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In the matter of:

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The Telecom Regulatory Authority of India (“TRAI”)’s tradition of regulatory humility – the “forbearance and flexibility” that has characterized its approach to telecommunications services regulation – has enabled the explosive growth of internet usage throughout India, including an over 50% surge in the number of users of mobile internet in rural areas since 2001. But as the Authority considers regulations and rules to “ensure orderly growth... and protection of consumer interest,” it is important to keep in mind the fundamental lesson taught by decades of technology regulation throughout the world: where entrepreneurial companies are left relatively free to experiment with innovative new methods of developing and deploying technologies – particularly telecommunications technologies – consumers enjoy the largest increases in their standard of living.²

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² “When products are differentiated, they can contribute to welfare not only by offering better prices, but also by incorporating attributes that better satisfy particular customers’ ideal preferences. The multi-dimensional nature of competition implies that social welfare cannot be completely determined through simple price-cost comparisons. It is possible, but not definite, that the reduction in welfare associated with the deadweight losses might be offset by the increase in welfare made possible by greater product diversity.” Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1, 63 (2005).

The importance of humility in regulating highly innovative industries cannot be overstated.³ Even after decades of research, there is still much that economists cannot predict about the broad economic effects of technological innovation on economic growth and development. The unintended and unanticipated costs of preventing new methods of reaching underserved consumers can be substantial, and the consequences enormous to those in greatest need.

Take but one example: In the rush to prevent tariff differentiation in the United States, upstart mobile network provider MetroPCS was forced to abandon a business model expressly designed to benefit the relatively less-connected and less-wealthy segments of the American population.

In 2011, MetroPCS, the fifth largest mobile service provider in the United States, endeavored to differentiate itself from its larger competitors while also providing “wireless for all.”⁴ Its least expensive plan – primarily offered to and adopted by pre-paid customers – offered unlimited voice, text and web-browsing for \$40.00 per month, and, thanks to a partnership with Google, included free access to YouTube. MetroPCS also offered users the ability to purchase additional services on top of the base plan for a nominal fee.

As a basic plan that focused on providing access to consumers who were, in one fashion or another, priced out of the larger carrier’s plans, it was rather feature restricted: although users could access a highly optimized version of YouTube, they were restricted from using other video services. Consumers could choose to purchase expanded access for significantly less than the rates charged by the major carriers, however. Nevertheless, as a result of a coordinated outcry from competitors and for fear of being punished by regulators (for violating the American equivalent of the rules here under consideration), MetroPCS ceased its offerings,⁵ effectively eliminating a desirable wireless service alternative for cost-conscious consumers.

The lesson of the MetroPCS story is a lamentable one. Prevented from competing with larger Telecom Service Providers (“TSPs”), and unable to provide the low-cost services that defined its core mission (and its means of differentiating itself from its competitors), the company was ultimately forced to merge with its next largest

³ See, e.g., Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153 (2010).

⁴ MetroPCS Introduces Wireless for All(SM) Nationwide Service Plans with No Hidden Taxes or Regulatory Fees, BUSINESSWIRE (Jan. 19, 2010), <http://www.businesswire.com/news/home/20100112005629/en/MetroPCS-Introduces-Wireless-AllSM-Nationwide-Service-Plans>.

⁵ See Edgar Alvarez, MetroPCS raises unlimited LTE data plan to \$70, starts throttling others, ENGADGET, Apr. 4, 2012, <http://www.engadget.com/2012/04/03/metropcs-new-lte-data-plans-throttling/>

rival in 2013. In contrast to the conventional wisdom about differentiation and prioritization among data services, the only parties that *really* benefited from this outcome were large incumbents that no longer had to compete with an innovative rival.

The risks of squelching the competition that vertical integration enables (like MetroPCS's arrangement with YouTube) can be enormous – and they are certainly unknowable in advance. In the wake of the world's antitrust actions against Microsoft, for example, it is easy to imagine that regulators might have prevented Apple from integrating iOS with its iPhone hardware.⁶ But whatever the *perceived* costs of Apple's business model (and the perceived benefits of regulating a more “orderly” approach to its objectives), regulators' forbearance helped to usher in the spontaneous and disruptive smartphone revolution.

Indeed, without Apple's vertically integrated approach, to say nothing of its exclusive deal with AT&T (which was also criticized by a range of advocates and competitors at the time⁷), the smartphone revolution might never have happened – or happened as quickly. Moreover, when the smartphone revolution did arrive (if it did), it would likely have been chronically anemic, shunning differentiation among services and avoiding the valuable integration of key services for fear of liability arising out of the preferencing inherent in an integrated model. Today, it is widely understood that the Apple-led smartphone revolution has done more to enable internet access for the world's most disadvantaged citizens than perhaps any other technology.

India is on the cusp of providing an economically and socially transformative service: near-ubiquitous, low-cost, high-value internet access that has the potential to create unprecedented opportunity and advantage for its citizens. The nation stands poised to increase the welfare of its poorest citizens with a rapidity seldom witnessed in human history. We strongly encourage TRAI to chart a wise course that allows for differentiated tariffs and the expanded internet access they can bring to India's citizens.

⁶ One need not look far to see that this hypothetical could easily have been reality. Among many others, internet scholar Jonathan Zittrain in his influential book, *The Future of the Internet – and How to Stop It*, warned of Apple's “walled garden,” and claimed that its integrated and tightly controlled iPhone platform would mean the end of innovation on the internet. See JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET—AND HOW TO STOP IT* (2008).

⁷ Marguerite Reardon, *Exclusive cell phone deals called into question*, C-NET (May 20, 2008), <http://www.cnet.com/news/exclusive-cell-phone-deals-called-into-question/>.

TSPs Should Be Allowed to Employ Differential Pricing

Zero-Rated Services

Services such as Facebook’s “Free Basics” or Wikipedia’s “Wikipedia Zero” are offered as a means of connecting underserved populations to particular, high-demand internet services. These zero-rated services are not typically designed to direct users’ broad-based internet access to certain content providers ahead of others; rather, they are a means of moving users from a world of *no access* to one of *access*. And once they are connected, the data suggest that these users eventually move on to purchase full internet access as a consequence of their experience with these zero-rated services.⁸

This is a business model common throughout the internet (and the rest of the economy, for that matter). Service providers often offer a free or low-cost tier that is meant to facilitate access – not to constrain it. Dropbox, for instance, offers its file sharing services for free, with the option for consumers to purchase increased storage as necessary. Most users continue to use Dropbox’s free service; the company reports that only about 100K of its 400M users opt to pay the nominal fee for increased storage.⁹ Yet not only is this differentiated tariffing a win for the company, it’s a win for the internet community at large. Dropbox helped to usher in the ubiquity of portable file storage and the consumer use of the “cloud,” offering a range of important benefits particularly appealing to consumers who can’t afford powerful devices, unlimited physical storage and the power required to drive them. And yet, far from having dominated the landscape, Dropbox now faces healthy competition from a plethora of large and small companies offering further refinements on the technology that Dropbox popularized.¹⁰

Zero-rated services can and do function in the same way. If a content provider partners with a TSP to provide some service for free or at nominal cost, the success of such a program could very well be short-lived. Far from being able to lock users into a single platform, the very success of that platform – even at a zero price – encourages other competitors with the ability to finance competitive

⁸ Daniel Sparks, *Understanding Facebook, Inc.’s Internet.org: It’s More Than Charity*, THE MOTLEY FOOL (Oct. 15, 2015),

<http://www.fool.com/investing/general/2015/10/15/understanding-facebook-incs-internetorg-its-more-t.aspx>.

⁹ See Eugene Kim, *Dropbox CEO Drew Houston was a little unclear today on how well the company’s business product is doing*, BUSINESS INSIDER (Jun. 24, 2015),

<http://www.businessinsider.com/dropbox-ceo-drew-houston-growth-not-profitability-2015-6>.

¹⁰ See Eric Newcomer & Dina Bass, *Dropbox Is Struggling and Competitors Are Catching Up*, BLOOMBERG BUSINESSWEEK (Jun. 24, 2015),

<http://www.bloomberg.com/news/articles/2015-06-24/dropbox-is-struggling-and-competitors-a-re-catching-up>.

services to enter the market and to offer new and innovative alternatives. As with the Dropbox example, even where users start with a free account, eventually more services are offered that provide consumers with more choices and opportunities to expand their consumption well beyond the initial offerings.

Differentiated Tariffs, in General

In fact, considered more broadly, forcing companies to hew to a single “neutral” pricing model is actually an effective way to guarantee that consumers’ demands for data and content are *frustrated*. Under the models advocated by proponents of undifferentiated tariffs, consumers have little incentive or ability (beyond the binary choice between consuming or not consuming) to prioritize their use of data based on their preferences. Thus it creates costly deadweight loss, as users are forced to forego the benefits of consumption of *some* services simply because they cannot afford or do not want *full* access. But it also leads to inefficient network usage patterns and limits the range of innovative offerings that might take advantage of more nuanced pricing schemes.

Undifferentiated pricing ensures that the marginal cost to users of consuming high-value, low-bit data (like VoIP, for example) is the same as the cost of consuming low-value, high-bit data (like backup services, for example), assuming neither use exceeds the user’s allotted throughput/capacity.

The result is that consumers will tend to over-consume lower-value data and under-consume higher-value data, and, correspondingly, that content developers will over-invest in the former and under-invest in the latter. The ultimate result is a net reduction in the overall value of content both available and consumed, and network under-investment. The idea that consumers and competition generally are better off when users have no incentive to take account of their own usage runs counter to basic economic logic and is unsupported by any evidence. The same is true of content providers.

The proper aim of any regulation of tariffs should be the optimal use of broadband, which maximizes the value of the internet for consumers and creates strong incentives for both content developers and TSPs to innovate and invest. Among other things, this means that, particularly where there is congestion, the optimal solution is for TSPs to encourage users to prioritize their data usage. And because consumer preferences are diverse, there is no one-size-fits-all formula for optimizing either data pricing or content and usage prioritization.

In practice, this would mean allowing TSPs to design a variety of plans aimed at enabling users with low or no adoption of the internet to “step up” into different plans with larger data offerings. Indeed, Facebook’s “Free Basics” program is an

exemplar of this model. Over 50% of users who first access the internet through the company's Free Basics program begin paying for access within 30 days in order to access a fuller set of features.¹¹

The benefits to consumers of differentiated tariffs extend beyond the welfare-enhancing benefits to the poor from zero-rated offerings. It is a simple economic fact that broadband access must be paid for by *someone*. In flat-rate regimes, TSPs will inevitably find a way to pass the costs on to those who are capable of paying – or at least to those parties the TSPs are legally allowed to charge. If content providers are not permitted to absorb any of this cost directly, there is only one other party in a position to bear the cost: consumers. Content providers and TSPs that have devised business models to subsidize consumer access should be welcomed by those concerned about expanding broadband access and maintaining its affordability.

In the world of multi-sided markets (like the market for internet data services), a one-size-fits-all pricing model (like a requirement that costs be borne by consumers alone, or by all input providers equally) is ill-advised. Not only is experimentation required to discover the optimal allocation of costs, but frequently a variety of business models coexist that permit (or force) different parties to pay for the same or similar services.¹²

Consider the many similar pricing plans devised by traditional industries confronted with analogous market dynamics. Some periodicals, for example, are paid for by readers and offer little or no advertising; others charge a subscription and offer paid ads; still others are offered for free, funded entirely by ads. All of these models work; none is intrinsically more effective at reaching consumers or better for consumer welfare than any other. There is no reason the same isn't true for data services and content – least of all in nascent markets aimed at attracting entirely new consumers whose willingness and ability to pay are uncertain and evolving.

In sum, a *per se* ban on differentiated tariffs is likely to fix prices at an inefficient and undesirable level and to deter or preclude precisely the experimentation and business model innovation that can drive the expansion of internet access to underserved populations.

¹¹ Sparks, *supra*, n. 7.

¹² See, e.g., Daniel A. Lyons, *Innovations in Mobile Broadband Pricing*, The Research Conference on Communication, Information and Internet Policy 42, 15 (2015) available at <http://lawdigitalcommons.bc.edu/lisp/752/>.

Where Market Pressures and the Economics of Platforms Do Not Guarantee Compliance with TRAI's Principles, Antitrust and Consumer Protection Law Can and Should Be Applied

There is a common misunderstanding regarding the role of content providers, particularly with respect to partnerships between content providers and TSPs. In its report on Net Neutrality, for instance, the Department of Telecommunications characterized content providers as potential “gatekeepers”:

The Committee, therefore, is of the firm opinion that content and application providers cannot be permitted to act as gatekeepers and use network operations to extract value, even if it is for an ostensible public purpose. Collaborations between TSPs and content providers that enable such gatekeeping role to be played by any entity should be actively discouraged.¹³

When considering the competitive effects of various internet business models, however, it is important not to assume that vertical agreements between TSPs and content providers are problematic. In fact, it is well understood in the economics literature that vertical integration is presumptively *procompetitive*.¹⁴ A “real” gatekeeper – one that extracts rents by sufficiently foreclosing access by consumers to content or vice versa) such that competitive alternatives aren't viable – poses problems that may be worthy of a regulatory response. But a *per se* rule that assumes that all such agreements should be precluded fundamentally misunderstands the competitive dynamics of the internet ecosystem. Among other things, there is a crucial difference between an actual gatekeeper with the economic power to constrain competition and consumer choices, and preferential or exclusive arrangements that ultimately expand choices, lower prices, and incentivize investment by content providers and network operators alike.¹⁵

Multi-sided platforms – like Google's search services, Facebook's social network and many others – require critical mass on every side of their platform in order to maintain viability. Platforms must encourage participation from all parties – users *and* developers – to match supply and demand, and it is squarely within their

¹³ NET NEUTRALITY: DoT COMMITTEE REPORT 70 (May 2015), available at http://www.dot.gov.in/sites/default/files/u10/Net_Neutrality_Committee_report%20%281%29.pdf.

¹⁴ Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LIT. 629, 680 (2007).

¹⁵ See, generally, Comments of the International Center for Law and Economics and TechFreedom In the Matter of Protecting and Promoting the Open Internet GN Docket No. 14-28, § VI available at <http://apps.fcc.gov/ecfs/document/view?id=7521706121>.

interest to be as generally nondiscriminatory as possible.¹⁶ Thus, far from being a “gatekeeper” – that is to say a bottleneck in a process that uses its power to extract rents – these platforms typically operate using open API’s that encourage outside developers to design services for as many consumers as possible.

As of 2012, for instance, Facebook alone had over nine million connected apps available to users of its platform,¹⁷ and as of 2014 over 300,000 different developers integrated with Dropbox to provide the cloud storage service to their users.¹⁸

Thus, the economic incentives faced by application providers impel them not to restrict access, but to open it – frequently by charging nothing for either developer or end user access – in order to ensure that the platform is widely adopted. It simply makes no economic sense for an internet platform to engage in the sorts of discriminatory activity that would cause it to lose critical mass on any side of its platform.

It is often easy to miss the positive feedback effects that occur for telecom operators as a result of users adopting internet applications. In contrast to the view that these application providers “use network operations to extract value,” providers can in fact generate additional value for online activity that drives increasing broadband adoption.

The Effects of Differentiated Tariffs on Innovation

Much of the thinking around differentiated tariffs assumes that they protect incumbents and harm new entrants. But this view is frequently mistaken and precisely backward.

It is often claimed that differentiated tariffs would imperil internet startups that don't have the resources of their incumbent competitors to purchase priority access, placing them at an unfair disadvantage. This is curious given that it is often the very large, incumbent organizations that advocate for neutral tariffs. The truth is that TSP price discrimination is as or more likely to help new entrants as to hurt them.

¹⁶ See, e.g., David S. Evans, *Economics of Vertical Restraints for Multi-Sided Platforms 2* (University of Chicago Institute for Law & Economics Olin Research Paper No. 626, Jan. 2, 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2195778.

¹⁷ See, e.g., Brittany Darwell, *Facebook platform supports more than 42 million pages and 9 million apps*, SOCIALTIMES (Apr. 27, 2012), <http://www.adweek.com/socialtimes/facebook-platform-supports-more-than-42-million-pages-and-9-million-apps/278492>.

¹⁸ Dan Levine, *Make your masterpiece: 4 Dropbox-connected apps for creativity*, DROPBOX (Oct. 7, 2014), <https://blogs.dropbox.com/dropbox/2014/10/make-your-masterpiece-4-dropbox-connected-apps-for-creativity/>.

Offering some services at subsidized or zero prices frees up resources (and, where applicable, data under a user's data cap) enabling users to experiment with new, less-familiar alternatives. Where a user might not find it worthwhile to spend his marginal dollar on an unfamiliar or less-preferred service, differentiated pricing loosens the user's budget constraint, and may make him *more*, not less, likely to use alternative services – *even if they are not among those included in the subsidized or zero-rated arrangement.*

Moreover, differentiated tariffs offer startups the potential to buy priority access, and thus an important means of overcoming the inherent disadvantage of newness.¹⁹ With undifferentiated tariffs, on the other hand, the advantages of incumbency can't be routed around by buying a leg-up in speed, access, or promotion.

There is another systematic flaw embedded in anti-differentiation thinking: that the costs to businesses of accessing subscribers is somehow unique and not one that these businesses should bear. Of course, access is never really “zero cost;” businesses, especially early stage start-ups, wouldn't need capital investment if all their costs were zero. In that sense, why is equality of TSP access any more important than other forms of potential price parity? Why not mandate price controls on rent for businesses, mandate equal rent? Businesses that depend upon *any* resource rationally include the costs associated with that resource in their investment and planning decisions. And every business enjoys certain cost advantages in some areas and disadvantages in others. But in the end, whether “equal” pricing is maintained or not is irrelevant to long run investment decisions.

To understand this point regarding the inequality of cost inputs to businesses, consider an analogous business need: advertising. Surely some businesses are fortunate enough to have early, anomalous, viral growth, but most invest heavily in advertising and marketing. During the 2015 U.S. Super Bowl, for instance, the cost of purchasing a 30 second advertising spot was \$4.5M USD – that's \$150K USD per second.²⁰ Large companies like Budweiser and PepsiCo paid multiple millions this year to advertise during the event; many of their competitors didn't. Yet, despite this inequality, smaller competitors like Sierra Nevada and Dr. Pepper have not gone bankrupt, and continue to find a way to operate within the unequal

¹⁹ See, e.g., Geoffrey Manne & Berin Szoka, *Net neutrality's hollow promise to startups*, COMPUTERWORLD (Sept. 16, 2014), <http://www.computerworld.com/article/2684174/net-neutralitys-hollow-promise-to-startups.html>

²⁰ Lindsay Kramer, *Super Bowl 2015: How much does a 30-second television commercial cost?*, SYRACUSE.COM (Jan. 31, 2015), http://www.syracuse.com/superbowl/index.ssf/2015/01/super_bowl_2015_how_much_does_commercial_cost_tv_ad_30_second_spot.html.

ecosystem of advertising. In fact, entrepreneurs and their investors thrive in environments where arbitrage is possible – where a creative individual can come up with novel approaches to take advantage of differential conditions better than his competitors.

The Cost of Over Enforcement Can Be Greater Than The Risk of Underenforcement

The approach taken in this Consultation to the the question of competition and consumer harm risks putting the cart before the horse. Before special rules are crafted to attempt to address perceived threats to consumer welfare, existing and effective rules of general applicability can and should be employed to address actual harms: most significantly, the well-developed principles of competition law that have been in force in India since the enactment of the Competition Act in 2003.

Importantly, competition laws are typically employed to address actual harms on a case-by-case basis, generally eschewing *per se* condemnation of business arrangements (like vertical integration) that impair competition only in limited circumstances. The error costs of over-enforcement of TRAI’s principles of transparency and nondiscrimination.²¹ likely threaten more harm than do the risks of underenforcement. In the face of rapidly accelerating technological changes – which will continue to present new and unanticipated possibilities for different tariff models – an effects-based approach under the competition laws that conducts an *ex post* analysis of conduct would be far more prudent. Instead of foreclosing or mandating specific conduct, such an approach would permit and foster experimentation, innovation and technological development, intervening only where actual competitive harms develop.

TRAI has a commendable history of “light touch” regulation of tariffs, reflecting the Authority’s understanding that proper regulation leaves room for market players to adapt technology and to tailor their services to evolving consumer demand. There is nothing new or unique about internet companies that would justify breaking from this approach – in fact there is much to be gained in continuing to allow differentiation as internet platforms discover better ways to enhance consumer welfare.

²¹ Manne & Wright, *supra* note 3, at 158-63.