Reflections on the Telecom Decade:1992-2002

Summary

Proceedings of the conference on “Convergence: Foolish expectations and dashed hopes” held in Montreal in November 2002. Excerpts from the panel: “Who helped create the euphoria?”. Published in 2003 by the Canadian Media Research Consortium, University of British Columbia, Vancouver.

There are three types of convergence: computer/telecom, telecom/cable, and container/contents.

The container/contents variety never seemed significant to me. I saw it as a clumsy attempt to justify the classic process of vertical integration with new words and concepts. Newspapers have always sought to control their distribution and the major film studios have long owned movie theatres. I felt the very symbol of this type of convergence, the AOL-Time Warner merger; was grossly exaggerated when it was announced. Before AOL acquired it, Time Warner was integrated and owned both contents (film, television, music and books) and a cable network. Had there been container/contents synergy, it should have long been apparent at Time Warner.

The two other types of convergence are technological. They are tangible phenomena that can be verified on the ground. Yet the word 'invasion' rather than 'convergence' would more accurately describe the situation.

The computer invasion of telecom has a name: Internet. Telecom/cable convergence is also affected by Internet. To the extent Internet decentralizes the intelligence of the network toward the periphery - access providers, and even users - it takes away from telecom its superiority over cable. Switching systems are bypassed to move faster between routers. What counts is capacity and, at this game, cable has an advantage over telecom carriers. But telecom/cable convergence is still pretty well limited to Internet access.

On the issue of who was responsible for the euphoria, I found it interesting that convergence gurus preceded the media and financial analysts in the list of suspects. I readily thought of George Gilder, Nicholas Negroponte and, of course, Canadian Don Tapscott. It is true that Gilder's latest work, *Telecosm*, was presented as the "Bible of the new age of communications." But how could books like *Being Digital* or *Digital Capital* change the industry? It's highly unlikely industry executives even read them. And had they, would their vision of an industry they knew better than anyone have changed?

The media, through the selection of events "worthy "of coverage, tend to favour bad news, disasters, wars, famines, etc. With digital technology and the financial convergence that ensued, the media finally had “good" news, and they played it to the hilt. We can't at once attack them for being systematically alarmist and stigmatize them for being enthusiastic when they have something positive to report on. Did they have an impact on executive decisions or did executives' public relations services manipulate the media to inflate the value of their enterprises? There was no doubt a subtle interaction that ought to be looked into. The Internet

phenomenon itself helped short-circuit the media, and small-time on-line speculators played a role parallel to the media in feeding the frenzy. In either case, it could only have been a tenuous relation of cause and effect.

With financial analysts, we are getting closer to the core of the issue. They played a direct role in evaluating the economic potential of the digital technology. An investment-banking consortium made up of Merrill Lynch, and others has already agreed to pay $1.4 billion U.S. in damages for having falsified the financial analyses of corporations they advised to help them sell their shares at top dollar: But financial analysts could not have fooled the entire investment fund managers' community if these had not been pressed to seek better returns than stock indices.

The speculative bubble would grow unconstrained until figures were really too disconnected from reality to remain credible. Corporations without income were suddenly worth hundreds of millions of dollars on the mere promise of future growth. Are financial analysts to blame? Not entirely. They were instrumental in the ruin of millions of investors, but they were not the primary cause of the euphoria.

I wanted to look at the convergence craze from a telecommunications perspective. The approach is intentionally limited, but it has the advantage of getting to the heart of the question. The source of the euphoria is easy to pinpoint: it is the privatization of the Internet in 1995. When the Internet backbone was still owned by the National Science Foundation (NSF), its use doubled every year. After the launch of the first browser; Mosaic, in November 1993, the backbone use did double every three months until April 1995, when the NSF withdrew. Then, we entered a grey zone. Did it continue to enjoy a quarterly growth of 100%? Nobody knows, but when scientific statistics were resumed in 1997, a growth of 100 % a year was recorded, an excellent performance to be sure, but a far cry from 1000 % a year.

The euphoria created by the Internet effect was primarily ideological and political. The Nineties were marked by the triumph of a new ideological passion: market fundamentalism. Its proponents spread the simplistic idea that the market was always right and the state always wrong. It's now become a cliché.

In telecommunications, market fundamentalism led to the suppression of telecom monopolies, whether private like in the U. S. or public like in Europe. In Canada, demonopolization was brought to a conclusion in June 1992 with the opening of long distance communications to competition. But would new entrants carve up the streets and build a parallel network to Bell's? This was not an option for even the most fanatic neoliberalists and still less for the CRTC.

Competition was introduced with forceps. A heavy, complex regulation process was instituted to serve two conflicting goals: encourage and artificially keep alive new entrants and compel the old monopolies to continue playing their traditional role of public service. The result was the creation of an artificial market in which between 200 and 250 long distance companies sprang up. The main one, Unitel, went bankrupt a mere two years after the opening of the long distance market to competition. It was kept alive thanks to Government intervention under the name of AT&T Canada and went bankrupt a second time in 2002.

At the same time, technology was bubbling over with the arrival of Internet. The years of re-regulation corresponded exactly with this period: the World Wide Web developed in 1989, Mosaic appeared in 1993. In Quebec only, the small consulting firm I head figured there were six Internet Service Providers (ISP) at the end of 1994, 80 one year later; and 165 two years later.

In both the long distance and Internet markets, new entrepreneurs sprang up outside the traditional business community and multiplied infrastructures without any planning or constraints from the regulators (on the contrary, with their blessing in advance). For equipment suppliers, beginning with Nortel, this was an unexpected boon. The industrial machine embarked on a frantic production race and stock value soared.

The financial community jumped on the bandwagon. Groups of venture capitalists called the "broadband barons" developed a "magical" business model. The idea was to lay a fibre-optic cable under the ocean. Cost of the trans-Atlantic cable: US $ 750 million (a little more in the Pacific). Expensive no doubt, but the new cables have enormous capacity. It is possible to sell part of this capacity and to retain enough circuits to operate one's own company. Of course, it is difficult to sell circuits on a non-existent cable. So they slashed prices. A trans-Atlantic circuit that cost about U.S. $20 million was pre-sold at half-price (Global Crossing even went down to U.S. $8 million). By thus selling off about a quarter of the cable's virtual capacity, the cable is prepaid and the remaining three quarters should translate into net profit.

There was a drawback, of course: the "broadband barons" ran the risk of providing their competitors with circuits at discount prices. But who cares? The latter would also deploy cables and return the favour by selling them circuits to other destinations for next to nothing, making it possible to create worldwide networks without initial capital. The result was a grid of cross-ownership where new entrepreneurs were at once partners and competitors. The "broadband barons" traded seats on board of directors and the new companies quickly raised a few hundred million dollars that became billions the following years through a well-orchestrated stock issue. Who wouldn't buy shares of companies whose offering circulars guarantee returns beyond 20% and 30%? This was the model followed by Global Crossing in the U.S., and 360networks and Tele-Bermuda in Canada.

This movement, started in 1997, made the stock market bubble burst. It's to be noted that these "broadband barons" had no notions of telecommunications. None of them seriously looked at the market potential and even less felt the need to abide by the customs of international cooperation. The right-thinking press (*The Economist, The Wall Street Journal*, etc.) described the International Telecommunications Union (ITU) as a cartel dominated by the former state monopolies. The strategy of these enterprises was based on a single principle, "winner takes all", and the winner would be the first to occupy the market. A reckless race for the construction of networks ensued. The “barons” had raised tons of money, and suppliers could sell them the best they had to offer:

Nortel had just brought out its 10-gigabyte OC-192 fibre, the world's most powerful system. Soon after, it did it again by launching dense wavelength division multiplexing systems (DWDM) that can route multiple colours or wavelengths on each fibre-optic strand. The first DWDM systems could carry four different wavelengths so the fibre capacity was multiplied by four. Then Nortel started to split the light into eight, then 16, 32, and finally 160 channels, each operating at a speed of 10 gigabits per second, increasing the overall capacity up to 1.6 Terabits per second. Such growth had no end in sight… The new optic cables laid in the oceans, across continents, in urban rings, and even in the local networks (LAN) of large corporations had a virtually infinite capacity.

The law of supply and demand did not apply to them for two reasons: the lack of planning and technological feat. At this point of imbalance, why did no one see that demand did not match market euphoria? The "broadband barons " continued to deploy more and more monumental cables, investors financed those corporations and bought their stock, and suppliers produced increasingly high-performance systems without worrying about their customers' solvency. The odd thing was that consulting firms continued to justify the skid. Most did not even carry out quantitative surveys; they were content to interview focus groups made up of Fortune 500 corporations.

In 1999, Nortel's main problem was that they were out of stock. They could no longer meet customers' orders. And Nortel controlled from 80% to 90% of the high-capacity optic fibre market in North America. What happened the following year? Customers increased their orders beyond their "sensed" needs to ensure delivery of their initial orders. For their part, Nortel salesmen inflated their customer’s orders before sending them down to the production line to be sure to meet their customers' needs constantly reviewed upwards. In 2000, the fall of the dot.coms provided the early warning sign of a crisis. Nobody paid attention. Order books had to

be honoured. While production plants were running at full capacity, customers reviewed their orders downwards – at last. They were going bankrupt. An aggravating circumstance was that most of these customers had placed their orders with Nortel on credit.

Among financial analysts, more and more voices joined the small group of researchers who had continued to do their job earnestly through those years. They were called the “contrarians”. Ross Healey, the Rosens, father and son, Paul Sagwa, and the most famous of them, economist Robert Schiller; who published the premonitory best-seller, *Irrational Exuberance*, in 2000. WI/at did these “contrarians” say? In essence, that acquisitions by Nortel, Cisco and Lucent, although paid in shares and not cash, had an impact on the corporations' financial situation (capital dilution, debt, etc.); that the abandonment of generally accepted accounting principles (GAAP) in favour of income before interests, taxes and depreciation (IBITD) was tantamount to ignoring depreciation; that credit granted by the Big Three (Nortel, Lucent and Alcatel) to their customers was of doubtful value since the nature of those customers had changed with the advent of competition: traditional monopolies whose solvency was guaranteed had given way to weakly-based entrepreneurs. The result was that the suppliers' cash flow did not correspond at all to financial statements.

The Big Three were thus exposed to the first weakening of the market. After the young Internet entrepreneurs in early 2000, the “broadband barons” began to reduce or cancel their orders at the beginning of 2001. Overnight, the three equipment suppliers had to review their growth forecasts downwards, Not that they were entering a period of decline. They were just growing slower than the analysts' “exuberant" forecasts. They were leaving the era of double-digit growth rates, which was enough to make their shares drop. Within a few months, Nortel lost 98% of its stock value, which had reached $375 billion at its peak in July 2000. Nortel dragged down with it a host of high-tech subcontractors.

Meanwhile, the "broadband barons" were going bankrupt one after another; thereby forfeiting the colossal loans granted by Nortel. The traditional telecom carriers were not spared by the drop in demand. Long distance new entrants had ordered them massive blocks of lines and switching capacity to be able to resell to their own customers. They were forced by the CRTC to fulfill these orders no matter how “optimistic” they were. With the new entrants going out of business, the old monopolies were left with unexpected excess capacity, worsening the bearish spiral of the industry.

What should we learn from this period of euphoria? Two major lessons, one ideological and the other technological.

Supporters of the neo-liberal ideology sought to create a competitive market in an economic sector where a natural monopoly existed. The result was a disaster – equal to their theoretical error. The technological revolution announced in the 90s did occur and, like any revolution, caused serious damage. The phenomenal growth of computers and the exponential explosion of the capacity of fibre optics were undeniable technological successes. The enterprises we talked about innovated, manufactured and marketed the promised products. It was the extent of their success that created such a deep imbalance.

This outcome is not a fatality. It can be resolved by a rebalancing of our economic and cultural priorities. If technological success was the major cause of the telecom crisis, perhaps we should, instead of focusing on R&D, redirect our innovation efforts toward the production of services and contents – in short, toward activities closer to social sciences and artistic creation. As Jean Monty, a leading Canadian actor of this great telecom saga, said in a November; 2002, interview:

> "Shouldn't we have a pact between the Nortels of this world, not to reduce the number of laboratories and researchers, but to redirect them toward human activities that need more research? The key question is: what are the applications for all these technologies?"