

# Timothy Denton

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If imitation is the highest form of flattery, I should be very pleased, because I found that a great deal of the content of what I might be able to tell you has now found its way into the Australian *National Bandwidth Inquiry* Chapter 2. And I have just been handed a copy of something by the Australian Competition and Consumer Commission and a discussion of the Internet takes place there which is also based on some of the work I have been doing. And so, thank you all, I am glad to have been read and heard and digested in this country.

So that is very good news because in this business we constantly need to remind ourselves of what we already know, and because I am a journalist I like to keep it simple. I have been in the telecoms business close to 20 years in terms of telecom regulation, and various patterns kept on recurring during that time. If I had a theme for what I would like people to consider in

Australia it is that as long as there is going to be market power there is going to be need for regulators to address it. This theme comes with the caveat that one must avoid intervention that is worse than the disease. But I am of the view that there is a strong case to be made and will continue to be a strong case to be made, as these technologies unfold, for the regulators to catch up with what the game is. And of course as the nature of the game is accelerating so rapidly, there are all kinds of opportunities for fresh tricks and for fresh dust to be thrown up in the face of public policy.

Let me start by saying that telephony is dead, or dying, even though it is a vast, rich cash machine; the Internet is going to kill it, and the Internet is not telephony. The second thing that I would like to say therefore is that the incumbent phone companies have a very strong incentive to create as much confusion as they possibly can while they do their best to maintain shareholder value and find a way to survive.

Now why is telephony dead? Well telephony was killed and is being killed by the Internet, and the *Australian Infrastructure Report* tells you why, the *Bellheads versus Netheads* tells you why, the shortly-to-be-released *Australian Competition Policy Paper* will tell you why. The Internet has been completely designed from the ground up, based on the characteristics of computers. We all know that computers have fantastically increased in their price-performance over the course of their existence, and that making computers connect was why the Internet was devised.. And so because computers exist in all their vast numbers and will shortly be embedded in our wristwatches or whatever else, they have become ubiquitous and extremely powerful.

The rate of increase of their power shows no sign of stopping. I know it is an old one

but George Gilder keeps on talking about the 32nd doubling, and the story is told of the inventor of chess, who was of course Chinese. The Emperor was so impressed with the game that he asks what his reward would be and the humble peasant says, 'Lord High Whatever, give me one grain of rice for the first square on the chessboard, and double it for every square thereafter'. I do not know whether it is at the 32nd or the 34th doubling, but at a certain stage you are reaching the doubling of power which represents the amount of acreage required to produce the rice. I think at the 32nd doubling all the rice paddies in China are given to the inventor of chess and at the 33rd doubling all the oceans are covered twice over with rice paddies to produce enough rice to supply this particular request. In other words, the power of doubling begins to be a change of quality, not just of quantity. We are living through fundamental technical change and we need to keep reminding ourselves, as we contemplate the telecommunications acronyms, that this is occurring.

Because it is occurring there is a kind of incompatibility, if that is the word, between the rate of innovation in the computer industry, and the lack of innovation in the telecommunications industry. Something had to give and like a big burst of a dyke the inflood of technological innovation coming from the computer industry has been so strong that even an industry as well entrenched as telecommunications had to break down. And the way it broke down was through the invention of the Internet, which allows computers to communicate in a way that simply bypassed what telephony was. My friend and colleague François Ménard keeps talking about telephony as basically a one-trick pony. It continues to do one thing, and one thing only, which is time division multiplex voice calls, and it does its 70,000 byte train and that is what it has always done. So it's fixed, it's determined, it's limited, and it's obsolete. And because it is obsolete and because we have all (at least I

have) grown up in the telecommunications break field, its issues seemed to be eternal, and now these issues seem to be changing.

My message, however, is that in this transition zone some of these issues of market power are simply eternal, they are just talking on a new guise. And so the purpose or the basic design philosophy of the Internet was a kind of peer-to-peer communication between computers, with this stupid network in the middle. The telephone design was dumb terminal, dumb terminal, intelligence in the centre. And between those two design philosophies there really is no compromise. Now the phone companies I think understand this perfectly well and are doing what they can to adapt to a change of the technologies. They also know that as Geoff Huston says, in a great phrase, 'there is no money in sewerage'; mere bandwidth distribution is not going to be a great moneymaking industry.

But the very power of the Internet was to separate the provision of services from the basic transportation network that supplied it. The essence of telephony was to compress and keep together the provision of the service with the provision of the transport. I continually use the railway and highway analogy, which is very rich. In the railway the provider of the carriages and boxcars tends to be the owner of the road bed. The carrier will have very specific interconnection points with other like carriers to move your goods over their road bed to the final destination. Here the service is integrated with the transport.

The Internet provides the possibility of separating out those who provide services from those who are providing underlying transport. And the same economic gains of price and performance that are going on in computations are now suddenly going to appear in the bandwidth market. As a result, those left supplying bandwidth are not going to be where they want to be in the market. I believe the phone companies understand this and are doing whatever they can. At the level of regulatory gaming they are seeking

to maintain their position - one more day of monopoly is one more day that they make money as a monopoly, or one more day exercising market power. And then at the other level they are seeking to reorganize their networks to make them more IP compatible so as to be able to compete.

So as we move into this era the regulators are stuck with a bewildering new set of knowledge to gain about how the Internet works. They have to read new source materials, and new levels of knowledge are required as to where and how market power will be exercised. Market power will be exercised for as long as it suits the interests of incumbents to do so. I mean, again, it is *one more day*. Even as we are gaining interconnection among telecommunications carriers providing competition in old-fashioned telephony, we have a whole new set of issues coming up for how market power will be exercised in an Internet-based world, with new sets of interfaces to learn about, new technical knowledge for regulators to understand.

Now the bet being proposed by those who say it is all just too uncertain, is that the evolution of standards in technology is so rapid that no problem is going to emerge out of this technological flux that will not be solved by further competition in the market. And I am sceptical. I am sceptical because the same owners of infrastructure who have always used their power in the past to limit technological innovation in the telecommunications industries are the people, or their successor companies are, who are making these same arguments again. They argue that the rate of technological innovation is too rapid for anyone to have any kind of coherent policy that could be applied over a number of years to cause there to be greater competition.

My belief is, based on the history of telecommunications competition in Canada and the United States and elsewhere, that it is much more probable that there is going to be a job for regulators, in seeking to understand how market power will be exercised in a

new technological environment. While the hand of regulation might be light, there is certainly a need for the kind of vigilance that comes with simply not being confused about what the nature of the issue is. The transition to an Internet-based world, where we might have perhaps rather more monopolistic suppliers of bandwidth but a flourishing diversity of providers of services on top of that bandwidth, is something that I think we should be working towards as a matter of public policy. So anything that gets in the way of that particular vision, or anything that tends to cloud the issue, I am very sceptical of.

At this stage of uncertainty as to the outcome of these technological changes in markets it behoves regulators, as they have so clearly done in Australia, to start understanding how this thing works. To start understanding how it can be made not to work, and to start understanding how various political and technical choices, which should be based on a sound view of what things cost, lead towards open and competitive markets and services or closed and technologically more backward markets, if the wrong choices are made.

At the end of the day I am saying that, having seen this for long enough, I am sceptical of the claims that we cannot have enough knowledge to make those choices towards more open and competitive markets.