ANALOG REGULATION, DIGITAL WORLD

Eric Crampton and James Ting-Edwards

Foreword by David John Harvey

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About the New Zealand Initiative

The New Zealand Initiative is an independent public policy think tank supported by chief executives of major New Zealand businesses. We believe in evidence-based policy and are committed to developing policies that work for all New Zealanders.

Our mission is to help build a better, stronger New Zealand. We are taking the initiative to promote a prosperous, free and fair society with a competitive, open and dynamic economy. We develop and contribute bold ideas that will have a profound, positive, long-term impact.

About InternetNZ

InternetNZ is a non-profit and open membership organisation. Our vision is for a better world through a better Internet. We promote the Internet's benefits. We protect its potential. And we focus on advancing an open and uncapturable Internet for New Zealand. We provide a voice for the Internet in New Zealand and work on behalf of all Internet users across the country. We are the designated manager for the .nz Internet domain and represent New Zealand at a global level. We provide community funding to promote Internet research, and work hard to bring the Internet community together at events like NetHui to share wisdom and best practice on the state of the Internet. We promote our vision for the Internet to industry leaders and the rest of New Zealand, in order to shape what New Zealand's Internet might look like in the future.

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Foreword

David John Harvey

The title of this report reflects a fundamental problem confronting regulators as New Zealand moves further into the Digital Paradigm. How do we apply analog-era regulations to the digital paradigm and its unique foundations and expectations? Are regulations in New Zealand fit for purpose? Are they simply maintaining or imitating previous structures, or do they recognise the disruptive, innovative and transformational changes from new technologies?

Established industries do not always embrace change, though they can sometimes benefit from it. The last analog revolution was home video recording, which movie studios first saw as a threat to be banned. Lawsuits, culminating in *Sony Corp. v. Universal City Studios* (*Betamax*),[1] argued home taping was infringement, and sought to ban home recorders by making technology companies liable. The US Supreme Court did not agree, saying video recorders had substantial lawful uses, including time-shifting by users, and these should not be denied to the public.

Allowing the new technology in the public domain was a game-changer. Forced to review their business models, movie and TV studios realised that their back catalogues could be re-released for home consumption, opening up substantial new revenue flows. Time-shifting was the first step in moving from 'appointment viewing' to today's on-demand content delivery. Had the *Betamax* case been decided in favour of content providers, it is doubtful these innovations would have occurred.

'Sharing platforms' such as Uber, Airbnb, Bitcoin and iPredict similarly disrupted established business models, and tempted the government to apply existing regulation rather than a more appropriate new regulatory model in New Zealand.

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A new model may single out new technologies for specific treatment. For example, specific rules may be applied only to the online space, meaning a behaviour faces legal consequences if done online but not face-to-face. This Internet exceptionalism is present in the *Harmful Digital Communications Act 2015* (HDCA). The New Zealand Law Commission (NZLC) cites the speed, pervasiveness and permanence of online communications to justify this 'technology specific' approach.

The HDCA was developed through policy debate, and reflects a tension between addressing online harms and protecting free expression online. This report usefully summarises debates around the HDCA, and offers a cautiously positive early assessment. This is a useful exercise, as the ICT Law Research Centre begins more detailed work to monitor and assess cases under the HDCA.

Another 'new technology' concern is the 'right to be forgotten'. Unlike physical documents, which can be lost or forgotten over time, digital information can remain available, searchable and sharable indefinitely.

[1] *Sony Corp. v. Universal City Studios* 464 US 417 (1984), also known as the *Betamax* case.

Europe's 'right to be forgotten' tries to address that concern, but as this report finds, it remains an ill-defined legal construct, perhaps motivated by the state wanting to control the perceived power of large Internet platforms.

Technology specific laws long pre-date the Internet. The original copyright law, the *Statute of Anne 1710*, focused solely on print material. As new technologies appeared new rights developed: the performance right, the broadcast right, the communication right, and lately the 'paracopyright'. All but the last developed with the analog centralised distribution of content model. The Internet changed that model. This report examines the need to assess and review the *Copyright Act 1994*, and the 2008 reforms to the Act, for the present era. Recent and continuing innovation may need a more adaptable approach in this area.

In practice, the ideal of technology neutrality can be a cover for maintaining past models when they are due for review. As this report finds, placing on-demand content under the Broadcasting Standards Authority (BSA) would not align with the new digital paradigm. The current classification model assumes 'appointment viewing,' an outdated model for online content.

Enabling the benefits of the digital paradigm means allowing the unexpected. One major driver of disruption and change in the digital paradigm has been 'permissionless innovation'. I have elsewhere described it as an environmental property of digital systems:

> Permissionless innovation is the quality that allows entrepreneurs, developers and programmers to develop protocols using standards that are available and that have been provided by Internet developers to "bolt-on" a new utility to the Internet. Thus we see the rise of Tim Berners-Lee's World Wide Web which, in the minds of many, represents the Internet as a whole.[2]

Regulation for the digital paradigm should embrace 'bolt-on' creative innovations in astounding new ways. Instead of avoiding risk, policymakers need to embrace it.

Finally, proportionate regulation will address the right problem in the right place. Targeting technologies that deliver content is a characteristic of totalitarian states. Thus, Turkey and Egypt have at various times shut down access to social media platforms or the Internet altogether. In a free and democratic society, we need to do better. Before trying to regulate a technology, we should engage with the intellectual task of understanding how and why people are using it, and the effects.

David John Harvey

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[2] David Harvey, *Collisions in the Digital Paradigm: Law and Rulemaking in the Internet Age* (Oxford: Hart Publishing, 2017), 25.

Executive summary

Small countries at the far end of the world cannot afford to lag in technological adaptation, which requires flexible and enabling regulatory environments.

In some areas, New Zealand's approach is laudable. When Rocket Lab, an aerospace corporation that launches lightweight, cost-effective commercial rockets, presented the possibility of taking New Zealand into the space age, the government made it happen by quickly changing the regulations. Wellington also refused to follow risible approaches like the European Union's 'right to be forgotten'.

In other areas, New Zealand's regulatory apparatus could heed two key lessons of the online world. First, environments allowing permissionless innovation drive more innovation than precautionary approaches. Second, user experience matters.

Cumbersome permissions tend to send innovators seeking greener fields. New Zealand's size and location necessitate good regulatory frameworks. For example, regulations around driverless cars may seem highly permissive, but uptake has been relatively slow. So good regulatory practice is not enough. But bad regulatory practice will certainly obstruct innovation.

Good regulation comes more naturally when it is user-centric. Analog-age regulation was often designed to protect consumers from market failures. Rather than shoehorning new services into old regulatory models, we should ask whether the problems regulation was meant to solve still apply – or whether technological change has already solved them and we need to focus on new problems.

Technological change will inevitably outpace regulatory change. Having a wide range of adaptable regulatory provisions for the digital age is crucial for New Zealand's wellbeing and prosperity.

In some cases, flexibility to adopt standards from trusted countries can let firms test what works best for them and their customers without starting from scratch.

Technological change will inevitably outpace regulatory change. Having a wide range of adaptable regulatory provisions for the digital age is crucial for New Zealand's wellbeing and prosperity.

- Copyright law needs to make greater provision for changing technologies to open new ways of making, marketing and accessing content;
- Government commitment to open data needs to be backed by greater open data practice;
- Changes to the *Land Transport Act* have been slow to reflect the reality of ridesharing;
- Anti-money laundering legislation should be more sensitive to the magnitude of potential risks so digital innovation is not unduly hindered; and
- Film and television censorship regimes need to be updated to better account for how users can learn about and access content with modern technology.

Introduction: Rethinking regulation

Technology usually moves much faster than regulation. Old laws sometimes remain on the books well beyond their use-by dates only to be used by newspapers as funny filler stories – like the UK's *Daily Mail* noting it has been illegal since 1313 to enter Parliament wearing a suit of armour.[3] The law would have made sense at the time, does little harm now, and is good for a laugh.

It is not always that benign.

Well-designed regulations work to solve market failures. They enable beneficial voluntary exchange and action by mitigating harm to third parties, bridging information gaps that can inhibit trade, and reducing externality and public goods problems like reducing pollution.

But every market failure justifying regulation is a product of the technology of its time. New technologies can sometimes create the need for new regulation – or make old rules obsolete.

But every market failure justifying regulation is a product of the technology of its time. New technologies can sometimes create the need for new regulation – or make old rules obsolete.

More than 20 years ago, techno-optimists claimed the Internet interprets censorship as damage to the internet's physical infrastructure and routes around the problem. Technological change and the web looked like a promising way to circumvent the real world's outdated regulations.

Today, cellphone apps are solving every market failure that justified taxi regulation decades ago, but the New Zealand government has been slow to adapt. The Uber app may have strived for the 1990s Internet ideal by identifying regulators as damage – and routed bookings around them,[4] but any Internet-enabled technology that interfaces with the physical world likely has to deal with obsolete regulations.

This report broadly looks at whether regulation in New Zealand is keeping up with technological change.

Regulation needs to adapt to the digital world to effectively minimise risks without impeding development that could benefit New Zealand. Technological change, however, will inevitably outpace regulatory change. Having an adaptable regulatory environment is, therefore, crucial. Rules against wearing armour in Parliament are silly, but do no harm. Rules preventing New Zealand from developing or taking up new technologies worsen the existing tyrannies of size and distance that hold back New Zealand. It might be hopelessly optimistic to think New Zealand could ever house the next Silicon Valley, but regulation that fails to keep up will guarantee that New Zealand falls behind.

[3] Annabel Fenwick Elliott, "No armour in Parliament, never handle salmon 'suspiciously' and being drunk in a pub is ILLEGAL: The bizarre Medieval laws that still stand in Britain today," *Daily Mail* (3 June 2015).

[4] Mike Isaac, "How Uber deceives the authorities worldwide," *The New York Times* (3 March 2017).

Communication in the digital world poses many unforeseen challenges. The speed and ease with which digital communication can spread endangers privacy, intellectual property rights, and potentially even personal safety. Regulating digital communication so it protects New Zealanders against such violations without undue collateral damage is difficult. Overbearing regulation of digital communication can be at odds with free speech. Similarly, calls for regulation to protect against such threats can point to a hidden agenda, one that protects industries from competition at the expense of consumers.

How policymakers react to changing technology has serious ramifications. In a world where skilled entrepreneurs are highly mobile, a flexible regulatory framework that facilitates innovation could be a defining feature for a small country. As one person interviewed for this report put it, engineers are like water: they flow to the path of least resistance. Regulations that inhibit innovation send innovators to friendlier shores. But an adaptable regulatory framework can make New Zealand the launch-point for low-cost satellites for the rest of the world.

'Permissionless innovation' supported by sensible protection and liability rules can harness the benefits of the digital world while mitigating downsides.

It is unwise to ignore all precautionary opposition simply because similar concerns have been debunked. However, blanket application of the 'precautionary principle' will stifle beneficial new technology. 'Permissionless innovation' supported by sensible protection and liability rules can harness the benefits of the digital world while mitigating downsides.

This report uses a case-study approach to examine whether New Zealand has achieved the correct balance – and the possible benefits of getting it right.

Why do we need regulation anyway?

Real-world regulation serves many purposes, some more laudable than others. Regulation can mitigate market failures, helping markets operate to everyone's benefit. But it can also protect incumbent industries, stymie competition, and obstruct innovation.

Market failures create potential for regulation to improve outcomes. For example, the external costs of households burning coal for heat in Christchurch justified regulations banning the practice. However, the case is rarely so clear cut: the benefits of regulation must always be weighed against its costs.

Regulation can go beyond standard consumer protections embodied in the common law and law of contract; it can set standards that benefit some consumers by protecting them from harm while preventing others from accessing the choices they would prefer. Occupational licensing for professional service providers can ensure purchasers will receive quality service – this is particularly important in markets where information

asymmetries could be dangerous.[5] But the same rules can prevent new business models from emerging, and also increase costs for consumers.

How regulation will affect the consumer or end user should be a significant concern in devising and reviewing legislation. In the absence of unintended spill-over effects on third parties,[6] regulation that worsens consumer outcomes should be viewed with suspicion.

New Zealand has general rules that promote the interests of consumers by ensuring accurate information and honest conduct in trade, and support informed choices by consumers. The *Consumer Guarantees Act 1993*[7] and *Fair Trading Act 1986*[8] cover the basic rules around trading. The Acts describe the rules sellers must follow to protect the end user.[9] These rules cover quality and safety standards, honest information provision, and timely delivery, among other things.[10] Anyone who is considered a 'trader' must comply with both Acts. The definition of who counts as a trader is broad,[11] but sellers of items purchased or acquired for personal use are specifically exempt.

If it ain't broke ...

Regulation is not the only way to solve the problems of seller-purchaser information and power asymmetry. The exemption of some sellers from consumer law provides an interesting case study for how markets operate

5 It is worth noting that reputation can also serve to inform consumers of the quality of professional service providers. For a discussion on the relative benefits and costs of licensing compared to other mechanisms of communicating quality, see Carolyn Cox and Susan Foster, "The Costs and Benefits of Occupational Regulation" (Washington, DC: Bureau of Economics, Federal Trade Commission, 1990).

6 What economists refer to as 'externalities'. Externalities are an example of market failure – situations where government intervention, such as regulation, may be able to improve on the free market outcome.

7 Consumer Protection, "Consumer guarantees and your rights," Website (2017).

8 Consumer Protection, "Fair trading and your rights," Website (2017).

9 Both Acts specifically identify 'consumer protection' as their intended aim.

10 It is worth noting, however, that the *Consumer Guarantees Act 1993* does not allow consumers to directly dispute unfair terms imposed by sellers that violate the Act. Consumers can complain to the Commerce Commission, which may investigate and impose penalties. However, this oversight has enabled many businesses to impose terms of sale not allowed under the Act. Alexandra Sims and Louise Mara, "Unfair Online Contract Terms in New Zealand: Evaluating the Effect of Regulatory Change," *Competition & Consumer Law Journal* 24:2 (2016), 128–156.

11 Commerce Commission, "Buying and selling online," Website (2014).

The Fair Trading Act's definition of "trade" is broad. It defines trade as "any trade, industry, profession, occupation, activity of commerce or undertaking relating to the supply or acquisition of goods or services."

Whether a person is in trade will depend on the specific circumstances of the seller and the offer. Many factors can be relevant to whether a person is in trade, including whether they:

- *regularly or habitually offer to sell goods or services online*
- *make, buy or obtain goods with the intention of selling them*
- *are GST registered*
- *have staff or assistants to help manage their sales*
- *have incorporated a company or set up another type of trading vehicle.*

There are other factors that might mean a person is, or is not, in trade. Sellers who are uncertain whether they are in trade should obtain legal advice.

Digital trading platforms have shown that markets can thrive even when consumer protection law does not apply or would be difficult to enforce.

in the absence of regulation. Despite the lack of legal consumer protection, markets of exempt traders still manage to thrive and provide value to consumers.

In unregulated markets, sellers have to convince consumers they are honest and reliable. Credibility is more difficult to establish when there is no punishment for bad behaviour. However, market mechanisms, such as branding and advertising, allow sellers to develop a credible reputation, which can help address the issues that regulation seeks to solve. Trademark law supports the ability of sellers to invest in their good reputation. Plus, where quality is difficult to verify, trusted third parties can independently certify product quality.[12]

Digital trading platforms have shown that markets can thrive even when consumer protection law does not apply or would be difficult to enforce. Internet auction websites allow sellers to develop a credible reputation that gives purchasers similar assurance as regulation would.[13] The reputation damage from negative feedback can serve as effective punishment and encourage good behaviour. While general contract and fair trading rules apply, and have been modified for the online environment,[14] it can be difficult to enforce those provisions on small traders over small transactions. Nevertheless, the market works. Entrepreneurs wanting to profit by bringing together buyers and sellers need to find ways to build trust.

The problems that regulation seeks to address can often be solved in the absence of regulation – a point frequently overlooked by those who advocate regulation. Every market failure represents a potential gain from trade that cannot be realised, until an entrepreneur finds a way to profit by bridging the gap caused by the market failure.[15] For example, consumer worries about seller reliability at Chinese online marketplace Alibaba led to a new industry's emergence: insurance that provides consumers money-back guarantee at a low cost.[16]

Markets are far from perfect, but regulation intended to protect the consumer can also make the consumer worse off. Licensing professional services can make those services more costly and inaccessible. The inability to contract out of the *Consumer Guarantees Act 1993* may hurt consumers willing to accept risk in exchange for a lower price.

This is not to say regulation is never beneficial – smart regulation can sometimes be the most effective solution to market failures. But regulation fails too, so the costs of potential market failure need to be weighed against the potential costs of policy failure.[17]

[12] See, for example, Dan Klein, *Reputation: Studies in the Voluntary Elicitation of Good Conduct* (Ann Arbor, Michigan: University of Michigan Press, 1997).

[13] See, for example, Adam Thierer, et al. "How the Internet, the Sharing Economy, and Reputational Feedback Mechanisms Solve the 'Lemons Problem'," *University of Miami Law Review* 70:3 (2016), 830–878.

[14] See Commerce Commission, "Changes to the Fair Trading Act," Website (2017).

[15] See Tyler Cowen and Eric Crampton, "Introduction," in Tyler Cowen and Eric Crampton (eds), *Market Failure or Success: The New Debate* (United Kingdom, Edward Elgar, 2002).

[16] Yiting Sun, "Consumer Insurance Can Save Shoppers from Floods of Fake Gadgets," *MIT Technology Review* (14 November 2016).

[17] See Harold Demsetz, "Information and Efficiency: Another Viewpoint," *The Journal of Law and Economics* 12:1 (1969), Article 2.

Keeping weeds out of the garden

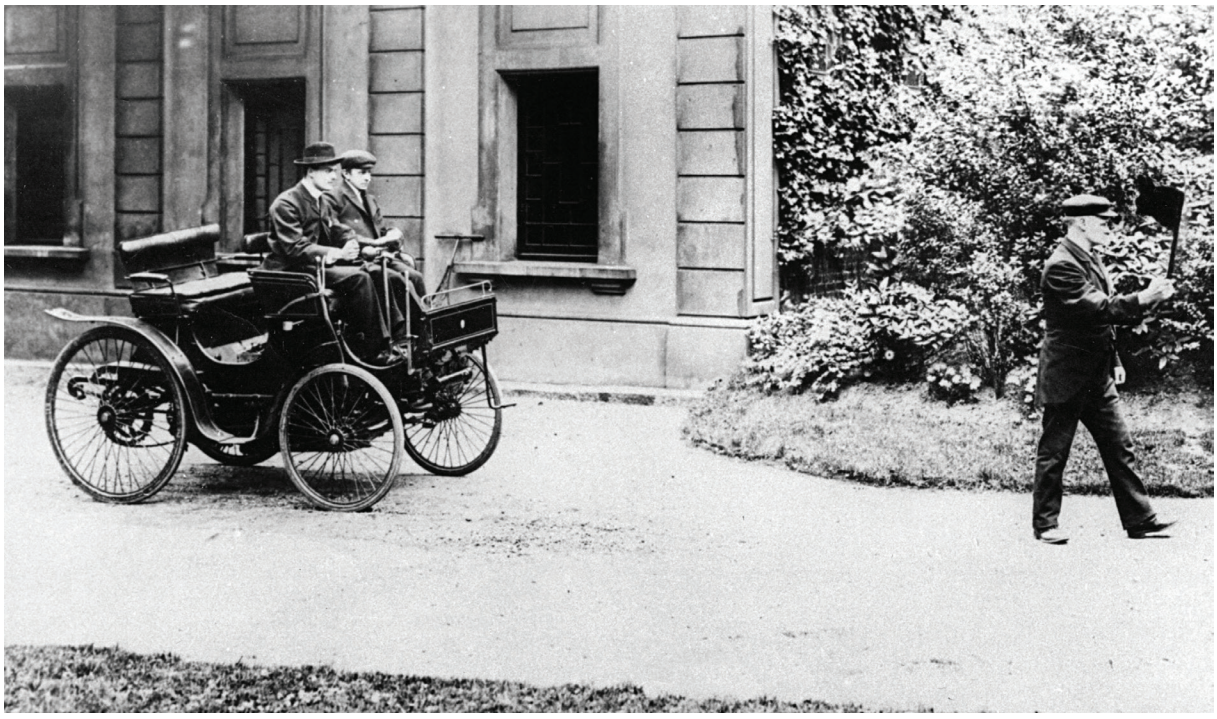
The difficulty with regulation designed to prevent threats is it is hard to foresee threats. Broad legislation that establishes minimum acceptable rules is more effective in deflecting threats without requiring burdensome regulations. General principles about desired outcomes, rather than specific rules about process or technique, better clarify what is required and may encourage compliance.

New Zealand's consumer law under the *Consumer Guarantees Act 1993* and *Fair Trading Act 1986* thus protects New Zealanders from harmful new products and dishonest traders without excessively hindering business.

This approach for consumer protection can also be used against other threats. Legislation already protects privacy, prevents harassment, defends intellectual property rights, and bans objectionable material. A first response to digital threats would be to see whether new technology breaches current rules to cause harm. If so, enforcing the rules already established should be the first priority.

While it should not be too controversial to claim that regulation should embrace opportunity and block threats, it can be challenging to do both in practice. Regulation can be misused for ulterior motives, in particular, anti-competitive aims.[18]

The fiercest opposition to digital innovations generally comes from incumbent industries. This is not surprising given their bottom line is



Laws in the United Kingdom and the United States required early cars to be preceded by a pedestrian waving a red flag. What current rules will look as silly in hindsight?

[18] Organisation for Economic Co-operation and Development (OECD), "Competition and Barriers to Entry," *Policy Brief* (Pais: OECD, January 2007), 4–5.

In regulated sectors, licensing procedures, territorial restrictions, safety standards, and other legal requirements may unnecessarily deter or delay entry. In some cases, these regulations seem to be the result of lobbying efforts by incumbent firms to protect their businesses. In other cases, incumbents find ways to take advantage of existing, complex regulations to thwart entry, such as by using the regulations as the basis of litigation against entrants.

under threat from new entrants. That the industry demands to apply regulation to new digital competitors rather than abolish it for themselves shows regulation as a barrier to entry.[19] Note the response of the taxi industry to Uber or hotel chains abroad to Airbnb.

It is also easy for anti-competitive motivated lobbying to masquerade as genuine concern for public good. Almost every innovation, from the motor car to the cellphone,[20] initially met with populist fears. Motivated parties can exploit these fears to push for regulation that thwarts new technology.[21] This is why regulators need to maintain a level-headed approach in evaluating risks rather than give in to fearmongering.

Regulation should not exist to protect the profits of incumbent producers or serve anti-competitive aims. This is especially important in small markets like New Zealand where fixed costs imposed by regulation can block entry for small competitors.

Incumbents suggest new entrants should follow the same rules as existing players. Calls for level playing fields earn some sympathy. But regulation should focus on protecting consumer rights or addressing harmful effects on third parties. If new technology can solve those problems just as well as existing regulation, shackling new players with rules designed for older systems hurts consumers and competition. Incumbents able to up their technological game should similarly be unshackled.

Regulation should not exist to protect the profits of incumbent producers or serve anti-competitive aims. This is especially important in small markets like New Zealand where fixed costs imposed by regulation can block entry for small competitors.

[19] Panayotis Kotsios explains how technical regulation can serve as a barrier to entry. Panayotis Kotsios, "Regulatory Barriers to Entry in Industrial Sectors," International Conference on International Business Proceedings (2010).

[20] For example, see the UK review into the dangers of cellphone use. Independent Expert Group on Mobile Phones, "Mobile Phones and Health" (Oxon, United Kingdom: 2000).

[21] An example is the 'bootleggers and Baptists' phenomenon, where those with a profit motive benefit from the moralistic arguments for regulation. See Bruce Yandle, "Bootleggers and Baptists: The Education of a Regulatory Economist," *AEI Journal on Government and Society* (May/June 1983), 12–16.

CHAPTER 01

Entertaining threats and online speech

By default, regulation continues even as technology radically changes the behaviours it was meant to govern. Written in a world of VCRs, cassette tapes and floppy disks, *Copyright Act 1994* remains the most important law governing the copying and sharing of information in New Zealand. Copyright encourages and rewards creative works, an honourable goal. But with new Internet-enabled ways of making, marketing and buying content, is pre-Internet copyright law still relevant?

Change can introduce or amplify problems; it may also offer solutions. Historically, concerns about harms from content have motivated broadcast media regulation. Does the same motivation exist for online content, which is normally accessed through more deliberate, interactive choices, and comes from companies and individuals globally? This is an area where new technology offers new solutions, such as options for informing consumer choices, and reduces the need for traditional regulation.

New behavioural possibilities can open new risks of harm. One example is online abusive speech targeted at individuals, a new harm specifically addressed in the Harmful Digital Communications Act 2015 (HDCA). We examine here the history and framework of the Act, bearing in mind its aim of responding to harm without unduly limiting free expression.

When setting rules for an uncertain future, it may help to favour tech-neutral principles over tech-specific rules; to regulate less or later while new behaviours take shape; and to employ sunset clauses to let us re-think over time.

Faced with rapid change, a key decision to make is when to set rules, and for how long. New problems need to be adequately understood before solving them. When setting rules for an uncertain future, it may help to favour tech-neutral principles over tech-specific rules; to regulate less or later while new behaviours take shape; and to employ sunset clauses to let us re-think over time. We invite wielders of regulatory hammers, especially those inclined to see rule-governed nails, to consider a more flexible regulatory toolkit incorporating lessons from the examples below.

1.1 Hurtful words

Human interaction is not all positive. By connecting more people in more situations, the Internet and smart technology not only deliver significant benefits but also amplify harms from bullying, shaming and social exclusion. New Zealand uses the legal framework of the HDCA to respond to online harms.

Social media trends, particularly the risks of online visibility, keep drawing headlines. When cellphone videos of schoolyard violence made the news in 2011, Prime Minister John Key called for a 'national conversation' on bullying.[22] In 2012, the New Zealand Law Commission (NZLC) assessed the harms from online communication and how the legal system might respond.[23] Its report found factors specific to online communications that increase harms: the speed and spread of online distribution; the pervasiveness of connected devices in modern life; the

[22] Audrey Young, "PM tells schools to act against bullies," *The New Zealand Herald* (29 March 2011).

[23] New Zealand Law Commission (NZLC), "Harmful Digital Communications: The Adequacy of the Current Sanctions and Remedies" (Wellington: NZLC, 2012).

way online information can persist and be searched, despite efforts at removal; and the way online anonymity can enable extreme behaviour.[24]

Based on that report, the government introduced the Harmful Digital Communications Bill on 5 November 2013. As the select committee was hearing submissions, news stories were highlighting severe cases of harm linked to online communications.

In the week the Bill was introduced, the 'roast busters' case dominated the headlines, where a group of young men boasted of sexual violence on Facebook. Even though the group's actions were hugely disturbing, "without actual evidence, my hands are tied," said Detective Inspector Bruce Scott.[25] In February 2014, celebrity Charlotte Dawson, who had publicly argued with online 'trolls' and campaigned against bullying, was found dead in her Sydney apartment.[26]

Severe cases of online harm make for compelling news stories. But a focus on such cases alone would result in unbalanced policy. Fortunately, the 2012 report by the Law Commission defined the issues and potential responses in a relatively balanced way, and enabled a broad policy discussion. As online safety group NetSafe said in its oral submission to the Bill, despite media reports, this "was not a process designed around or in response to cyberbullying headlines."[27] Instead, it was a broader exercise to allow time and space to share and address concerns. As emerging news stories fuelled public concerns, those concerns could be channelled into an open and balanced policy discussion.

The HDCA has created three ways to respond to online harm. The aim of a balanced regime applies to each. The first balancing measure is defining 'harm' as "serious emotional distress."[28] As the High Court confirmed, this requires serious distress but not diagnosis of a psychological or medical condition.[29] The new criminal offence requires that a complainant has suffered harm, that an ordinary person would have suffered harm in the same context, and that the defendant intended to harm.[30] Accidentally causing offence is unlikely to support that charge. In practice, criminal charges have been applied predominantly to behaviour following break-ups of intimate relationships, where a person posts hurtful comments or intimate recordings online.[31] Most charges result in guilty pleas.

Second, the civil regime allows private individuals to complain of online harm to NetSafe, the 'approved agency'.[32] NetSafe offers advice and tries to resolve most matters through dialogue and mediation.

[24] Ibid. [29], 10.

[25] Calida Smylie, "Police powerless to stop young men boasting of filming underage sex," *The New Zealand Herald* (3 November 2013).

[26] See Natalie O'Brien and Nick Ralston, "Charlotte Dawson found dead," *Stuff* (22 February 2014).

[27] NetSafe, "Oral submission by NetSafe to the Justice and Electoral Committee on the Harmful Digital Communications Bill" (Auckland: 26 March 2014), Supp1.

[28] *Harmful Digital Communications Act 2015*, section 4.

[29] See *Police v B* [2017] NZHC 526 at [22].

[30] *Harmful Digital Communications Act 2015*, section 22.

[31] David Harvey, "R v Iyer [2016] NZDC 23957" (Auckland: Auckland District Law Society, 17 February 2017).

[32] See *Harmful Digital Communications Act* 2015, sections 7 and 8, and the Harmful Digital Communications (Appointment of Approved Agency) Order 2016.

Only after NetSafe fails can complaints go to the District Court. This process was meant to be more approachable for complainants, and to filter out complaints below the threshold for harm without court action. Since November 2016, NetSafe has prepared 27 case summaries where unresolved matters passed the threshold for harm. None have gone to court, suggesting the filtering process works and that acknowledgement by NetSafe is, in itself, a remedy for some complainants.

Finally, balancing measures under the HDCA include a 'safe harbour' for content hosts. Much of the content that people access on the Internet comes from other ordinary users and is made available by a third party 'content host'. That includes not only big platforms like Facebook and Twitter but also individuals who run groups on social media or allow comments on a blog.

To reduce harm online, a new legal framework might require new obligations on these hosts. But hosting content is generally a good thing – like hosting dinner parties. But new obligations or liability risks might deter people from acting as hosts. More fundamentally, it is unfair to blame hosts, online or offline, for things their guests say or do.[33] The 'safe harbour' is so called because it allows content hosts to avoid liability, in this case, for harmful content posted by others.[34] This protection requires cooperation: a host must pass on any HDCA complaint to the person responsible within 48 hours and remove the content unless the person who posted it says 'keep it up'.[35] The 'keep it up' provision was proposed in joint submissions by media, civil society and technology groups, including InternetNZ.

The safe harbour is not perfect. Hosts are not protected if they try to manage harmful content proactively, but must first receive a complaint that triggers the safe harbour.[36] This may not be a big problem in practice, as hosts may contract out reporting, asking people to file a formal notice for content the host is already aware of. If disputes are escalated to the District Court, hosts may be ordered to remove the content, to identify the person who posted it, or to publish a correction or 'right of reply'.[37] Outside of criminal provisions, penalties apply only to breaching a court order without excuse – entailing a fine or a jail term in extreme circumstances.[38]

The safe harbour aims to preserve online expression, but it may also encourage unnecessary self-censorship of benign content. TradeMe, a local platform committed to transparency reporting, has exercised the safe harbour process once. TradeMe received a complaint regarding online comments about a book, but was satisfied the content did not breach its

33 New Zealand Law Commission (NZLC), "Harmful Digital Communications," op. cit. [5.116], 131.

34 *Harmful Digital Communications Act 2015*, sections 23 and 24.

35 Ibid. Sections 23 and 24.

36 Ibid. Section 24(1)(a). See also Rick Shera, "Harmful Digital Communications – Update" (Auckland: Lowndes Jordan, 21 December 2015).

37 *Harmful Digital Communications Act 2015*, section 19.

38 Ibid. Section 21.

own terms and conditions, and by extension the HDCA's. Nonetheless, when TradeMe passed the complaint to the user, the user chose to remove it. One example is not a trend, but it may support further monitoring of the safe harbour. No agency monitors or reports on the use of safe harbour with private complaints to private hosts.

With the full HDCA framework less than a year old, it is too early to tell how well it works overall. In time, reporting from NetSafe and New Zealand Police will allow an overview of the civil and criminal aspects of the HDCA. More criminal cases have occurred than predicted, but these may be a reasonable response to previously unaddressed high levels of harm.

The Regulatory Impact Statement for the HDCA has promised a review after two years to assess the take-up and effectiveness of the new rules. That review should also consider whether the Act has been proportionate to the harms targeted.

Government commitment to monitoring and reporting on the safe harbour could help identify or rule out unwanted chilling effects on online content. Such ex-post regulatory assessment is rare.

The Regulatory Impact Statement for the HDCA has promised a review after two years to assess the take-up and effectiveness of the new rules.[39] That review should also consider whether the Act has been proportionate to the harms targeted. The Act regulates much more than the cyberbullying that gave rise to the legislation – it encompasses all digital communications. Almost all criminal prosecutions under the HDCA have stemmed from failed relationships, and may necessitate more cost-effective and targeted ways of mitigating those specific harms. Further, assessing the Act's effect on non-infringing speech can determine whether the Act has struck the appropriate balance.

1.2 Copyright

Copyright is an important legal tool that encourages and rewards people's creativity. New writing, art, musical compositions, photographs, videos, sound recordings, and software code all result in copyright 'works'. Our law automatically gives the owner of each new work a 'copy right': the exclusive right to copy the work.[40] This is legal monopoly, restricting everyone else from copying the work without permission – except as allowed under current 'fair dealing' exceptions.

VHS tapes were introduced in 1977. In 1994, New Zealand copyright law changed to allow recording of television programmes for watching at a more convenient time. Re-watching the VHS recording multiple times remained illegal.

[39] Ministry of Justice, "Regulatory Impact Statement – Harmful Digital Communications" (6 November 2013).

[40] Thanks to Elizabeth Heritage of Creative Commons Aotearoa New Zealand for this explanation of the term.

Box 1: Fair dealing in New Zealand

Part 3 of the *Copyright Act 1994* sets out "permitted acts" that allow the use or copying of a protected work without an owner's permission. There are specific rules for institutions, such as schools,[41] archives,[42] and the Blind Foundation.[43] The general fair dealing exceptions allow use by anyone for:

- research or private study; and[44]
- criticism, review or reporting current events.[45]

Use for research or private study is the most broad of the permitted acts. Whether a use in this category is fair dealing depends on an assessment of:

- the purpose of copying;
- the nature of the work copied;
- whether the work could be obtained within a reasonable time at an ordinary commercial price;
- the effect of copying on the potential market for or value of the work; and
- the amount and substantiality of the part copied.

This list of factors is not used in any general way to assess other potential uses of copyright works under New Zealand law.

The restriction on people copying without owner permission protects the market for the work. If it is something people will pay for, the copyright owner can sell copies or allow others to do so. Copyright can encourage creative efforts, which also enrich our lives, our economy and, perhaps, our culture.

In the 300 years since the first Copyright Act in 1710, new technologies have required rethinking the law: cameras, auto-pianos,[46] photocopiers,[47] multi-tracks, synths, cassette tapes, VCRs, home computers, etc. Each new technology has changed the economics of creative works. New possibilities have emerged for creating works and supplying them around the world, at ever lower cost.

41 See *Copyright Act 1994*, sections 44–49. In practice, educational use of copyright materials is largely through licensing schemes, which override many of the permitted acts.

42 Ibid. Section 57.

43 Ibid. Section 69.

44 ibid. Section 43.

45 ibid. Section 42.

46 See Lee Hollaar, "Copyright of Computer Programs," Chapter 2, in *Legal Protection of Digital Information* (2002).

47 Association of Research Libraries, "Copyright timeline: A history of copyright in the United States," Website.

1.3 The digital change

Thirty years ago, those unlikely to afford the genuine article went for poor-quality pirated audio and VHS tapes. But digital content does not degrade when shared, transforming the economics of piracy.

But not all copying is necessarily piracy. Cheap, efficient and accessible communications on the Internet depend upon, and enable, copying information between devices and people. This is also true of other digital technologies:

- iPods and other mp3 players depend on copying music files;
- cloud services require copying files between devices and people; and
- an Internet search requires temporary copying because it builds an index.
- While Internet services depend on copying information, they also can build in measures to combat copyright infringement. Google's Content ID, for example, seeks copyrighted content on YouTube to identify rights-holders – and has generated more than $2 billion for its content partners.[48]

1.4 How has regulation in New Zealand responded?

1.4.1 2008 reforms

New Zealand's copyright law was last substantively updated through the 'new technologies' reforms in 2008. This was intended to bring the 1994 Act up to date with technology such as the Internet and make the framework more technology neutral.[49] The reform process inevitably focused on technologies most visible at the time, though technological change has continued in the years since.

The iPod, released in 2001, made mp3 players popular and visible. Law changes in 2008 made it legal to use this seven-year-old technology by creating a new 'personal use' provision.

The iPod, released in 2001, made mp3 players popular and visible.[50] Law changes in 2008 made it legal to use this seven-year-old technology by creating a new 'personal use' provision. The new section 81A allowed legitimately obtained sound recordings to be 'format shifted' from one medium, such as a CD, to another, such as a file on a computer or an mp3 player.[51] It was illegal prior to that change, but far from uncommon. Despite the availability of portable video players, this change was technology specific, with no similar provision for format shifting of legitimately obtained recorded video.[52] In general, format shifting of video remains an infringing activity.[53]

48 Google, "How Google fights piracy," Website.

49 Copyright (New Technologies and Performers' Rights) Amendment Bill (102–2) (27 July 2007).

50 The founder of tech website Slashdot became infamous for initially writing off the iPod. Rob Malda, "Apple releases iPod," Slashdot.org (23 October 2001).

51 *Copyright Act 1994*, section 81A.

52 The fifth generation 'iPod with video' was released in 2005. See Wikipedia, "Ipod Classic," Website.

53 Section 43 of the *Copyright Act 1994* allows 'fair dealing' for 'research or private study'. Even with a broad interpretation, format shifting a recording to watch with friends or family would likely be infringement.

1.4.2 File-sharing

While the consumer-friendly reforms of 2008 enabled format shifting, they also recognised the new threat of peer-to-peer file-sharing. Although file-sharing has legitimate uses, such as sharing software updates efficiently,[54] it became strongly associated with copying music. The most controversial aspect of the 2008 reforms was section 92A, which required all ISPs to adopt and implement a policy including account termination for repeated copyright infringement.[55] The provision was deleted by the select committee[56] but reinserted by a supplementary order paper.[57] This provoked a strong response from technology businesses, their users and others who identified being cut off from the Internet as an unreasonable penalty for a civil wrong. Following public outcry, and failed attempts to establish shared rules for ISPs,[58] section 92A was first suspended and then repealed without ever coming into force.[59]

Section 92A was replaced in 2011 by a graduated-response regime,[60] under which copyright owners can send infringement notices to ISPs, identifying activity by IP address.[61] To avoid liability, the ISP must pass this to the account-holder associated with the IP address. Notices for repeated infringement escalate from 'detection' to 'warning' to 'enforcement'. An enforcement notice enables an owner to take action through the Copyright Tribunal for compensation,[62] or the District Court to have a user's Internet account suspended for up to six months.[63] Notices can be contested by users. This regime confines the role of ISPs in policing their customers.

The focus of the 'new technologies' on file-sharing seems almost quaint in 2017. Since 2008, improvements in connection speeds and online payments have enabled convenient, legitimate ways to find, pay for and stream recorded music and videos. But those sites operate in the shadow of file-sharing: high subscription fees would likely see the return of illegal file-sharing.

At their best, the 2008 reforms recognised the relevant interests of users, copyright holders, and 'intermediaries' such as ISPs. The file-sharing provisions include a safe harbour. This allows ISPs to avoid liability for infringement by their users by deleting or removing access to infringing material stored on the ISP's system. The overall result is a fair balance, where content owners can seek a response from ISPs, but ISPs need not fear direct liability for acting directly against their customers.

Too strenuous copyright restrictions can limit the re-use of works in ways that take a toll on total creative output.

Copyright should strike a fair and efficient economic balance. On the one hand, it should give strong and usable protection for creative works to encourage the effort and investment it takes to produce new works. On the other hand, copyright restrictions should not unfairly limit the ability to seek, receive and share information.[64] Too strenuous copyright restrictions can limit the re-use of works in ways that take a toll on total creative output.

54 Gavin Clarke, "Want a Windows 10 update? Don't go to Microsoft … please," *The Register* (1 September 2016).

55 *Copyright (New Technologies) Amendment Act 2008*, clause 53.

56 Copyright (New Technologies and Performers' Rights) Amendment Bill (102–2) (27 July 2007).

57 Copyright (New Technologies) Amendment Bill, Supplementary Order Paper 193, clause 53.

58 Chris Keall, "Section 92A to be scrapped," *National Business Review* (23 March 2009).

59 See *Copyright (Infringing File Sharing) Amendment Act 2011.*

60 *Copyright Act 1994*, section 122A.

61 Ibid. Section 122C.

62 Ibid. Section 122O.

63 Ibid. Section 122P.

64 This paraphrases the right of free expression affirmed in the *New Zealand Bill of Rights Act 1990*, section 14.

1.5 Making copyright more adaptable

The main problem with the 'new technologies' reforms is they are technology specific. Measures like the safe harbour develop a reasonable balance. Other measures like the sound-only format-shifting and file-sharing regime target technologies of the moment, with no room to adapt to technological change.

The most visible example of a flexible approach to exceptions is the 'fair use' system in the United States. A person wishing to use a protected work must assesses whether that use is 'fair' against four factors:[65]

- the purpose and character of the use, including whether such use is of a commercial nature or non-profit educational;
- the nature of the copyrighted work;
- the amount and substantiality of the portion used in relation to the copyrighted work as a whole; or
- the effect of the use on the potential market or value of the copyrighted work.

Source: Creative Commons

The 'fair use' approach requires some work to transform or add value, and protects the original work against competition by substitution. Israel and Singapore recently adopted fair use in their copyright laws, and it has been strongly recommended for Australia in reviews by the Australian Law Reform Commission[66] and the Australian Productivity Commission.[67]

Stronger provision for fair use can encourage new works. Derivative works are most common in the music industry,[68] where sampling and mixing are used in creating works. Much of the response to this trend is from private entities such as Creative Commons, a licensing system for creators wanting more minute control than available under standard copyright. Creative Commons works can be made available without restriction, or with particular restrictions the creator wishes to apply.

Outside of this scheme, if someone uses a 'substantial' part of copyrighted work without permission, and they are not covered by any of New Zealand's fair dealing exemptions, they are liable to pay royalties to the rights owner (in the case of music sampling) – or be sued for infringement.

Traditional copyright, which usually lasts for the life of the author plus an additional 50 to 100

65 Limitations on exclusive rights: Fair use, 17 U.S. Code § 107.

66 Australian Law Reform Commission, "Copyright and the Digital Economy," Report No. 122 (Sydney: 2014).

67 Australian Productivity Commission, "Intellectual Property Arrangements," Inquiry Report No. 78 (Canberra: 2016).

68 See, for example, James Boyle, Jennifer Jenkins, and Keith Aoki, *Theft! A History of Music* (Createspace Independent Publishing, 2017).

Stronger fair dealing provisions are especially important if copyright terms lengthen under international trade agreements. Copyright protection against derivative works should preserve the creator's incentive to build new works within the same universe – not stymie new creation.

years depending on the type of work, the year it was produced, and the jurisdiction, erodes the rich and dynamic commons from which new creation can draw inspiration. The same rules that increase the value a creator can draw from a new creative work also increase the costs of producing new works.[69]

Stronger fair dealing provisions are especially important if copyright terms lengthen under international trade agreements. Copyright protection against derivative works should preserve the creator's incentive to build new works within the same universe – not stymie new creation. Consider JD Salinger, who spent much of his later life preventing anyone from publishing sequels to *Catcher in the Rye* even though he never intended to write his own sequel.

Legislative provisions for fair dealing are much narrower in Canada, but the courts tend to favour users. This has resulted in a copyright regime that is more friendly towards transformative works than in the United States.

That said, the judiciary is limited in how far it can work around legislation. While New Zealand has fair dealing exemptions, these are not as broad as in other countries; in particular, it does not have an exemption for parody or satire. This is a dangerous situation in which "socially useful commentaries often breach copyright."[70] Take, for example, the parody of Robin Thicke's "Blurred Lines" by law students at the University of Auckland in 2013. Had someone sued the students, they would not have been protected under fair dealing exemptions, despite the value of their work.[71]

More troubling is the effect narrow exceptions have on innovation:

> Many organizations are risk adverse they will not innovate if that innovation falls outside of an exception. Thus the narrower an exception, the more it stifles competition. Copyright should not be dictating how innovation occurs.[72]

Overly restrictive and unreasonable copyright laws can also diminish respect for copyright and undermine its credibility.[73] Copyright provisions clearly need to be better aligned with public and industry opinion to encourage compliance. Crafting specific exemptions will become increasingly tedious as the law lags behind technological developments.

Expanding fair dealing (see Box 1) would be as simple as adding the phrase 'such as' before listing the instances in which fair dealing might be found. By including 'such as', the first step of the inquiry would no longer be necessary – any content could be covered under fair dealing provisions.

Copyright law reform is challenging terrain. Any reform to fair dealing needs to be followed up with guidance documents to provide consistency and predictability.

69 See William Landes and Richard Posner, "An Economic Analysis of Copyright Law," *Journal of Legal Studies* 18:2 (1989), 325–363.

70 Alexandra Sims, "The Case for Fair Use in New Zealand," *International Journal of Law and Information Technology* 24:2 (2016), 176, 178.

71 Ibid. 188.

72 Ibid. 190.

73 Australian Law Reform Commission, "Copyright and the Digital Economy," op. cit.

1.5.1 Allowing for changing technology and uses of works

Copyright reform should also consider openness to purpose so copyright law can find a balanced response to new technologies. A range of new uses of works was confirmed 'fair' in the United States long before being made legal in Australia or New Zealand. Table 1 lists new technologies, and the year in which copyright law was changed to accommodate the use of the new technology.

Table 1: New Technologies and Year in Which Copyright Law Was Changed to Accommodate Them

Technology	United States	Australia	New Zealand
VCR	1984	2006	1994
Reverse engineering	1992	1999	2008
Internet search	1999	NA	?
DVR	1999	2008	?
Cloud services	2008	NA	?

Source: Sean Flynn, "Fair Use in Empirical Research," Talk at the symposium "Is Copyright Flexible Enough to Accommodate Multiple Interests While Still Working for Authors?" (Wellington: New Zealand Centre of International Economic Law, 20 February 2017).

Each of the technologies listed in Table 1 involves copying works in a way that falls outside the uses specified in New Zealand law. For example, the 'private copying' right is framed narrowly – a user may make a back-up copy, but a third party, such as Dropbox, is not allowed to do so on the user's behalf.

Open-ended exceptions seem more responsive to valuable new uses of works, while retaining reasonable protections for owner's rights. In some cases, such as the VCR, allowing new technologies for copying has created profitable new business models for existing copyright owners.

1.5.2 Where to from here?

The scheduled review of our law in 2013 has not yet been held. Meanwhile, technological progress continues to change the opportunities and challenges for protecting creativity in New Zealand.

The Ministry of Business, Innovation and Employment (MBIE) completed the Creative Sector Study in 2016,[74] a series of qualitative interviews with New Zealand creators producing various types of copyright work. The study asked how the current copyright system supports or fails these creators. This empirical turn – focusing on ground-level outcomes for people in our creative and innovation industries – may be a useful step away from the clichéd clash of 'old media' and 'new technologies'.

[74] Ministry of Business, Innovation and Employment (MBIE), "Copyright and the Creative Sector" (Wellington: New Zealand Government, 2016).

1.5.3 The new tyranny of distance[75]

The Internet enables global access to film and television content – at least at a technical level. But regulatory costs in small countries can prove a big hindrance. Do expensive analog regulatory regimes make sense in a digital world, or does the shift to a digital world makes the old regime obsolete?

Content classification in New Zealand is complicated. TV shows air under industry self-regulation through the Broadcast Standards Authority (BSA). The BSA assigns the ratings you see on shows you watch on TV. But DVDs and films in cinema come under the Office of Film and Literature Classification (OFLC).

So where does streaming content like Netflix sit?

Before Netflix officially opened in New Zealand, then-Chief Censor Andrew Jack threatened legal action against Internet Service Providers who provided global modes. Why? Making it easy for households to parallel import streaming video also made it easier for them to access content that had not been classified in New Zealand, or that might here be banned.[76]

The Censor also threatened distributors of video games that did not carry New Zealand classification labels,[77] though enforcement of that against the thousands of international websites where Kiwis download games would be interesting.

Content ratings ensure viewers know what they or their children are getting into before watching a programme or sitting down at the cinema.

For content under the OFLC's jurisdiction, classification can be costly. OFLC reports that Netflix incurred regulatory costs of "less than $150,000" to stream to New Zealand.[78] At a subscription fee of $15 per month, compliance costs for classification amounted to about 800 subscribers' payments. Lightbox, a streaming site in New Zealand, paid $250,000 to have its library classified.[79] The classification fee for a restricted film is $1124,[80] so streaming site would have to expect a film to bring in about 75 subscription-months to cover the classification costs.

Lightbox, a streaming site in New Zealand, paid $250,000 to have its library classified.

Since then, New Zealand has appointed a new Chief Censor and the legal position has clarified. Streaming sites do not need to seek New Zealand ratings for their content. But the Censor's Office can call in contentious content for classification, like Netflix's recent 13 Reasons Why series.

75 This section has been substantially revised from the original draft. We thank the Chief Censor for pointing out errors in the original version, for which we offer unqualified apologies.

76 "Censor eyes 'global mode' internet access." *New Zealand Herald* (7 November 2014). http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11354334

77 Campbell Gibson. "Chief censor loses trust in video game industry." *National Business Review* (10 November 2014). https://www.nbr.co.nz/article/chief-censor-loses-trust-video-game-industry-cg-p-165094

78 Office of Film & Literature Classification. 2015. "Balancing Freedom of Expression with Public Safety in a Digital Age." Submission in response to the Government's discussion document Content Regulation in a Converged World 16 October 2015. Note that only content not already classified in Australia or the UK, or that there carries an age restriction, requires OFLC classification.

79 Nicki MacDonald, "Is censorship dead in the digital age?" *Stuff* (3 March 2015).

80 https://www.classificationoffice.govt.nz/blog/classification-fees/. Note that bulk discounts can bring this fee down.

The outcome was reasonable. Netflix provided warnings about the show that suited a New Zealand audience. But nobody knows quite what would happen if a smaller streaming site, based abroad, decided not to answer the phone if New Zealand's Chief Censor asked for a chat.

The discrepancy between the legal regimes for broadcast, streaming, and cinematic content is part of the basis for the government's digital convergence review. But, barring cases like child pornography, does it really make sense to restrict access to digital content through regulation backed by legal penalties?[81]

The same technology that streams content to the viewer also brings a host of user-generated content ratings – and enables parents to control what their children view. The Internet Movie Database (IMDB) provides more information and nuance than a generalised classification ever could.[82] Netflix has a Kid's Mode.

Equipping consumers with tools to safely navigate online content can make more sense than trying to force the world's content providers into a bespoke New Zealand regulatory framework.

Shoehorning streaming content either into the Broadcast Standards regime, or into OFLC classification, would not work well.[83] Too many smaller niche foreign streaming sites could be frozen out if they had to deal with the BSA. Imposing high classification costs on niche content through the OFLC risks hindering Kiwis' access to content. And neither regime makes much sense when ample information about any film's content is available from the streaming sites themselves, and from a host of others.

The regulations do need to be modernised. The censorship regime overall could rely more heavily on available RP ratings, which leave more room for parental discretion.

But, if the government makes the wrong decision, at least Kiwi consumers with a virtual private network will be able to route around the damage censorship might cause.

1.6 Protecting privacy

Expectations of privacy are important for normal human interactions. People behave differently when constantly monitored: most choose to close doors and use envelopes rather than show everything to everyone – well, except on Facebook.

New Zealand's *Privacy Act 1993* defines protected 'personal information' broadly but allows a sliding-scale approach, depending on how information is used. Technological change has introduced new ways to breach privacy while vastly increasing the benefits of shared data.

Regulating practices to protect individual privacy faces a conundrum: There is and should be a right to privacy in a free country, but protecting privacy can also sometimes stifle information that could be used for the public good.

The right to privacy is by no means absolute. It is almost impossible to live in a developed country without divulging personal information to government or businesses. Once we accept this – and the degree to which regulation protects privacy – we need to consider the benefits and costs of rules around privacy. Otherwise, we have to forgo highly valuable goods

[81] Watching Die Hard on broadcast television with your 12 year old is legal. Watching the R-13 rated anniversary edition on blu-ray with your 12-year-old is illegal and could result in fines or jail time. See https://nzinitiative.org.nz/reports-and-media/opinion/new-media/

[82] It is far from the only available source. The Common Sense Media website, for example, provides advice from parents and children about films content.

[83] The OFLC's 2015 submission, op cit. at page 33, suggested bringing streaming content under the OFLC's jurisdiction.

and services that need personal information. For example, privacy rules in Germany have frustrated the development of Google Maps street view, resulting in a much worse user experience relative to other countries with less restrictive rules.[84]

A realistic assumption about how much individuals value their own privacy is also important. Experimental analysis has revealed that while people claim they highly value privacy, when faced with a trade-off they happily divulge personal information for relatively small rewards.[85]

1.6.1 Open data

Concerns around government use of big data about private individuals are understandable. At the same time, an accommodative stance towards citizens' use of government data can unlock research allowing New Zealanders to better understand themselves, and crowd source some policy analysis.

The government's embrace of Creative Commons licences has largely removed copyright as a barrier to data access. Its commitment to more open data is evident in initiatives like the Data Futures Partnership. Open Data Watch ranked New Zealand 17th out of 173 countries for access of data.[86]

Access to data beyond what is publicly available on the Statistics New Zealand website is difficult, and much of the data freely available abroad is locked behind restrictive access processes here.

Even so, access to data beyond what is publicly available on the Statistics New Zealand website is difficult, and much of the data freely available abroad is locked behind restrictive access processes here. Open Data Watch recommends improving user ability to download customisable data extracts.

Nowhere is this clearer than in access to confidentialised versions of important surveys.

New Zealand has a wealth of microdata from survey analyses in the form of confidentialised unit record files (CURFs) covering topics such as health, income, work and nutrition.[87] These files are accessible in theory but getting permission to access this data is not so easy in practice.

Because these files are confidentialised, it is difficult, but not impossible, to re-identify individuals from the data. The risk varies on the dataset – it would be easier to re-identify someone from Census data than the General Social Survey. But all come under the same stringent approval process. Researchers have to satisfy Statistics New Zealand they are qualified to analyse the data, they will use it for research that serves the public good, and the research will be disseminated appropriately.

[84] Erica Ho, "Alas, there will be no more Google street view in Germany," *Time* (11 April 2011).

[85] For example, see Kai-Lung Hui, Hock Hai Teo, and Sang-Yong Tom Lee, "The Value of Privacy Assurance: An Exploratory Field Experiment," *MIS Quarterly* 31:1 (2007), 19–33, and Ellen Rose, "Data users versus data subjects: Are consumers willing to pay for property rights to personal information?" Proceedings of the 38th Hawaii International Conference on System Sciences (Hawaii: 3–6 January 2005). It is worth noting, however, that preferences for privacy may depend on framing, See Alessandro Acquisti, Leslie K. John, and George Loewenstein, "What Is Privacy Worth?" *The Journal of Legal Studies* 42:2 (June 2013), 249–274.

[86] Open Data Watch, "Open Data Inventory Country Profile: New Zealand" (2016).

[87] Statistics New Zealand, "Confidentialised unit record files (CURFs)," Website (12 January 2017).

For example, Statistics New Zealand took three weeks to allow The New Zealand Initiative to run a different analysis on a CURF it had already allowed The Initiative to use for a different study.

While those goals are laudable, they unduly restrict access to anonymized data, requiring application forms, curriculum vitae, and signed contracts. Researchers must go through this process every time they need the data, even if they have used the same dataset before. For example, Statistics New Zealand took three weeks to allow The New Zealand Initiative to run a different analysis on a CURF it had already allowed The Initiative to use for a different study.

Of course, Statistics New Zealand needs to be careful with confidential information. Caution protects respondents from privacy breaches and ensures confidence in the security of data so respondents feel comfortable about giving truthful answers. It is especially important to be cautious around access to sensitive data that has not been anonymised – data held within Statistics New Zealand's data labs. The balance seems wrong, however, when considering confidentialised data.

The contrast with US open data practices is striking. Anonymised Public Use Microsamples (the US equivalent of CURFs) of US Census data and American Community Survey (ACS) data are available in the form of state-level zip files to anybody worldwide with a computer and an Internet connection.[88]

It is simpler for researchers in New Zealand to access US data than data here. Much of the US data can even be analysed from a web browser interface of the University of California at Berkeley[89] or the University of Minnesota's Population Center's IPUMS. Accessing similar data in New Zealand requires complex and specific data requests that take weeks to process, and even a visit to the data lab.

Statistics New Zealand recognises this discrepancy. At a June 2017 open-data event hosted by Koordinates, SNZ statistician Liz MacPherson discussed her agency's commitment to opening data while maintaining privacy. On access to anonymised CURFs, she said, "Watch this space."[90]

Statistics New Zealand's shift towards more open data frameworks has been accompanied by increasing risks in disseminating anonymised data. Changes in the broader data ecosystem are now making it easier to link confidential records with other publicly available data to de-anonymise data.

A few solutions are available, including more sophisticated anonymisation techniques, relatively restricted access to data, and penalties attached to de-anonymising data. In 2016, Australia's attorney-general proposed making re-identifying anonymised data a criminal offence. This approach, coupled with safe harbours for white hat researchers, is a promising way forward.

New Zealand could also supply microdata samples through IPUMS[91] – or a homegrown equivalent.

88 For example, IPUMS CPS, "Current population survey data for social, economic and health research," Website, or National Center for Health Statistics, "Public-use data files and documentation," Website.

89 See, for example, Berkeley.edu, "SDA Frequencies/Crosstabulation Program," Website.

90 Liz MacPherson, "Watch this space," Twitter (7 June 2017).

91 See IPUMS International.

Box 2: The right to be forgotten

Does a European 'right to be forgotten' make sense for New Zealand?

The EU Court of Justice ruled in 2014 that individuals there have the right to ask search engines to remove links containing their personal information if it is inaccurate; inadequate; irrelevant or excessive in relation to the purposes for which it was collected; not kept up to date; or kept longer than necessary.

This requires search engines to use a case-by-case approach balancing the right to be forgotten against other fundamental rights. Thus, while the right to be forgotten is not absolute, it sets a dangerous precedent that threatens freedom of information and the press, and imposes burdensome administration costs on search engines. The 'right to be forgotten' may really be a "right to hide undesirable personal information."[92]

As of August 2015, Google had evaluated 1,030,182 URLs for removal since the right to be forgotten was introduced in Europe.[93] Of these, 41% were removed from search results. Links to articles naming primary and secondary victims of a crime are almost guaranteed to be removed, and those detailing minor offences or quashed convictions are also likely to be deleted from search results upon request.[94]

In New Zealand, the tort of privacy arguably reflects sufficiently "social mores about what a person is entitled to put behind them and what remains society's business ad infinitum."[95] *P v D* held that to meet this threshold, facts disclosed must be "highly offensive and objectionable to a reasonable person of ordinary sensibilities."[96] Safeguards already in place through the tort of privacy, in addition to the HDCA, mean the European model may a impose high cost for little additional benefit.

92 New Zealand Law Society, "Privacy Week 2016: A 'right to be forgotten'?" (12 May 2016).

93 Google, "Search removals under European privacy law," Website.

94 Ibid.

95 Anna Fraser, "Should There Be a Right to Be Forgotten (The Right to Make Search Engines Hide Information About You) in New Zealand? An Analysis of Google v Spain," Victoria University of Wellington Legal Research Paper (3 May 2016), 16.

96 P v D [2000] 4 LRC 195 (High Court), [34].

CHAPTER 02

The digital enabler

2.1 The sharing economy

Trust matters. If consumers cannot trust the person from whom they rent a hotel room or accept a car ride, markets cannot work well. Reputation was the solution in traditional marketplaces, complemented by regulation to protect consumers later. So independent cabbies do not necessarily need to rely on the reputation of a cab company – government certification of drivers did the job.

Digital platforms now connect buyers and sellers, starting with online classified markets like eBay and TradeMe. Feedback features are prominent in building seller credibility for online auction sites. New buyers can see how previous buyers have rated their experience with the seller and read about any complaints to decide whether to buy. Such platforms now serve as trusted intermediaries between buyers and sellers for used goods, car rides and even room-sharing. But has regulation kept up?

2.1.1 Ridesharing

Apps like Uber's solve many of the problems regulation was designed to solve – and at a lower cost. But regulatory change in New Zealand has been slow to come.

Taxi regulation protects consumers getting into an anonymous car. Modern ridesharing services have systems that mitigate many of the safety risks in earlier modes of transport. Ridesharing is de-anonymised, GPS-tracked, cashless and feedback based. This reduces opportunities and incentives for "rider violence, poor driver behaviour, fare evasion, fare gouging, and mishandled complaints."[97] Apps like Uber's solve many of the problems regulation was designed to solve – and at a lower cost.

But regulatory change in New Zealand has been slow to come. Parliament's Transport Select Committee did little to gain the public's confidence when the questions of MPs on that committee to Uber's representative showed the legislators had no clue how the service worked.[98]

Under the *Land Transport Amendment Act 2017*, all drivers, whether with Uber or a traditional cab company, still need to carry a P-endorsed licence. Fortunately, the licence no longer requires passing a course, takes only a few days and not eight weeks to obtain, and brings down overall costs by about $1,500.[99] But the rules would still require a Kiwi driver who spent a year on an overseas excursion a decade ago to get a police background check from that country – a process that can take months. And the rules for drivers operating under multiple ridesharing companies are also tiresome. Uber reports that its drivers may have to swap out a paper display card in the car window every time they switch from accepting a ride through Uber's app to accepting one through another service like Lyft or Zoomy.[100]

97 See the submission by Uber to the inquiry. Uber, "Ridesharing is the future of mobility," Submission to the Transport and Industrial Relations Committee (n.d.), 4.

98 Isaac Davison, "Taxi or Uber? Confusion reigns as ridesharing company turns up at Parliament" *The New Zealand Herald* (24 November 2016).

99 Mitch Cooper, Uber, Personal correspondence (September 2017).

100 Ibid.

At least the government no longer requires Uber's CEO to live in New Zealand.

Customers valuing a driver's P-endorsement should be able to choose to ride with taxi companies hiring P-endorsed drivers. But not all riders value that. It is unclear what problems continued licence endorsement requirements are meant to solve. The simplified P-endorsement still impedes driver participation.

The higher the fixed costs imposed by regulation, the more Uber and others will look like standard taxis, destroying the clear niche for ridesharing services.

2.1.2 Airbnb

A similar tension exists between Airbnb and more traditional, commercially regulated accommodation providers. Hotel owners are increasingly frustrated by the lack of regulation on Airbnb, with some saying Airbnb is "operating like hotels, but not on the same level playing field."[101] Other hotels are not concerned, saying Airbnb is just another player in a diverse industry where hotels doing a good job will always exist.[102]

Cash-strapped councils are using targeted rates on hotels and tourist operations to cover the infrastructure costs of tourism. But is the problem Airbnb or local government finance?

Some councils are taking action against Airbnb hosts offering commercial short-stay accommodation (28 days or fewer) but paying residential rates instead of a tariff. Queenstown Lakes District Council is asking people advertising their properties as short-term rentals to comply with commercial property rules by registering their properties as accommodation and applying for resource consent.[103]

The answer is not necessarily regulating Airbnb like hotels but considering whether councils use appropriate charging mechanisms for services like water supply. The case for separate levies on Airbnb providers would be weak if residential properties were levied for their real water consumption – with corresponding reductions in general rates – and if tourist amenities were funded through higher user charges, or by GST paid by tourists, rather than levies on hotels.

[101] Amanda Stephenson, "Alberta Hotel Association argues for regulation of Airbnb and other vacation rentals," *Calgary Herald* (9 January 2017).

[102] Brent Leslie, "Airbnb growth raises strong concerns in some sectors," AccomNews (29 July 2015).

[103] Daisy Hudson and Amanda Cropp, "Holiday home owners in spotlight as Mackenzie sets sights on commercial rates," *The Timaru Herald* (13 January 2017).

2.1.3 Autonomous vehicles

Good regulation is necessary but not sufficient for technological innovation.

New Zealand's rules seem perfectly suited for autonomous vehicles.

> A particular advantage of testing autonomous vehicles in New Zealand is that our legislation does not explicitly require a vehicle to have a driver present for it to be used on the road. So long as any testing is carried out safely, a truly driverless vehicle may be tested on public roads today.[104]

The government showed its support for testing autonomous cars in its *Intelligent Transport Systems Technology Action Plan 2014–18,*[105] which "sets out a programme of work to promote such technology and ensure there are no obstacles to its continued deployment."[106]

The first driverless vehicle was tested in New Zealand in January 2017 at the Christchurch International Airport, which hopes to use the technology to shuttle passengers around the airport and its surrounds. While it may be some time before autonomous cars rule the roads, at least the government is optimistic about their potential and understands their inevitability.

The government hoped that with relatively liberal regulations, New Zealand could become a hub for autonomous car innovation. However, other centres have been moving faster in testing driverless cars, while New Zealand has not proven sufficiently attractive. In fact, Uber says it is too busy trying to run just normal passenger services in New Zealand to even consider driverless cars here.[107]

While good regulatory structures are needed to develop digital innovation, other crucial factors are also at play. The value proposition for driverless car testing in New Zealand, compared with venues in Europe and North America, which are closer to both developers and customers, has been hazy. Consequently, an earlier draft of this report was more pessimistic. But as this report went to press, a trial of driverless buses began in Christchurch.[108] Picking winners is inherently fraught. Setting liberal and enabling regulatory regimes can let winners emerge.

2.2 Burdensome compliance and anti-money laundering

You need not watch Martin Scorsese's oeuvre to know white-collar workers launder money too, not just the criminal underworld. The *Anti-Money Laundering and Countering Financing of Terrorism Act 2009* (AML/CFT Act) was a response to this billion-dollar industry and investment in criminal activities.[109]

[104] Ministry of Transport, "Testing autonomous vehicles in New Zealand," Website (Wellington: New Zealand Government, 7 October 2016).

[105] New Zealand Government, "Intelligent Transport Systems Technology Action Plan 2014–18: Transport in the Digital Age" (Wellington: 2014).

[106] Ministry of Transport, "Testing autonomous vehicles in New Zealand," op. cit.

[107] Personal interview.

[108] John McCrone, "Future perfect: Christchurch can pioneer autonomous vehicles and social innovation," *Stuff* (23 September 2017).

[109] Amy Adams, "Exposure draft released of new anti-money laundering laws," Press release (Wellington: New Zealand Government, 13 December 2016).

Box 3: The iPredict debacle

No one suspected that money laundering regulations designed to block big criminal enterprises would kill tiny iPredict.

iPredict was a real-money prediction market owned by Victoria University of Wellington. The market let traders buy and sell contracts that would pay out based on political or economic events. Prices in such markets have provided remarkably efficient predictions of election outcomes. Traders could not deposit more than $10,000 into their accounts, and the total amount of money held in trader accounts in 2015 was about $200,000.

iPredict's launch in the lead-up to the 2008 election represented the best of New Zealand's regulatory culture. The Securities Commission took on a facilitator's role to help iPredict fit the futures exchange into existing regulations. As one insider put it, the commission thought the market was 'cool' and wanted to make it work.

iPredict was arguably the world's leading real-money prediction market of its time.[110] The Reserve Bank even cited iPredict's inflation predictions in its Monetary Policy Statement.[111] Political commentators used iPredict's election contract prices to make their forecasts.[112] Meanwhile, anti-gambling pressure groups, and lobbyists for legal gambling operations made for fairly restrictive terms governing the only authorised prediction market in the United States.[113]

Nonetheless, iPredict was never a financial success. Hopes of running sponsored markets for large corporates forecasting sales, for example, proved overly optimistic. It continued to operate thanks to the generosity of Victoria University and the value of its data to academic research.

But iPredict was hit with two regulatory shocks. The *Financial Markets Conduct Act 2013* upended much financial markets regulation, including the provisions under which iPredict operated. While the Financial Markets Authority (FMA), which succeeded the Securities Commission, worked creatively with iPredict to help it fit into the new structure, the legal costs involved were not small. As a securities lawyer who helped iPredict put it, figuring out how to fit iPredict into the Act was almost like taking a securities law exam.[114] When regulations designed for big banks hit small players, legal costs can be almost insurmountable.

While iPredict had been successfully working through Act compliance with the FMA, compliance costs involved with anti-money laundering legislation proved overwhelming. Know-your-customer regulations are expensive enough for banks. For iPredict, where hundreds of traders maintained accounts around the $5 mark, and the total amount traded was less than half the value of the average house in Auckland, it was impossible. The arm of the FMA responsible for anti-money laundering compliance seems to have taken a conservative view; the Ministry of Justice then recommended against exempting iPredict. Expecting hundreds of thousands of dollars in ongoing legal costs for a venture that barely otherwise earned its keep, Victoria University closed iPredict.

iPredict's initial authorisation represented the kind of regulatory nimbleness that would have showcased New Zealand in the digital age. iPredict's closure demonstrated a rather more hamfisted approach.

Glenn Boyle, professor of finance at the University of Canterbury, helped develop iPredict during his time at Victoria University. On the discussions with the Securities Commission, he says:

I recall the money laundering bogeyman coming up only once, and then only in jest. I don't remember the exact wording, but it was something along the lines of "you'll probably get hit with money laundering charges if the Americans invade or we ever elect a communist government."[115]

[110] Disclaimer: One of the authors of this report, Eric Crampton, served as academic advisor to iPredict in the late 2000s.

[111] Reserve Bank of New Zealand, "Monetary Policy Statement" (September 2011).

[112] See, for example, Niko Kloeten, "iPredict launches new election website," National Business Review (28 July 2011) and Bryce Edwards, "The infuriating and fantastic Winston Peters," *The New Zealand Herald* (11 April 2014).

[113] See Iowa Electronic Markets, "About the IEM: Frequently Asked Questions," Website.

[114] Personal interview.

[115] Eric Crampton, "Unless the Americans invade or we elect communists," Offsetting Behaviour Blog (27 November 2015).

The FMA could and should have recognised that iPredict did not pose any substantial money laundering risk. The market was not sufficiently liquid for anyone to move more than trivial amounts through it. The Ministry of Justice could have recommended an exemption to the anti-money laundering requirements, and reconsidered whether iPredict could operate under exemptions that more closely suited its situation. And all of them should have considered that little iPredict couldn't likely afford protracted legal negotiations with the government.

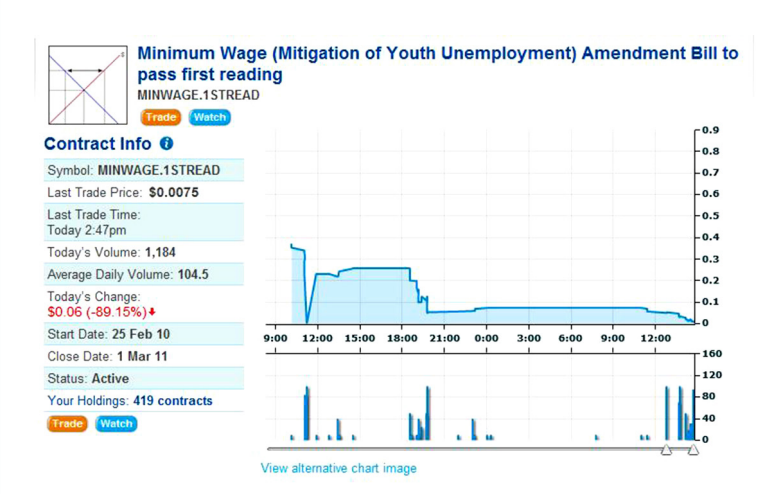
Instead, the government loaded a tiny academic enterprise with compliance costs befitting one of the big banks – and broke its back.

The second phase of anti-money laundering legislation has gone too far by including in its scope lawyers, accountants and real estate agents. Should these reforms pass, these professions will be subject to the same red tape as financial advisers under the guise of making them more accountable.

The New Zealand Law Society has vociferously opposed expanding the AML/CFT Act, arguing the Act creates a tension between "the obligations of lawyers to their clients, the traditional lawyer–client relationship and the role of lawyers as trusted advisers and their role as informants under the new regime."[116] The Law Society also says it is better placed to monitor compliance with the Act than the Department of Internal Affairs, warning that expanding the AML/CFT Act could increase costs for clients.

The Law Society already has anti-money laundering mechanisms, which makes this proposal dual regulation. Why empower a government department to investigate money laundering in the legal profession when the Law Society is ready to expand its scope to fit the government's specifications? For a government supposedly committed to less regulation, this seems counterproductive.

It is unclear whether the legislation has helped reduce criminal activity but it has clearly produced real costs for New Zealanders. It is now more onerous to open a bank account. Banks can close the accounts of those making international money transfers, frustrating New Zealand migrants' efforts to send money home.[117] It has also stymied exchanges that would allow people to trade dollars for Bitcoins, as banks are unable to determine compliance with anti-money laundering rules.[118]



Trading at iPredict during the Cabinet Meeting discussing Sir Roger Douglas's bill on the youth minimum wage. The price spiked downwards during the Cabinet meeting in which the government decided that it would not be supporting the bill.

Source: Offsetting Behaviour, 17 March 2010. https://offsettingbehaviour.blogspot.com/2010/03/markets-and-information-aggregation.html

[116] Gareth Vaughan, "Lawyers continue to balk at the Government's plans to drag them into compliance with anti-money laundering laws," Interest.co.nz (14 February 2017).

[117] Reserve Bank of New Zealand, "Statement about banks closing accounts of money remitters," Press release (28 January 2015).

[118] Alexandra Sims, "The Disruptive Potential of Blockchain and Distributed Ledger Technology," Presentation to Treasury (6 September 2017).

CHAPTER 03

High-tech New Zealand

3.1 Rockets

The distance from middle earth to outer space is less than you might think. The government's Outer Space and High-Altitude Activities Bill received Royal Assent in July 2017, officially signalling the legality of private entities exercising space activities in New Zealand.[119] This will not only implement the Technology Safeguards Agreement (TSA) with the United States, but also allow New Zealand to participate in the global space economy as the place to go for small satellite launches.

It started with Rocket Lab asking the government for permission to launch rockets into space and capitalise on New Zealand's unique geographical location and environmental conditions.

The government was particularly innovative in its approach to Rocket Lab even though there was no regulatory apparatus for outer space at the time. The Department of the Prime Minister and Cabinet encouraged MBIE to facilitate the venture, which it did by putting together an expert team of regulators to set enabling rules.

In case Rocket Lab could launch rockets faster than MBIE could prepare the legislation, MBIE allowed Rocket Lab to operate under similar rules in the United States until domestic legislation was enacted. The contract included provisions to guide the transition from regulation by contract to the legislative regime being debated. The government is investing $25 million in the project over five years.

Gaining consents at the local level was more difficult. Rocket Lab wanted to launch from Birdlings Flat outside Christchurch. But due to the slow processing of non-notified resource consents for exceptionally non-traditional activities there, Rocket Lab shifted to the Mahia Peninsula in Wairoa.

One interviewee from MBIE said it was unrealistic to expect consent on Rocket Lab's deadline for Christchurch.[120] Local Government New Zealand's Lawrence Yule added that Mahia's remote location made the consenting process simpler because launches from there would pose fewer risks, and small councils presented with big opportunities tend to speed up the process.[121]

Regulatory structures in the United States are designed for large space launches costing hundreds of millions of dollars. A half-dozen agencies need to be consulted separately for payload and launch authorisation, with high compliance costs. New Zealand can provide a one-stop shop with low compliance costs befitting smaller, low-cost payloads.

Regulatory structures in the United States are designed for large space launches costing hundreds of millions of dollars. A half-dozen agencies need to be consulted separately for payload and launch authorisation, with high compliance costs. New Zealand can provide a one-stop shop with low compliance costs befitting smaller, low-cost payloads.

Rocket Lab's first test launch in May 2017 reached outer space. Its second test launch is planned to happen while this report goes to print, in October 2017, and will deploy four satellites.[122] Its $6.8 million price tag per launch is among the lowest internationally.

Unfortunately, the regulatory approach to Rocket Lab is unlikely to scale well for other initiatives. Critical to the approach's success was the

[119] Simon Bridges, "Outer Space and High-altitude Activities Bill," New Zealand Parliament, Website.

[120] Personal interview.

[121] Personal interview.

[122] RadioNZ, "Rocket Lab counts down to new test flight" (27 September 2017).

ability to form a team of officials from different sectors for the project. New Zealand does not have the depth of talent to bring together these teams regularly. The flexible approach and the determination to make things work is, however, laudatory.

The government might consider adopting a similar approach to untangle the regulatory thicket encumbering cryptocurrencies like Bitcoin.

3.2 Small changes for supersonic speed

America is becoming friendlier to supersonic air travel, and that could be great for New Zealand.

In June 2017, the US Senate Commerce Committee proposed to change the rules so that new supersonic craft need only meet the noise specifications of existing subsonic planes for take-off and landing. And the Federal Aviation Administration (FAA) has to write standards for sonic booms to replace the existing ban.[123]

Six-hour flights between Auckland and California could make New Zealand to Silicon Valley a day trip, travel included – and boost our technology sector.

A new start-up airplane manufacturer, Boom, promises new supersonic 55-seat passenger aircraft within the next few years. Boom's head of global policy and communications says ticket prices between Auckland and Los Angeles would be roughly equivalent to current business class fares, but the trip would take only six hours.[124] Six-hour flights between Auckland and California could make New Zealand to Silicon Valley a day trip, travel included – and boost our technology sector.

The New Zealand government is also open to supersonic travel – or at least has not closed the door on it. The *Civil Aviation Act 1990* does not mention supersonic flight, putting it in a legal grey area.[125] Because any booms would occur over water for any routings from New Zealand, sonic booms may not face any regulatory barrier.

Source: https://boomsupersonic.com

[123] Eli Dourado, "Lee-Gardner Amendment would reduce supersonic fuel burn by 20 percent or more," Boom Supersonic (27 June 2017).

[124] Eli Dourado, Personal correspondence (April 2017).

[125] *Civil Aviation Act 1990*.

Noise on take-off and landing might, though. It is unclear whether supersonic aircraft would be subject to the Chapter 3 rules of the International Civil Aviation Organization (ICAO) like older subsonic turbo-jet and turbo-fan aircraft are[126] or whether they need to meet stricter standards, which would substantially increase costs – and which could rule out routings to New Zealand entirely if aircraft are designed to more liberal American standards[127]

Whether there would be sufficient traffic to justify supersonic routes between Auckland and California is for an entrepreneur to test. If demand for Trans-Pacific travel, especially at the higher end of the market, is sensitive to travel time, supersonic options would bring New Zealand closer to the US Pacific coast. But New Zealand will be left out if it does not follow America in allowing supersonic aircraft to meet the Chapter 3 ICAO rules.

[126] Civil Aviation Authority of New Zealand, "Part 21 CAA Consolidation: Certification of Products and Parts," (2017), Appendix C, subsection d, 87.

[127] Boom reports 20% higher costs under ICAO Chapter 4 rules than under Chapter 3 rules.

CHAPTER 04

Policy principles

4.1 Permissionless innovation versus precautionary principle

Policy responses to uncertainty, technological or otherwise, can range from highly precautionary approaches that reduce both risks and benefits of innovation, to permissionless systems that allow innovation by default. Virginia Postrel, in *The Future and its Enemies*, argues that innovation then sits on a stasis-dynamism axis. These are visions for human progress, the latter embracing "a world of constant creation, discovery, and competition," and the former a "regulated, engineered world."[128]

The precautionary principle states:

> … if an action or policy has a suspected risk of causing severe harm to the public domain (affecting general health or the environment globally), the action should not be taken in the absence of scientific near-certainty about its safety.[129]

Under this approach, developers are guilty until proven innocent – they have to show that their creation "will not cause any harms to individuals, groups, specific entities, cultural norms, or various existing laws, norms, or traditions" before it is allowed to be released for public consumption.[130]

The precautionary principle is used in many policy settings in New Zealand, particularly "when there are high risks, high irreversibility of impacts, and a high degree of uncertainty about those impacts."[131] Being precautionary, however, risks stifling unanticipated but possibly large benefits. The loss of consumer welfare from regulatory barriers in the US telecommunications industry is roughly $100 billion.[132]

Similarly, insisting on proof of safety sounds reasonable in principle but it can be an impossibly high bar for new technology in practice – particularly for new entrants. To demonstrate with reasonable accuracy that autonomous vehicles are comparably safe as traditional cars could take hundreds of years of testing with the current fleet size.[133] Such testing before full adoption is unfeasible.

Arguably, one of the main reasons for Uber's success is it sometimes does not ask for permission.

Arguably, one of the main reasons for Uber's success is it sometimes does not ask for permission. The same goes for many start-ups in areas with regulatory uncertainty – getting approval is also often too slow

[128] Virginia Postrel, *The Future and Its Enemies: The Growing Conflict over Creativity, Enterprise, and Progress* (New York: Touchstone, 1998), xiv.

[129] Nassim Nicholas Taleb, et al. "The Precautionary Principle (with Application to the Genetic Modification of Organisms)," Extreme Risk Initiative – NYU School of Engineering Working Paper Series, arXiv:1410.5787 (2014), 1.

[130] Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, Virginia: Mercatus Center at George Mason University, 2014), vii.

[131] Linda Cameron, "Environmental Risk Management in New Zealand – Is There Scope to Apply a More Generic Framework?" Policy Perspectives Paper 06/06 (Wellington: New Zealand Treasury, 2006), 17.

[132] Jerry Hausman, "Valuing the Effect of Regulation on New Services in Telecommunications," *Microeconomics* 28 (1997), 1–54.

[133] Nidhi Kalra and Susan Paddock, "Driving to Safety: How Many Miles of Driving Would It Take to Demonstrate Autonomous Vehicle Reliability?" (Santa Monica, California: Rand Corporation, 2016).

and bureaucratic. Forgoing permission also allows an innovation to gain traction so that when it does get the attention of regulators, the value of the technology can be proven to policymakers, who would otherwise have little incentive to make allowances for disruptive technologies.

Disruptive technologies that do not ask for permission can inspire reform of outdated regulations, which often hide behind 'consumer protections' to serve incumbent industries over consumers. Reform would not happen if rogue companies devising disruptive technologies accepted that they fit into the same box as incumbent services and accompanying regulations.

This brings us to the case for permissionless innovation, which:

> … refers to the notion that experimentation with new technologies and business models should generally be permitted by default. Unless a compelling case can be made that a new invention will bring serious harm to society, innovation should be allowed to continue unabated and problems, if they develop at all, can be addressed later.[134]

Regulations guided by the precautionary principle discourage innovation. Economic gains from innovation are less likely when government appears suspicious of every innovation that crosses its desk. Thinking up "hypothetical worst-case scenarios"[135] is not only time-consuming but also futile in many instances. Ultimately, "policymakers should not be imposing prophylactic restrictions on the use of new technologies without clear evidence of actual, not merely hypothetical, harm."[136]

The Securities Commission showed a glimpse of this flexible approach when it facilitated iPredict. But the precautionary approach to anti-money laundering compliance helped kill iPredict.

In an ideal world, start-ups would not have to exercise blatant civil disobedience to start their business, and governments would embrace permissionless innovation and regulatory adaptiveness.

The Securities Commission showed a glimpse of this flexible approach when it facilitated iPredict. But the precautionary approach to anti-money laundering compliance helped kill iPredict (see Box 3).

The precautionary principle ignores the value of failure in innovation. We need the "process of evolutionary, experimental change"[137] to keep growing as a society through "technological progress, economic entrepreneurialism, social adaptation, and long-run prosperity."[138] Pre-emptive regulation endangers social development in the name of paternalism. That is not a fair trade-off for anyone.

The challenge for governments worldwide is to be perceptive of threats without veering towards paternalism. The precautionary principle often dictates the regulatory response to innovation without considering the message it sends to developers (who are treated as though they are guilty until proven otherwise). The government should, instead, aspire to be a digital enabler, reacting if necessary rather than regulating based on worst-case scenarios.

[134] Adam Thierer, *Permissionless Innovation*, op. cit. vii.

[135] Ibid.

[136] Ibid. 2.

[137] Ibid. 16.

[138] Ibid. 17.

4.2 Protection from harm

The government recognises that regulation should only be considered if private solutions are not possible. But whether private solutions are feasible can change with technical progress. New technology can do a better job than existing regulations in solving old problems. This should motivate further scrutiny as to whether old regulatory rules can be relaxed or even abolished.

Regulation can protect consumer rights but it can also be stifling. It can increase the cost or risk to producers, resulting in increased prices or reduced product offerings. Consumers can be worse off from the regulation intended to protect them.

Uber users have much more power to ensure a safe ride than typical taxi riders, while Netflix provides users better information about the appropriateness of content than the OFLC.

Feedback systems in digital platforms that connect consumers and producers have proven to be an effective alternative to regulation. The consumer is much better served by being able to observe the experiences of other users and judge the quality for themselves. Uber users have much more power to ensure a safe ride than typical taxi riders, while Netflix provides users better information about the appropriateness of content than the OFLC. Yet regulators refuse to reform redundant rules.

When regulation intended to protect consumers from harm ends up being detrimental to consumers, it needs to change. If government is committed to better regulation, then further scrutiny is needed on existing regulations to determine whether they are still improving outcomes for the end user.

4.3 Reasonable liability rules

The intention of regulation to protect against potential hazards is well meant – but it can impede innovation.

Regulators can never fully anticipate the dangers of new technology. Instead of expecting regulators to do the impossible, regulation should focus on framing sensible rules for liability.

If individuals know they have to compensate for harm caused by their use or misuse of technology such as drones, they can decide whether the risks are worth the possible consequences. Putting the responsibility in users' hands sets the right incentives. Regulators are overly cautious because they do not want to be responsible for bad outcomes; they have less reason to care about the unseen benefits their rules prevent.

4.4 The sincerest form of flattery

Some countries do things better and have ideas sooner than we do. Common sense says if that technology finds its way to New Zealand, our first regulatory response should be to study the response of similar countries. If no obvious reason exists for New Zealand to have a more restrictive response, the decisions of those countries could be accepted by regulators here.

This is particularly relevant for a small country like New Zealand. Developing regulatory standards is not only costly but also largely a fixed cost – it is not cheaper for a small country to develop a standard than for a large one. The administrative costs of developing fit-for-purpose regulation are higher on a per-taxpayer basis in smaller jurisdictions, which is why it is more expensive to develop standards specific to New Zealand. Second, when service providers abroad consider the merits of serving New Zealand at all, the high fixed costs of entering a small market can be a deal breaker: the burden of complying with a small country's regulations is higher on a per-customer basis.

Allowing providers to demonstrate compliance with regulatory provisions in broadly similar jurisdictions, rather than bespoke compliance with New Zealand's, is worthwhile for digital services.

This idea has already been referred to in the context of film classification, but it is relevant in policy determinations involving disruptive technologies and in several other areas of law. Allowing providers to demonstrate compliance with regulatory provisions in broadly similar jurisdictions, rather than bespoke compliance with New Zealand's, is worthwhile for digital services.

Consider cloud computing. The Cloud Risk Assessment tool of the Department of Internal Affairs (DIA) must be completed by any provider wishing to supply cloud computing services to the government. Few large foreign providers – which are often the safest data repositories because their scale allows them to afford the best protection – have been willing to use the tool. As of early May 2017, the DIA's website listed 15 providers that have filled the government's questionnaire – but the most prominent international providers are missing.[139]

> Ian Apperley's evaluation of the cloud risk assessment tool highlighted its benefits over prior, even more rigid approaches. He noted also, though, that agencies like Amazon or Rackspace could be even safer than listed providers, but we may never know as "larger players often won't answer these questions."[140] He suggested that companies doing that might only be hurting themselves by precluding themselves from New Zealand government contracts. But while this approach may work in larger markets, small countries that make it hard to operate get left by the wayside.

[139] See Department of Internal Affairs, "Assess the risks of cloud services," Website (2017).

[140] Ian Apperley, "DIA issues mandatory requirements for cloud computing for agencies," What is it NZ (27 March 2014).

Regulatory impact statements for rules affecting the digital sector should assess why compliance with a comparable jurisdiction's rules would be inadequate for access to the New Zealand market.

Since then, the government has signed an all-of-government agreement with Amazon Web Services to provide cloud services,[141] but adoption of cloud services was delayed for years because of New Zealand's bespoke framework. An alternative would have allowed providers to either meet DIA guidelines or demonstrate compliance with rules in comparable jurisdictions like Canada, the United Kingdom, Australia, the European Union or the United States – the developed markets from which New Zealand sources much of its technology in the first place.

Regulatory impact statements for rules affecting the digital sector should assess *why* compliance with a comparable jurisdiction's rules would be inadequate for access to the New Zealand market.

[141] Divina Paredes, "NZ Government signs cloud framework agreement with AWS," CIO New Zealand (30 May 2017).

Conclusion

It is easy for regulation and policy to outlive the problems they were intended to solve.

It is easy for regulation and policy to outlive the problems they were intended to solve. While large economies close to global markets can bear the costs of outdated regulation, small markets like New Zealand cannot.

The costs of outdated regulation are especially obvious in digital environments. Kiwis have poor access to Internet-based services that consumers in larger markets take for granted. As the most dynamic parts of the world economy shift to models with high up-front development costs but low costs of servicing additional customers, having access digital products and services developed overseas is critical for both consumers and producers in New Zealand.

Small countries can do deft and innovative things. New Zealand's trademark in the global launch market could be speedy and relatively painless approvals for small satellite delivery – like the government's quick response to Rocket Lab. Compliance with US regulation was deemed sufficient until the government drafted more suitable, flexible and less costly New Zealand regulation.

This approach suggests broader principles are worth considering. Permissionless innovation is best, barring demonstrable risk. But a more competitive approach has its merits where regulation is needed. New Zealand should begin the regulatory process by asking which foreign regulatory jurisdictions do a sufficiently good job and could serve well the New Zealand market. Then, when appropriate, New Zealand can build a better model that firms could opt into, as MBIE has built for rocket launches.

Treasury's Best Practice Regulation Framework, on the whole, is excellent. It encourages regulation that supports growth, and is proportional, flexible, durable, certain and predictable, transparent and accountable, and supported by capable regulators.[142]

However, that framework could also ask whether New Zealand-specific regulation offers sufficient net benefits over simply allowing compliance with a comparable jurisdiction's regime. It seems unlikely that mandating New Zealand-specific film and television ratings, compared with simply providing foreign ratings, would survive that test.

New Zealand regulation also needs to consider the specific burden imposed by fixed costs in small markets. That builds the case not only for piggybacking on foreign codes but also for, where possible, providing regimes that incorporate more common sense and lower compliance costs.

Consider iPredict. New Zealand's Securities Commission provided appropriate flexible consideration when it helped the Victoria University of Wellington start-up through the regulations. But iPredict began from a privileged position. It was backed by a university, rather than a for-profit entity; was supported by lawyers willing to help the university through

[142] New Zealand Treasury, "Best Practice Regulation," Website (21 April 2017).

legal hurdles at reduced rates because they thought the idea sufficiently interesting; and was encouraged by regulators who also thought the idea meritorious. Even with all that, iPredict was unable to survive the anti-money laundering compliance the government threw at it.

Imagine the position of a small start-up considering innovation in blockchain supported payment system development, but without the advantages iPredict had when it started. The regulatory compliance issues alone would discourage such development from starting in New Zealand.

We can and must do better.

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Which moves faster: technology, or the regulation that tries to keep up with it?

The answer is obvious. Everyone knows that the pace of technological change is always increasing. But just as a relay team is held up by the pace of its slowest runner, a country's ability to adapt to new technology depends on whether its regulations can keep pace.

And countries whose regulations do not keep up will be left behind.

Because technological change will inevitably outpace regulatory change, having an adaptable regulatory environment is crucial. And it is even more important for a country already hindered by the twin tyrannies of size and distance.

This report takes a broad look across regulation and technological change in New Zealand. We point to great successes, like MBIE's nimble response to Rocket Lab. But the broadcast standards and censorship regime has not kept up with technological change, the anti-money laundering regime hinders digital innovation, and copyright must better enable new creation through more flexible fair dealing provisions.

New Zealand needs to strive for permissionless innovation.

Enabling the benefits of the digital paradigm means allowing the unexpected. One major driver of disruption and change in the digital paradigm has been 'permissionless innovation'. I have elsewhere described it as an environmental property of digital systems:

> Permissionless innovation is the quality that allows entrepreneurs, developers and programmers to develop protocols using standards that are available and that have been provided by Internet developers to "bolt on" a new utility to the Internet. Thus we see the rise of Tim Berners-Lee's World Wide Web which, in the minds of many, represents the Internet as a whole.

Regulation for the digital paradigm should embrace 'bolt on' creative innovations in astounding new ways. Instead of avoiding risk, policymakers need to embrace it.

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