

The Problem of Exclusive Arrangements in Multiple Dwelling Units: Unlocking Broadband Growth in Indonesia and the Global South

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ABSTRACT

One key area that continues to be problematic for entrepreneurial businesses that wish to serve the broadband market is the question of ensuring competition in multiple-dwelling units (MDUs) and private developments managed by a single landlord or entity. As is the case in Indonesia, many MDUs around the world enter into exclusive arrangements with a single Internet Service Provider, leaving consumers with no practical alternative for high-speed broadband connections. Our paper examines this phenomenon and addresses 10 myths that we have observed in the marketplace on the topic. We also look at how this area has been addressed by authorities in other countries, concluding with five specific recommendations for ways in which business, regulators, and consumers can work to improve local competition on a global scale.

Keywords: broadband; multiple-dwelling unit; competition; consumer protection

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I. INTRODUCTION

Of the 7 billion people on the globe, a little over 4 billion do not yet have access to the Internet; of these, nearly 80 percent of new users will come from Asia and Africa (Reed, 2014). There is a need to address the government policies that will enable explosive growth for new users, and the topic of policies “connecting the next billion” will be an area of focus at the upcoming United Nations Internet Governance Forum in Brazil. Indeed, as competition increases in the global broadband market, politicians, telecommunication regulators, and competition authorities increasingly are addressing the challenge of ensuring that consumers have choice. One area that continues to be problematic for new businesses that wish to serve the broadband market, however, is the question of ensuring competition in multiple-dwelling units (MDUs) and private developments managed by a single landlord or entity. As is the case in Indonesia, many MDUs around the world enter into exclusive arrangements with a single Internet Service Provider (ISP), leaving consumers with no practical alternative for high-speed broadband connections. Our paper examines this phenomenon and addresses 10 myths that we have observed in the marketplace on the topic. We also look at how this area has been addressed by authorities in other countries. Our paper concludes with five specific recommendations for ways in which business, regulators, and consumers can work to improve local competition on a global scale. As a way to illustrate the problem for non-technologists, we begin by comparing this problem of ISP exclusivity with a hypothetical soft-drink exclusivity case.

II. YOU CANNOT BRING THAT BRAND OF SODA TO YOUR APARTMENT

To illustrate the nature of the problem, we will use the following, non-technological hypothetical. Pak Donny just moved into an apartment in a 20-story multiple-dwelling unit (MDU) in downtown Jakarta. After moving in his belongings, he went around the corner to buy something cold to drink for him and his friends. Pak Donny walked back to the building with a six-pack of Pepsi. The owner of the MDU stopped Pak Donny at the door and told him that he could not bring the Pepsi into his apartment. Instead, the MDU's manager informed him that all residents in the building can only drink sodas that are sold and branded by the Downtown Store. Moreover, the MDU owner had even entered into a profit-sharing agreement with the Downtown Store to ensure that residents could only buy soda from the Downtown Store. Perversely, the MDU owner believes that this restriction incentivized the Downtown Store to provide the best products at the best prices. The MDU Owner tells Pak Donny "please let me know if you have any complaints about Downtown Store sodas, and if you do, I'll make sure and address the complaints directly with Downtown Store management."

Just down the street, Pak Donny has the Corner Store available within walking distance. The Corner Store has different brands of soda, but importantly, Corner Store gets customers in and out really fast. Pak Donny likes that because he can grab his groceries at Corner Store and be done in 5 minutes. By contrast, the Downtown Store

provides great service, but always has a longer line, and it typically takes Pak Donny 20 minutes to buy the same groceries. Pak Donny comes up with an idea: he calls the owner of the Corner Store and asks if the Corner Store would be willing to sell him sodas and help smooth things over with the MDU owner so that he can bring them in his apartment. To his dismay, the owner of Corner Store informs Pak Donny that the MDU owner will not break the exclusivity deal that is in place with Downtown Store. To make matters worse, the “contract” between the MDU owner and Downtown Store is not even in writing, but instead, the exclusivity is maintained by way of payments made from the Downtown Store to the MDU based on the use by the residents. In the end, Pak Donny is out of options and he is frustrated that the MDU owner and the Downtown Store have conspired to constrain his right to choose what he brings in the apartment. Pak Donny even consults with his friend, who is an attorney, and he learns that exclusive arrangements between businesses are mostly legal. Ultimately, Pak Donny does not feel like he has any recourse.

III. THE ISP/MDU JUGGERNAUT

As preposterous as the above scenario may seem about soda purchases, when it comes to the selection of an Internet Service Provider (ISP), this phenomenon is exactly what is happening today in Indonesia and in many other countries around the world. As much as this scenario may strike consumers as unreasonable (at least as it applies to soda), in many ways this has become the new normal. We may never know who gains more from the exclusive arrangements—i.e., whether it is the MDU owner or the ISP—but in any case we postulate here that it is not the user who wins. Further, the phenomenon of MDU exclusivity creates a dangerous illusion in the market. The illusion is this: by most objective factors, one might look at the presence of dozens of ISPs in the city of Jakarta and conclude that the market is competitive, at least as measured by the existence of competitive ISPs. However, as we will describe below, many of the ISPs that serve the MDU are one and the same. In other words, the MDU forms its own ISP and serves a captive market that will never have choice.

Why do we assert that this kind of market is not a competitive one? Because in essence, the MDU owner and the ISP are in concert with each other, exercising exclusive possession or control of the supply of a service within their community. The end user does not take any part in the decision. This dystopia promotes, essentially, a series of monopolistic practices within an otherwise competitive marketplace. It has become axiomatic that most monopolistic constraints on free exchange of goods or services are bad for consumers (Sweezy, 1972). Competition is good because consumers drive the firms to provide better, cheaper services. Studies have shown that ISPs—like many other goods and services—are able to compete for the same consumer, and when they do, competitors engage in behavior to “win” the customer, often resulting in better service; and in price wars, more options become available at lower cost (Shakkottai, 2006). In the case of cable television, the U.S. Federal Communications Commission (FCC) found that adding another competitor for video services in MDUs offered a significant increase in multichannel competition that leads to lower prices, more channels, and a greater diversity of information and entertainment from more sources (FCC, 2007). We look at this further in our “top 10” myths section below.

If one assumes that consumer choice should always be a high regulatory priority in any modern economy, then the restraints on consumer choice should only yield for compelling health or safety reasons (or, perhaps, extreme unrecoverable expense). To be clear, a free market does not mean that anything goes. For example, in many countries, the use of living spaces is guided by reasonable health, safety or aesthetic rules established by building owners, homeowner associations, or condominium cooperatives. Examples of reasonable rules include: controls or rules to make sure that certain kinds of animals may not be allowed in the home; or public-safety rationale to prohibit tenants from using a charcoal grill that could set fire to the complex; or aesthetic limitations imposed by architectural review committees; or services that are purchased by everyone without exception, like so-called "natural monopoly" utilities for supplying electricity and water (Mosca, 2008). For these utilities, few communities provide a choice among competitive providers of electricity and water as the barriers for entry is prohibitively expensive (the process requires digging up the streets to install wholly duplicative lines). That is one reason why these public services are often run by a single government or agency. The concept of "structural separation" has also been very effective in several markets, i.e., the practice of segregating supply from distribution in regulated markets. The model has worked well for electricity, gas, railways, post, telecommunications, and other sectors (OECD, 2006). This model has, thus, already worked in many other sectors—including the Internet—so for the case presented in this paper, we believe that it is a matter of simply introducing the concept to the MDU context.

Electricity, water, and Internet services share the common characteristic of having a high barrier to entry because of the cost of installing new infrastructure. However, unlike Internet services, electricity and water do not have great variability in price, speed, or in their other qualities. Electricity and water are relatively undifferentiated goods—all consumers want them, but for the most part, consumers do not care who provides them. Ultimately, with just a few exceptions, consumers are free to choose what they bring into their homes. Although things are changing here, too, consumers rarely have choice between water, sewer and electricity providers, and competition is rare in those markets, and the "natural monopoly" theory is far less prevalent today than it was fifty years ago (DiLorenzo, 1996). However, this is not the case with Internet access. Even with the ability for ISPs to compete for services within buildings, anecdotes are clear that MDU owners regularly enter into exclusive arrangements that make it either practically impossible or contractually unauthorized for a tenant to choose their own broadband provider.

A. How Big Is the Problem?

Asia provides, by far, the greatest opportunity for growth in new Internet users: over the next twenty years, 3 billion people in Asia will join the Internet (Reed, 2014). For this paper, we have looked briefly at the case of Indonesia because we feel that the ecosystem is relatively representative of the challenge in the region. Indonesia has 250 million inhabitants and is the fourth most populous country in the world. The capital city, Jakarta, has about 11 million inhabitants, making Jakarta a very large potential market for broadband. As with many urban environments, many (if not

most) citizens live in MDUs; the global firm Colliers estimates that there are at least 200,000 different MDUs in Jakarta (Colliers, 2014). Not every MDU is locked up with exclusivity, but our anecdotal evidence suggests that many of them are. To extend this situation to our introductory hypothetical, if the MDU owner has chosen to wire the building with the service of ABC Telecom, and if Pak Donny likes the speed, pricing, or bundling of XYZ Telecom better, he is out of luck. This is the likely story of millions of citizens that live in the MDUs in Jakarta. Simply put, the choice of ISP may not be available for most, and similarly, the opportunity to serve different MDUs and to compete for the customer may not exist for most ISPs. Because of this constraint, there is a crucial bottleneck at the last few meters of the connection to the consumer.

One of the biggest challenges in analyzing the MDU exclusivity question may be the difficulty (if not impossibility) in getting pertinent information about it. The University of Indonesia completed a study together with a multistakeholder community of participants from the private sector and civil society to look at the nature of the challenge in Indonesia, where (like most of the world) there is a dearth of information available to regulators on the problem's magnitude (Pusakom, 2015). It is not a simple matter of reviewing exclusivity agreements that may exist between ISPs and MDU owners, because in many cases the contracts do not exist in writing but instead through handshake agreements that are enforced between the parties and unavailable to the public or possibly for future tenants (until after they move in). Indeed, the mere presence of unwritten exclusive arrangements should be a red flag for regulators because the nature of the problem and obscurity of contracts makes it difficult for consumers to assert their rights.

The University of Indonesia's study found that more than 80% of users cannot choose a fixed broadband provider either because of exclusive arrangements or for other reasons. Specifically, 54% have no option because of exclusivity arrangements, and 34% have no option of another provider available. The study estimates that only 12% users in Indonesia have the freedom to choose their broadband provider. Counter intuitively, the study found that the majority of users (more than 80%) are nonetheless satisfied with their fixed broadband connectivity. It is our hypothesis that this high degree of user satisfaction occurs because the lack of competition means that Internet users have no basis to compare their experiences. Also, the majority of the users are using the internet for low-bandwidth activities, such as email, chatting, and social media.

B. Understanding the Rationale for Exclusivity

What kinds of exclusivity arrangements are there? We focused our informal interviews on this topic on the case of Indonesia, where we found two main types of exclusivity arrangements. The first kind, the "type 1" exclusive arrangement, involves an MDU that owns and operates its own ISP and refuses to allow other providers in the market to compete with them. In this sense, the MDU is, itself, an operator in the Internet ecosystem and could fall under the regulatory umbrella of the relevant ministry of communications or other competition authority. By contrast, a "type 2" exclusive arrangement occurs between the MDU and an independent ISP, so the MDU is not directly in the business of providing the Internet services, but instead,

has agreed that only one ISP do so. In both cases, the rationale is identical: the MDU and the ISP each point to the investment that they have made to wire and connect the building and there is a belief that only the ISP that made the investment should be used. The proponents of these arrangements point to pro-consumer features of the arrangement, including the convenience and cost-savings that can come from buying a service in bulk and rolling the invoicing into monthly condominium fees through "bulk billing" arrangements (FCC, 2010). Along these lines, we describe a "type 3" arrangement which isn't actually exclusive, but instead, a bulk-billing or exclusive marketing model.

1. The MDU as Exclusive ISP (Type 1)

In one of the common models, the MDU owner, itself, becomes an ISP and uses this business as a way to remain competitive and offer the service for less money. In Indonesia, this is fairly common practice. One MDU that does this is the Sinar Mas Group, which owns both Sinar Mas Land and the ISP Moratelindo; another is the Artha Graha that, together with its ISP Artatel, owns large properties in the Sudirman Central Business District. In these cases, the property owners have locked in use for ISP services for thousands of tenants. Even if the ISP services that the developers provide are acceptable or even excellent for many (or maybe even most) of its tenants, there are invariably individuals and entrepreneurs who occupy these properties that need a service that is faster, with less latency, or perhaps there are residents who want a slower, cheaper option. In this case, consumers cannot switch because the property owner is the ISP and will not allow competition. Additionally, even if there were an ISP that would want the business, the ISP would not have access to the private structure. In a type 1 scenario, the MDU and the ISP have the same shareholder, so there is no incentive for either to allow competition for an otherwise captured market.

2. The MDU and An Independent ISP (Type 2)

Another common model is where the ISP approaches the MDU with an offer for exclusivity. These are contracts that may or may not be written, but generally include payments from the ISP to the MDU in the form of a franchise fee or revenue-sharing model. The rationale for type 2 exclusivity is somewhat easier to justify than type 1 exclusivity because of the technological concerns about the ability to share the indoor wiring "harnesses" within a building. In general, there is typically only one set of wires that goes from the bottom of a building, inside the walls, and over to the different residents, and it would be cost-prohibitive to install multiple complete sets of wiring within the walls of buildings. In the past, the existence of a single set of wires meant that either one operator can use them or that one operator makes an investment that they should have the right to recover. Reports about this cost in New York City ranged from \$30,000 to \$100,000 to wire MDUs, thus ensuring the significance of these costs (Flamm, 2014). However, as we explain later, today, this wiring can be shared by multiple parties. Thus, the rationale that once existed to justify type 2 exclusivity is no longer relevant.

Not all exclusivity arrangements are bad. In both type 1 and type 2 exclusivity scenarios, the MDU owner may be able to either sell condominiums to people at a lower price if the owner factors in future long-term revenue by providing ongoing services to the residents, or simply increase his ongoing profit margin for his investment. Although cheaper housing may be, itself, a consumer benefit, the subsidy saddles the resident with no choice in ISP providers in his apartment, perhaps forever. Further economic analysis would be required in order to determine whether these tradeoffs are understood by consumers and whether or not the long-term benefit outweighs the short-term gains.

3. Bulk Billing Arrangements (Type 3)

The third type of exclusivity arrangements may not be actually exclusive at all. Through so-called “bulk billing” arrangements, an MDU provides what could be considered as a consumer benefit, which may not have any of the characteristics of type 1 or type 2 arrangements. A typical bulk-billing plan happens every month as a resident pays condominium fees or HOA dues. These fees and dues are then grouped (“bulk”) into a collection of various overhead charges for the MDU and can include: the salary for the doorman and security; the maintenance of any pool or recreational facilities, etc. Therefore, a resident may not be bothered by paying one amount for condominium fees and another amount for Internet, particularly if the bundled rate is competitive and possibly even lower than the market rate. The billing between condominium fees and Internet services may be separated or otherwise broken out as different line items, but all residents are grouped together and pay the same fee for the Internet, regardless of whether or not they actually use the services. Type 3 arrangements sometimes also include marketing exclusivity, giving the residents the appearance of no choice. Bulk-billing and exclusive marketing arrangements may appear exclusive because typically only one provider will provide the bulk billing. In reality, however, the arrangement is not exclusive unless it contains features of either type 1 or type 2. Often, the MDU owner may want (or even insist) on having exclusive arrangements so that they can achieve their own efficiencies in management of resources. A type 3 arrangement may not be as attractive for MDU owners or ISPs, but they do provide a middle ground of simplifying the experience for both parties, while keeping open the opportunity for competition.

C. Why the Rationale for Exclusivity No Longer Applies

If our concern then, is focused on type 1 and type 2 practices, why has this not been addressed before? There may have been a reason a few decades ago to assume that only one provider can access units in a given MDU, but that is not the case today. At this point, telecommunication providers, ISPs, and electric companies have ample experience sharing common resources available to them in the public right-of-way (Reed, 2014). Multiple parties can and do occupy the same telephone pole and conduit. Even fiber-optic cables and copper wires can provide services that can be shared by multiple users. In fact, sharing poles, conduits, cables and sometimes even the optical fiber to a resident in the public right-of-way is increasingly the norm rather than the exception. Even so, we shouldn’t assume that competition is always

the answer, as economist Edward Chamberlin explained, it is crucial “to build up the system from the firms which compose it, discovering from the facts what assumptions are appropriate as to competition and monopoly, and therefore as to structure” (Chamberlin, 1951). In other words, the challenge to be met is not merely a generalization that competition is better; instead, it is to allow the market to create incentives for investment while maintaining a pro-competitive ecosystem that empowers multiple modes of competition. One need look no further than the development television of services to see how consumers have benefitted by more choice of providers, brought by a variety of technologies, including free-to-air, satellite, cable, and today, via Internet.

The ecosystem may require intervention from a regulator at times in order to clear a path for new entrants and new technologies. Several years ago, in the case of the public right-of-way, such intervention was required. The public right-of-way consists of a “bundle” of easements, poles, conduits and space that telecommunication, electrical, and cable utilities use to bring their cables to the end users. When cable companies began to offer services in the 1970s, they wanted to share the infrastructure that was built by the telephone and electric utilities. Additionally, the cable companies also wanted to use the risers inside of MDUs. To borrow an example from the experience in the United States, the utilities protested, claiming that these poles were unavailable for additional use. So in 1976 the U.S. Congress passed the Pole Attachment Act which made sharing poles with cable companies mandatory. There are similar sharing practices in most countries globally (Reed, 2014).

If today’s practice of sharing poles, conduits and space in the right-of-way is a best practice throughout industry, why is the use of conduits and wires within the building still sacrosanct? Has something changed since the 1980s to enable (or to restrain) multiple providers to share facilities? In many ways, the technology has improved. Said another way, the technology has evolved over time to meet the problem and to satisfy the changing needs of users. In fact, the technical challenge of sharing a telephone line by multiple providers has been looked at for more than a century. At the turn of the last century, the concept of “multiplexing” was developed by George Owen Squier as a means for sharing wires for phone calls (Squier, 1919). This has grown over time, and today there are two primary models for sharing: virtual unbundling and physical unbundling. We will look at both of these below.

1. Virtual Unbundling

With virtual unbundling, a single entity, which might be the MDU owner or a third party, operates the building’s broadband service infrastructure on a wholesale basis. The wholesaler maintains the cables and boxes from the MDU’s entry point (often in a basement) and from there, to the subscribers’ residences. The wholesale services are offered to resellers, who in turn sell retail broadband services to the residents (and possibly supply separate customer equipment as well). In this model, the retailers are offered a menu of wholesale offerings—different speeds, latency, data caps, pricing, and customer-service options, for example—which they can combine to create their retail offerings. The challenge with this model is that it can be difficult for retailers to

differentiate their offerings since they are all reselling the same wholesale services. Retailers will generally choose to bundle additional services like voice and video to increase the attractiveness of their respective offerings.

The beauty of virtual unbundling lies in its simplicity and low investment requirements for new retail entrants. There are multiple ways to implement the “unbundling” aspect, which can happen at central offices, points of presence, or even in the basement of the MDU itself. In fact, on a macro level in Indonesia, virtual unbundling is the norm as many of the ISPs in Indonesia are, in fact, selling services from a wholesale provider. Most all type 1 scenarios are MDUs that are reselling wholesale services as the sole retail provider in the building. Indeed, the challenge of virtual unbundling at the MDU isn’t free of technical challenges, but for the most part, this is a philosophical solution more than a technical one. In other words, if virtual unbundling primarily occurs closer to the core (rather than at the MDU itself) then there may be a tendency—and possibly even an economic incentive—for type 1 and type 2 exclusivity arrangements because a virtually unbundled operator can benefit from a captured market in just the same way as someone who owns and controls the physical connection to the user.

Accordingly, virtual unbundling is, itself, not a panacea, but it can be a crucial solution to the problem. If we think conceptually about the unbundling occurring at the MDU itself (rather than deeper in the network), the picture becomes much clearer. In essence, here’s how it works. The wholesaler, the MDU (or a third party), installs broadband access equipment (a “multiplexer”) in the building basement that aggregates the connections from each apartment, creating customer “ports” that can be leased to third parties. This is essentially a way of taking several separate wires and plugging them into a junction box with separate ports for each line. To revisit our hypothetical with Pak Donny, in the basement of his building, the wires to Pak Donny’s apartment—which were installed at the time the building was constructed—might be connected to Port A-1 on the access equipment and the line leading to the apartment of Pak Donny’s neighbor would be connected to Port A-2. The wholesaler then offers the broadband access service on each port to retailers, who can compete to provide retail broadband to Pak Donny and his neighbors. Ports A-1 and A-2 might be resold by the same retailer or by different retailers. None of the retailers operate infrastructure in the building (with the possible exclusion of modem-routers in the subscribers’ apartments, but even those could be provided by the wholesaler). The retailers have only service and billing relationships with their customers in this case, analogous to the common option of selecting a long-distance voice provider independently of one’s local telephone company. The crucial point is that virtual unbundling means that there is no need for retail ISPs to deploy or change the MDU infrastructure, including installation of a new, separate line to the subscriber because the existing line can be used for that purpose.

As a technical aside, note that the realization of these customer ports depends on the particular access technology employed. If Ethernet lines connect apartments to the multiplexer, for example, the ports are indeed physical ports on an Ethernet switch. If a shared medium technology such as fiber optics is used in the building, there might not be a separate physical connection at the multiplexer for each subscriber. Instead, networking technologies such as wavelength division

multiplexing or virtual LANs (VLANs) are used to create virtual ports by segregating the traffic of different customers and retailers on the shared medium.

2. Physical Unbundling

The alternative to virtual unbundling is physical unbundling, where each of the broadband retailers operate their own infrastructure. For example, by connecting a fiber-fed multiplexer to the twisted copper voice pairs that typically run from a building's basement to each subscriber's residence, an ISP could offer the residents broadband at speeds from the high tens to hundreds of Megabits per second with advanced DSL technologies such as vectored VDSL or G.fast. Alternatively, in buildings with pre-installed Ethernet wiring, which is increasingly common in MDUs, a (different) fiber-fed multiplexer could be used to provide Gigabit-per-second broadband to the MDU residents. When an existing wire or fiber exists between a central point in the building and each subscriber's residence, multiple ISPs are easily accommodated: the wire or fiber of each of the ISP's customers is connected to the ISP's respective multiplexer. Accommodating multiple ISPs is also possible with buildings wired for fiber or coaxial cable; the required infrastructure is only slightly more complicated. All that is required of the MDU owner is to provide physical access to the ISP and a modest amount of rack space where each of the service providers can install their equipment.

Returning to the example of Pak Donny, with virtual unbundling Pak Donny's retail ISP has no physical infrastructure in the building and provides Pak Donny's service by means of the wholesaler's equipment. In the case of physical unbundling, Pak Donny's retail ISP has its own broadband access equipment situated in the building (as do other ISPs serving customers in Pak Donny's MDU).

The facilities-based approach with physical unbundling requires more infrastructure and investment, but it gives the service providers more control over their destinies with less intervention from the MDU owner. It also can provide competition with different technologies, so that one company can offer fiber connectivity and another customer (who may not need the speed of fiber) could use DSL. However, one of the main drawbacks with physical unbundling in MDUs is that physical unbundling requires enough space in the internal conduits and tunnels to accommodate multiple connections. Internal space in MDUs is at a premium, so the option may not be practical in all cases, although it will increasingly be relevant in the future, when buildings are designed for connectivity. The designers of the majority of older buildings did not contemplate multiple wires for Internet connectivity; as such, virtual unbundling is the more likely solution.

D. Cutting the Wire Altogether with Wireless Technologies

Wireless options can help as well—but not all forms of wireless. In this context, it is critical to distinguish between mobile wireless (e.g., via a smartphone) from fixed wireless, where an ISP sells point-to-point service to a fixed location such as an MDU (potentially with multiple end-users at that fixed location). A mobile wireless provider is in the business of providing connectivity to individual customers on the

go, on phones, and on the move. Consequently, the frequencies allocated for mobile applications are scarce and the demand for use of that spectrum can often yield periods of extreme congestion. By contrast, a Fixed Wireless Access (FWA) provider has a customer in one place that can site an antenna on the building—thus, it is fixed wireless—and thus provide connectivity to the residents from this antenna. For an MDU application, fixed wireless networks can be designed to be more robust and to carry greater aggregate traffic per-building than mobile systems (among other reasons, fixed wireless systems can leverage spectrum at higher frequencies, which is relatively uncrowded). Still, FWA installations of this kind require cooperation with the MDU owner so that facilities can be installed in common areas and then shared by all residents (e.g., via Ethernet from the FWA multiplexer to each subscriber's residence). Multiple FWA providers can be accommodated at an MDU in an analogous manner to accommodating multiple fixed-line providers.

IV. MYTHS AND REALITIES ABOUT EXCLUSIVITY

As we have previously stated, there are no global surveys on the status of the MDU exclusivity problem. The study carried out by the University of Indonesia has shown empirically that the problem exists and that it is significant, with more than 80% of Indonesian users unable to make any selection in their broadband provider (Pusakom, 2015). Since this is often one that is described anecdotally, we have observed that there are several myths in the anecdotes that mischaracterize the problem and the solution. In this section we look at what we believe to be the “top 10 myths” that we have heard in our interviews with colleagues on this topic.

Myth 1: In exclusive arrangements, residents get the best pricing because the MDU can make sure that the ISP performs.

Reality: Any profit-seeking firm will, per pure economic theory, seek to maximize their market share by use of means that exclude competition. The myth that monopolists act in the best interest of their customers has long been debunked in modern economic theory (Sweezy, 1972). History has shown that the natural monopoly theory has been shattered and pricing and customer service has improved; in the case of traditional telecommunications, consumers have seen an exponential drop in the price of calls and availability of services since the privatization and breakup of the PTTs. Borrowing from experience in the United States for illustration, in 2003 the Government Accountability Office completed a report that showed that the price of cable subscriptions declined 15 percent when another wireline competitor entered the market (GAO, 2003). Additionally, in the domestic U.S. cities where Google Fiber has launched its services, prices have plummeted, and although it is too early to tell what the competitive investment will be, at a minimum, competitors are claiming their intention to match the offering (Ladendorf, 2013). These responses are due to the presence of competition.

Myth 2: An MDU can negotiate the best quality of service for its tenants because of its negotiation power and therefore make sure that the fastest possible speeds are available.

Reality: The user of Internet services is not the MDU, but instead, the individual consumer. The MDU is, at best, an intermediary. Users have different needs: some are more sensitive to price than others, and some may require high speeds or low latency

for gaming, video conferencing or small business needs. With this variation in needs, it is a challenge for any single ISP to provide a product that is equally satisfying to all users. Once the MDU and the ISP are locked in an exclusive arrangement, there is a reduced incentive to upgrade the installation because there is no immediate threat of loss of the consumers. In many cases, particularly where the MDU owns the ISP, the MDUs are not tech firms, so they do not invest in R&D and may not even know how to operate the equipment properly. As such, the argument that the MDU is in a better position than the user to negotiate prices is tenuous at best.

Myth 3: Exclusive arrangements give a better customer experience because the MDU can negotiate certain service-level agreements for responsiveness that promises prompt attention to customer concerns.

Reality: Since the ISP has a captive market, even with contractual minima, there is no financial incentive for the ISP to be as responsive as possible. Service-level agreements and response times can be managed by contract, but if the user ultimately does not have the ability to "vote with their feet" and select another provider, then the incentives to honor the contract are attenuated.

Myth 4: The building's wiring will not allow more than one provider.

Reality: The "natural monopoly" theory is no longer true with modern facility-sharing technologies. To be sure, there is a necessary level of cooperation that is required among ISPs, although this problem has been shown to be addressable in the right-of-way and by the co-location of ISPs and other providers in Internet exchange points (Gerson, 2012). Also, unburdened by exclusivity, the FWA market can also augment services, to the extent that FWA providers can share conduit to reach the residents.

Myth 5: Residents can just use their wireless mobile connection.

Reality: It is true that mobile connections can solve some of the problems but are no substitutes for wired broadband (or for fixed wireless), particularly in urban areas, where wired connections are significantly more efficient for high data uses. Moreover, the cost of mobile wireless connections varies widely and depends on the limited availability of spectrum, which is constrained in most parts of the world. As a result, wired and wireless options should be thought of as complementary products, and in fact, many consumers already have subscriptions for wireless data in addition to wireline.

Myth 6: Residents can put up an antenna in their window to a wireless ISP (or Wireless Local Loop) that may perform better than a mobile wireless provider.

Reality: It is true that Fixed Wireless Access (FWA) can help, but here are several practical problems with line-of-sight connections. One of the most significant problems is that exclusive deals often extend to the rooftop of the building, thus removing the roof as an option to install antennas that can serve all residents. This takes the roof off the table but leaves residents with an option of putting up antennas in the windows of their apartments and this, in turn, depends on line-of-sight. Often only a few residents in a building may be able to have unobstructed views to place an antenna in their window to connect to a FWA provider. In this context there are powerful signals that may come from high-powered antennas, and these are best kept on rooftops (which are often prohibited because of the exclusivity arrangements). Although satellite television antennas are often mounted on balconies and aimed upwards, this is not the

case for FWA antennas, which typically perform best with line-of-sight to a terrestrial base station.

Myth 7: Residents want MDU owners to include Internet in a bulk-billing arrangement.

Reality: If residents want bulk-billing, this can still be offered with more than one option of service provider. This is how liberalization initially worked in the telecommunications market in the United States. The customer could not choose their local telephone company, but they could choose the long-distance provider. The long-distance provider would bill the customer through the local company. Also, if residents want bulk billing and exclusivity that goes with it, there should be a regular vote by the residents (e.g., every year) to validate that the majority of residents are getting the best deal available on the market. Even if this leaves a minority of residents unhappy about lack of choice, they can at least participate in the process.

Myth 8: Many MDUs and ISPs do not enter into written exclusivity arrangements, and if there is no written contract that makes the arrangement exclusive, then there is no exclusivity problem.

Reality: Exclusive arrangements do not need to be written in order to be real. Many deals are done through informal in-kind arrangements, such as a promise by the ISP to remodel a common area in exchange for an unwritten exclusivity arrangement. This is also similar behavior that has been established to exist in the context of mobile operators: an example of a non-problematic, but often unwritten promise might be for the mobile provider to provide landscaping in common areas (or other improvements) in exchange for the right to install antennas on the building. Although problematic practices could more easily be established and addressed by producing evidence of the contracts, it is the perception of users that is more important than the existence of contracts. If the user does not believe that they have choice, e.g., because the manager has told him that they do not, then the users are unlikely to make competitive choices in the market.

Myth 9: If we allow a second ISP to serve the building, then we will be buried with ISPs and we cannot accommodate everybody.

Reality: In most markets there are only a handful of ISPs. Even then, reasonable limits can ensure competition. For example, awarding rights to three ISPs and/or opening up for bid and renewal periodically.

Myth 10: There is no evidence that ISPs will provide services unless they have the incentive of exclusivity to recoup their investment.

Reality: It is true that ISPs must incur a cost related to the installation of their equipment, and these ISPs have a right to recover that investment. However, there are ways to provide the opportunity to recover the investment by implementing a system that provides a cost-based "buy in" from competitive carriers that allows them to serve customers while offering the incumbent ISP the recovery of their investment.

V. SHARING PRACTICES IN OTHER PARTS OF THE WORLD

The liberalization of global telecom markets has been a long slog. However, since the 1990s most countries in the world have broken up the monolithic and state-run postal, telephone and telegraph services (PTTs). One of the first things that was liberalized was access to passive infrastructure, for example, the Pole Attachment Act that was

passed in 1976 in the United States so that cable companies could share the infrastructure used by telephone and electricity companies. In recent years, regulations that open up the sharing of infrastructure within MDUs have advanced. In this section we look at some of the practices to address this concern in Ecuador, France, Europe, and the United States. We selected these areas because of familiarity that we have with the work. Our focus on rules in these markets is not intended to be a full survey of the ways that authorities are addressing the problem but it provides some insight.

A. Ecuador

In the case of Ecuador, there is not a specific regulation governing the installation of internal networks in real estate, but there are general regulations regarding the installation and operation of the networks and the limitations of restrictive clauses.

The Regulation on Access and Sharing of Physical Infrastructure (Reglamento sobre el Acceso y Uso Compartido de Infraestructura Física) was passed in 2009 and is intended to regulate cases where it is not possible to build other physical infrastructure for the provision of telecommunications services. The reasons may be varied, including technical, legal, environmental, or urban. In such cases, the owner of the infrastructure is obliged to allow sharing to third party operators. If the provider cannot gain shared use of resources, the Regulation allows the authority to hear the case and issue a binding decree. as for infrastructure sharing agreements, Article 13 of the regulation states specifically that access agreements may not include exclusivity clauses or other restrictions on the sharing of physical infrastructure if another operator so requests it.

Ecuador provides other sources of protection for consumers as well in this regard. One source is the Organic Law on Control of Market Power, which prohibits behaviors that undermine free competition. This law states that there is no single bright-line rule that establishes exclusivity in the deployment of telecommunications networks. Instead, there is a rule of reason that regulators use in order to see if there is a restrictive or exclusive effect on competition. Another example is the Regulation for Subscribers and Customers-Users of Telecommunications Services and Value Added Services. In this regulation, at Article 14, paragraph 14.1 there is a provision that declares that users have the right to choose freely the service provider and accessible without discrimination under the applicable law.

B. France

In Europe, in spite of the harmonized market brought by the European Union, the issue of MDU exclusivity has not been addressed at the European level in Brussels but rather by national authorities. In France, Article 109 of the French Law for Economic Modernisation (now, article L. 34-8-3 of the Electronic communications Code) defined in 2008 the last meters cabling as a monopoly with an obligation to the first operator to rent this cabling to its competitors. ARCEP defined this “mutualisation point” as 1 per building for buildings above 12 apartments and is proposing 1 per set of over 300 dwellings otherwise (ARCEP, 2008). ARCEP

recommendations to implement this measure that makes exclusivity difficult, because under Article L. 34-8-3 “access is to be provided under transparent and nondiscriminatory conditions from a point located outside the limits of the private property, and which allows third-party operators to connect to it, under reasonable economic, technical and access conditions. Any refusal to provide this access must be justified.”

The French system sets out a clear distinction between the provider of the infrastructure layer (“opérateur d’immeuble”) and the provider of the service layer (“opérateur commercial”). ARCEP further clarified the rules in place by issuing a Guide specific to fibre deployment in MDUs in 2011 as well as a standard terms and conditions (ARCEP, 2011) Finally, the French government updated the rules in 2014 via Order 2014-329 relating the digital economy within the framework of Article 1 of the Law 2014-1, and this enables the government to simplify and secure decisions in certain ways. For example, the Order replaces certain provisions of the general ICT law (“code des postes et des communications électroniques”) and in Article 5 the indoor installations of fiber to the home networks are addressed. The law details the building (co)owner(s) and the operator’s respective responsibilities, and it expands the field of application for connection procedures to all types of shared residential premises, buildings or subdivisions.

C. Germany

Currently, there is an important test case in Germany involving Liberty Global’s acquisition of regional cable network operator KBW which serves customers in the State of Baden Wurttemberg. In this case, Liberty Global notified the EU Commission of the merger in 2011, and the EC referred the case to the German competition authority. According to an EU press release at the time, “The Commission found that the proposed transaction may significantly affect competition in the market for the provision of free TV services to housing associations, where contracts with tenants are negotiated collectively, a big market in Germany” (European Commission, 2011). The proposed transaction would reduce the number of regional cable operators, who deliver basic cable TV services to apartment blocks or MDUs, from three to two in Germany.

The German competition authority—the Bundeskartellamt—eventually cleared the deal after Liberty Global agreed to open up bids for contracts with Germany’s housing associations and to remove encryption from digital television services, finding that “[w]ith the obligation to open up large long term contracts with the housing industry and give up further contractual rights as well as the basic encryption of digital free TV programs, the negative effects of the merger are compensated.” The Bundeskartellamt added: “The abolition of exclusivity and ownership clauses will ensure legal certainty.” The Bundeskartellamt noted that the duration of contracts would come under closer scrutiny and stated that a contract term of 10 years may be an infringement of EU and German competition laws. It views the Liberty Global merger “as a test case that could set a precedent for almost all market participants.”

At this point, resolution of this question is still open. In 2013 a state court in Dusseldorf blocked the deal following a challenge from Deutsche Telekom which claimed that the remedies were too lenient. Liberty Global is appealing to the German

Federal Supreme Court. According to a senior Liberty Global official, the exclusive dealings with housing associations have “been at the center of the merger clearance.” If the number of regional operators is reduced from three to two, there would be an impact on the multi-dwelling unit market, according to the Dusseldorf court. In Germany, where the housing market is based on rentals, housing associations are in a powerful position when it comes to choosing a broadband provider and in deciding what technologies to install in their buildings. Most of Liberty Global’s service agreements with housing associations have multi-year terms, and the stakes are high because many of Germany’s large property conglomerates own thousands of properties. With the KBW transaction, Liberty Global agreed to grant early termination rights on certain agreements that they have with the largest housing associations.

D. USA

The FCC found that about 30 percent of Americans live in multi-tenant dwellings and there were many exclusive arrangements. Cable rates were found to be 17 percent lower in markets where wired, non-satellite competition was present. Seventeen U.S. states restricted exclusive arrangements via the Attorney General’s office or similar (including New York, Illinois, Massachusetts, Florida, and Pennsylvania). Still, the FCC thought that it should take national action, and it did so by banning cable companies from entering into exclusive contracts. (FCC, 2007). However, the FCC later looked at the topic again in the context of bulk billing arrangements and exclusive marketing deals and concluded those arrangements are permissible. (FCC, 2010).

VI. CONCLUSION AND RECOMMENDATIONS

While the astounding growth of the Internet is reaching a saturation point in many parts of the world, many consumers in those regions remain underserved. Here we have proposed a hypothetical, non-technical scenario in Jakarta where an MDU owner and a local grocery store have entered into an exclusive arrangement to restrict the ability of the residents to purchase soda from anyplace other than the Downtown Store. Even though one can draw distinctions between soda and Internet services, the hypothetical helps establish how nonsensical the restraint on trade can be. At a minimum, the hypothetical represents the kind of restrictions that do, in fact, exist when it comes to the purchase of broadband in Jakarta and many other places in the world. Many MDUs around the world regularly enter into exclusive arrangements (many of which are unwritten agreements) with a single Internet Service Provider, leaving consumers with no practical availability of choice for high-speed broadband connections.

How should the global community respond to the exclusivity problem? First and foremost, all participants in the ecosystem should recognize that exclusivity is a concern, and the restrictions for access to Internet service in MDUs that exist today are similar to the kinds of restrictions that were found impermissible four decades ago in the public right-of-way. On some level, a policy statement by the appropriate

government agency that type 1 and type 2 exclusivity arrangements are not allowed might be enough to help change the market. This lack of competition at the "last few meters" means that ISPs do not have appropriate incentives to make ongoing investments to increase service while providing competitive pricing for the services. Although mobile services may help relieve this problem in the future, we do not believe that mobile provides a viable alternative to the high-speed needs that exist in dense urban environments (Reed, 2014).

At the same time, there is an acute need to address what incentives MDUs can provide to ISPs to invest in their buildings and wire them for speed. Accordingly, we propose a co-regulatory approach to the problem, starting with a set of simple principles that could be enforced by a local regulator. In this sense, we view the proposal as a "co-regulatory" one since the regulation would only come in if there is a violation. Our proposal is as follows:

- **Transparency in contracting.** Any MDU that enters into contracts of any kind with an ISP (including bulk billing arrangements) should commit to transparently publishing the agreement and making it available to any residents in the MDU. This transparency will enable residents to understand what restrictions there may be on the choices that they have for broadband before they move into the MDU.
- **Transparency in investment and buy-in formula.** An ISP (or an MDU) may invest in the upgrade of internal wiring to provide the Internet to the residents, and it is reasonable to expect a return on this investment. We propose that the costs for the wiring be published and clear, just as they are already on the books of ISPs when they record and amortize the assets. The investment cost, if public, provides a basis for the development of reasonable cost-based recovery that could take the form of a "buy in" from competitors. This proposal would put MDUs on equal footing with the model that has been proven in the public right-of-way for the use of poles, conduits, and trenches. Thus, a new entrant could buy into the installation at any time based on a cost-recovery model.
- **Exclusive arrangements must be limited in time (e.g., one year with only one renewal).** We do not assert that exclusive arrangements should be prohibited across the board, but we believe that they should be limited in time to no more than one year in duration with, at most, one (1) additional one-year option. The principle here is to provide a limited (but reasonable) incentive to the private sector to invest in MDUs, but to cap the exclusivity to one year in many cases, and two years at most. This recommendation of one year (with one renewal) is not based on any particular formula, but instead it is a proposal to place some limits on the amount of time that a single provider can exclusively serve a building.

We believe that the proposal above will help address the problems with existing buildings, particularly if coupled with a co-regulatory way to enforce the model—for example, if the government provides a mechanism for quickly hearing and ruling on controversies. For new buildings, and for consumer benefit, we have two final recommendations:

- **Include duct-sharing and internal infrastructure in permitting reviews.** For the future, new development projects could warrant a unique, separate set of recommendations. Cities often impose certain public-minded conditions on developers (minimum parking requirements, green space, etc.). Plans for new buildings that are being designed and built today (and in the future) should be built for sharing and to

assume that more than one provider will have access to the conduits and chases. Also, design requirements that anticipate the interconnection locations and provide for access to companies to install equipment should be part of the permit review and approval process for MDUs.

- **Government should publish a consumer guide.** Most of the discussion about this topic is technical and users get lost quickly. Like our Pak Donny example, they don't know where to turn for help. The government regulatory authority or consumer-protection authority should publish a brochure that's accessible to users about how they can exercise choice. The French provide a good example of this (ARCEP, 2011).

There are many details that have yet to be defined, but we believe that these measures could be implemented in a way that provides relief if there is a breach. Along these lines, we suggest the model in Ecuador is worth further review and discussion, because it arose from a dynamic market in Latin America and provides a rule of reason for resolving the dispute. Under the Ecuadorian rules, if an ISP cannot gain shared use of resources, the regulation allows the authority to hear the case and issue a binding decree. This would allow market forces to handle access arrangements and provide a mechanism to hear and review the matter by a binding procedure.

Over the next few years, we hope that the discussion will continue to develop on best practices to adopt, as well as those to avoid, for the development of broadband and the critical infrastructure for the Internet. The nuances to the different kinds of models are crucial to debate among stakeholders.

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