WHAT LESSONS CAN BE DRAWN FOR DIGITAL PLATFORMS FROM **THE REGULATION OF TRADITIONAL NETWORKS?**

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What Lessons Can Be Drawn For Digital Platforms From The Regulation Of Traditional Networks

By Martin Cave

Traditional investor-owned network industries in communications, energy, transport and water have been regulated for more than a century. It is therefore timely to ask if this experience has any lessons for digital platforms. One key issue is whether standard competition law suffices in either case. The answer for traditional networks is a resounding no, and the conclusion is gaining ground that sector-specific regulation, with its more interventionist traditions and specialist delivery, is required for the largest digital platforms too. In traditional networks this often involves a combination of price controls of activities where market power allows excess profits, and the promotion of competition across the value chain where it is feasible, via divestment, inter-connection, or entry based on access to residual monopoly assets. In the case of major digital platforms requiring inter-operability between the largest platform and its rivals seems the most promising route, but it will require major regulatory effort to put it into effect.

01 INTRODUCTION

Privately-owned traditional network industries – notably in communications, energy, and transport – have been around in the U.S. at least since the 1880s, and in Europe in their post-nationalization form since the 1980s. The industries exhibit the twin characteristics of natural monopoly, especially in their local distribution network, and provision of a service essential to human survival, and this has made them the subject of intense regulation, which invariably goes beyond the generic competition law in the relevant jurisdiction.

Large digital platforms are a 21st century phenomenon. By virtue of being untethered to a physical network in a specific place, and hence global, they can aspire to span, and have spanned, the world almost instantaneously and a very low cost. By 2021, firms strongly reliant on such platforms occupy five of the top six slots in global financial market valuations.

The question addressed discussed in this article is: what lessons can the regulation of large digital platforms draw from these earlier experiences? There is no denying the significant difference between the characteristics of each – notably, the universal, essential and stable nature of the demand for the services of traditional network industries, as distinct from what may prove the more transient demand for digital platforms; the crucial role and speed (often measured in weekends) of inventiveness in determining the fate of digital platforms, contrasted with the time taken (measured in decades) in network industries to embody technical change in highly capital intensive processes; and of course the wildly different back stories in the two cases of some of the firms and their founders. Not for many years will it be possible to compare the achievements of Alexander Graham Bell and Thomas Edison, with those of Jeff Bezos, Larry Page and Mark Zuckerberg.

In the meantime, what both varieties of network sectors exhibit is the notional or practiced ability to exert a high and conspicuous degree of power in their respective marketplaces, maintained over a substantial run of years. This fact alone, combined with the nature of the services supplied, gives them a social and economic importance which inevitably attracts political and public attention.

Answering the question here involves first a look at what has happened in traditional networks, and then an attempt to draw lessons for platform regulation. The second part is more conjectural, especially for an author whose primary experience has been in regulating traditional networks, but it is timely when major changes in the public policy approach to the largest digital platforms are now in urgent contemplation.

02 WHAT ARE THE DEFINING FEATURES OF TRADITIONAL NETWORK REGULATION?

A. Who Needs Sector-Specific Regulation Anyway?

At the start of the post-privatization period in the 1980s, the need for regulation of traditional network industries was tested in a natural experiment in New Zealand, a country then in the throes of radical pro-market reforms. It chose to rely on its then new generic competition law, rather than the more intrusive regulation used elsewhere, to deal with its energy and telecommunications sectors. The result is almost universally agreed to be a failure. Years elapsed before an entrant's attempts to use competition law to gain access to the incumbent's "essential facilities" were finally decided. A commentator has written: "this laissez-faire approach failed to generate a socially optimal outcome, as the general competition rules proved inadequate to address exploitative behavior by incumbent firms, such as price-gouging, which in other jurisdictions is controlled by sector-specific regulators. From the late 1990s onwards, the New Zealand government began enacting sector-specific regulation for the telecommunications, electricity, and gas industries, which moreover has been progressively strengthened over time."[1]

B. Controlling Persistent Natural Monopolies

The core of traditional network industry intervention has been output price controls set by a sector-specific regulator, either of the whole value chain, when the monopoly is vertically integrated, or at the least of the local distribution network, which strong economies of density have in most cases made a highly capital-intensive natural monopoly.

The traditional method of doing this is to use a so-called "building blocks" approach to calculate and allow recovery of the network's costs of operation, including its operating costs and its capital costs (for which purpose a valuation of capital and an allowed rate of return are required). Cost-plus pricing schemes of this kind exhibit almost no incentive for efficiency, and coincident with the European privatizations of the 1980s, an alternative known as incentive or price cap regulation came into use. Both processes suffer from asym-

1 N. Dunne, *Competition Law and Economic Regulation*, Cambridge University Press 2015, p. 77.

metry of cost information between regulator and firm, and by gaming behavior by the latter; accordingly, in many jurisdictions levels of return have persistently exceeded the cost of capital by a significant amount. Any incentives for innovation have generally not worked well.

C. Developing Competition Across the Value Chain

Suppose investment is taking place in a new suburb in which new local distribution networks are needed, or a new electricity transmission line is required. It would be quite possible to create competition for the market, by putting the provision of the service out to tender. In principle, this could extend to all investment projects, both new and replacement, ultimately turning network regulation into a process in which a public agency juggles a set of locationally and temporally over-lapping contracts, with the resulting co-ordination costs. But it may work better if confined to projects which are new, large, separable, and not too time-critical.

A more widespread and fruitful approach is to seek to introduce competition in the network industries market, by starting, say, with a fully vertically integrated monopoly, and then examining the scope for allowing entrants to compete with the incumbent in the activities which are most hospitable to entrants. Assuming – as is usually the case – that the retailing activity is potentially competitive, an entrant there can invest in the skill of acquiring and billing customers, and buy upstream monopolized physical services from the incumbent, on terms set by the regulator - which will have "unbundled" them for this specific purpose, and set an "access price" for them, using one of the price control mechanisms noted above. The entrant is then emboldened progressively to duplicate further network products, in order of their amenability to entry. This may be accompanied by rules requiring some form of separation into vertical components of the historic monopolist, in order to prevent it from leveraging its market power from monopoly into competitive arenas.

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In the EU's fixed telecommunications sector, this process achieved a transformation such that while in 2000 competition was almost entirely confined to the retail function alone, undertaken by firms which simply "resold" the incumbent's products, in 2021 in some member states competitors now rely on the historic monopolist solely for access to ducts and poles which carry their own fibers, and themselves supply everything else or buy it competitively. Correspondingly, the competition problem in the sector is increasingly taking the form of collective rather than single firm dominance.

D. The Role of Network Externalities

A particular factor operates in a communications network. It arises from the fact that your willingness to pay for access to it depends on the number of people you can contact on it. In 1880, Alexander Graham Bell said of his invention: one day every American city will have a telephone. If that had been it, voice telephony's impact would have been limited, because it is clearly the ability to make and receive calls to and from numerous different people or organizations which gave telephony its value: the more people connected the better.

As competing networks arose in telecommunications, first in fixed and then much more quickly in mobile telephony, regulators quickly intervened to limit this risk of monopolization by requiring all network operators to interconnect - i.e. to pass on to, and (for a fee) accept for completion, any call from any other operator. We see below that a supercharged version of network externalities may operate in digital platforms.

E. The Telecoms Precedent

Finally, we consider specifically the implications for platform regulation of what has happened in the telecommunications sector. Beyond interoperability rules, EU regulation in that sector over the past twenty years has operated in a manner which straddles the two spaces of traditional network regulation and competition law. More particularly, a single underlying and consciously pro-competitive regime, adaptable in its operations to changing circumstances, has been successful in shifting the whole sector towards a much lighter touch. The same regime has operated in both mobile and fixed telecommunications – much less obtrusively in the former where network duplication is easier and the burden of regulation is largely shared between application of the standard merger regime and the insertion into spectrum licenses of rules and obligations designed by national regulators both to prevent the monopolization of that key natural resource, and to ensure that network coverage is equitable. A lynchpin of the regime is that all of the more intrusive regulatory remedies are subject to sunset clauses: they can only be renewed in any market if a firm is found to

be exercising, and expected to continue to exercise, significant market power.[2]

Thus, as in other areas of economic regulation, competition law and regulation are complementary, not substitutes. The key design problem is to get them to work together in combination, with the contributions of each shifting over time: in telecoms towards competition, in digital platforms now towards regulation.

Casual observation suggests also that in many jurisdictions competition law and regulation are practiced by different communities. The competition law community comprises a few public officials and very many private sector lawyers, and focusses heavily on supporting and maintaining competitive processes. Regulatory activity is more economist-dominated with a focus on maximizing some form of social welfare function, employing the dark arts of social cost-benefit analysis, and applying more robust instruments. When additional economic regulation is required, it makes a difference which community is entrusted with it.

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LESSONS FOR THE REGULATION OF DIGITAL PLATFORMS

A. Why Can't Existing Competition Law Cope with Digital Platforms?

Firms which provide intermediation between separate groups, now christened two-sided platforms, ante-date competition law itself by thousands of years, and in most of competition law's century or so of existence have attracted relatively little attention. This is no longer the case, now that they dominate the top of the "most valuable corporation" lists.

This is not itself a reason for throwing the existing rule book away and starting again. At present competition authorities have no choice but to apply existing competition law to them. They are helped in this by guidance provided by such organizations as the OECD. Most of this work goes on under the radar. My own experience includes conducting a competition inquiry in the UK into a merger between two food-ordering platforms with non-negligible market shares, which were pure intermediaries.[3] The process involved defining markets and analyzing likely competitive effects. Data on single- and multi-homing were collected. The presence of multiple local markets permitted some inferences to be drawn on whether the indirect network effects continued to multiply as firm size grew, or were quite soon exhausted (as the data suggest was the case). These analytical tasks were more or less accomplished.

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But a case of this kind is a million miles away from the persistent dominance of gigantic companies like Amazon, Apple, Facebook, and Google, which conduct businesses of major social prominence and controversy. Within the framework of competition law and policy, a number of changes have been proposed for such companies, particularly within the merger framework. These include a tougher restriction on potential "killer acquisitions" or a reversal of the burden of proof in a merger inquiry, shifting it from the relevant authority onto an acquirer falling into a specified class. More radically, review and possible reversal of past merger decisions have been proposed. But in many jurisdictions, the focus has shifted to choosing the complementary form of regulation.

While traditional network industries are inherently local, in the sense of providing service in particular areas, and can be regulated nationally, major digital platforms are global, and hence will most effectively be regulated in a fashion which will be determined largely by legislators and regulators in Brussels and Washington and a few other countries.

B. The Role of Market Tipping

Digital platforms exhibit an additional form of network effects than telecommunications network. When a subscriber to a social platform is joined by a friend, they both benefit directly. But an advertiser will now pay more for their attention of both of them, and this allows the network to raise its production values. So, indirectly, a third person will join, and so on and so on. These combined network effects help the biggest network the most. In the end the market might tip

2 See M. Cave, C. Genakos & T. Valletti, "The European Framework for Regulating Telecommunications: A 25-year Appraisal," *Review of Industrial Organisation,* 55, 2019, pp.47-62. On the analogy with platform regulation, see Pablo Ibáñez Colomo, The Draft Digital Markets Act: A Legal and Institutional Analysis, **Journal of European Competition Law & Practice,** 12, 2021, pp. 561-575.

3 See M. Cave, "Platform software versus the software of competition law," *Journal of European Competition Law & Practice,* 10 (7) 472-478, 2019.

into a monopoly. By then it would be too late. So should we adopt a "predict and forestall" strategy?

Market tipping is thus a specter at the feast in this discussion. But there is a risk of a contagious moral panic over tipping. A few years ago, concern was quite widely expressed that the ride-hailing market was on the point of tipping into a monopoly in many jurisdictions. Instead in many city markets in the US, for example, it seems to exhibit a fairly stable and sedate duopoly.

There would also be the issue of how to make an appropriately graduated regulatory response to the expectation of market tipping. In the case of ride-hailing, this might vary across a spectrum beginning with obligations on the largest firms to share some of their data with rivals, which allow the regulator to monitor market developments, (possibly) license restrictions clipping the wings of the largest networks, (if better data are the source of the network externalities) an obligation on large firms to share such data. The final stage – pretty much equivalent to shutting the stable door after the horse has bolted – might be controlling the price of the service.[4]

C. What is to be Done? Some Comments on Possible Interventionist Remedies for Regulating Large Digital Platforms, Inspired by the Experience of Traditional Network Regulation

There are many more or less well-developed proposals for how to regulate large digital platforms, some in the form of draft legislation. The aim here is not to present a coherent set of proposals but to identify discrete parallels with, and possibly learnings from, more traditional network regulation.

- Selectivity in application. As noted above, from its birth in 2003, the EU telecoms regulatory regime, inspired by competition law, has focused its full force on a small subset of network (and other) firms, using as its criterion an extension of the competition law conception of dominance. Regulatory proposals for digital platforms typically do not piggyback on a similarly hallowed concept, but confine their application to the largest two-sided platforms, christened in the EU "gatekeepers" producing "core platform services." These platforms share an affinity in terms of size, business model and the digital and data technology they use, rather than are based on something akin to a standard industrial classification. This seems not only justifiable but even necessary.

- User protection. The essential nature of the services provided by traditional network industries, together with in many cases the monopoly status of the supplier, has led in many jurisdictions to higher-than-normal levels of protection for customers, particularly domestic customers. For example, firms regularly have universal service obligations, and it may be unlawful for an energy or water supplier to cut off service for non-payment of bills, except under the strictest of conditions.

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Digital platforms provide a variety of services, from communications to shopping to a great deal else. One aspect which they have in common with traditional network industries, however, is their collection of vast amounts of user data. Access to a family's ongoing electricity consumption can disclose its absence from the house as reliably as holiday pictures posted on Facebook. Hence an equivalent need to regulate for data security and the protection of privacy. It is worth noting that, since data are the currency in digital, data protection rules such as the GDPR provide an incidental brake on those platforms' profits. But other communications platform issues – mendacious content, damaging communications with juveniles, unlawful political meddling, etc. – have no equivalent in traditional network regulation.

- Control of monopoly profits. Regulation of traditional utilities almost invariably revolves fundamentally around controlling the use of the firms' market power which would otherwise lead to excess returns. The way this operates in practice through price control has been described above. It may be useful to ask how in principle a similar regime to limit profits might be applied in the case of a major digital platform.

  Several of them – notably Facebook and Google – make services available to users at a price of zero, yet remain fabulously profitable from digital advertising revenues. To eliminate such profits by regulation rather than taxation (or price control in digital advertising markets), prices would have to go negative. The negative price could be accomplished by the platforms paying a fixed fee to their users, set by the regulator. Alternatives could easily be construct-

4 G. Barker & M. Cave, "Predicting and forestalling market tipping: the case of ride-hailing apps in the UK," *Utilities Law Review*, 23 (1) 2020.

ed which inserted more incentive for the platform to reduce costs or increase revenues. The existing and widely discussed regulatory remedy closest to that described here is to require payments to users for the data which platforms monetize when selling those users' attention to advertisers. In the version above, these payments would be designed to transfer excess returns to users. This would give the activity some of the characteristics of a co-operative in which users would be the residual legatees of any surpluses. It is clearly not fanciful to suppose that this would have an adverse effect on innovation on the platform, with a consequent effect on its life expectancy.

- Divestment. It is a standard remedy in competition law to require a firm to divest itself of certain assets, in order to remedy the anti-competitive effects of a proposed merger, after a finding of abuse of market power, or following a market investigation. Thus under the UK competition regime, disposals have been required after a finding of adverse effects on competition from firm co-ordination in the cement industry. The same outcome flowed from market investigations in the regulated airport and gas sectors. Specific sectoral regulatory proposals have been brought forward in several countries which would allow airports to keep unified control of runways but divest, and introduce competition in the provision of terminal facilities. As noted above, in the USA there are calls to use competition law to revisit and undo acquisitions made some years in the past quite far in the past by Facebook (of WhatsApp and Instagram) and by Google.

  In the case of traditional networks such cases it is relatively straightforward to value the total mostly tangible capital and divide it equitably among several firms. But intangible capital in the forms of intellectual property, organizational know-how, and data and data-handling capability would be harder to value and separate, especially if these attributes had already been scrambled over several activities by a firm anticipating such a remedy. Also, benefits from any such action would be counterbalanced by the loss of beneficial network effects.

- Interoperability. The problem of direct network effects was elegantly solved by telecommunications regulators - by simply requiring the interconnection of networks. Thus Art 4.1 of the EU's 2002 Electronic Communications Services Access Directive simply states: "Operators of public communications networks shall have a right and, when requested by other undertakings so authorized, an obligation to negotiate interconnection with each other for the purpose of providing publicly available electronic communications services…" The phraseology relied on the common understanding reached by then of what was meant by interoperability and interconnection.

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In the case of digital platforms, the work must start from scratch. A possible early example might be that, via agreed application programming interfaces ("APIs") and standards, a user of Facebook might receive a friend request from someone on a rival network; then content would flow back and forth between the two networks. Other examples are provided by data interoperability. Thus a search engine rival to Google might have right to obtain an organic search result from the latter and integrate it into its offerings.[5] This would be separate and additional to obligations relating to the portability across of customer data. But whereas inter-operability in a telecommunications context involves a fairly uniform generic application, each species of regulated digital platform will pose different problems, each fought over by the relevant parties.[6]

These remedies share with the unbundling remedy in traditional network regulation the notion that another way of dealing with market power than price control is to require the monopolist to share its resources with competitors. The natural arena in which such an outcome might be accomplished is a regulatory one, since regulators inevitably have continuous, rather than episodic, relations with the firms they regulate, and years' experience of corralling firms to find solutions to technical issues in consumers' interests. Legislation would set out the principles to be adopted in deciding where and possibly how to mandate inter-operability. The actual regulatory decisions would require difficult trade-offs - already made in telecommunications over the regulation of fiber networks, for example - between immediate benefits for consumers from competition and longer-term benefits from greater innovation inspired by higher rewards for successful investors. They would also be subject to an appeal regime.

5 P. Larouche & A. de Streel. "The European Digital Markets Act: A Revolution Grounded in Tradition," *Journal of European Competition Law & Practice,* September 2021.

6 This variety is shown by the list of six illustrative but very different cases in *Equitable Interoperability: the "Super Tool" of Digital Platform Governance*, Policy Discussion Paper No. 4, July 2021, The Tobin Centre for Economic Policy at Yale, at pages 9-27.

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CONCLUSION

The focus proposed in many jurisdictions on confining regulation to a small number of the largest digital platforms seems both sensible and probably inevitable. I see no special awkwardness in defining this group in a way which is based on the likely scale of consumer detriment rather than a criterion used previously in a different context.

It looks as if a major foundation of traditional network industry regulation – direct price control of significant parts of the value chain – is not very likely expressly to be reflected in the economic regulation of digital platforms. Nor does there seem to be much value in another stand-by remedy in that field, the horizontal (or vertical) separation of the dominant firm.

The most promising affinity with traditional network regulation lies with the mandating of interoperability in telecommunications, where such inter-operability was able to counteract what would otherwise have been insuperable disadvantages for fledgling entrants, arising from direct network effects. In the case of digital platforms the same remedy looks able to counteract a dominant firm's advantages arising from both direct and indirect network effects. This option looks to me to be by far the most practicable read-across from traditional regulation, although one which will require an immense and varied amount of expertise and labor.

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Finally, for this option to be successfully realized, the mind set and experience of those individuals performing the task, in whatever institutional framework it were done, would ideally be those of a regulator, preferably with an explicit goal of furthering consumer welfare, and accustomed to conduct a long-term and technical relationship with a fairly small number of regulatees, rather than those versed in the activities of a competition authority, generally having episodic and non-technical relations with many firms.

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