

Challenges of Competition and Regulation in the Telecom Sector

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The telecommunications sector has come a long way from its perceived status as a natural monopoly to a competitive multiplayer industry. As competitive forces, both from within the telecom industry and the surrounding digital ecosystem, continue to redefine the sector's dynamics, it creates new challenges for regulation and competition enforcement. Calling for fresh thinking on the respective roles of the sectoral regulator, the competition authority and the need for greater synergies between them, a model for voluntary cooperation between the authorities is suggested.

The telecommunications sector is often seen as the poster child of India's economic liberalisation. Its transition from a government monopoly to a multiplayer industry was accompanied by the introduction of regulatory interventions, rooted, to a large extent, in the concerns of competition policy. The aim of regulation was to specify ex ante measures to check against practices that could adversely affect the rights of consumers, block the entry of new firms, or make it difficult for others to compete effectively. Over the last 25 years, regulation and competition have worked well to make India the second largest telecom market in the world.

However, the story so far has been almost entirely in reference to wireless networks, as about 98% of India's 1.19 billion telecom subscribers and 95% of the 446 million internet subscribers are on wireless networks (TRAI 2018a). Several issues of competition policy lie at the heart of many of the current debates in this segment, including tariff wars, interconnection terms and effects of the ongoing consolidations in the sector. Given that it constitutes such a significant portion of the market, trends and turbulence in the wireless segment are critical to the health of the industry as a whole. Understanding the challenges of regulation and competition in this field, therefore, requires a closer look at the respective roles of the sector regulator and the competition authority as well as the interface between them.

At the same time, as the link between digital connectivity, telecommunication networks and economic growth becomes more apparent, it is clear that broadband services will drive the next phase of telecom development. Cellular networks, with their dependence on licensed spectrum and user load-determined performance are not well equipped to serve as the bedrock of this modern internet-based society. What we need instead is a policy framework focused on improving the overall competitiveness of the broadband sector, much like the past initiatives that enabled the current state of wireless development. This process has to begin with a reassessment of the rationale for regulation in the telecom sector and how that should evolve with changing circumstances. Rethinking roadblocks to fibre expansion, release of more shareable spectrum and redesign of universal service interventions are some pieces of this puzzle.

Developments within the telecom sector were also accompanied by rapid technological advancements in the broader digital ecosystem. The growth of new internet-based applications is, perhaps, the Schumpeterian moment of creative

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destruction for many traditional communication services. Network designs are also evolving swiftly. Internet companies and content delivery networks now control data pipes and infrastructure that could rival most telecom providers. These changes have challenged the very concept of what constitutes a “telecommunication service,” a question that bears great relevance to future regulation and competition enforcement in this sector.

Against this background, the paper discusses the changing role of regulation in the telecom sector. Recent developments in the sector, both in terms of competition pressures from within, and forces of disruption and innovation in the digital economy from outside have created interesting debates around the functions and mandate of the Telecom Regulatory Authority of India (TRAI) and its interface with the Competition Commission of India (CCI). This paper offers some suggestions on re-thinking regulatory priorities in this latest phase of telecom development and facilitating cooperative arrangements between the TRAI and the CCI.

New Phase of Development

For a long time, telecom was believed to be a “natural monopoly.” Significantly high fixed costs and economies of scale suggested that the market would be served best by having only one provider. Accordingly, the regulatory stance the world over was focused on maintaining government ownership over telecom infrastructure or allowing private monopolists to do so in a controlled manner, the AT&T monopoly in the United States (US) being the most well-known example.

In the 1980s and 1990s, we began to see a global shift towards telecom liberalisation, motivated both by technological advancements as well as the general acceptance of market-driven approaches and their allocative efficiencies (Trauth and Pitt 1992). Mounting public sector debts and prodding from the World Trade Organization (WTO) also played their part in this transition. This led to the rise of the “regulatory state,” a shift in the role of the state from a provider to a regulator of economic activities, often through statutory regulatory bodies that function at arm’s length from the government (Yeung 2010).

In the Indian case, the first phase of a government-controlled monopoly lasted until the early 1990s. With the announcement of the national telecom policy in 1994 began, what we may call, the second phase of India’s telecom development. This was accompanied by the enactment of the TRAI Act in 1997. This second phase of India’s telecom story has been characterised by the remarkable growth in the mobile services industry, particularly in the last decade.

Telecom performance reports released by TRAI over the last 10 years show that there were about 10–14 active mobile providers in the country, with a minimum of five to six providers in each service area. Competitive forces exerted by these players aided the adoption of wireless services and a steady reduction in tariffs, as current mobile outgo per subscriber is about ₹0.25 per minute compared to 2005, when the lowest available charge was about ₹1.20 per minute (TRAI 2006, 2018a).

Data usage charges, however, continued to remain significantly high until Reliance Jio’s disruptive entry into the market in September 2016. As per a study by Analysys Mason, India’s data tariffs were in the range of about ₹250 per gigabyte (GB), which constituted about 2.6% of the country’s per capita gross national income compared to 0.4%–0.5% in many developed economies (Bhupta 2016). These figures have changed drastically in the last two years, as per GB rate of data services has fallen from ₹226 in 2015 to ₹19 by December 2017 (TRAI 2018a).

The active price competition in the sector has also had a corresponding impact on the adoption of internet services. The number of broadband internet users in the country increased by about 127 million between 2016 and 2017, accompanied by a 72 million decline in the number of narrowband users (TRAI 2018a). Presumably, most of these users have switched from 2G to 3G and 4G services due to increased availability and affordability. Average usage patterns have increased about 20 times from 99 megabyte (MB) per user per month in March 2015 to 1,945 MB in March 2018 (TRAI 2015a, 2018b). While one may be sceptical about the sustainability or inclusiveness of these developments (the distribution still remains largely skewed in favour of urban users), these are positive trends by all counts. This ongoing shift, from a predominantly voice-based industry to a data-driven one, represents the third phase of India’s telecom development. Defined by its focus on expanding high-speed internet access, a key feature of this phase would include consolidation in the wireless segment. A large number of operators meant that the sector’s resources remained spread thinly, leading to duplication of infrastructure and fragmented spectrum holdings. As per a 2014 report, the spectrum held by the largest Indian operators was around a fifth of that of the largest Chinese operator and half of even the smallest Chinese operator (Vodafone 2014).

The last two years have seen a phase of exits and consolidation in the sector. Going forward, we are likely to be left with four major operators: Bharti Airtel, Idea–Vodafone, Reliance Jio, and the state-owned Bharat Sanchar Nigam Limited (BSNL)–Mahanagar Telephone Nigam Limited (MTNL). Research indicates that in most circles, the estimated levels of market concentration measured using the Herfindahl–Hirschman Index (HHI) would continue to remain below the hypothetical three-firm HHI, even after all the proposed mergers come into effect (Kathuria et al 2017). However, as the market matures, the focus of competition should ideally start shifting from tariffs to service quality, which has been a persistent problem for telecom users.

Thus, in order to fully realise the socio-economic potential of the internet, we need data speeds and prices that can serve this goal. By its very design, the quality experienced on a wireless network varies with the number of active users, creating possibilities of a “negative network effect,” for as the number of users goes up, the value for each user goes down (Shah 2017). Current wireless networks are also constrained by their dependence on expensive spectrum and susceptibility to interference from geographical and physical barriers. While technological solutions continue to make cellular networks smarter and more efficient, the new phase of telecom development

will have to look beyond auctioned spectrum for enhancing broadband access. Making more shared spectrum available under an unlicensed or lightly licensed regime should be an integral part of the solution. Only about 21.2 million users in India have wired internet access, of which fibre connectivity is limited to about 4,80,000 (TRAI 2018b). While the latter figure has increased by 12 times in the last five years, high costs of fibre and right of way issues continue to pose challenges. Even as wired penetration increases, it is reasonable to expect that in the short to medium term, commercial provision of wired broadband access will remain focused on larger cities and towns. High-speed access in rural areas will therefore remain contingent on the government's slow-moving BharatNet project, followed by development of supporting infrastructure to link the fibre lines laid under this scheme to end consumers.

Rethinking the Rationale for Regulation

The discipline of "regulation" has been studied from multiple perspectives using instruments of economics, political economy, law, and public policy. At its heart, the function of regulation is to clarify the "rules of the game" and reshape the behaviour and incentives of firms. In modern regulatory theory, the rationale for such intervention arises mostly in situations where left to itself, the market is not likely to deliver the most efficient outcomes on account of certain market failures. Drawing from this, regulation in the telecom sector has been prompted by concerns of market power, information asymmetry between operators and consumers, and the existence of externalities.

However, as the sector's focus moved from fixed-line access to wireless services and now high-speed data services, the surrounding market conditions and rationale for regulation have also changed. Some of the key interventions brought by TRAI and the government, which share regulatory responsibilities in this space, and possible directions in which this thinking can evolve further, can be discussed.

Network effects and interconnection: Network effects in telecom imply that the value to a subscriber of having a telecom connection is directly linked to the number of other users of the service. In the absence of regulation, existing operators could choose to limit access to their networks to their own customers, causing all new subscribers to gravitate towards them. Telecom regulators have addressed this by mandating interconnections between networks, and in many cases also regulating the terms on which the networks interconnect. The intuition is that incumbent firms would otherwise indulge in margin squeeze practices, setting significantly high interconnection fees and making it difficult for others to compete.

Although interconnection remains a vital feature of telecom regulation, the need to specify interconnection usage charges (IUCs) has come to be questioned over time. In line with this, the TRAI has also been gradually reducing the termination rates to be paid by the calling party's network to the receiving network. The amount was recently reduced from ₹0.14 per minute to ₹0.06 with a decision to bring it down to zero by 2020 (TRAI 2017b).

The present wireless market has a handful of big players with comparable strengths but varying cost structures, as 2G networks continue to coexist with 4G long-term evolution (LTE). Gradually, the market is expected to move fully towards packet-switched networks resulting in reduction of termination costs. In this situation, operators would be in the best position to determine their wholesale payment terms, subject to a set of governing principles set by the regulator. Networks of similar sizes would presumably move to a zero pay model, where each party bears its own costs. But, if a network genuinely imposes asymmetric traffic pressures on other networks, as claimed by incumbents in Reliance Jio's case, a differential termination fee may be justified. The regulator would, of course, still have to assess whether the interconnection rates set by an operator are unfair or could lead to the denial of market access.

The challenge here is that each operator enjoys a "virtual monopoly" over the calls terminating on its network, yet, none of them may satisfy a strict test of "dominance" under competition laws. As noted by the Organisation for Economic Co-operation and Development (OECD) (1998), the role of the sector regulator is often to regulate "those who act as 'gatekeepers' but escape the legal/economic definition of dominance (although they have the clear potential to become dominant)." In such a situation, leaving the matter solely to ex post determination by a competition body could lead to suboptimum results.

Information asymmetry on price and quality: Regulators generally adopt a range of disclosure and transparency norms to address the information asymmetry between telecom providers and their consumers. In an ideal scenario, consumers should be able to make informed switching decisions based on available information relating to the price and quality of services. This should, in turn, motivate providers to improve their performance. Actual telecom markets are, however, far from perfect. A recent Interactive Voice Response System (IVRS) survey by TRAI in Delhi, Madhya Pradesh and Karnataka offers some telling results. Over 40% consumers in each circle were dissatisfied with the tariff-related information provided to them and even higher percentages were dissatisfied with their data speeds and network quality (TRAI 2017a).

A part of this problem arises from the complexity of tariff structures. Bundling of voice, short message service (SMS) and data services have become the norm. Increasingly, access to internet content, and now devices, are being bundled with telecom packs. While these packages provide better utility to some users, it also tests their ability to understand and compare the real value of the bundled components. Similarly, consumers also do not have the knowledge or the technical expertise to assess the quality of service (QoS) being offered by a provider or easily compare it with others. Regulators, therefore, lay down minimum QoS norms, setting out the basic requirements to be met by all operators. While this enables regulatory monitoring of specified standards, effective communication of this information to consumers continues to remain a daunting task.

With increasing volumes and complexity of information, the focus of regulation needs to shift from merely mandating service providers to disclose specific information to finding ways to make this information more meaningful for end users. RegTech (regulatory technology) tools, like TRAI's quality of services analytics portal, data speed analysis tools, and the recently introduced tariff comparison tool are all part of this solution. In addition to building its own solutions, the regulator should also push for the release of more open data by regulated entities that can be used by third parties for generating meaningful analytics.

Diminishing role for tariff interventions: At present, TRAI has allowed the market to set its own prices for all but a handful of services (national roaming, fixed rural telephony and leased line services). This stems from the realisation that the distortionary impact of price intervention in competitive markets would almost always exceed its perceived benefits. Tariff forbearance being a given, the debate has now shifted to whether the telecom regulator should continue to apply principles like non-discrimination and non-predation in the context of the "nuanced dynamic pricing policy that the sector is currently witnessing" (Gouri 2017).

Following a long consultation process, TRAI recently released the Telecommunication Tariff (63rd Amendment) Order, 2018, confirming its decision to continue regulating these aspects of telecom tariffs. In this order, it has classified all of "wireline access services" as one market and defined terms like "predatory pricing," "significant market power" (SMP) and "relevant market" in that segment. These aspects are also covered under the Competition Act, 2002, leading to questions of overlapping jurisdiction.

Approach towards spectrum management: Policies for allocation and management of spectrum are designed to address the negative externalities arising from unregulated use of this resource. This thinking emanates from the categorisation of spectrum as a scarce and "rival" resource that is prone to excessive interference. In practice, over 60% of India's spectrum resources remain reserved for defence and government purposes (TRAI 2015b). The remaining bands that have been licensed for commercial use come at an enormous price, as the cost of spectrum in India is amongst the highest in the world. Arguably, public interest would be better served if we moved away from short-term revenue maximisation towards a more nuanced life cycle analysis of the costs and benefits of managing spectrum in different ways (Ponappa 2011). One way to do this would be by changing our understanding of spectrum from a "rival" resource to a "non-rival" one, parts of which can be managed through light-touch regulation or interference management protocols.

The robust Wi-Fi ecosystem that developed pursuant to the release of unlicensed spectrum in the 2.4 and 5 gigahertz (GHz) bands is a case in point. The interoperability and management of devices operating on these bands is governed by the 802.11 standards laid down by the Institute of Electrical

and Electronics Engineers (IEEE). A similar case now exists for allowing shared usage of unlicensed spectrum in many other bands. Unused television white spaces, high frequency millimetre bands in the range of 57 GHz–64 GHz (v-band), and 70 GHz–80 GHz (E-band) are all examples of bands that have an admitted broadband potential and have already been deregulated in many countries.

Given their suitability for backhaul as well as last-mile access, immediate deregulation of some of these bands, like v and E bands, is expected to deliver much greater economic benefits than any revenue gains that may be expected from a potential auction or administrative allocation (Rai et al 2018). Past judicial scrutiny for mismanagement of spectrum, as seen in the 2G case, should not make revenue maximisation a norm when there are clear welfare gains from allowing unlicensed spectrum.

Vertical integration of networks and content: In the case of internet-access services, the open design of transmission control protocol/internet protocol (TCP/IP) facilitates interconnection between connected networks. Concerns of direct network effects and interconnection therefore tend to lose their relevance for this category of telecom services (Shah 2017). In this new world, telecom companies are instead aiming to reap the benefits of indirect network through vertical integration between access and content services. For instance, services like Airtel Wynk, Vodafone Play and Reliance Jio's bundled access to its vast content ecosystem are all designed to leverage the symbiotic relationship between access and content. With subscribers on the one side and content producers on the other, both sides of the market stand to gain from an increase in the complementary user base. More specifically, the telecom provider also stands to gain from attracting new subscribers to this combined offering: increases in data consumption, and greater opportunities to collect user data.

The footprint of competitive effects of such vertical arrangements will span across many sectors, some of which are regulated while others are not. Along with this, the relevance of studying the actual "effects" of such arrangements, point to an ex post analysis by CCI as the appropriate mechanism for a competition analysis in this area. At the same time, TRAI remains responsible for devising ex ante rules to ensure that providers do not abuse their gatekeeping function to benefit or disfavour any particular content, as done in its regulations prohibiting discriminatory pricing of data services (TRAI 2016). This can become another site for exercise of powers by both the TRAI and CCI.

In all of these areas, there is a need for rethinking the rationale for regulatory intervention in the light of changing market conditions, new technologies and global standardisation efforts. At the same time, the mechanisms being deployed by the regulator also need to evolve continuously to make the process more informed and responsive. A comparative study on the responsiveness of regulators in India found that TRAI fares better than other Indian regulators in terms of openness in formulating regulatory instruments (Burman and Zaveri 2016). Some of this flows from the explicit requirement of

“transparency” in the TRAI Act, which is often missing in other laws. However, as observed by the Supreme Court in the call drop case, there remains scope for further strengthening of TRAI’s processes (*Cellular Operators Association of India v TRAI* 2016). One important component of this improvement would be the adoption of a formal regulatory impact assessment framework in the telecom sector. This would include a systematic process for weighing the costs and benefits of any regulatory action. The quality of this framework for governing the interaction between the regulator, industry and the public will determine the effectiveness of its outcomes.

Who ‘Regulates’ Competition?

Each of the instruments discussed previously was regarding a technical or economic dimension of telecom regulation. The primary role of the regulator in such cases is to undertake ex ante measures designed to prevent the market from developing in a manner that adversely affects the interests of the sector or its consumers. There is, however, a third element of regulation—competition regulation that is geared towards preventing firms from indulging in activities that would have an adverse effect on competition (OECD 1998). This section highlights some of the challenges in trying to demarcate regulatory responsibilities in this area.

The TRAI Act empowers the regulator to make recommendations on “measures to facilitate competition and promote efficiency in the operation of telecommunication services.” This does not constitute a direct mandate to undertake competition regulation, yet, a lot of what we see as telecom regulation has its roots in the promotion of competition. Interconnection regulation, for instance, is an ex ante instrument to prevent abuse of dominance. Similarly, mobile number portability is a tool to prevent the adoption of unfair terms that can restrict the switching behaviour of consumers.

While enacting a specialised framework under the Competition Act, 2002, the legislature did not do much in terms of clarifying the boundaries and potential overlaps between its role and that of sectoral regulators. In some cases, laws that came about after the creation of the cci, such as the Electricity Act, 2003, still empower the sectoral regulator to deal with competition issues. This has come to pose many challenges and will continue to do so in the times to come.

Potential areas of overlap: A straightforward reading of the law would indicate that TRAI’s sector-specific functions are clearly distinct from the responsibilities that have been cast upon the cci. The TRAI’s role is to set the ex ante rules of the game while the cci primarily performs an ex post function of checking anticompetitive agreements and abuse of dominance although, it also conducts ex ante review of mergers and combinations.

A closer look at the market realities, however, reveals multiple points of intersection between the authorities. This has come to light, most recently, in the predatory pricing and interconnection disputes that have erupted post Reliance Jio’s entry into the market. Soon after Reliance Jio’s launch, the incumbent

operators approached TRAI complaining that Reliance Jio’s entry strategy of offering free services was in violation of TRAI’s tariff rules, which among other things, require all tariff plans to be “non-predatory.” The TRAI did not find such a violation given Reliance Jio’s status as a new entrant in the market. Interestingly, while laying down its rule against predatory pricing, the TRAI had not defined the contours of what would be regarded as predatory conduct. It has recently taken a view on this by defining predatory pricing to mean tariffs set by a SMP that are below its average variable costs. The SMP, in turn, is defined as a player that holds at least 30% of the subscriber base or gross revenue in a relevant market. This deviates from TRAI’s previous position which also included “traffic volume” as a criterion for determining an operator’s SMP status. The tariff order has come to be challenged before the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) and an interim stay has been imposed on TRAI’s new definition of SMP (Chaturvedi 2018).

Incumbent firms had also raised the same matter before the cci, alleging a violation of Section 4 of the Competition Act. The provision defines predatory pricing as below cost pricing by a dominant firm, with a view to eliminate competition. The cci also concluded that a predatory pricing claim could not be maintained against Reliance Jio as it was not holding a dominant position in the market for wireless services (*Bharti Airtel v Reliance Industries* 2017). The decision of both the TRAI and the cci hinged on the fact that the authorities chose to define all wireless services, irrespective of the technology being used (2G/3G/4G LTE) or the functionality being offered (voice, messaging or data) as one relevant market. In TRAI’s case, this definition has now been hardcoded into its regulations, thereby raising concerns about the consequences of a rigid demarcation of markets in a dynamic technology-driven market.

This episode led to an exchange of words between the TRAI and cci, highlighting the challenges of their overlapping powers (Raj 2017). While the cci has the explicit power to regulate predatory pricing under Section 4 of the Competition Act, the TRAI has derived this power from its function to fix tariffs for telecom services, under Section 11 of the TRAI Act. The TRAI’s regulations and the telecom license define “tariff” to include “rates and related conditions,” which implies the authority to lay down governing principles of tariffs. This view also finds support in the Supreme Court’s broad interpretation of TRAI’s powers in the BSNL case (2013):

There is no restriction on the power of the Authority to make regulations, except that the regulations must be consistent with the TRAI Act and the rules framed under it.

The law, therefore, offers ample scope for both the TRAI and cci to look into cases of below cost pricing, leaving it up to them to address (or contest) any potential overlaps. Similar issues of mandate have also come up in the context of denial of interconnection points by Airtel, Vodafone and Idea to Reliance Jio. In October 2016, the TRAI recommended a penalty of ₹3,050 crore on the incumbents for acting with an “ulterior motive to stifle competition” (Aulakh 2016). The same facts also led the cci to find a prima facie case of cartelisation

against the incumbents, leading it to initiate a detailed investigation into the issue. Challenging it, the Bombay High Court issued a strongly worded order noting the cci's lack of jurisdiction to order an investigation into a matter that involved the interpretation of conditions under telecom contracts, and the specific laws and policies applicable to the sector (*Vodafone v cci* 2017). The issue is now on appeal before the Supreme Court. The decision in this case is likely to have far-reaching implications not just for the jurisdictional issues between the cci and TRAI, but also other sectoral regulators in fields like electricity and petroleum.

Competition from over-the-top services: Another set of questions have come up in situations where unregulated entities, like communication over-the-top (OTT) services, compete with the service offering of regulated telecom providers. For instance, a consumer would easily substitute a sms with a WhatsApp message, in terms of the price, characteristics and end use of the service. An inquiry into the competitiveness of the messaging services market will therefore require a broader perspective, informed by data from both within and outside the telecom sector. A situation where the sector regulator and the competition authority stand firm on their dominion and independence will not serve this end.

The network neutrality debate in India has been peppered with requests from telecom providers to bring OTT communication services like WhatsApp and Skype within the purview of regulation. This is based on the reasoning that these services perform an "equivalent function" and should be similarly regulated. The fallacy of the argument lies in the fact that regulation of telecom services is not inherent to the function being performed by the service providers but the market failures encountered in that process. To the extent that similar or other market failures exist in the market for content and application services, it will require fresh thinking about the laws needed to govern them. For instance, the need for a robust privacy and data protection framework is one clear example of an area that merits such regulation. However, mandating full-fledged telecom regulation on these new players is likely to be counterproductive.

So far, the regulator has shown reluctance in treating content services at par with licensed telecommunication services that serve as a gateway to the internet. This view is supported by the fact that the vast innovation potential of the internet would be adversely affected if we try to fit all new services into existing compartments of regulation. There will, however, be situations where large internet-based firms and technology companies pose anti-competitive challenges to others in the market, particularly on account of dominance induced by network effects. The solution here lies in strengthening the cci's ex post de facto competition enforcement process to deal with the challenges of the online economy (Parsheera et al 2017), rather than bringing them within the fold of ex ante telecom regulation.

Competition impact assessment: The true test of any regulatory or policy intervention lies in the outcome that it generates. It

is possible that certain well-intended interventions may end up creating unintended barriers to competition in the sector. For instance, imposing high fees on providers like virtual network operators or a strong licensing regime for proposed public data aggregators that are expected to spur adoption of public Wi-Fi services could create entry barriers for smaller players. Such issues can be mitigated through a process of competition impact assessment, both prior to the adoption of a new policy and at periodic intervals afterwards.

The cci's guidelines on competition assessment facilitate such a process by suggesting that economic legislations and policies should be subjected to an assessment of their potential impact on competition in the relevant market, including free entry and exit, number of participants, symmetry of information, and ability and motivation of participants to compete (cci 2016b). The guidelines, although not designed to cover subordinate legislation, could provide a useful framework for the TRAI and the government to assess the impact of their policies on competition in the sector. This ties in with the earlier discussions on the need for regulatory impact assessment and also offers a valuable point for cooperation between the cci and TRAI.

Framework for Cooperation

Public choice theory suggests that like every other economic actor, regulatory agencies are also motivated by their own self-interest. It is therefore fair to expect that left to themselves, sectoral regulators as well as the cci will choose to adopt the most expansive reading of their jurisdiction (within the limits set by law) and be reluctant to choose arrangements that could hamper their independence. This makes it incumbent upon lawmakers to put in place appropriate checks and balances to deal with situations where a matter could fall within the domain of both sets of authorities or where actions by one may have significant consequences on an area overseen by the other.

In the cci's case, a joint reading of Sections 60 and 62 of the Competition Act suggests that the provisions of the act apply in addition to other laws but in case of an inconsistency, the act would prevail. Relying on this, the cci has held that even though the activities of cellular service providers are regulated by a sectoral regulator, any competition issues arising out of the activities and practices of these entities would fall within the ambit of the provisions of the Competition Act (*Sonam Sharma v Apple and Others* 2013).

However, there have also been instances where the cci showed some deference to TRAI's authority over technical issues, although without compromising on its own jurisdiction. In the context of technical interoperability between direct-to-home (DTH) providers, it observed that

the TRAI and the licensing authority of DTH services are seized of the issue of technical interoperability ... any interference at this stage of evolution of technology by this Commission may not be appropriate. (*Consumer Online Foundation v Tata Sky Limited* 2011)

Similarly, in a complaint relating to lack of choice in mobile roaming services, the cci found that the operators in question

were acting in accordance with the relevant license conditions. It noted that

TRAI is the appropriate authority to deal with issues inter alia relating to mobile telephony services. (*Achintya Mukherjee v Loop Telecom and Others* 2011)

The recent exchange of words between the authorities, however, illustrates that a case-by-case acquiescence or contestation of jurisdiction does not bode well for the sector. It creates regulatory tension, promotes forum shopping and allows the development of parallel jurisprudence, adding to market uncertainty. At the same time, drawing a fine line between their functions is equally difficult. An overly restrictive demarcation of functions would allow much to slip between the gaps and a rich potential for synergies would be lost.

This situation is not unique to the telecom sector or to India. Countries all over have been struggling to find efficient mechanisms to govern the interrelationships between competition authorities and sectoral regulators, including through some of the following options that have been discussed by the International Competition Network (ICN 2004):

- (i) Delimitation of jurisdiction: Statutory delimitation of jurisdiction or the government decides the relationship between the authorities. Authorities could also agree on de facto assignment of lead jurisdiction to mitigate overlaps.
- (ii) Organised cooperation: Mandatory consultations or referrals, possibility to conduct joint proceedings and intervention in hearings.
- (iii) Informal and soft techniques: Informal contacts and exchange of views between the authorities; setting of joint working groups; staff trainings and exchange of officials.

The Competition Act takes a tepid step towards formal cooperation by providing that the cci and other sectoral regulators “may” make a reference to one another. In cci’s own words “this provision has hardly been used either by a statutory authority or by the Commission.” From 2010 to 2016, the cci made five references to other bodies and received only one (cci 2016a).

Some useful lessons in this regard can be drawn from the work of the Financial Sector Legislative Reforms Commission (FSLRC), which proposed that the following elements should be encoded in the law (FSLRC 2013):

- (i) Consultation for draft regulations: The cci should review draft regulations issued by the regulator for public comments and provide inputs on the potential competition implications, which must be considered by the regulator.
- (ii) Review of regulatory provisions: The cci should monitor and report the effects of regulatory actions and practices on competition on an ongoing basis. This could include conducting competition impact assessments as per the framework put in place by the cci.
- (iii) Mandatory references to one another along with the ability to participate in relevant proceedings, as a non-voting member. The aim would be to draw from the expertise of the other body while retaining full autonomy over the final decision.
- (iv) Memorandum of understanding to establish the detailed procedures for cooperation, including sharing of information

between the bodies, subject to compliance with confidentiality obligations.

(v) Pending a legislative mandate, it is incumbent upon the authorities to voluntarily design and adopt a suitable cooperation mechanism. While it may seem intuitive to expect some reluctance, such an arrangement would in fact fall squarely in line with their mandates to protect consumer interests and ensure market efficiency. Failing such a consensus, the issue could also be referred to an inter-ministerial committee to be constituted by the government (Mehta and Mehta 2017), which could facilitate a cooperation arrangement along the lines suggested above.

How would such an engagement have worked out in the Reliance Jio predatory pricing investigation? The first step would be for the TRAI to make a reference to cci (or vice versa if the information about a potential anti-competitive conduct was first received by the cci) seeking the other body’s views on the matter. In the present case, neither the cci nor the TRAI seem to have offered a data-driven, quantitative analysis of why “wireless services” were classified as a relevant market. Was there data to show that all types of wireless services are regarded as substitutable from a demand- as well as supply-side perspective? Does only one-way substitutability (from slow 2G to faster 4G LTE speeds) and from voice to data services affect this analysis? These questions could have been better answered in a collaborative framework with the TRAI contributing to its telecom sector data and expertise, and the cci weighing in on the specifics of competition economics. Similarly, TRAI’s open consultation on revising the regulatory principles of tariff could have benefited from cci’s formal inputs on predatory pricing with a corresponding obligation on the TRAI to consider and respond to those inputs.

Conclusions

The telecom sector in India is going through a new phase of development. As its priorities shift from traditional telecom services to high-quality internet access, the policy and regulatory framework must also respond accordingly. Heavy reliance on wireless networks, high costs of spectrum, the continuing digital divide and tepid infrastructure development are some key challenges of this phase. A part of the solution lies in rethinking the rationale for regulatory intervention in telecom markets and redesigning these interventions to address current barriers to broadband expansion. This would include a shift from the current focus of maximising revenues through spectrum auctions to releasing more shared spectrum on an unlicensed basis to generate greater socio-economic benefits in the long run. The other part of the solution lies in strengthening the existing transparency mechanisms by embracing the best practices of regulatory impact assessment in the formulation of all telecom regulations. This becomes particularly important in the field of telecom, given the dynamic nature of the sector and its wide-ranging impacts on overall socio-economic development.

As the sector’s dynamics continue to evolve, it will also keep bringing up new challenges of competition regulation and enforcement. This includes issues like predatory pricing, denial of access, interconnection charges, bundling of services, and

competitive pressures from online businesses. Regulators must, however, avoid the trap of jurisdictional tussles or trying to fit new types of services into existing regulatory compartments. Instead, the focus should be on building greater synergies between the sector regulator and CCI by creating effective cooperation mechanisms. Such cooperation should ideally be secured through an amendment to the laws governing the TRAI and CCI. But, pending such a move, it is for the authorities themselves to design and adopt suitable mechanisms to

avoid uncertainty in the market and pursue better consumer outcomes.

The suggested elements of a voluntary memorandum of understanding between the TRAI and CCI would include CCI's participation in TRAI's consultation processes; review of regulatory provisions to assess their impact on competition; mandatory (non-binding) references on areas of mutual interest and mechanisms for sharing of knowledge and information between the authorities.

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