

The Digital Economy: promise or problem?

*This short paper discusses the concept of the "Digital Economy" and whether in a policy sense it represents merely a promise of good things, or instead a set of challenges to be addressed. It is not a fully referenced document and is intended to inform policy discussions.*¹

Context

Senator Conroy's release of the National Digital Economy Strategy is the latest in a series of incremental steps taken since Kevin Rudd surprised many by adding "Broadband" and "Digital Economy" to the title of the Minister for Communications. At the same time his Department was stripped of the responsibility for Information Technology.

This paper is not a comment on the strategy. Rather it is a discussion of the intent of the strategy, and whether Government policy making adequately addresses the issues at hand.

The strategy starts from the premise that the adoption of broadband technologies is a universal good that has as a direct consequence greater productivity and overall social well-being. So in the Minister's Foreword to the Strategy he writes;

The task of ensuring that all sectors of Australian society and industry participate fully in the digital economy and enjoy its benefits, is one that requires collaborative effort between government, industry and the community.

The question I wish to pose is whether the Digital Economy is merely a technologically determined promise for the world, or a problem representing important policy choice points.

It is my contention that it is the latter and that policy formulation needs to be more pervasive than merely focussed on ensuring participation.² It is not just a matter of "getting there faster" but of deciding where it is we wish to go.

I start by suggesting that the scope of attention of the policy is restricted to a set of activities rather than the economy as a whole. Working from the larger definition I raise questions about the future of economic organisation, democracy and social inclusion. These are identified as choice points for policy rather than mere consequences of the technology as usually encompassed in catch-phrases like "new business models" and "digital democracy".

Definitions – an economy transformed

The Digital Economy is defined in the Government's Strategy and earlier work as;

The global network of economic and social activities that are enabled by information and communications technologies, such as the internet, mobile and sensor networks.

This definition is as restrictive as would be a definition of an Industrial Economy as the activities that take place in factories. An exercise in economic history however reveals an industrial revolution that took place over an extensive period of time. To describe how the Industrial Economy of 1950 differed from the economy of 1700 I would say;

The Industrial Economy is one in which the means of production, distribution and exchange have been transformed by the application of motors – from steam engines, to internal combustion engines and electric motors.

That covers all the changes in transportation, money (printing presses, high volume mints) and greater agricultural production; as well as the expected consumer goods and factories making textiles and clothes.

The Digital Economy can be similarly described as;

The Digital Economy is one in which the means of production, distribution and exchange have been transformed by the application of information and communication technologies – from the telegraph, to the telephone, the internet and broadband IP enabled networks.

These definitions capture the essence of both motors and ICT as General Purpose Technologies or GPTs; this is the core explanation for their impact on economic growth.

The other significance of the analogy is to focus on the dimension of time. The revolution is not a sudden one. The industrial revolution stretched over 200 years, and is still happening in developing countries. The ICT revolution begins about the 1830s with the telegraph. The telephone was its next technology in 1870, automated switching of voice and telegraph from about 1900, the electronic computer and data communications from the 1960s, mobile services from the 1980s and IP networks from the 1990s.

The revolutionary step of the 21st century is broadband, and the consequence that the capacity of a communications link is seldom a constraint on the applications that can be considered.

The three main stages of mankind's economic and social evolution, the Agrarian, Industrial and Digital Economies are each accompanied by changes in where economic advantage comes from.

The Agrarian Economy was the discovery of the benefits of specialisation, good artisans made pots and traded them for food from good farmers. A person who is good at something doing more of a similar task is an economy of scope – using the same capability to do more tasks.

The Industrial Economy capitalised on the ability to make productive units bigger, they realised economies of scale (as well as the economies of scope).

The Digital Economy goes to the next stage, variously described as network effects or "demand side economies of scale".³ Of course, these effects go along with the economies of scope and economies of scale previously recognised.

This change of the source of value has dramatic implications. At the start of the twentieth century there was a concern about the size of firms – resulting in the US anti-trust agenda, while Germany and Japan accepted cartels. It is asserted by some that this difference was a core source of the USA's economic advantage.

Economic organisation

Economic theory of the firm is a contended space. At its extreme market theory assumes atomistic producers who miraculously co-ordinate their activities and don't have "production co-operatives" – be they co-operatives of labour or capital.

The firm is explained as a means of reducing transaction costs. The limits of the size of the firm have historically been created by global regulations, but also by the internal communications task of co-ordination.

The Digital Economy simultaneously creates the opportunity for firms to be larger because of the ability to co-ordinate internally, and smaller because the ICT environment enables firms to utilise information intensive co-ordination to overcome some historic transaction costs.

Both these trends have been evident in the economy. The new "conglomerates" that dominate in a brand driven world, like Nestle, demonstrate there is very little natural limit

to firm size. Meanwhile the electronics and automotive industries demonstrate extremely dispersed yet co-ordinated manufacturing structures.

But on top of this simple dichotomy is the impact of demand side economies of scale. Google, eBay, Facebook and Amazon are all examples where these effects result in single firm global dominance.

That dominance is not necessarily permanently guaranteed. As Facebook surpassing MySpace demonstrated a lead can be assailed. These firms each constitute threats to the other – but do we really think the world is better if Facebook supplants Google in search, or Google supplants Microsoft in operating systems? The biggest threat is “congestion” and the same model that Eli Noam proposed for telecommunications the potential for “high value” users to decamp and start their own group.⁴

However, the dominance is also not merely transitory, and is certainly not without significant power.⁵

The difficulty with market power derived from network effects is that it doesn't come about through acquisitions as covered by section 50 of the *Competition and Consumer Act 2010*. In the absence of divestiture clauses there is little the law can do about them. As the Europeans have found with anti-trust action against some of these firms, their global nature makes effective enforcement difficult. The cost of a successful action may simply be denying your economy access to the technology or service.

The promise of the Digital Economy is frequently described as “new business models”; the problem is that those models may entrench market power.⁶ The imagery is of small firms operating on a global scale; the reality is often single global producers.

Democracy

A promise of the communications revolution has always been political empowerment. From the creation of the printing press and the ability to publish the political pamphlet sprung the means to motivate the masses – in Paris in 1789 and Russia in 1917.

More recently the events in the Middle East have been credited to the wonders of Facebook and Twitter as means of connecting large numbers of people rapidly.

However, against these examples there stands the alternative considerations of improved surveillance and of “mob” reactions.

The forces of the State in earlier times did not always close down the printing presses of the revolutionaries, instead using them as the best place to infiltrate the workings of revolutionaries. The presses are closest to the intellectual sources.

Similarly the State uses communications networks to facilitate surveillance. For every regime that has been challenged by a communications led revolt there are more that have maintained their control through the surveillance they can apply.⁷

The issue of surveillance is not restricted to Government. Under the rubric of “privacy” discussion has developed on the way non-Government players have increased visibility over individual communications and choices. This is particularly the case with models designed to offer “cloud services” as opposed to merely communication conduits.⁸

The process of public policy formation and political action involves distinct phases of idea formation, idea promulgation and commitment to action. The Digital Economy, or Information Society, significantly accelerates the second phase. This creates a first mover bandwagon effect, that the rapid spread of an idea can supplant prior consideration of alternatives. A minor but specific recent example was the spread of calls for banning live

beef exports to Indonesia, ignoring the fact that without Australian involvement the cruelty to animals slaughtered in Indonesia was greater.

At its worst this can become the kind of “mob rule” that ran in France during the Great Terror. The communications process calling for action moved faster than consideration of alternatives. And these mobs are not entirely self-managing swarms. Instead research in the US shows that “the Internet has done little to broaden political discourse but in fact empowers a small set of elites--some new, but most familiar.”⁹

Political theorists note how political parties moved from ideas based movements, to mass movements, through winner-take-all (poll driven) models to cartel parties that are barely distinguishable. This trend can be analysed as a consequence of the speed of communication.¹⁰

Social Inclusion

Generally the belief is that the Digital Economy or Information Society provides new tools to facilitate social inclusion. This is characterised as either overcoming socio-economic barriers or geographic barriers (and is sometimes confused as to which given the correlation between socio-economic and regional disadvantage).

The first and simplest observation to make is that universal access to the communications medium (the NBN say) does not provide universal access to the associated equipment and skills required to make use of them.

The second is that history suggests that when you don't need to be located beside your customers to service them, a provider will go where the life suits them more. Historically this has been cities not regional areas.

The achievement of full penetration of phones with tone signalling saw the banks able to close country bank branches because the phone really was an alternative. A medical specialist able to consult remotely is more likely to live in the city.

The “revolution” we are undertaking is not in itself new. The trend from the adoption of ICT as a GPT thus far has been greater centralisation; the telephone for example was a great motivator in building America's cities.¹¹

Similarly the productivity improvements fuelled by ICT adoption in the US and Australia have not been accompanied by a lessening of economic inequality.

Conclusion

This short study is not meant to be an inspiration for a new band of Luddites. Its intent is to broaden the scope of consideration of the policy issues associated with the concept of a Digital Economy.

The “Digital Economy” does not refer to a subset of activity; it is a description of a transformed economy.¹² There are policy choice points in how that transformation takes place. Policy formulation needs to engage with those choice points, not make assumptions about good things automatically flowing from speeding up adoption.

¹ Paper prepared by David Havyatt. This is the first version of the paper and was published on 6 June 2011.

² In making this distinction I draw heavily on David Lyons *The Information Society* 1987 which posed many of these questions.

³ This is the term applied by Katz and Shapiro in *Information Rules*

⁴ See Eli Noam in the introduction to *Telecommunications in Europe*. (I think)

⁵ For the Google case see Scott Cleland *Search and Destroy: Why you can't trust Google Inc*

⁶ A longer discussion at this point would engage with the fallacy of the "long tail" Suffice to say that long-tail theorists always sample from the upper end of the distribution at which a Zipf curve of a Pareto distribution is indistinguishable from a log-normal distribution.

⁷ See *The Net Delusion: The Dark Side of Internet Freedom* by Evgeny Morozov 2011

⁸ Again see Cleland *op cit* for the Google case.

⁹ See *The Myth of Digital Democracy* Matthew Hindman 2010.

¹⁰ More recently the trend identified by Lindsay Tanner in *Sideshow* of the "dumbing down" of politics is a consequence of politicians forever commenting and seldom thinking.

¹¹ See Ithiel de Sola Pool *The Social Impact of the Telephone* 1981

¹² Telstra CEO David Thodey has, I believe, made the observation "there is only one economy"; but I'm unable to find a reference for it.

About DigEcon Research

Purpose

DigEcon Research is a stand alone research body. Ultimately, its pursuit is policy research, the focus of which is the meaning and significance of the Digital Economy. This policy research encompasses both economic and social research.

Researching the significance of the Digital Economy

The concept generally referred to as the Digital Economy is frequently discussed but there is little shared meaning in the term. A key definitional issue is whether the Digital Economy is something yet to happen or in which we are now embedded.

DigEcon Research focuses on the analysis of social and economic change rather than an analysis of a notionally static "Digital Economy". Analysis of the change as it occurs should highlight those areas where there is genuine policy choice rather than merely a need to adapt policy to changes that have already occurred.

Before Thomas Kuhn popularised the idea of "paradigms" J.K.Galbraith railed against the "conventional wisdom". There is no denying that what Kuhn called "normal science" or the repeated application of existing theory to new problems results in most practical developments. It is equally true that the application of existing theory to problems they were not designed for results in, at best, vacuous solutions and, at worst, wildly dangerous outcomes.

The Digital Economy challenges the fundamental concepts of neo-classical economics. It also challenges most of the precepts of how societies are organised. In this context policy research needs to focus on what is different, not on what is the same. The Digital Economy is not just a matter of means of production but about the fundamental structures of social organisation.

Work program

This research is designed both to inform policy makers and to assist those who would seek to influence policy makers or to make business decisions. DigEcon Research however does not provide strategy recommendations nor undertake policy advocacy on behalf of any party.

A key element of the research will relate to the direct regulation of the converging industries of telecommunications, media, consumer electronics and information technology. However, the agenda encompasses the wider economic and social policy issues.

The scope of the research agenda will ultimately depend upon the researchers who wish to participate in what is more an idea than an entity.

In the crowded Australian research field there are a number of "bodies" that share some of the objectives of DigEcon Research. DigEcon Research aspires to contribute to the work of these and any other researchers in the field.