aspects of reality that in some sense transcend the limits of a particular time and place. This is not to say that myths are abstract. Myths are fundamentally concretely grounded *stories*, about people (or about anthropomorphized gods, animals and plants), and their universality emerges in the context of the particular stories through which they are told. "Myths" and "models", in their capacities and limits, are in principle isomorphic.

The other side of the coin is that no myth is *completely* true: like all models or stories, myths involve an anterior determination and a corresponding selection of which facts or details are most salient or significant (what Joseph Schumpeter, with regard to economic models, called a "vision" of reality), and hence all myths are characterized by biases or capacity limits. Moreover, the dissemination or distribution of social myths is not costless, and hence the existing distribution of wealth and power tends to determine which myths have the greatest spatial and temporal diffusion, independently of their "truth"-value. Hitler's "Big-Lie" theory—that if you tell enough people a big enough lie, often enough, they will come to believe it, or accept it as "truth"—constitutes the basis of a *fundamental principle of much effective propaganda and advertising*. Success in altering social perceptions of "reality" in this context thus depends on access to sufficient material-energy resources and power to enable sufficient repetitions of a myth that its "truth" appears self-evident.

The power of myths rests as much on their control of unconscious preconceptions as on their logic at the conscious level. Hopes and fears, desire and revulsion, as well as aesthetic aspects such as the beauty and symmetry or ugliness and disproportion of a particular myth and the extent to which a particular myth generates social-psychological resonances in its audience, or "strikes a responsive chord," given a *pre-existing mythic framework*, are among the forces (apart from the factors noted above) that determine the ultimate durability and extent of particular myths.

One of the most powerful telecommunication-based myths regarding the current global political economy is still that promoted by Marshall McLuhan (1964), which centres on the image of a "global village," and which assumes in part that the "linear," bureaucratic (or "centre-margin") structures erected on a foundation of print and literacy have been undercut (and will ultimately be overturned) by the penetration of electronic media into the global economy. This myth presupposes that electronic media have created a "tactile" world of multiple "centres without margins," in which humans have been "re-tribalized" and converted into "hunters and gatherers" of information, rather than of material goods. Telecommunications, in McLuhan's vision of current "reality,"

are the technological agents of a global Chardinian epiphany in which electronic media annihilate space and time.

This sketch is to some extent a parody of McLuhan's myth in its more complex forms, but as a representation of the version of the myth that has received wide currency, it does not involve significant reductionism. The ideological strengths of this myth of the regaining of identity are obvious: it provides an image of hope centred on the further development of electronic telecommunications media that are already in place, which will eventually result in the harmonious global dance of multiple autonomous and independent centres of knowledge, wealth and power. Moreover, the myth has no explicit programmatic content: the millenium of the global village (in the crudest versions of McLuhanism) is an inevitable result of the continued development of technological trends that are already apparent, and the primary social task is to *understand* these trends and their social effects, not to attempt to transform society in the light of "rear-view mirror" thinking that will only prolong and render more painful this period of transition. Present uncertainties, in the context of this myth, are largely failures of imagination.

The attractiveness of this myth is considerable. It has a populist aspect; it requires no action; it accounts for a number of current trends; it provides an image of the regaining of social identity and harmony; and it explains current uncertainties as a transitional phenomenon. The limits of the myth, however, are equally considerable. It has no effective theory of the determinants of political-economic power; it hence involves (at least in its more vulgar forms) a reductionistic sort of technological determinism, in which mechanisms and processes of determination are unspecified or underspecified; and (perhaps most seriously) its teleological bias inhibits recognition and analysis of factors that may retard, *or* promote, the progress towards the millenium.

A number of variants of this "global-integration" myth have been developed as means of uncertainty-reduction, all of which bear on the question of the appropriate telecommunications strategy for the twenty-first century. Some of these myths relate to the telecommunications sphere itself; some relate to the overall environment of telecommunications. One of the most powerful and inclusive of these myths, notwithstanding its major inadequacies as a policy guide, for reasons sketched above, is the "free-market" myth. This myth draws on the image of the costless and perfectly functioning market incorporated in the axioms of basic neoclassical economic theory, and emphasizes the role of *competition* among profit-maximizing firms in generating an "efficient" allocation of resources in the short run, and rapid technological change and productivity growth in the longer run.

In its neo-conservative variants, this myth also tends to rely on an image of government as a vast, incomprehensible, slow-moving, unwieldy, and monolithic bureaucracy that rewards incompetence, inaction, empire-building and obfuscation. The myth, furthermore, ignores or downplays the numerous situations, acknowledged within more sophisticated neoclassical theory, in which "market failure" can occur and government regulation and/or control becomes necessary to ensure the socially efficient allocation of resources. "Market failure" will typically occur when any one of the following phenomena exists: indivisibilities; increasing returns; joint production; resource-consuming or incomplete sets of markets; transactions costs; interdependent utilities; externalities; imperfect competition, including so-called "natural monopolies"; public goods; common-pool problems; spatial competition; or divergences between private and social discount rates. Ironically, this catalogue of the situations in which market failure occurs is at the same time a reasonably precise description of the principal economic characteristics of the telecommunications sector and of the cultural economy as a whole.

Yet the "free-market" myth—which provides the ideological basis for such government policies as deregulation, privatization, the so-called Canada-U.S. Free Trade Agreement, the treatment of information as private property rather than as a public good, and the related shift from "universal-access" to "pay-as-you-go" principles in the information market—undeniably has considerable political-economic power. Much of the force of the myth stems from its simplicity (cynics might say its simple-mindedness): "Just let the free market work, and the cornucopia is yours." As with the McLuhan myth, no demands for personal action or responsibility are imposed on one who subscribes to this myth. Moreover, the image of "big government" as an impersonal, arbitrary and inefficient monolith, apart from its populist, "anti-bigness" appeal, almost invariably strikes a responsive chord in anyone who has had to deal on a matter of some personal importance with one of the rude, obtuse, rule-bound, inflexible and unhelpful petty tyrants that tend to infest the lower ranks of any large-scale bureaucratic organization, public or private, municipal, provincial or federal. (Most individuals who have had, say, to make a claim on an insurance policy with any private-sector insurance company, or to cross swords with a Book-of-the-Month Club's computer, will likely have similar resonances, but the power of the "free market" myth is such that its bias, or filter-system, tends to put a higher weight on experiences of the former type, and a lower weight on the latter, so that the net result is a biased, but existentially grounded, prejudice against "Big Government," and a corresponding prejudice in favour of "free markets.")

The limits of the "free-market" myth, however, are quite profound, and nowhere moreso than in relation to the telecommunications subsector and the

cultural economy as a whole. The "free market" functions "efficiently," from a social standpoint, only under a highly restrictive set of assumptions, virtually none of which is wholly satisfied in practice within the cultural-economic sector, as has been indicated in some detail above.

It therefore appears to be necessary to develop a more realistic myth of telecommunications than either the McLuhanite or the "free-market" myths can provide, as a heuristic basis for telecommunications policy-formulation over the next few decades. The present is an age of high uncertainty, and consequently it demands a realistic myth that is adequate to the times. The conclusion of this article is therefore couched in terms of a set of *obiter dicta* (none of which is defended, although all of them are defensible) that is intended to suggest some of the elements that belong in such a myth of telecommunications for the twenty-first century.

Before proceeding to these *obiter dicta*, however, it will be worthwhile to indicate some other current myths that have conditioned the form of these *obiter dicta*. Myths that provide alternative visions to those already discussed include the following:

1. The nation-state is now obsolete, as a result of telecommunications developments and the development of the transnational corporation, which have produced a genuinely global market that transcends national boundaries, and renders the nation-state currently irrelevant.
2. The world is now, of necessity, becoming a world of trading blocs; individual nations, particularly smaller nations, can no longer survive on their own, but need to become part of larger political-economic entities.
3. Capitalism (and/or socialism) is now obsolete; the Cold War is dead; and the "convergence" theories of the 1960s can be reactivated. (This myth currently exists in both "left-wing" and "right-wing" versions.)
4. "Bigger is better": in order to compete successfully in the world market, we need to eliminate barriers to the centralization of capital domestically, so that our firms have the capacity to compete internationally.

Over and against these myths, another set of myths, with a different implicit political-economic agenda, has also developed:

5. The nation-state is not yet obsolete, and efforts to control foreign political, economic, and cultural domination are an essential component of a strategy to produce a strong and independent Canada and a more firmly grounded international political economy. (Again, this myth has left-wing and centrist or right-wing variants.)

6. Neither capitalism nor socialism is yet dead; recent developments in Eastern Europe and the USSR represent demands for a reconstitution of socialism, rather than a complete renunciation of socialism; the secular development of capitalism within the OECD countries has involved an expansion of social welfare structures that has not been completely offset by the neo-conservative "blip" over the course of the past decade; and none the less, renewed talk of "convergence" is decidedly premature.
7. "Small is Beautiful": the world is on the verge of major environmental ecodisaster, as a result of social-economic developments that have created drastic and potentially irreversible effects insofar as ozone layer, "greenhouse effect," acid rain, and other forms of global ecological pollution are concerned. The only solution is a radical alteration in global political-economic policies and practices.
8. A "New International Economic Order" is required, to deal with inequalities in the distribution of global income and wealth, and to cope with the currently effectively insoluble problems posed by the magnitude of Third World debt.

I should perhaps confess my own biases with regard to these subsidiary myths before outlining the *obiter dicta* that conclude this article. Without necessarily agreeing to the precise formulations or biases of the myths outlined above, my leaning would be to grant greater credence to Myths (4), (5), (6), and (8), with two major qualifications: that the locus of property-ownership implicit in Myth (4) is not necessarily appropriate for the telecommunication sector nor for the cultural economy as a whole; and that Myth (7) requires further intensive study in the immediate future, to refine estimates regarding the timeline of environmental effects, the degree of irreversibility of these effects, and the net costs of eliminating them.

In the foregoing context, the following elements appear to be essential components of a policy-oriented myth of Canadian telecommunications for the twenty-first century: ✓

1. The telecommunications sector needs to be conceived of as an integral component of the overall Canadian cultural economy, viewed as an integrated whole.
2. The telecommunications sector (as currently defined) is principally concerned with the *distribution* of information.
3. The spheres of production and distribution of information are becoming increasingly interdependent. This interdependence necessitates a more comprehensive and integrated vision of the cultural-economic sector.

4. The Canadian economy over the next two decades (without significant policy shifts) will be moving towards a demographic situation where the centre of gravity of the age-structure of the population and the percentage of retired person will be rising; where the number of jobs available for the labour force will be shrinking in relative terms; where the effective tax-base will be shrinking, while the demands on government revenue will be rising; and where there is hence a genuine possibility for a fundamental and sustained fiscal crisis of the Canadian state.
5. The cultural economy, broadly defined, is one of the few areas where a major alteration in Canada's economic future is possible.
- ✓ 6. The major economic priority for Canada over the next two decades will be the expansion of the information-*production* sector, broadly defined (including for example, pre-school child care, as well as research and development and broadcast and other media programming). The primary reason for this priority is that information-*production* is labour-intensive in its demand for inputs, and knowledge-intensive in its supply of outputs.
- ✓ 7. As a consequence of the preceding point, notwithstanding the necessity for a government-backed, policy-supported expansion of the cultural economy (involving a policy-driven rather than a market-driven strategy of culture), the priority of cultural-sector *production* needs to be dramatically increased relative to the sphere of cultural distribution.
- ✓ 8. In the foregoing context, government support for the telecommunications industry needs to be limited, while government support for the cultural-*production* sector needs to be expanded, as part of its cultural-economic and overall economic strategy.
9. At some point in the near future, the serious potential negative impact of recent government policy decisions (such as the Free Trade Agreement) on the freedom of action of the Canadian government with regard to the Canadian cultural economy needs to be re-appraised, and if the net benefits of the FTA appear on balance, in this larger perspective, to be illusory, then the government needs to withdraw (as it is entitled to, under the FTA) from the deal.

This article has arrived at an apparently negative conclusion. It has suggested that the telecommunications sector (narrowly defined) requires *less* government support, not more support, over the next few decades. The principal reason for this proposal, however, as embodied in the *obiter dicta* that inform this proposed new myth, is that expansion of the domestic *production* side of the Canadian cultural economy represents, from a macroeconomic standpoint, the highest priority for the foreseeable future; that the telecommunications

sector, taken as a whole, is more likely to be self-financing than the Canadian informational production sector; and that the induced growth of the Canadian domestic information-production sector represents the most secure long-term basis for the expansion of Canadian telecommunications.

The challenge facing Canada, as we approach the twenty-first century, in an increasingly competitive global economy, is not simply to increase its production capacity, but rather to increase its capacity to increase the productivity of its capacity. A narrow concept of the sources of domestic productivity growth will cripple this bulwark of Canadian survival. Telecommunications will play an essential role in the Canadian economy over the next two decades, but if Canada is to survive, this role will be an ancillary one.

REFERENCES

- Innis, H.A.. 1964. *The Bias of Communication*. Toronto: University of Toronto.
- McLuhan, H.M.. 1964. *Understanding Media*. New York: New American Library.
- Parker, Ian, J. Hutcheson, and P. Crawley, eds. 1988. *The Strategy of Canadian Culture in the 21st Century*. Toronto: Harold Innis Foundation.