

Regulating the New: Overland Telegraph to Generative AI

Charles Todd Oration 2023

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Abstract: The Charles Todd Oration is an annual event run by TelSoc and is named for Charles Todd, the Postmaster-General of South Australia, who was responsible for completing the Overland Telegraph Line from Darwin to Adelaide in 1872. The 2023 Oration was delivered in Sydney on 12 October 2023 by the author, Rob Nicholls, and was introduced by Communications Minister Michelle Rowland MP. The Oration examined the challenge of novelty to regulators. It looked at history of regulating innovation, promotion of innovation in the context of consumer protection, how regulators can deal with innovation, and minimising consumer harm.

Keywords: competition, co-design, generative artificial intelligence, regulation, telecommunications

Introduction

This is a (close to) verbatim transcription of the Charles Todd Oration 2023.

I would like to start by acknowledging the traditional custodians of the land on which we meet, the Gadigal people of the Eora nation, and to pay my respects to elders past, present, and emerging. I would particularly like to pay my respects to all First Nations Peoples with us today.

Thanks, Minister, for your kind and generous introduction. Actually, I think that I am allowed to say “thanks, Michelle”, given the amount of time that we worked together on telecommunications regulation at Gilbert + Tobin. I will be discussing some of the lessons learned there today.

My title for today is “Regulating the New: Overland Telegraph to Generative AI”. Rather surprisingly, I will actually touch on generative artificial intelligence, rather than just using it

to persuade you to come along today. I am going to look at this issue in four parts. The first is some history of the challenge of novelty for regulators (including when regulation was part of ownership). The second is the key issue of jointly promoting innovation and protecting consumers. I know, “stifling innovation” is the catch cry of regulatory submissions the world over. I should know, I have used it often enough on behalf of clients! However, I am going to try to come at the issue as dispassionately as I can. As an academic, I am supposed to be able to do that. The third issue is what principles can be used generally by regulators to deal with the new. The final part is to consider how regulation and regulators can ensure that these technologies are used in a way that harms consumers least. I will let you know now, just in case you worry about the time that I am taking, I will spend most of my time on issues one, two, and three.

Some History of the Challenge of Novelty for Regulators

For many years, the Commonwealth Postmaster General was the owner and regulator of communications services ([Moyal, 1983](#)). This flows from the Commonwealth’s constitutional power. Section 51(v) of the *Constitution of Australia Act 1901* (Cth) gives the Australian Parliament power to legislate on “postal, telegraphic, telephonic, and other like services”. Spectrum management also falls under that power. Last year, Minister Rowland gave her oration on the 150th anniversary of the Overland Telegraph for which we honour Todd today ([Rowland, 2023](#)). Importantly here, this was a quarter of a century before Federation.

The challenge was one of regulating, owning, and dominating the telegraphy space. Todd’s vision may have been to link Australia and England, but he was the Postmaster General of the British Colony of South Australia ([Livingston, 1997](#)). To be fair, it was a self-governing and convict-free colony. However, Todd’s task was to create an overland telegraph system in competition with the other Australian colonies ([Courtenay, 2023](#)). In particular, it was Queensland that wanted to direct traffic through Brisbane in competition with Todd’s overland telegraph. Indeed, when Todd was running late and the submarine cable from Java had already landed at Darwin, the Queensland Superintendent of Telegraphs called for Todd’s project to be scrapped, and for the line from Darwin to connect to the terminal at the remote Queensland town of Burketown ([Puntis, 2008](#)). Indeed, Burketown had been the original proposed termination. I should point out that the *Adelaide Evening Journal* on Saturday 24 August 1872 (“[History of the Adelaide to London Telegraph,](#)” 1872), expressed undisguised glee in its history of the overland line in the role of South Australia compared with Queensland.

What I argue is that the Overland Telegraph was a state funded project leading, eventually, to becoming an asset of the Commonwealth.

I think that it is also interesting to look at the replacement of the Overland Telegraph. Part of that interest is that it involves exclusive patents and a former Australian icon. The technology available in Australia for radio in the early 1920s used patents held by Amalgamated Wireless Australasia or AWA. For disclosure, I worked for AWA Communications about 30 years ago. These intellectual property rights were obtained as a result of the merger of the patent rights of the Marconi and Telefunken subsidiaries in Australia in 1913. In order to avoid Australia being, as Billy Hughes put it to the Imperial Conference in 1921, “at the end of the line”, the Hughes administration entered into an agreement for the supply of communications services with AWA. As part of that arrangement, AWA was partially nationalised, with 50% plus one share under government control. However, the partial nationalisation was also controversial, in that the seven-member board of directors of the new AWA could be appointed on a 4:3 basis by the privately held part of AWA. Ultimately, this position was solved when, as Prime Minister, Billy Hughes took a seat on the board ([Curnow, 1963](#), p. 88). That is a slightly different way in which a shareholder minister can express their statement of expectations.

The “single hop” link between Australia and the UK was delayed, partly due to British intransigence on the form of Imperial communications which, under the Norman scheme, was to use a series of relay stations to link the Empire. The Norman scheme was based on a report by Sir Henry Norman ([“Relays in the Wireless Line,” 1921](#), p. 5):

The Committee of the Imperial Conference today discussed a wireless proposal submitted by Sir Henry Norman. This provides for an Empire-wide scheme, enabling the Dominions and Britain to communicate with each other, but not directly. This plan provides for a two-thousand-mile radius, meaning that relays are necessary. Mr Hughes bitterly opposed this, demanding a direct exchange, if a scheme is to be attempted at all.

This dispute was ultimately resolved in a variation to the agreement to build the wireless beam system in 1927.

There was a royalty flow described by Solicitor General Garran ([Garran et al., 1929](#), p. 80):

The company also agrees to make its patent rights available to the Commonwealth free of charge for the purpose of the manufacture or use of plant or apparatus to be manufactured and used exclusively by the Commonwealth. In return for these concessions the Commonwealth agrees to pay to the company 3d. per month in respect of every person licensed to listen in under the Wireless Telegraphy Act.

Of course, the AWA wireless beam service was part of what became part of the Overseas Telecommunications Commission, later OTC, along with Cable and Wireless assets, in 1946. That is, regulating the new by nationalisation ([Given, 2007](#)).

Turning to more recent times, the deregulatory approach to telecommunications ran from 1992. It started with the “managed duopoly” of Telstra and Optus for fixed-line services and three GSM operators (Vodafone was the addition) in mobile. From 1997, the ACCC was tasked with delivering workable competition in an environment with many “natural monopolies” or

bottlenecks. In 1997, telecommunications sector-specific competition law was introduced as Part XIB and Part XIC of what is now the *Competition and Consumer Act 2010* (Cth). The Telecommunications Act was designed to provide a “light touch” regulatory environment and provides for a high degree of self-regulation for the sector ([Nicholls, 2017](#)). It has a policy objective in section 4 to promote “the greatest practicable use of industry self-regulation”. However, it had the “stick” that the regulator (the ACMA) can make binding codes or rules, if the self-regulatory regime does not deliver outcomes which are aligned with policy. This is known as co-regulation and I will discuss it further shortly.

The response to the “new” of deregulated telecommunications included two key concepts. The first is the “long-term interest of end-users” (LTIE). This is set out in section 152AB(2) of the *Competition and Consumer Act 2010* (Cth). The objectives of the LTIE are:

- (a) the promotion of competition;
- (b) achieving any-to-any connectivity; and
- (c) encouraging economically efficient use of, and economically efficient investment in, infrastructure.

The ACCC has used a standard approach of regarding competition as the process of rivalry between firms, where each market participant is constrained in its price and output decisions by the activity of other market participants.

The second is the concept of access ([Nicholls, 2014](#)). There is a right of access to “declared” services and access must be provided on non-discriminatory terms and conditions. The ACCC is empowered to declare bottleneck services if declaration is in the LTIE.

However, this liberal co-regulatory market-based approach did not achieve the expected outcomes in the fixed sector. Instead, the national broadband network, described eloquently by Michelle in last year’s oration was the outcome ([Rowland, 2023](#)). Three out of three for State ownership as a response to the new. I would have to note that national ownership can only be applied domestically.

So, we have had a look at the historical challenge of novelty for regulators. The next issue is promoting innovation and protecting consumers.

Promoting Innovation and Protecting Consumers

In any form of regulation there is a balance between promoting innovation and protecting consumers. Actually, it is often a balance between not stifling innovation and protecting consumers. I guess this is the stage at which to mention stifling of innovation ([Lev Aretz & Strandburg, 2020](#)). It is a phrase which appears mainly in regulatory submissions. It is also true that some of these were drafted by me for clients or reviewed by me at the ACCC. The

problem in dismissing the risk of stifling innovation is a matter of information asymmetry. Is the regulator actually certain that the business is using a rhetorical tool or is it the final cry before exit? In either case, it is likely that this balance must be to minimise risk of harms to consumers – that is, regulatory intervention will have a consumer protection focus. Of course, I should mention that any decent submission will also hint darkly at “unintended consequences”. Usually without specifying those consequences.

I will come to market-based and command and control regulation shortly. In either case, the regulatory implementation is likely to fall into one of a number of approaches. This is where there is a risk flowing from asking an academic to give an oration. A bit of “Regulation 101” is likely to be on the agenda ([Baldwin et al., 2011](#); [Baldwin & Cave, 2020](#); [Freiberg, 2017](#)). One of my former colleagues asked me before the Oration whether Chat GPT had finished my speech yet. Here I will confess that I am using material that has already been presented to students! Some of the regulatory approaches are ([Coglianese, 2017](#)):

- **Outcome-Based Regulations:** Outcomes clearly defined in regulations (the “what”) and the regulated parties determine the “how” ([Haines & Gurney, 2003](#)). Requires measurable and enforceable objectives.
- **Systems-Based Regulations:** Regulated parties have methods for assessing/managing prescribed risks, through process-oriented specifications for rules and system controls designed to meet goals ([Behn et al., 2022](#))
- **Standards and Guidelines:** Use of standards can complement legal instruments. But requires trustworthy standards bodies.
- **Regulatory co-design:** Opportunity to understand and focus on user needs. Requires stakeholders to be willing, trusted, and competent ([Abbas et al., 2021](#); [Avram et al., 2019](#); [Banerjee et al., 2021](#); [Trischler et al., 2018](#))

I like the idea of regulatory co-design, when it is done well. Essentially it helps to ensure that the regulatory approach keeps its focus on consumers, while being effective for the regulator and the regulated. It does take time. However, the time taken will assist in reducing the potential for whipsaw regulatory responses. Broadly, the degree of regulatory co-design is measured on a spectrum. The International Association for Public Participation or IAP2 has produced a model which maps out this spectrum ([IAP2 Spectrum, 2023](#)). For the consumer, the engagement sits on a scale, which ranges through:

Inform → consult → involve → collaborate → empower.

The role of the community in each of these ranges through:

Listen → contribute → participate → partner → decide.

Associated with both of these ranges is a set of goals as to why the participation is required and a set of promises as to how consumers will be involved. Regulatory co-design is effectively

mandated in the energy sector in Australia ([AER, 2023](#)). It is just not part of the approach in the telecommunications sector. In my view, that is a missed opportunity.

As I mentioned, we currently have a telecommunications regulatory environment based on co-regulation. As a former regulator, co-regulation is neither fish nor fowl. From a regulatory enforcement perspective, self-regulation looks like the rules set for a club. As long as they are not detrimental to consumers and do not discourage entry, they can be safely ignored. Regulation flows from legislation and subordinate legislation and can be enforced. Co-regulation is often code for self-regulation, which is fine if it does not adversely affect consumers. When it is enforced regulation, there is often push-back from the regulated, arguing that the self-regulatory aspects are sufficient. This is part of the rationale behind the Telecommunications Industry Ombudsman, Cynthia Gebert, calling for direct regulation ([Gebert, 2023](#)) and Nerida O'Loughlin of the ACMA asking whether co-regulation has had its day ([O'Loughlin, 2023](#)).

In the context of dealing with the new, direct regulation is most likely. It seems to me that we need to have regulatory co-design as part of a regulatory regime that uses systematic regulation, which is outcomes-based. We do not have the option of national ownership. To provide improved consumer protection, I am not actually calling for a regulatory nirvana. Merely the application of well-understood tools.

Having looked at some of the issues in that joint task of promoting innovation and protecting consumers, I now turn to general regulatory principles in addressing the new.

General Regulatory Principles in Addressing the New

I want to briefly divert to discuss the issue of regulatory certainty. Mainly, because there is no such thing. The best that any regulator can offer is regulatory predictability, and this is probably the best that any regulated entity can expect. I say this in the context of “rule of law”. Rule of law means that people in the same circumstances are treated by the law in the same way. That is, the operation of the law is predictable. It is not certain. Certainty is an ask that is never delivered. On the other hand, regulatory predictability leads to good outcomes for both the regulated and the regulator.

There is a tradition of considering regulatory systems in terms of either market-based or “command and control” ([Cave, 2013](#)). There are a few reasons why market-based approaches have been preferred in the last three decades. The most important of these is the issue of information asymmetry. Put simply, the regulated entity is likely to know far more than the regulator. Indeed, this is particularly the case in the telecommunications sector, where the

ACCC uses recordkeeping rules, and other information provision requirements, to assist to understand how the sector functions.

So why would you choose either market-based or command-and-control regulatory approaches? And in the context of regulating the new, which is the right approach ([Dunne, 2015](#))?

What are the reasons for market-based regulation? First, it's efficient. This is partly because businesses are allowed to choose the most cost-effective way to comply with the regulations. It has a high level of flexibility. Businesses can adjust their behaviour in response to changes in the market. After all, that is what business as usual is for businesses. I will also argue that market-based regulation can promote innovation. This is because businesses have a financial incentive to develop new technologies, if only to allow them to comply with regulations in a more cost-effective way.

On the other hand, there are some negatives to a market-based approach. The first is regulatory complexity. Market-based regulation can be complex to design and implement. Balancing fairness and effectiveness can create unintended consequences. Sorry, I couldn't help myself here! There are also equity issues. Market-based regulation can be inequitable because businesses that are able to afford to comply with the regulations will benefit at the expense of businesses that are not able to afford to comply. This compliance cost could well include external advisory costs. The last issue is effectiveness. Market-based regulation may not be effective in addressing all types of regulatory problem. This is particularly true of addressing externalities.

Well, why would you choose a command-and-control regulatory approach? There are three main arguments. The first is that it is effective. It has worked in the past. The second is simplicity. Command-and-control regulation is relatively easy to understand and enforce, because regulations are specific. The third is predictability. Businesses know what they need to do to comply with regulations, and consumers know that they are protected.

On the other hand, there are some downsides of command and control. Command-and-control regulation can have high compliance costs and these costs are passed on to consumers. Command-and-control regulation is inflexible. It restricts approaches to compliance. The third is most critical to this Oration. It adversely affects innovation. For once, I did not claim that it stifles innovation! However, businesses are less likely to invest in new technologies if they are required to comply with specific standards.

In the end, the decision is a balance between all of these factors. What is most important is that the regulatory approach is consistent and predictable. This means not changing the rules part way through.

As I have mentioned, the telecommunications sector has primarily been characterised by market-based regulation with occasional nationalisation. This can be contrasted with broadcasting regulation, which has more command-and-control regulation on the basis that it is dealing with a social good.

As a generalisation, sectors characterised by dynamic efficiencies (rather than productive or allocative efficiencies) are best suited to market-based regulation ([Decker, 2015](#)). The rationale is that they tend to be more innovative.

In dealing with the new, I think that regulatory settings probably need to consider parallels with existing situations. However, there is a significant risk in getting it wrong by defining the problem too early. For example, I might have decided, acting reasonably, that in 2007 I would consider regulating MySpace. In that year it was registering 320,000 users a day, and had overtaken Yahoo! to become the most visited website in the United States. It was owned by News Corporation and looked like it was acquiring near monopoly market share. MySpace had eclipsed Friendster (yes, I really am that old!) and was not restricted to college students. Using a bit of network economics and knowledge of multi-sided markets, I might argue that the tipping point had occurred, and that News Corp's vertical and horizontal integration meant that MySpace was going to have monopoly characteristics. I should be thinking about providing access to MySpace in some regulatory way. Except, of course, that Facebook overtook MySpace in 2008 partly because of News Corp.

The logical approach to regulation of the new as the new is emerging is by using existing laws and regulations. We might fret about the market power of each of the big tech players. I am old-fashioned and still use the term GAFAM for Google, Apple, Facebook, Amazon, and Microsoft. Of course, Facebook is Meta and Google is Alphabet and Open AI should probably be in the mix (unlike X, formerly known as Twitter). But we have mechanisms for dealing with market power without new regulation. Australian competition law does not ban or break up monopolies. Nor does it prohibit monopoly rents. It does address misuse of market power and that, after all, is the likely problem. The misuse-of-market-power provisions were changed five years ago, partly to address changing business practices ([Kemp, 2017](#)). However, these have not been used by the ACCC in the GAFAM context.

Enough of general regulatory principles in addressing the new. My next and final area is how do we do it all in a way that protects consumers. I am also going to finally get to generative AI (Artificial Intelligence).

Protecting Consumers

Ultimately, regulation is only required in order to protect some group which would be adversely affected in the absence of regulation. Usually, these are consumers. However, they may be small businesses and occasionally whole sectors, as in the News Media Bargaining Code ([Nicholls, 2020, 2021](#)).

A rush to regulation is required when there are no current tools that can be applied to a problem. The heart of the argument that I am making in this Oration is that the absence of regulatory tools is incredibly rare. I will take generative AI as an example. There are a few potential consumer harms, which flow from the use of generative AI using a chatbot interface, such as Chat GPT or Google Bard.

In relation to text, one key issue is transparency. This is less “why did the gen AI say this?” and more “what was the basis of the statement”. In my view, this can be partly addressed by relying on the “Model Card” for the generative AI. Each of OpenAI ([OpenAI, 2023](#)), Google ([Google, 2023](#)), and Meta, for Llama 2 ([Meta, 2023](#)), publish a model card setting out some minimal information such as the model’s:

- (a) name and version;
- (b) type;
- (c) inputs and outputs;
- (d) training data;
- (e) evaluation metrics; and
- (f) limitations and biases.

Why? Because the publication of the model card is at a minimum “conduct in trade or commerce” and might rise to be a “representation”. It also sets a reasonable consumer expectation of the service. All can be dealt with under the Australian Consumer Law, which is Schedule 2 to the *Competition and Consumer Act 2010* (Cth) or the *Australian Securities and Investments Commission Act 2001* (Cth), if required. You will notice that I am comfortable with disclaimers as to the risk of hallucination. That is, there is no point trying to regulate that which cannot be changed.

On the other hand, the use of generative AI to produce images which are then used in bullying is not a matter where there should not be an immediate response. However, as has already been noted by the eSafety Commissioner, Julie Inman-Grant ([Office of the eSafety Commissioner, 2023](#)), the issue is not so much with the creation of the bullying material than with its publication on social media. Part of Meta’s approach to free use of image-creating AI

on its platforms is the reduction in potential harm. Taking down harmful material is easier when there is a mechanism for the creation of novel but harmless material.

I will note in passing that Google search appeared to have monopoly characteristics until Microsoft Bing Chat included access to GPT 4 at no additional cost, when the Open AI version costs \$US20 per month. One source, Statista ([2023](#)), suggests that Bing's share of search has risen from 6.8% in May to 9.2% in July as a result of this change. I should also note that other statistical sources are not as optimistic for Microsoft, despite its \$US10 billion investment in Open AI.

Conclusions

I hope that I have done as I have promised. I have given a potted history of the challenge of novelty for regulators. I have discussed promoting innovation and protecting consumers. I have looked at how regulators can deal with the new. I ended by considering how regulation and regulators can ensure that novel technologies harm consumers least.

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