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**LATIN AMERICAN COMPETITION FORUM**

**Session I: Competition Principles in Essential Facilities**

**Background Paper**

**8-9 September, San José (Costa Rica)**

*This background paper was prepared for the Secretariat by Pablo Serra and Aldo González (Department of Economics, University of Chile) with inputs and comments from Niamh Dunne (Corpus Christi College, University of Cambridge). It is circulated FOR DISCUSSION under session I of the Latin American Competition Forum at its forthcoming meeting to be held on 8-9 September 2010 (Costa Rica).*

*The views expressed in this paper are the personal responsibility of the authors. They should neither be attributed to the Inter-American Development Bank, the OECD nor to its member countries.*

Contact: Ms. Hélène Chadzyska, Administrator, LACF Programme Manager  
Tel.: +33 (0)1 45 24 91 05; Fax: +33 (0)1 45 24 96 95; E-mail: [helene.chadsynska@oecd.org](mailto:helene.chadsynska@oecd.org)

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## COMPETITION PRINCIPLES IN ESSENTIAL FACILITIES

### 1. Basic concept of essential facilities

1. When an upstream firm owns an input that is indispensable for the provision of services in a downstream market,<sup>1</sup> and it is economically infeasible to duplicate or substitute this input, there is what is known as an *essential facility* or ‘bottleneck’. The OECD provides a more detailed definition:

*Essential infrastructure means that supplying a service is substantially more difficult without access to this infrastructure and that a monopolist owner of this infrastructure would find it profitable to impose at least a small but significant non-transitory price increase above the competitive level for access to this infrastructure.*<sup>2</sup>

2. Most examples of essential facilities are found in the infrastructure sector. In the telecommunications industry, long-distance operators need access to local networks to reach their customers. In the air transport sector, airports are considered essential facilities, since airlines require access to airports to transport passengers. Similarly, access to port terminals is essential for maritime cargo companies in order to transport goods. Other examples of essential facilities are transmission and distribution grids for power generation companies and rail networks and stations for railroads. Moreover, the essential facilities concept is not limited to the traditional infrastructure industries. Competition law has also applied the essential facilities doctrine in cases dealing with football stadiums, computer operation systems, news networks and ski resorts.

3. The distinctive feature of cases involving essential facilities is the existence of a potentially competitive market, usually the downstream market, which complements a related market which has characteristic of a natural monopoly. In the case of vertically integrated markets, such as those mentioned above, access to the upstream market is a prerequisite for operation in the downstream market.

4. Although the economic definition of the concept of essential facilities is simple to describe, its practical implementation is far from straightforward. There is a risk that a very broad definition of essential facilities could undermine the competitive process by which markets works. A basic principle of market economies is that firms are free to decide which other firms they negotiate with and which assets they open to the market. Absent any *ex ante* regulation, it is generally accepted that a denial of access to intermediate assets, even if made by a dominant firm, is not *per se* unlawful, and that compulsory access should be granted only in an exceptional circumstance.<sup>3</sup>

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<sup>1</sup> Typically, the upstream firm provides access services to firms in the downstream market, while the downstream market serves or is closer to final consumers.

<sup>2</sup> OECD (2006) Policy Roundtables: Access to Key Transport Facilities.

<sup>3</sup> See Areeda (1990).

## 1.1 *Essential Facilities Doctrine*

5. Cases concerning the essential facilities doctrine belong to the broader category of *refusal-to-deal* case law.<sup>4</sup> Denial of access by a dominant firm can be considered anti-competitive only if it does so with the purpose of excluding or damaging competitors in one or more markets and without having any legitimate business justification.<sup>5</sup> In turn, broadly speaking, “*the essential facilities doctrine holds that dominant firms may incur antitrust liability if they do not provide access to their facilities, even to competitors, on a non-discriminatory basis where sharing is feasible and the competitors cannot obtain or create the facility on their own.*”<sup>6</sup> The parameters of the doctrine have been shaped and clarified in a number of important legal cases in both in the United States and European Union (EU), which are reviewed below.

### 1.1.1 *United States Case Law*

6. In the United States, what is now known as the essential facilities doctrine was first applied in the 1912 Supreme Court decision in *USA v. Terminal Railroad Association*.<sup>7</sup> In the case, a group of rail firms that owned bridges, ferries, terminals and other crucial infrastructure in the St. Louis area came together to prevent competing rail firms from providing transport services in the region. The Supreme Court held that this conduct constituted a concerted attempt to monopolise the rail transport market in St. Louis, in violation of §1 of the Sherman Act. Consequently, it required that the defendants grant non-discriminatory access to third parties, or alternatively to divest the essential infrastructure.

7. In *Otter Tail Power v. United States*<sup>8</sup> (1973), the Supreme Court condemned a public utility, which generated and transmitted power, for refusing to transmit power that had been generated by competing companies through its transmission system to municipalities that wanted to buy cheaper power from the utility's competitors. The Court held that this unilateral refusal to deal by a monopolist amounted to a breach of §2 of the Sherman Act.

8. In *Aspen Skiing Co v. Aspen Highlands Skiing Co*<sup>9</sup> (1985), Aspen Skiing, the owner of three ski resorts, refused to renew a multi-area ticket selling agreement with the owner of a fourth ski resort in the Aspen area. The ticket had granted skiers access to all four resorts using the same pass. Aspen Skiing was found guilty of attempted monopolisation, also contrary to §2 of the Sherman Act, which required it to be established that by refusing to sell the joint pass, Aspen Skiing had harmed its competitor. The Court of Appeals for the Tenth Circuit took the view that the multi-area ticket constituted an essential facility which Aspen Skiing, as monopolist, had a duty to market jointly with its competitor. On appeal to the Supreme Court, however, the Court refused to rule on whether the essential facilities doctrine actually applied in these circumstances, as it had sufficient alternative grounds to uphold the finding of a breach.

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<sup>4</sup> Generally, market actors are free to make their own decisions regarding which firms they will do business with and on what terms. Where, however, a refusal to supply another firm has a detrimental effect on consumer welfare, for example because it excludes a competing firm and reduces competition, it may constitute a breach of competition law where it involves co-ordination between two or more firms or unilateral conduct by a dominant firm. Where a firm agrees to supply in theory, but imposes supply conditions which are as restrictive or exploitative as to make it impossible for the purchasing firm to comply, there can be a constructive refusal to deal.

<sup>5</sup> This is also known as *foreclosure* in the terminology of antitrust practice.

<sup>6</sup> Frischmann and Weber Waller (2008 : 2-3).

<sup>7</sup> *United States v. Terminal Railroad Association*, 224 U.S. 383 (1912).

<sup>8</sup> *Otter Tail Power Co. v. United States*, 410 U.S. 366, 93 S. Ct. 1022 (1973).

<sup>9</sup> *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 601 (1985).

9. The Seventh Circuit case of *MCI v. AT&T* (1983) generated what today is known as the *MCI* Test, which outlines four necessary elements that must be satisfied in order to determine that the essential facilities doctrine is applicable.<sup>10</sup> In the case, AT&T, the local network telephone monopolist, denied access to long distance calls from its competitor, MCI, which challenged this refusal before the courts. The Court of Appeals for the Seventh Circuit took the view that an asset should be considered an essential facility if the following conditions are met:

- Control of the asset by a monopolist;
- Competitors are unable to duplicate the essential facility at reasonable costs;
- Denial of the facility to a competitor; and
- Feasibility of providing the facility to competitors.

10. Where all of these criteria are met, access should be granted to the access seeker. In *MCI v. AT&T*, the critical issue was the second element of the test, that is, inability to duplicate the facility. The Seventh Circuit held that the local network access was indispensable for the business of long distance providers and that the duplication of the network would be excessively expensive for competing firms.

11. Although the wording of the *MCI* Test is rather vague, it provides a preliminary framework by which to analyse whether a facility is essential or not. Subsequent court decisions have clarified the meaning of the various parts of test. Regarding the first element, the court must accurately define the relevant market in order to determine whether the firm has monopoly power or not. Regarding the second element, which is probably the most controversial, the firm seeking access must show that there is no alternative and that the input is essential to compete with the monopolist.<sup>11</sup> The third element encompasses not only outright denials of access, but also covers access granted under abusive or discriminatory conditions.<sup>12</sup> The fourth element takes into account arguments that justify the refusal to grant access, such as physical unfeasibility (for example, capacity constraints) or quality of service deterioration.<sup>13</sup>

12. It is important to note, however, that the *MCI v. AT&T* case was resolved at Circuit Court rather than Supreme Court level. The most recent statement of the US Supreme Court in relation to the essential facilities doctrine is to be found in *Trinko* (2004), where the Supreme Court refused to employ the doctrine to condemn Verizon, an incumbent telecommunications network operator, for providing downstream competitors with discriminatory (sub-standard) access to its infrastructure. Since the terms of access to the incumbent local loop network were mandated by the federal Telecommunication Act of 1996, the Supreme Court took the view that the doctrine could not be invoked. The Court argued that there is little additional benefit to be gained through antitrust intervention in an industry that is already subject to sector-specific regulation, where the purpose of the regulation is precisely to deter and remedy anticompetitive actions. Moreover, against the small benefit of the antitrust action, there is a high risk of mistaken decisions. The Court took the view that assessing alleged breaches of the Telecommunications

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<sup>10</sup> *MCI Communications v. American Tel & Tel. Co.* 708 F.2d 1081, 1132 (7<sup>th</sup> Cir., 1983).

<sup>11</sup> It is not sufficient to show that the facility is the lowest-cost alternative. Rather it has to be shown that alternatives are infeasible or do not exist.

<sup>12</sup> For instance, charging an unjustified high price is equivalent to denying access.

<sup>13</sup> Quoted From *Hecht v. Pro-football, Inc* 570 F.2d 982, 992-93 (D.C. Cir. 1977) “the antitrust laws do not require that an essential facility be shared if such sharing would be impractical or would inhibit the defendant’s ability to serve its customers adequately”.

Act requires technical knowledge, and as such is a difficult task for a court to perform under an antitrust framework.

13. The *Trinko* decision has been interpreted as a departure by the Supreme Court from its previous, more receptive approach to the essential facilities doctrine. Its refusal to apply antitrust in an industry under specific regulation may indicate that it considers these mechanisms as substitutes rather than complements. It should be noted that, prior to this decision, the federal regulatory agency and the state level authority had already fined Verizon for obstructing entry, and had forced the company to open its local loop network to competitors. Nevertheless, the *Trinko* case remains notable, not least for Scalia J's assertion that the Supreme Court has never previously recognised the existence of the essential facilities doctrine and, because it was not necessary to do so to resolve the case at hand, his refusal to "either to recognise it or to repudiate it here."

### 1.1.2 European Union Case Law

14. In the European Union, the essential facilities doctrine emerged from the refusal to deal jurisprudence which developed in cases like *United Brands*<sup>14</sup> (1978) and *Commercial Solvents*<sup>15</sup> (1974). In the latter, the European Court of Justice ruled that a firm dominant in the provision of a raw material was abusing its market position by refusing to supply that input to a downstream competitor of its manufacturing subsidiary.

15. The expression 'essential facility' was first used by the European Commission in the *Sea Containers v. Stena Sealink*<sup>16</sup> (1992) decision. Stena Sealink was a harbour operator and owner of a ferry service that competed with other providers. The plaintiff alleged that Sealink granted competitors slot allocations that had less favourable conditions than those reserved for its own carrier service. The case was resolved when Sealink offered Sea Containers better slots.<sup>17</sup> Other cases involving transport industries include the *London European – Sabena*<sup>18</sup> (1988) decision, in which the Commission held that the refusal by Sabena to grant London European airline access to its computer reservation system was anti-competitive. In *Eurotunnel*<sup>19</sup> (1994), the European Court of Justice (ECJ) ruled that a joint venture between the Eurotunnel company and the rail carriers SNCF and British Rail had to allocate at least 25 % of track capacity to third parties. Initially, the national operators had had exclusivity over the use of the infrastructure.

16. Although the *Eurotunnel* case addressed the issue of third party access to infrastructure, it was not until the *Oscar Bronner* judgment that the ECJ expressly considered the essential facility doctrine.<sup>20</sup> A newspaper (owned by Mr. Bronner) which had a 4% share of the Austrian newspaper market was denied access to an early morning home-distribution nationwide network created by two leading newspapers. The excluded firm claimed that access to this network was an essential facility, because it was unable to create a competing distribution system. Without expressly accepting that the essential facilities doctrine exists in

<sup>14</sup> Cases 6 and 7/73 *Commercial Solvents* [1974] ECR 223.

<sup>15</sup> Case 27/76 *United Brands* [1978] ECR 207.

<sup>16</sup> *Sea Containers v. Stena Sealink* (OJ L15/8, 18.1.1994).

<sup>17</sup> This change in behaviour was triggered by the Commission's criticism of the way in which the incumbent was re-allocating slot times among the different downstream operators. OECD (1996).

<sup>18</sup> *London European – Sabena* (OJ L317/47, 24.11.1988).

<sup>19</sup> *Eurotunnel* (OJ L 354/66, 31.12.94).

<sup>20</sup> C-7/97 *Oscar Bronner GmbH&Co KG v. Mediaprints Zeitungs- und Zeitschriftenverlag GmbH& Co. KG et al*[1998] ECR I-7791.

EU competition law, the ECJ laid down an onerous three-stage test that must be satisfied in order to find that a refusal to grant access constitutes a violation of the law:

- The refusal to grant access is likely to eliminate all competition in the downstream market on the part of the person requesting access;
- The refusal is incapable of being objectively justified; and
- Access to the facility is indispensable to carrying on the downstream business, inasmuch as there is no actual or potential substitute in existence for the facility.

17. Applying this test to the facts of the *Bronner* case, the ECJ rejected the claim that the distribution network constituted an essential facility. First, the distribution network was not considered an indispensable asset for selling newspapers as there were alternative sales channels (shops, kiosks, etc). Second, the ECJ did not accept the claim regarding the economic unfeasibility of building a new distribution network. In support of this second point, the ECJ applied a test of feasibility based on a hypothetical competing firm with the same sales volume as the two leading newspaper firms.

18. The ECJ judgment in *Bronner* departed from previous cases by implying a stricter test for declaring a facility to be essential. In particular, it makes the decision of whether or not the essential facility doctrine applies independent of the size of the firm seeking access. If size of firms mattered, then entering firms could claim to have too little market share to be able to build up a new facility. Bergman (2000) argues that had these stricter criteria been applied in the *Commercial Solvents* case, it is not evident that the decision would have been the same.

19. The essential facilities doctrine has been considered further in the European Commission's 2005 discussion paper on the application of Article 82 EC Treaty (now Article 102 TFEU) to exclusionary abuses.<sup>21</sup> Essential facility cases are classed within the broad category of refusal to supply. According to the discussion paper, a refusal to grant access is considered abusive if the following five conditions are met:

1. The behaviour can be characterised as a refusal to supply;
2. The refusing firm is dominant;
3. The access to the facility is indispensable;
4. The refusal is likely to have negative effect in competition; and
5. There is no objective reason for the refusal.

20. Although the conditions set out in the discussion paper are similar to those in the *MCI* Test, some subtle differences exist; for example, where the *MCI* Test uses the term monopolist the approach of the European Commission in the discussion paper requires only dominance. This difference may explain why, under EU competition law, the refusal to supply must also negatively affect downstream competition. The discussion paper recognises the relevance of the risks undertaken by a firm that builds a facility involving a substantial sunk investment. In order to protect *ex ante* incentives to invest, the facility owner may seek fair compensation for granting access, and in certain circumstances access holidays may be justified.

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<sup>21</sup> European Commission, DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses, December 2005, available online on the Commission's website at <http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf>.



21. In the European Commission's 2008 communication on enforcement priorities, three broad requirements for refusal to deal cases (including those concerning access to infrastructure) were outlined: (i) objective necessity of the input; (ii) elimination of effective competition; and (iii) consumer harm.<sup>22</sup>

### 1.1.3 Latin America Case Law

22. The essential facilities doctrine and variants of the concept have been applied by competition authorities and regulatory agencies in numerous Latin American countries. In addition to the boxed examples spread throughout this paper, the following provides a sample of some instances in which aspects of the essential facilities doctrine have been utilised in the Latin American context.

- In *Argentina*, one of the first cases in which a firm was found guilty of abuse of dominance involved the essential facilities doctrine. In the case, the only slaughterhouse in a small city in the province of Santa Fe was held to have abused its dominant position when it refused to give access to its facilities to a cattle farmer, who also owned a butcher shop that competed with the slaughterhouse.<sup>23</sup>
- In *Chile*, the competition decision making body, the Tribunal de Defensa de la Libre Competencia (TDLC), has applied the essential facilities doctrine to promote open, non-discriminatory access to key networks controlled by dominant firms, following an interpretation of Art. 3 (b) of the Competition Act. In 2006, the TDLC fined a telephone company that denied wholesale clients the use of its broadband platform to render IP voice service, in order to protect its business. The TDLC also ordered the company to modify the restrictive clauses.<sup>24</sup>
- A contentious application of the essential facilities doctrine occurred in *Peru*, in a dispute between Peru's only airline and a branch of a bank located in an isolated area. In order to verify that the airline's funds were legally obtained, the bank asked the airline for information on its funding sources. In response, the airline closed its account, but two years later it produced the documentation and asked to open a new account. The bank refused, and the airline filed a complaint alleging abuse of dominance. The first instance competition decision-making body, the Free Competition Commission, refused to accept the complaint. This refusal was reversed on appeal by the second instance decision-making body, the Tribunal for the Defence of Competition and Intellectual Property. The Tribunal referred to the bank branch as an "essential facility" and held that it could not simply refuse to open an account without examining the documentation. The ruling was controversial because it was not clear, from the facts, how the bank branch could be considered an essential facility. First, there was another bank in town, albeit a branch of the National Bank, which had higher charges. Second, even if the other bank was not a realistic alternative, it was not established that the airline needed an account at a bank branch in that town and there was no explanation of the refusal's competitive effects.<sup>25</sup>

<sup>22</sup> European Commission, *Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings* (OJ C 45/19, 24.2.2009), paragraphs 75-90.

<sup>23</sup> *A Savant v Matadero Vera* (1982), Resolution 78/82 from the Secretary of Commerce, cited in Germán Coloma, "The Argentine Competition Law and its Enforcement" in Eleanor M Fox and D Daniel Sokol (eds.), *Competition Law and Policy in Latin America* (2009) Hart Publishing, Oxford, UK, at p.101. Note that Argentine competition law expressly provides that entry deterrence may constitute an abuse of dominance.

<sup>24</sup> Ruling No. 45/2006 –TDLC, of 26 October 2006.

<sup>25</sup> OECD, *Competition Law and Policy in Peru – A Peer Review* (2004), pp.27-28.

- Issues related to the essential facilities doctrine can arise in merger cases. In *Argentina*, the competition authority, the National Commission for the Defence of Competition (CNDC), reviewed a proposed vertical merger in which Maersk Sea Land, a large international shipping company, would purchase the concession for one of six terminals at Puerto Nuevo. Puerto Nuevo was one of two port facilities that comprised the Port of Buenos Aires, which together accounted for more than 90% of container traffic in Argentina. The feared anti-competitive effect resulting from the merger was foreclosure: Maersk might have been able to exclude its downstream shipping competitors from access to the essential upstream port facilities at Buenos Aires. Following the merger review, however, the CNDC concluded that Maersk would not have sufficient market share to do so. Its terminal had only 8% of the total capacity at Puerto Nuevo, and it would also face competition from Dock Sud, the alternative port facility in Buenos Aires.<sup>26</sup>

## 1.2 *Criticism of the Essential Facilities Doctrine*

23. The essential facilities doctrine has been subject to much scholarly criticism, and there have been increasing attempts to restrict or eliminate its use in recent years. The main criticisms can be summarised as follows: first, that the doctrine is too open-ended and insufficiently defined; second, the doctrine cannot be meaningfully applied by courts; third, the doctrine, if applied, would be ineffective; and fourth, application of the doctrine creates adverse incentives for the incumbent and entrants.

- **Open-ended and insufficiently defined.** A leading exponent of this criticism is Areeda (1990). He argues that the doctrine requires the creator of an asset to share it with rivals, thus indicating that there are exceptions to the right to keep one's creations to oneself, yet the doctrine itself fails to specify the contents of these exceptions. Areeda adds that there is no general duty to share a facility, and if the obligation to provide access exists at all, it should be imposed only very exceptionally. No one should be obliged to deal unless doing so is likely to improve competition substantially.

Areeda argues that there is a need for caution in imposing liability on the basis of the essential facilities doctrine, and a need for a defence based on legitimate business justifications. Denial of access is never *per se* unlawful; having a legitimate business purpose saves the defendant. What constitutes legitimacy is a question of law to be decided by the courts. Although the defendant bears the burden of advancing a legitimate business purpose, the plaintiff bears the burden of persuading the tribunal that the defendant had an intention to exclude by improper means.

The opposite view is well represented by Frischmann and Waller (2008). They state that the essential facilities doctrine is merely an expression of the established common law principle favouring open access for certain facilities, assets and property that are affected with the public interest. Open access to facilities, according to these authors, supports society's economic interest in wealth maximisation and allocative efficiency as well as other societal goals of fairness, equality, and non-discrimination. When refusal to grant access to infrastructure is a means of either acquiring or maintaining a monopoly, antitrust liability should ensue.

- **Cannot be meaningfully applied by courts.** Areeda (1990) writes that compulsory access should be deemed beyond the ambit of antitrust law if it requires the court to assume the day-to-day controls characteristic of a regulatory agency. In a similar vein, Werden (1987) argues that disputes over access to essential facilities should be resolved in regulatory proceedings rather than through antitrust litigation. Thus the doctrine should not be invoked unless a regulatory agency exists that is capable of adequately supervising the remedy imposed exists.

<sup>26</sup>

OECD, *Competition Law and Policy in Argentina – A Peer Review* (2006), p.42.

In contrast, although Frischmann and Waller (2008) recognise that a judicially enforced essential facilities doctrine may be a second best solution to a comprehensive, well-conceived general social policy regarding open access, such a general policy is unlikely to emerge because the US Congress is unlikely to ever tackle the question of open access as a general category. Rather, discrete examples of open access issues arise throughout the legislative process, and these are debated and acted upon in specific contexts – network neutrality for Internet and telecommunications regulation being recent examples. Additionally, enacting legislation is a time consuming process, and addressing the access problem by legislative means may not occur in a timely manner.

- **Ineffectiveness.** Once access is mandated by an authority, the next step is to set the tariff and conditions of access for the facility. If merely an obligation to provide access is established, and not the terms of such access, then the owner of the facility may extract all the downstream rents through the access charge. This is a result that comes from the “Chicago critique”, or one monopoly profit theory, which says that if a firm has monopoly power in one segment of the market – in this case, the upstream market – it can extract the whole rent of the downstream market by setting the access charge to the facility at the monopoly level.<sup>27</sup>

Additionally, there is a risk that the owner of the facility will discriminate against its downstream customers or competitors, not through the access price that it sets, but rather in the quality of the input that it provides to them. Non-price discrimination of this sort is also called sabotage. Examples of sabotage activities include degradation of quality in interconnection to a telecommunication facility and allocation of less attractive time slots at transport facilities. Sabotage put downstream competitors at a disadvantage vis-à-vis the vertically integrated facility operator.

In order to prevent a monopolist from exercising its market power through access tariffs or by sabotaging downstream competitors, institutions are required both to regulate the access tariffs and to monitor against technical discrimination. A further drawback to the use of the essential facilities doctrine as a ground for antitrust liability is, consequently, the need to administer the decision.

- **Adverse incentives.** The desirability of forcing an upstream firm to open its assets to competitors on the downstream market depends on the trade-off between *ex ante* and *ex post* efficiency. Where a firm has already created a successful product or facility whose control allows it to exercise monopoly power, it could be efficient *ex post* to force this firm to allow access to the product or facility to third firms. Increased competition can result in higher quantities of goods or services being produced and lower prices than were charged in the monopoly market. Competition improves the allocative efficiency of the market, and the resulting benefit may outweigh any vertical economy loss.

However, from an *ex ante* perspective, use of the essential facilities doctrine weakens the incentives to invest in innovation. A firm that cannot fully exploit the profit of its innovation, because it has to share the benefits of the new products with other firms or consumers, will invest less than in circumstances where sharing is not mandated. This argument goes back to Schumpeter (1942), who remarked that the prospect of rents is what gives firms incentives to innovate. Applying this viewpoint, the essential facilities doctrine can be criticised on the basis of the negative incentives to innovate that may result from an unrestrained application of the

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The result of the Chicago critique holds only whether there is no price discrimination. If the monopolist, who is the owner of the facility, can perfectly price discriminate in the downstream market, then it may not be able to obtain the same rent under an unregulated tariff applied to buyers of access.

doctrine by antitrust authorities.<sup>28</sup> If facility owners anticipate that they will have to share their assets and profits *ex post*, even though they bear the costs and risks of innovation *ex ante*, they will invest at less than the optimal level. Conversely, some potential entrants may prefer to obtain compulsory access to an existing facility instead of building their own infrastructure. Thus, a very wide application of the essential facilities doctrine may hurt consumers in the long-term, since they will enjoy less variety and lower quality of goods.

The dangers of underestimated access charges, which would have an effect similar to an over-generous application of the essential facilities doctrine, have also been recognised in the economic literature. As Laffont and Tirole (2000) point out, this may induce entry by inefficient firms or excessive entry, as well as potentially reducing the incentives of the facility owner to invest in quality improvements.

If the regulator could *ex post* set access prices that allow an investor to obtain an appropriate return that compensates for all relevant *ex ante* risk, this regulatory truncation would not arise. However, Gans and King (2003) argue that a regulator which sets an access price after the relevant investment has been sunk has a strong incentive to set a low tariff, for the reasons mentioned in earlier paragraphs. Hence, the truncation problem arises because a regulator's *ex ante* commitments with regards to long-term access prices have limited credibility. However, this possibility may be exaggerated, insofar as, if the regulator is not short-sighted, he will take into account the effect of profit truncation on future investments.

### 1.3 *Criteria for Defining Whether a Facility is Essential.*

24. The following issues should be taken into account when evaluating whether or not an asset should be deemed to be an essential facility.

- **Define the downstream market.** This is the market that firms may access by means of the alleged essential facility. It is crucial to define the downstream market correctly, since classification as an essential facility hinges on how widely this market has been delineated. For instance, in the case of transportation, we can use a wide definition such as any mode of passenger transport between A and B, or a narrower definition of the relevant market, such as *passenger train* transportation between A and B. In the port sector, a maritime terminal may be a market in itself, or the relevant market may include other terminals located in adjacent areas that serve the same hinterland. Similar questions can be asked in relation to gas pipelines, for example: should we consider natural gas as a market in itself or should it be included as a part of a wider definition, such as the energy market?

Defining the relevant market is no trivial task. We must include within the definition all equivalent substitutes to the services provided through the purported essential facility, in order to properly define the market. One methodology employed for delimiting the market is the SSNIP test, which is most commonly used in merger control.<sup>29</sup> Under this test a relevant market is defined as the minimum group of sellers for which is profitable to jointly increase the price of the product by 5%. However, the SSNIP test may not be useful in many essential facility cases, as it is likely to be a one-provider market – that is, the owner of the essential facility – who is already charging the monopoly price.

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<sup>28</sup> Some scholars use the term ‘overzealous’ application of the doctrine, in the sense that antitrust authorities are eager to find a dominant firm guilty of denying access to an essential facility.

<sup>29</sup> SSNIP stands for **S**mall but **S**ignificant **N**on-transitory **I**ncrease in **P**rice.

- **Is it economically feasible to duplicate the essential facility?** Once the relevant market has been defined, we must determine whether it would be economically feasible for a new entrant to duplicate the facility. Duplication does not necessarily mean that the new facility must have the same features as the existing one. For instance, in relation to port facilities, it is likely that the first terminal was constructed in the most protected area, and closest to the main cities. In telecommunication, it may be not feasible to enter the market for broadband and telephony services with a copper network, but it may be possible to do so with other technologies that are capable of providing the same services.

Sometimes, a new facility may be at a disadvantaged with respect to the existing facility in terms of costs or quality. If these differences are severe, the entrant that constructs the new facility will not be able to compete with firm that owns the essential facility, and therefore the duplication will not be economically feasible. The question of feasibility is a matter of degree, and the relevant authority, whether regulator or competition agency, must decide whether the difference in attributes gives the owner of the existing facility significant market power. However, as a general rule, the jurisprudence suggests that disadvantages in cost or in other attributes are insufficient to establish that an input is essential for these purposes.<sup>30</sup> One factor relevant to this determination is the origin of the advantage. Where the advantage is a result of superior production techniques or capabilities developed by the owner, there is less likelihood that the asset will be declared essential.

Duplication feasibility is also related to the scale of entry. Since essential facility cases usually involve large sunk costs, the scale of entry must be above a certain threshold in order to be undertaken profitably by a private firm. For instance, if the entry threshold is equal to 40% of the market, a firm that wishes to serve just 20% of the market will not satisfy the feasibility test. For that firm, having access to the relevant facility will be essential for entering the downstream market. On the other hand, a new entrant firm that is able to capture 45% of the market will be in a position to build a new facility, and in these circumstances the argument for finding an essential facility should be dismissed.

What should be the approach in cases where classification of a facility as essential is dependent upon the market share that a new entrant firm may obtain? According to the European Court of Justice in the *Bronner* case, the feasibility of new entry has to be assessed by reference to a potential new entrant that has a size equivalent to the existing firm. This ruling implies a stricter test for declaring a facility essential. In particular, the decision as to whether the essential facilities doctrine applies is independent of the size of the potentially excluded firm. If the converse were the case and the size of the new entrant was the relevant benchmark, then many firms could seek compulsory access to facilities owned by their competitors by claiming to have too little market share to build their own facility.

Another possibility is that, in the relevant market, the facility has already been duplicated. For example, two terminal ports may serve the same hinterland or two telecommunication platforms (copper and HFC cable) may provide internet services in the same geographical area. On the one hand, if more than one facility in the market is observed, this means that duplication is feasible and consequently none of the facilities should be considered as essential. On the other hand, it could be the case that the market can sustain only two firms – that is, a natural duopoly – and a third firm in the same market would not pass the feasibility test. In these circumstances, it is not clear whether entry in the downstream market should be required by means of compulsory access to one of the existing facilities. If the number of facilities in the market is used as a proxy for

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See *McKenzie v. Mercy Hospital*, 854 F.2d 365 (10th Cir.1988).

competition, the more facilities that there are in the market the less market power they can exert, which in turn makes the need for intervention less apparent.

A clear-cut example of this situation is entry by mobile virtual network operators (MVNO). These companies provide normal mobile services without having a physical telecommunications network. The MVNOs re-sell communication services bought at wholesale rates from the physical operations mobile companies. The latter own the facilities (towers and antennas) that are essential for providing mobile services. In some countries the mobile phone operators have voluntarily provided access to MVNOs, while in others access has been mandated by the regulatory agency. Within the European Union, the Commission has established a methodology by which each country is required to decide whether its mobile market is competitive enough. This methodology is based on the standard antitrust analysis that is used to assess the existence of dominance at single firm or collective levels. It considers, among other factors, the behaviour of firms in the market, the magnitude of entry barriers and the risk of co-ordination among facility owners.<sup>31</sup>

The divergence between private and social costs of duplication provides a different case for regulating access. A facility might be privately duplicated by an entering firm, but the existence of externalities may render it impossible. For instance, proposals to build new transmission towers for mobile telecommunications in an area are usually met with strong opposition from residents. Similar limitations apply to the construction of new landfills sites or airport runways. In such cases, the firm building the new facility faces substantially higher setting up costs compared to the cost of the existing infrastructure. This difference constitutes an entry barrier which gives market power to those with access to existing facilities.

- **Is it feasible for the essential facility owner to provide access to third firms?** If the facility satisfies the economic criteria for qualifying as essential, there must be an assessment of whether it is feasible for it to share the facility with other firms. Technical incompatibilities, capacity constraints and congestion costs or other legitimate business reasons could make it very costly or ultimately unfeasible to provide access to the facility.<sup>32</sup> Some caution is necessary when assessing the technical impossibilities to sharing a facility. The facility owner may have incentives to use the facility beyond what it actually needs, in order to foreclose entry by a downstream competitor. For the incumbent, the dissipated rents lost because of competition may more than offset the extra costs it incurs in overusing the facility.<sup>33</sup> The solution in such cases is to make some fraction of the infrastructure capacity available to entrants.

25. The case below summarises a case report prepared by the Technical Secretariat of the Peruvian Agency for the Protection of Competition (INDECOP<sup>34</sup>), in a case in which the essentiality of a facility was determined by law. The example also illustrates how an essential facility can abuse its position of dominance without charging an excessive price. In fact, in this case the plaintiff did not complain about the tariff charged by the defendant, but rather about a technical imposition that increased the plaintiff's costs while benefiting the defendant. The theoretical portion of the report contains an extensive analysis of the concept of essential facilities, although in the application to the specific case the concept was not

<sup>31</sup> As at April 2006, five countries had found either individual or collective significant market power in the mobile industry and required mobile companies to provide mandatory access to MVNO. See Dippon and Banerjee (2007).

<sup>32</sup> The risk of losing customers due to competition obviously cannot be a legitimate reason to refuse the access.

<sup>33</sup> An incumbent airline may operate some flights at less than full capacity if that prevents other airlines from utilising a slot that attracts passengers from other competing flights operated by the incumbent.

<sup>34</sup> Instituto Nacional de Defensa de la Competencia y de la Protección de la Propiedad Intelectual.

considered. INDECOPI concluded that although El Peruano, the defendant, did not compete with the plaintiff in any market, its conduct did impact the costs of registering patents and trademarks and reduced welfare.

#### **Box 1**

The Technical Secretariat recommended that the Free Competition Commission sanction the official daily El Peruano for abuse of a dominant position. The specific conduct at issue was El Peruano's refusal to publish trade mark and patent notifications that had been self-diagrammed by the client.

According to the plaintiff, Fernandini Abogados Asociados S.A.C., where notifications were diagrammed by El Peruano they included more blanks and larger-size letters, which augmented the cost of notifications by about 40%. El Peruano, in turn, justified this conduct by arguing that otherwise notifications could be illegible which was incompatible with its official daily condition, that some notifications self-diagrammed by customers had been refused by the trademark bureau or the patent bureau (OSD and OINT, respectively)<sup>35</sup>, and that its tariff was similar to that charged by other dailies.

The INDECOPI report argued that, given the legal obligation to publish trademarks and patents in El Peruano, the newspaper had a position of dominance. It added that the legal responsibility for verifying whether the trademark and patent notifications satisfied the requirements, including legibility, was vested in OSD and OINT, respectively. Thus, those registering trademarks or patents had the incentives to publish legible notifications in order to avoid having to publish them again if either OSD or OINT found them illegible. Finally, INDECOPI recommended sanctioning El Peruano for abuse of a dominant position.

## **2. When Should Sharing of a Facility be Mandated?**

26. This section of the paper seeks to answer the question of when sharing of a facility should be mandated from an economic perspective. Section 4 will consider the question of whether the issue of essential facilities should be a matter of judicial decision or whether it should be exclusively in the regulatory domain, although some suggestions will be provided below where appropriate. As will be demonstrated, some of the criticisms of the essential facilities doctrine that were discussed in section 1 could, at least in principle, be addressed through the access conditions that are imposed on the facility.

27. In theory, the rule for granting access is simple: access to a facility should be recommended any time that this increases social welfare. The difficulty for an authority charged with mandating access is in acquiring all the information needed to decide whether access is welfare-enhancing or not. Designing and implementing access conditions usually involves some kind of regulation. Regulatory practice, however, suffers from significant shortcomings. Usually, regulators have less information about cost and demand parameters than market actors, they observe firms' efforts imperfectly and they have incentive problems. Regulators may behave opportunistically and may renege on regulatory commitments. These difficulties are likely to be more severe in developing countries where regulatory agencies lack the necessary human and financial resources. Hence in some cases the decision on whether mandate access or not hinges on the regulator's legal powers and level of expertise.

28. Consider a case where duplication of a price-regulated facility is not economically viable. Providing access to independent firms could cause the loss of vertical and horizontal economies of scale. In such circumstances, if the vertically integrated monopoly could be perfectly regulated, mandatory access would reduce welfare. However, given the difficulties of regulation, introducing competition into the potentially competitive activities that use the service provided by the essential facility appears to be an attractive option. Competition is likely to increase productive and allocative efficiency and to enhance innovative efforts that would result in new, improved products for consumers in the downstream activity. Moreover, competition in some segments could raise the possibility of duplicating the facility in the future.

<sup>35</sup> Oficina de Signos Distintivos and Oficina de Invenciones y Nuevas Tecnologías, respectively.

Nevertheless, generating these benefits through a mandatory access obligation requires proper access regulation design and implementation, something which is difficult to achieve. Moreover, if imposed by a court its application would generally require the court to assume “*the day-to-day controls characteristic of a regulatory agency*,”<sup>36</sup> a possibility that some scholars reject utterly. A further aspect that must be considered is that competition in the downstream market is likely to be imperfect.

29. As seen in section 1.2, some authors argue that, from a long-term perspective, granting access to an essential facility may have a negative impact because it reduces the incentives to invest in welfare-enhancing facilities. This would occur, for instance, if access has to be provided at average (*ex post*) cost without taking into consideration *ex ante* risks. Such a pricing mechanism ignores the fact that the investors who built the facility initially were *ex ante* exposed to significant losses if their investment had proven unsuccessful. This pricing approach creates what Hausman (1999) calls a ‘free call option’ for entrants. These firms will ask for access and pay a cost-based access price for the use of the asset only if the product is successful, while the owner of the facility has to bear all the risk of innovation *ex ante*.

30. Under cost-based pricing, investments which succeed earn back their cost, while investments which do not succeed earn back less than their cost. This regulatory truncation of profits either delays investments or discourages socially desirable investments.<sup>37</sup> However, profit truncation does not occur where there is proper pricing regulation that values *ex ante* risk. Of course, computing risk-inclusive prices is far from simple: for regulators it is difficult to quantify a project’s risk and to give it a monetary value, while owners of a facility will tend to exaggerate their costs and access seekers typically undervalue access costs.

31. Consider the case when duplication of a facility is economically viable. In this context, the second criticism of mandatory access comes to the fore: imposing a duty to share a monopoly discourages entrant firms from developing their own alternative facility and, consequently, perpetuates the monopoly. Given the difficulties in regulating monopolies, this is a valid criticism in circumstances where duplicating a facility is economically viable. Facility competition can lead to higher output and productive efficiency as well as product innovation. Thus, the benefits that result from facility competition should be compared to the cost of duplicating the essential facility, an assessment that necessarily has to be dynamic and to take into account the capabilities of regulators.

32. A further consideration, beyond the dichotomy of *ex ante* versus *ex post* efficiency, is the question of consumer welfare. Competition typically brings greater choice and value for consumers, which can provide competition authorities and regulatory agencies with a powerful argument in favour of mandating access to a facility. The European Commission, for example, in enforcing the EU law prohibition on abuse of a dominant position, has committed to focusing on those types of conduct that are most harmful to consumers. Consumers benefit from competition through lower prices, better quality and a wider choice of new or improved goods and services. The Commission, therefore, will direct its enforcement to ensuring that markets function properly and that consumers benefit from the efficiency and productivity which result from effective competition between undertakings.<sup>38</sup>

33. From this perspective, although efficiency and consumer welfare frequently align, they constitute distinct objectives, and so the essential facilities doctrine may be deployed to achieve one or both of these aims. Mandating access can be a means of forcing competition, on the assumption that this will generate for consumers the typical benefits of competitive markets. At the same time, it is necessary to bear in mind the more abstract but potentially serious risk that consumer welfare may in fact be harmed by mandating access, through adverse impacts on quality or innovation over the longer term.

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<sup>36</sup> Areeda (2009).

<sup>37</sup> Gans and King (2003).

<sup>38</sup> Discussion paper, footnote 21 *supra*, paragraph 5.



34. The appropriateness of mandating access to an essential facility depends on a number of factors. First, any evaluation should consider any potential economies of scale and vertical integration. Second, the potential gains from introducing competition in downstream markets must be taken into account; as outlined, this depends on the capacity of regulatory agencies and the eventual degree of competition in the downstream market. Determining access conditions to a facility is particularly difficult since the agency granting access has to value *ex post* the *ex ante* risks incurred by investors. Given that, in more mature markets, the *ex ante* risks are more limited, it seems sensible to distinguish those cases in which the facility is already operating from those in which it is not. Another pertinent distinction is the origin of the facility, given that access regulation of a facility is likely to depend on whether the owner acquired it or created it. Four distinct cases may be identified taking into account these criteria.

### **2.1 Privatisation of an essential facility built by the government**

35. Before privatising a vertically integrated facility, the government should decide whether to privatise the company as an integrated monopoly or whether to restructure the industry to sell separately the essential facility component and the potentially competitive components. Since in this case infringement of property rights or disincentives to investment are not relevant concerns, the sole consideration should be a comparison of the benefits resulting from competition with vertical and scale economy losses. Prior to privatisation of the infrastructure, the government should introduce the sector regulation, so that the investor acquiring the facility knows in advance what regulatory framework will govern his business. Moreover, the government should consider restrictions or an outright prohibition on vertical integration, an issue to be considered in greater detail in the next section.

36. Where the government chooses to introduce competition into those segments in which this is possible, regulating access conditions to the facility becomes of the utmost importance. Given that the price paid by the investor in these circumstances will depend on the regulatory framework, the only concern about access pricing should be efficiency. In particular, efficient access pricing should provide the owner of the facility with the appropriate incentives to expand capacity as needed. An alternative is to specify service standards and to hold the owner of the facility responsible for making the investments necessary to comply with these standards. An advantage of this second option is that the concessionaire will invest in expansion to the extent that this is warranted by demand growth.

### **2.2 Facility built by a private firm under a concession contract with the government.**

37. Let us assume that the government is auctioning a contract to build, operate and transfer an essential facility. A fully informed regulator should auction the facility under open access provided that (i) this generates enough revenues to cover investment costs and (ii) the benefits of competition in the downstream market outweigh eventual losses from vertical and horizontal disintegration; otherwise, the regulator should auction a concession for a vertically integrated facility.<sup>39</sup> In principle no disincentive to invest should arise from mandatory access given that the access price regulation would be known in advance by the concession holder. Moreover, the concession contract should indicate that access must be on a non-discriminatory basis, especially where capacity is limited.

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<sup>39</sup> A bill modernising the state-owned port sector that was enacted by the Chilean government in 1997, created 10 port authorities, which were empowered to award concessions to private investors for administering and operating port infrastructure. Concessions could be comprehensive, and include all longshoreman duties as well as managing port infrastructure; or, alternatively, could be restricted to managing port infrastructure, while maintaining non-discriminatory access for longshoreman activities. Port authorities opted for the integrated operation scheme because the studies they had commissioned showed that this was the most efficient system given that it facilitated co-ordination in port activities and investment in cargo transfer equipment (Serra, 2002).

38. One alternative to price regulation is temporary franchising of the facility to the concession seeker that asks for the lowest access fee, an idea that was first suggested by Demsetz (1968). The advantage of this approach is that it requires considerably less regulatory supervision than a privatised facility. Before auctioning the concession, the government specifies technical norms and service standards and the duration of the concession. It then awards the concession to the bidder that asks for the lowest access charge. Once the concession has expired the government re-auctions it. The regulator retains responsibility for supervising concessionaire compliance with the technical norms and service standards specified in the concession contract. Concessions, however, bring their own difficulties, which are discussed in section 3.

### **2.3 Facility built by a private firm with or without a non-exclusive concession**

39. Let us now consider the case when the essential facility is an unregulated monopoly. In this situation, the monopolist probably created a new business, rather than merely acquiring an existing facility or being awarded a concession, as in the two previous cases. If access pricing allows investors an appropriate return for their innovation then disincentives to invest need not arise. In this case the access charge should take into account the *ex post* production, the *ex ante* cost of risk and a just return for the innovation. Unquestionably, it is difficult to determine *ex post* the risks borne by investors in the project and to give this a monetary value, or to determine the innovation value-added, while it is even more complicated to determine a just return accrued to an innovation.

### **2.4 New facility planned by a private firm with or without a non-exclusive concession**

40. Access regulation is difficult for a mature business and even more so for a new one. Thus a possible solution for an investor that is planning to develop a facility is to ask the competition authority for prior approval of the pricing scheme that it plans to apply. The investor might request an ‘access holiday’, which would grant a period of time over which the facility would not be subject to access regulation. During this time, a vertically integrated investor could charge monopoly prices, or deny access to downstream competitors. “*The logic here is similar to the temporary monopoly granted by a patent; to allow the inventor supra-competitive returns so as to provide an incentive to innovate.*”<sup>40</sup>

41. In some cases, an investor that plans to build a facility requires long-term use-or-pay contracts with users in order to finance the project. For instance, the financial institutions that provide funding for the investment might require that the investor have contracts in place with high-demand users prior to approval of financing. The market power of the investor would therefore be defined by that of the potential large-scale users of the facility. In this circumstance, the imposition of mandatory access would improve the negotiating position of other entrants that are seeking access. Moreover, if two or more investors compete to build the facility, the resulting access charge is likely to be efficient, since users will contract with the investor that offers the best conditions. Gans (2001) notes that investments may occur either before or after the socially-optimal time in such circumstances and that access holiday could be used to optimise the investment timing, as an increase in the length of the access holidays intensifies the investment race and results in earlier investment.

### **2.5 Essential facility jointly owned by a group of users**

42. Mandatory access to an essential facility that is jointly owned by several firms is simpler to justify and implement. First, joint ownership can be considered *prima facie* evidence of essentiality as it reveals that scale economies are such that joint provision is more efficient. Unless another joint venture could achieve similar economies of scale, refusal to grant access could be considered anti-competitive. Second, the remedy is to impose an obligation to open ownership on an equal basis to access seekers that are willing to invest at the time the joint venture is created. As underscored by Areeda (1990), admission to

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<sup>40</sup> Gans and King (2003).

a joint venture is a one-time remedy that does not require day-to-day control by the court. Even when admission is sought at a later time, regulators may be able to define equivalent terms. For these reasons the US courts tend to apply a less strict standard of proof in order to declare that a facility is essential when the refusal to deal is by a club of firms instead of a sole firm.<sup>41</sup>

43. The case below illustrates how the Chilean Competition Tribunal dealt with case involving an essential facility owned by all the major service users. The Tribunal condemned the owners of the facility for discriminating against a user who was not a part of the joint venture. The Tribunal argued that, if accepted, this conduct could be used in the future as an entry barrier given that the facility could not be duplicated.

### Box 2

Transbank S.A. is the only credit and debit card payment platform operating in Chile. It is a joint venture of all the country's major financial institutions. Moreover, these institutions, which are the issuers of debit and credit cards, have signed contracts with Transbank that includes a clause by which the latter has an exclusive mandate to affiliate merchants and decide the merchant usage fee structure. Hence, Transbank has completely centralised the acquiring role.

The National Economic Prosecutor filed a request with the Competition Tribunal (Tribunal de Defensa de la Libre Competencia) to rule that Transbank pay the maximum fine allowed by law for abusing its position of dominance and to put an end to the contract clause granting Transbank an exclusive mandate to affiliate merchants. The Prosecutor alleged that monopolisation of the acquiring role (affiliation of merchants) by Transbank was anticompetitive, something corroborated among other facts, such as the plaintiff's profit rates which were above 50% in 2001 and 2002. According to the Prosecutor, these high profits were concealed through rebates given to card issuers.

The Tribunal held (Ruling N° 29/2005) that these rebates could not be seen as shareholders dividends given that they depended on the number of transactions and not on the shareholders' participation in Transbank's property. However, it decided to sanction Transbank for not extending the rebates to the sole card issuer that was not a shareholder of Transbank. The Tribunal argued that acceptance of this sort of discrimination could become an entry barrier to the financial industry given that duplicating the platform would be almost impossible for a new institution.

In fact, given that Transbank was owned by all major financial institutions and customers tend to concentrate all of their financial dealings in the same bank, it was likely that few cardholders would use the new platform. This situation in turn would have reduced the acceptance of the new platform by merchants as they would not be inclined to issue cards that few people carried.<sup>42</sup> Duplicating the payment platforms would mean almost doubling costs, as there are significant fixed costs associated with developing and maintaining the network for authorising and settling transactions for cardholders, merchants and issuers. Thus, according to the Tribunal, Transbank was an essential facility that a newcomer would find it impossible to duplicate. Moreover, the Tribunal considered that the gradual concentration of the card payment platforms, which though successive mergers had become one facility, was *prima facie* evidence of it constituting an essential facility.<sup>43</sup>

Regarding the charge of monopolisation of the accruing role, the Tribunal held that card payment platforms are two-sided markets, with the customers, who are the cardholders, on the one side and the merchants on the other.<sup>44</sup> Thus, given that banks operate on both sides of the market (as issuers of cards and recruiters of merchants), it would be sufficient to have enough competition on either side of the market, given that any additional profits on one side would be wiped away by competition on the other side. In fact, an increase in the merchant usage fee would lead card issuers to improve the incentives offered to their clients for using their cards. Finally, the Tribunal argued that the users of the platform were also the owners, and that vigorous competition among card issuers would ensure that no monopolistic rents would prevail, provided that all transactions between Transbank and the issuers were based on the volume of card transactions.

<sup>41</sup> See Hovenkamp (1997: 7.7).

<sup>42</sup> In turn, a payment card platform whose cards are taken by more merchants is more valuable to card users.

<sup>43</sup> In addition, it can be said that duplicating the payment platforms would imply almost doubling costs, as there are significant fixed costs associated with developing and maintaining the network for authorising and settling transactions for cardholders, merchants and issuers.

<sup>44</sup> In order to succeed, credit card platforms need some minimum number of cardholders and merchants.

### **3. What are the Regulatory Instruments to Apply When Facility Sharing is Considered Mandatory?**

44. This chapter deals with access regulation to an essential facility that produces an access service and a final service. The final service is provided in competition with independent firms, firms which in turn require access services to provide the final service. Usually regulation establishes technical and economic non-discriminatory access to the essential facility. A second component of access regulation is price regulation. Its purpose is to ensure tariff non-discrimination and efficiency.

45. The chapter is organised as follows. Section 3.1 derives efficient access prices in a world with no-uncertainties where regulators are fully informed. Section 3.2 introduces uncertainty to the access pricing problem. Section 3.3 deals on price differentials among users of the facility that confront different degrees of risk. Section 3.4 considers an alternative to price regulation: auctioning the facility. Finally sections 3.5 and 3.6 deal with non-tariff discrimination.

#### ***3.1 Access pricing when sharing of the facility is feasible and considered appropriate***

46. This section draws heavily on the OECD report on Access Pricing in Telecommunications, 2004 and on Vogelsang (2003). The problem considered here is how to compute in a risk-free environment the access price to an essential facility that produces an access service and a final service. The focus is on the theory and not the practice of access pricing. That is, we will assume that the regulator has full information on the cost structure of the essential facility.<sup>45</sup>

47. Assuming that the downstream industry is perfectly competitive, the efficient price of the access service provided by the essential facility equals the marginal cost of providing this service. In fact, this condition guarantees that the final price will be equal to the marginal cost of the final good, and this condition will in turn ensure that final consumers consume up to the point where the marginal utility from the last unit consumed is just equal to the marginal cost. Therefore the regulator should, in principle, set the price of each good equal to marginal cost.

48. Most essential facilities are characterised by economies of scale and scope, which would prevent the facility from earning sufficient revenue to cover its costs if prices were set at marginal cost. We assume that general revenues are not available for financing the revenue gap that would result from marginal cost pricing. In this situation, we assume that prices are set so as to maximise welfare, subject to the constraint that the regulated firm receives sufficient revenue to break-even. This approach leads to Ramsey prices, which simultaneously determines optimal access and final goods prices, based on assumptions about demand functions, substitution between final services and access services, the type of competition on the downstream market and cost relationships. Thus the access price would be based both on costs and demand factors and will exceed the marginal cost.

49. Ramsey pricing leads to potentially complex results. Thus economists and practitioners have proposed simpler ways to determine access charges. One of these is the so-called Efficient Component Pricing Rule (ECPR). This pricing rule maximises welfare but takes as given the essential facility's final price. In the case where the independent firms' services are a perfect substitute for the monopoly's final services, and where access services requirements per unit of final good are fixed, the ECPR access price is the monopolist's final price less the monopolist's marginal cost of converting a unit of the access service into a final good. ECPR has been criticised for preserving the existing final price. Many regulators view a

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<sup>45</sup> In practice the regulator does not have full information. Taking into account the information asymmetry leads to different pricing systems.

reduction of this price as the main reason for mandating access to the essential facility. Thus if the regulator does not wish to preserve the existing final price, it would be erroneous to use ECPR.

50. Ramsey pricing produces a second-best solution to the extent that it involves pricing above marginal cost. A two-part tariff, however, can bridge the revenue shortfall without compromising efficiency. It consists of a usage component that equals the marginal cost of access and a fixed charge that is paid by each downstream firm. If the fixed cost is the same for all downstream firms it introduces increasing returns to scale in the competitive market and therefore runs the risk of turning this industry into an oligopolistic or even monopolistic industry. Thus an efficient solution requires that the fixed component depends proportionally on past profits of downstream firms or on past usage of access services (or number of customers served in the past) by downstream firms.

51. An alternative two-part tariff is the so-called capacity-based access pricing. Here downstream firms purchase in advance access capacity. The marginal price for usage is set equal to the marginal access cost as long as the competitive firm purchases less than the level of capacity it acquired. This approach confers no advantage on downstream firms serving a larger number of customers, as those firms would have to purchase more access capacity.

52. Global cap price is another pricing scheme found in the literature. This scheme allows the monopolist to decide both the access and the final price subject to a cap on a weighted average of both prices set by the regulator. A monopolist subject to a global price cap (with the optimal weights on each service) has, in principle, the correct incentives to choose welfare-maximising access and final prices. In fact, by treating access and final prices symmetrically, the monopolist is indifferent between selling access services or final services. In principle, this condition eliminates the incentive to restrict or deny access to downstream competitors. The optimal weights would be the actual output levels. Predicting such outputs would require solving the Ramsey pricing problem. This would be a hard task and would make the use of price caps superfluous. Thus some compromise is made like using past output information to determine weights.

53. The above has considered situations in which the facility is already built. The next step is to analyse endogenous entry decisions, in which case access regulation affects the decision to invest. Gans (2001) shows how access pricing can be used to induce competitors in an industry to provide a monopoly at the socially optimal time infrastructure. He assumes that two firms compete to build an essential facility. The firm that does not build the facility demands access services from the other firm. The pricing scheme is a two-part tariff, where the fixed component is structured so as to induce a 'race' between market participants willing to provide the infrastructure. This involves trade-offs between investment incentives and competition to bring forth the optimal provision and use of essential facilities. An important feature of the pricing formula is that it is implementable *ex post*. That is, the regulator, while committing *ex ante* to the formula itself, need only use information available at the time access is sought to settle on the realised access price.

### **3.2 Risk adjusted pricing mechanisms that considers the risk borne by the parties that built the facility but not by those who request access.**

54. The previous section considered a world with no uncertainty. However, uncertainty is omnipresent in the real world and has a crucial impact on investment decisions. In fact, investors face uncertainties regarding future demand, future costs and future interest rates, among other variables. Hence the role of the regulator should be to set access prices in such a way that, given the underlying uncertainties, investors are willing to keep their capital in the firm, while social welfare is maximised (See OECD report on Access Pricing in Telecommunications, 2004).

55. Gans and King (2003) show that if the regulator can commit to a regulatory contract *ex ante*, then it is efficient for this contract to have state contingent prices. That means higher access charges in states where project profits are high relative to the dead weight loss from increased final product pricing, either because demand for the relevant final product is inelastic or demand is relatively high at any price, and lower access prices in those situations where demand for the final product is relatively low or relatively elastic. Hence the regulator must set prices such that the profits of the firm are above-normal when the investment is successful.

56. As pointed out in the OECD report, it might be difficult for the regulator to compensate the firm for bearing a risk in the past, especially when that risk did not materialise. Thus the profit-truncation problem is directly related to an inability by the regulator to commit to access prices prior to an investment being made. If the regulator is unable to commit to prices that compensate for risks that the firm bore in the past, then an access holiday provides a desirable alternative. Gans and King (2003) write that optimal holidays need to be judged on a case-by-case basis, which is likely to be difficult in practice. Thus they favour establishing clear simple rules that relate to the type of the project eligible for access holidays. In their opinion, for relatively high risk projects involving infrastructure with a thirty-to-fifty year lifespan, a ten-to-twenty year access holiday would seem appropriate.

### **3.3 Pricing differences based on risk assumed by clients (*ex ante* long term contracts vs. *short term ex post* contracts)**

57. Future demand is a major source of uncertainty. In some cases demand uncertainty is so high that investors are unwilling to build the facility unless their clients share part of the risk.<sup>46</sup> This is quite common in the construction of gas-pipelines and liquefied natural gas (LNG) gasification terminals, where the investors request long-term “use-or-pay” contracts from their prospective clients. Thus the users of the facility absorb part of the demand risk via these contracts and in this way make the investment viable. Under these circumstances, the imposition of some conditions would level the field for firms seeking access to the facility. First, the obligation to establish an open-access policy, that is, institute a requirement to provide non-discriminatory service to anyone who requests it and to publicly disclose pricing structure and information on available capacity. Second, a period should be established to subscribe capacity at the initial conditions.

58. If the facility proves to be commercially successful, other potential users of access services could demand access to the facility. Does the general principle of non-discrimination imply that they should pay the same prices? In most circumstances, this would not be the case. Newcomers that demand access would face less risk than those users that signed “use-or-pay” contracts from the beginning. In fact, they will demand access only if market conditions are attractive. Access prices should consider risk differences confronted by access seekers.

### **3.4 Access conditions and pricing when sharing of the facility is built by a private firm under a concession contract with the government.**

59. Given the difficulties in finding acceptable methods of regulating access prices, alternative approaches are worth looking at. As mentioned earlier, temporary franchising of an essential facility requires considerably less regulatory supervision than a privatised facility. Before auctioning the concession, the government specifies technical norms, service standards and the duration of the concession. It then awards the concession to the bidder that asks for the lower access charge to the facility. Once the concession is finished the government re-auctions it. The regulator would retain responsibility for

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<sup>46</sup> Or more precisely it could be a requirement of the financial institutions that lend the money for the project.

supervising concession-holder compliance with technical norms and service standards specified in the concession contract.

60. Concessions, however, have their own difficulties. The franchise holder will withhold maintenance activities at the end of the concession period if the state of conservation of the assets is not observable. This problem justifies a preference for extended concessions. In addition, the longer is the length of the concession, the greater is the incentive of the concessionaire to construct a long-lasting facility. On the other hand, long-term contracts might require renegotiating access charges or negotiating a payment to the concession holder when new works are required. Guash (2004) finds that 30% out of a sample of more than 1,000 Latin America franchises were renegotiated between 1985 and 2000. In cases where the facility must be enlarged because demand grows faster than anticipated and capacity constraints become an issue, how should the expansion costs be split between the government, users and the franchise holder? What fraction of the expected additional income from access charges should be allocated to the franchise holder? There are no easy answers to these questions (Engel, Fischer and Galetovic, 2001).

61. As mentioned previously, an alternative is to specify service standards with which the concessionaire must comply. Thus, the concessionaire will invest on expansions to the extent that demand growth justifies it. It is foreseeable that the concessionaire will attempt to sidestep investments required near the end of the concession. A way of handling this problem would be to pay some residual value for investments made after the beginning of the concession period.

62. Engel, Fischer and Galetovic (2001) advocate an auction mechanism - least present value of revenue (LPVR) - that lessens the problems of franchising. Under LPVR auctions, the regulator fixes maximum access charges (according to some optimising criterion) and the concession is awarded to the bidder that requires the smallest present value of revenues for building, operating and maintaining the facility. Revenues come from access charges and are discounted at a rate established in the auction rules. The franchise ends when the present value of revenue equals the amount requested in the winning bid. These auctions are more flexible than their fixed-term counterparts. For example, if the government needs to terminate the franchise ahead of time, a fair compensation for the concession holder is the difference between the revenue requested in the bid and the amount collected thus far.

### ***3.5 Vertical constraint to integration or structural separation as a remedy for the risk of downstream discrimination: when may these measures be necessary and how can they be achieved?***

63. A contentious issue is whether the owner of the essential facility should be allowed to participate in the competitive segments, given that a vertically integrated facility could non-price discriminate (sabotage) against the independent firms. Mandy (2000) believes that the incentives for sabotage are at least unclear. He argues that sabotage raises the costs to rivals, who are forced to increase their prices. This price increase may reduce sales of independent firms, thereby lowering demand for the essential input. Nevertheless, if the vertically integrated essential facility is as efficient as its rivals in providing the non-regulated service and can absorb additional demand without rising its marginal costs, then discrimination does not affect sales of the essential input. Thus, it is an empirical question whether the owner of an essential facility has enough incentives to discriminate against downstream competitors.

64. Sabotage, however, is not the only risk to competition when an essential facility is vertically integrated. First, competition may be adversely affected by asymmetric information. The integrated company could have information about its rivals that they do not have. For example, the local telephone company knows the customers of its long-distance service rivals. Second, if the regulator sets the access price above its marginal cost, the integrated monopoly has incentives to charge a price for the non-regulated service below its average cost—and even below its marginal cost. In fact, the integrated

company compensates for this price fall with an increased demand for the essential input. This pricing policy, sustainable in the long run, may even force competitors out of the market. Third, a vertically integrated monopoly may raise the regulated access charge by transferring costs from non-regulated services to the essential facility.

65. Sabotage can be deterred either by imposing harsher punishment or by intensifying oversight to increase the likelihood of detection. Nevertheless, the ability to penalise non-tariff discrimination depends on the capacity of regulators and antitrust authorities to technically scrutinise and legally prove such conducts. Thus, in principle, imposing restrictions or outright prohibition on vertical integration of an essential facility may be appropriate during privatisation. The burden of proof for demonstrating that vertical integration is a more efficient solution should rest on those who favour this approach.

66. The following case illustrates the concern of the Argentinean antitrust authority (Comisión Nacional de Defensa de la Competencia, CNDC) regarding discrimination against independent firms by a vertically integrated essential facility. The CNDC ruling considered that airports are essential facilities. Most cities have one airport only and it is practically impossible to duplicate it. Moreover for airlines access to airports is essential.

**Box 3**

In 2002, CNDC denied the authorisation requested by AA2000, the biggest airport operator in Argentina, to acquire LAPA, one of the main airlines in the country. At that time, AA2000 held the concessions for 32 commercial airports in Argentina, serving 70% of flights, 92% of passenger traffic and 98% of cargo movement. LAPA, in turn, had a 41% market share of the domestic passenger traffic and opportunities for expanding to international routes.

The CNDC decision defined airports as a bottleneck infrastructure. For that reason, the agency opted to impose vertical separation, as the best way to avoid anti-competitive behaviour that could damage competition in the downstream market. Although airport services were subject to regulation and a regulatory agency (ORSNA) was in charge of enforcing the regulation, the CNDC considered that the vertically integrated company would still have enough discretion to discriminate other airlines.

The ruling argued that AA2000 could grant LAPA (i) discounts or better credit conditions in the aeronautical services subject to price regulation, (ii) access to strategic information about competitors, and (iii) advantageous infrastructure assignments (hangars, counters and passenger lounges). The scope for discrimination against non-affiliated airlines was greater for non-aeronautical services as these were not price regulated.

**3.6 *Transparency and other measures that can be adopted to reduce the informational advantage of the integrated monopoly as well the transfer of costs from regulated activities to non-regulated activities***

67. If all independent firms had access to the same market information at the monopoly's disposal, the strategic advantage of vertical integration would be diminished, and the likelihood of non-price discrimination would be reduced. For instance, Chilean port authorities in charge of granting concessions for port infrastructure to private investors took the position that concessionaires ought to grant any interested party open and expeditious access to information such as cargo contracts, service priorities, type of cargo and consignees, listed on forms that would be compiled by the port authority, so that all interested parties would have the same information.



68. A condition that may be imposed on a vertically integrated monopoly is that the provision of the competitive service ought to be made through a subsidiary with an exclusive line of business, thereby forcing it to maintain separate books in the non-regulated business.<sup>47</sup> Moreover, the subsidiary could be required to become a public-stock corporation, or at least subject to oversight by the securities regulator. This distinction is important because company law establishes that transactions between a parent company and its subsidiaries must observe the same rules of fairness as those that usually apply to the market.

69. Another strategy to reduce the likelihood of non-price discrimination is to enhance the autonomy of the business unit that provides the non-regulated service. Mandy (2000) shows that when a subsidiary is managed independently, it has fewer incentives to discriminate against third firms. One way by which to increase autonomy is to open ownership of the subsidiary to other shareholders, as this creates opposing interests. Another option is to demand independence of the board of directors and independent management of the subsidiary.

#### 4. When Should Competition Authorities Intervene in Essential Facilities Matters?

70. This section of the paper discusses the role of competition authorities in dealing with problems caused by the presence of an essential facility. Since essential facilities, by definition, are likely to involve a natural monopoly and a competitive segment of a market, they may require either the intervention of a regulatory or a competition agency to resolve issues relating to sharing of the essential assets. Before analysing cases in which the decision should rest primarily on antitrust or regulation, the differences between these two types of policy intervention will be explored briefly. Laffont and Tirole (2000) distinguish four major differences.

1. The opportunity of action. Regulation works through specific rules set *ex ante* – usually approved by the legislative bodies – which firms in the industry have to follow. In essential facilities matters, the rules define the assets to be shared, the conditions of access and the way that tariffs for access are regulated. Antitrust action is usually *ex post*, in reaction to a purportedly anti-competitive action of a firm
2. The scope of intervention. Regulation is more intrusive than antitrust. Besides fixing tariffs, regulatory agencies decide about the timing of entry, the level of investments and the market structure. Antitrust is focused more on assessing the conduct of firms, although it may also address market structure (through merger control) and the granting of access to third firms.
3. The policy objectives pursued. Regulators usually have broader objectives than antitrust institutions. Both share the goal that the market should perform efficiently. However, regulators are also in charge of redistributive and universal service obligations, which on occasion may collide with the objectives of competition and efficiency.
4. Information and continuity of relationship. Regulatory agencies have greater knowledge about the industry under their supervision than antitrust agencies and the courts. Laffont and Tirole (2000) mention four reasons for the greater industry expertise of regulators: the specific focus of the regulator in a particular industry; the long-lasting relationships between regulators and regulated firms; the greater numbers of regulatory agency staff, in particular staff trained in technical matters; and the continuity of the procedure for obtaining information.

71. We find a role for competition authorities in defining essential facilities in the following situations.

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<sup>47</sup> Laffont and Tirole (2000) believe that it is difficult to measure and prevent cross subsidies.

- **Industries without specific industry regulation.** Absent specific regulation, antitrust law and institutions is the most suitable instrument by which to determine whether the assets under scrutiny qualify as essential facilities.
- **Industries under specific regulation, where the law does not explicitly define an asset to be essential for providing services.** The omission of the law may originate in technological changes that are affecting the industry, where new services are created or new types of platforms emerge. Law cannot foresee all future market contingencies. For instance, regulation governing sharing of infrastructure in the telecommunications industry focused initially on telephone services. At the time of the emergence of the Internet and related services, countries did not have specific legislation in place to regulate the terms of access to the incumbent infrastructure. Instead, many countries relied upon antitrust to force the opening of facilities in order to promote competition in the sector.
- **Industries with specific regulation where the law is insufficiently complete to decide about a case of essential facility.** Since laws are incomplete, antitrust may be useful to interpret the legislation in cases where it is not evident whether the sharing of assets and access conditions are mandated in the law or not. In some countries, the interpretation of specific law rests primarily on the respective regulatory agencies, while in others it is the courts that decide, on the basis of an antitrust law. For instance, in *Trinko* (2004), the US Supreme Court took the position that in industries under specific regulation, there is limited scope for the application of antitrust law in matters such as the forced sharing of assets.
- **Essential facilities cases where refusal of access is a collective instead of an individual decision.** The refusal to supply could be a decision of a group of firms competing in the same market, which exclude another firm to the access to an allegedly essential input. There are two categories of cases: a joint venture between competitors in the downstream market that jointly build a facility and refuse access to outsiders; or where a group of firms, each one owning its facility, decides not to grant access to potential downstream rivals. Antitrust intervention is particularly useful in such cases, since both categories require the evaluation of possible collusive behaviour, which competition analysis is best suited to accomplish.

72. Although regulatory agencies have superior expertise and knowledge of the industry under their supervision, antitrust agencies are better qualified to apply competitive analysis to cases involving essential facilities. Additionally, antitrust agencies may check decisions of the regulatory authority to identify behaviour falling within the purview of antitrust law. This oversight role for antitrust institutions becomes important whenever there is a risk of capture of the regulatory agency. As the literature reports, a continuous relationship between the agency and the industry, as is the case with regulators, increases the risk of capture.

73. Even in industries where essential facilities are established *ex ante* and subject to detailed regulation, there is still a role for antitrust. As experience shows, it cannot be taken for granted that, after mandating sharing of a facility and fixing the access tariff, competition will follow without any difficulties in the downstream market. As previously explained, if the facility owner also participates in the competitive segment, he may employ his privileged position in the upstream market to sabotage downstream entrants. Since regulation reduces the upstream rents, ideally down to the competitive level, the rents of the market are to be found in the downstream unregulated market.

74. Sabotage renders downstream competitors less attractive, in terms of quality of service, when compared with the integrated facility owner. The obvious remedy against this form of discrimination is the enforcement of conditions of access. Sabotage is related to the technical conditions of access given to competitors. Regulatory agencies are best suited to enforce non discrimination rules due to their specific knowledge of the industry.

75. Structural restrictions, such as vertical separation, are a more intensive solution to the problem of sabotage. If the facility owner does not participate in the downstream market, it will have no incentives to exclude any of its downstream clients.<sup>48</sup> Since the price for the access to the facility is regulated, the upstream firm will want to sell as much input as possible, which makes its interest congruent with the interest of the society. Mandating vertical separation is not without its own cost, since some efficiencies, such as economies of scope, can be sacrificed. In some cases, an intermediate approach is applied, which allows a downstream firm to participate in the ownership of a facility, but only at a level below a certain threshold. The enforcement of vertical separation rules does not require industry specific knowledge and it may be accomplished either by antitrust or regulatory agencies.

76. Decisions about vertical separation in essential facilities have been made both at the regulatory and the antitrust level. In the railroad industry, Sweden and United Kingdom opted for structural separation between rail networks and passenger train companies. In both countries, this decision was taken at the time of liberalisation of the rail industry and established by law (regulatory measure). On the other hand, the most notable example of vertical separation ordered by antitrust means was the break-up of the AT&T telephone company in the United States. The courts, acting on the basis of a filing by the US Department of Justice, ordered AT&T to divest its local telephone network, keeping only its long distance business and manufacturing subsidiary.

77. Discrimination through sabotage is not the only way to exclude downstream competitors. The abuse of “margin squeeze” provides incumbents with another means by which to drive out rivals and impede the development of competition in the downstream market. Margin squeeze is a practice that incorporates elements of both excessive pricing and predatory pricing. It occurs where the vertically integrated incumbent firm manipulates the margin between its upstream/wholesale price and downstream/retail price – generally, high wholesale, low retail prices – in order to negatively affect its downstream competitors’ profits. Even if the price of the essential input is regulated through one of the different pricing mechanisms, the facility owner may have some flexibility in setting the upstream input price. For instance, a telecommunications platform that is able to provide multiple services downstream may be regulated under a global price cap, according to which the average price of all inputs and services must be below a cap established by the regulator. Under this circumstance, the facility owner has some degree of freedom to increase some input prices while decreasing others.

78. Margin squeeze problems have occurred, in particular, in the market for broadband telecommunications services. In Europe, this sector is subject to strict regulation, which requires incumbent telecommunications firms to open their networks through unbundling for downstream services such as telephony and broadband internet. The European Commission has taken decisions in two cases involving exclusionary pricing through margin squeeze in the last decade:<sup>49</sup> *Deutsche Telekom*<sup>50</sup> and

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<sup>48</sup> It is possible that the upstream firm engages in a secret exclusive contract with one downstream operator. For that scheme to succeed, firms must implement a mechanism of side payments from the downstream to upstream firms.

<sup>49</sup> In a third decision in Case COMP/38.233 – *Wanadoo Interactive* (decision of 16 July, 2003), the Commission held that the incumbent telecommunications firm in France had breached Article 82 EC (now Article 102 TFEU) by charging for retail broadband services predatory prices that did not allow it to cover its variable costs. The decision was upheld on appeal in cases Case T-340/03 *France Télécom v Commission* [2007] ECR II-107 and Case C-202/07 P *France Télécom v Commission* [2009] ECR I-2369.

<sup>50</sup> Case COMP/C-1/37.451, 37.578, 37.579 — *Deutsche Telekom AG* (decision of 21 May 2003); upheld on appeal before the Court of First Instance (now the General Court) in Case T-271/03 *Deutsche Telekom v Commission* [2008] ECR II-477; judgment pending in further appeal to the European Court of Justice in C-280/08 P *Deutsche Telekom v Commission*.

*Telefónica*.<sup>51</sup> In the *Deutsche Telekom* case, the Commission found that the incumbent telecommunications company in Germany, Deutsche Telekom, was charging to intermediate users (internet providers) higher *wholesale* prices than the *retail* prices that it charged to some final consumers of Deutsche Telekom's own broadband services. Thus, competitors of Deutsche Telekom's retail internet subsidiary had negative margins even if they were as efficient downstream as the Deutsche Telekom subsidiary. The *Telefónica* decision reached a similar conclusion with respect to the activities of the incumbent telecommunications company in Spain.

79. The margin squeeze cases show that regulating price and terms of access to essential facilities is not enough to guarantee competition downstream. Since regulation reduces upstream rents, the dominant firm has incentives to recapture these rents at the unregulated downstream level. Antitrust law provides a means by which to prevent anti-competitive practices, such as predatory pricing or margin squeeze, from occurring in a market. It is important to note that, in the cases cited above, the national regulatory agencies had done a poor job in preventing incumbent firms from excluding downstream competitors. One possible explanation is that the telecommunications regulators did not want to harm the national telecommunications companies. Another possibility is that the regulatory agencies lacked the skills to identify and/or the power to sanction anti-competitive conducts in the downstream market. Under either of these hypotheses it is clear that antitrust action was also necessary to promote competition in the downstream services.

80. The problem of margin squeeze makes clear the interdependence between regulation and antitrust. Mandating access to an essential facility and regulating the input price also requires an active competition authority that deters exclusionary practices in the downstream markets. If regulation is weak, an integrated firm will have no incentive to exclude downstream firms since it can extract all the rents in the upstream market. On the contrary, a tough regulatory regime that succeeds in reducing upstream rents will induce the facility owner to extract rents in the downstream market. In such circumstances, the dominant firm will be more willing to engage in exclusionary practices, which consequently renders antitrust action more necessary. Margin squeeze cases demonstrate that regulation and antitrust are complements rather than substitutes.

81. Mexico started a process of liberalisation and privatisation of transport infrastructure – ports and railroads – in the late 1980s. Restructuring and opening transport infrastructure to competition was perceived as a vehicle by which to foster efficiency and quality in the provision of transport services. The cases outlined below provide an example the role played by both the regulatory agency and the antitrust agency in Mexico in implementing this liberalisation process, and particularly in setting the access conditions to key infrastructure by third firms.

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<sup>51</sup> Case COMP/38.784 – *Wanadoo España vs. Telefónica* (decision of 4 July 2007); currently on appeal to the General Court in T-336/07 *Telefónica and Telefónica de España v Commission*.

**Box 4. Access to Transport Facilities in México**<sup>52</sup>

Access conditions to essential infrastructure in Mexico are established in various laws, by-laws, and “general directives.” Regulations define, for each transport industry, the facilities that are subject to statutory third party access. The institution responsible for enforcing these rules is the Ministry of Communications and Transportation (MCT). On the other hand, the Federal Competition Law applies to all industries, even those subject to industry-specific regulation. Refusal to provide access that impedes competition can be penalised under this Law, though there is no explicit reference to essential facilities.

The conditions that must be satisfied in order to mandate access to essential facilities by antitrust decisions are stricter than those defined *ex ante* by specific regulation. A position of market dominance is a prerequisite for a grant of compulsory access under antitrust law, whereas regulation establishes *ex ante* those assets which are to be open access, independently of the degree of competition they face. In addition, market definition is part of any antitrust litigation to grant access to a facility, but not in cases involving regulated infrastructure. On the other hand, industry-specific regulation is enacted by legislative bodies and can be more time consuming.

Some controversies relating to the access regime for tracks and other essential infrastructure in the railroads industry illustrate the role played by both the MCT and the competition authority (CFC) in resolving cases relating to access regulation. Beginning in 1995, the government privatised the railroad system, creating vertically integrated regional companies with control over track and freight services, which were required to provide access to key inputs to other cargo firms. Given the vertically integrated market structure, the risk of sabotage or discrimination against independent freight companies was a reasonable concern.

The industry-specific regulation (Railroad Services Law) grants the regulator the power to mandate the interconnection of rail infrastructures and to set the terms of access. The Law liberalised access tariffs, except for those services where the CFC considers that reasonable competition does not exist.

In 2001, Ferromex, one of the rail concessionaires, requested an opinion from the CFC about: (i) alleged differences between the access terms contained in the original the concession contract and the MCT’s interpretation of those terms, and (ii) the scope of access rights and tariffs. The CFC’s opinion supported the legality of the access conditions set in the concession contract, since the exclusivities granted under the original concession were necessary to guarantee the recovery of initial investments. It also ruled that negotiated access tariffs could include opportunity costs, but should be non-discriminatory and not set at monopoly levels. Although the CFC pronouncement was not binding, the MCT applied it in subsequent similar situations.

In 2001, TFM, a freight operator, filed a complaint against Ferromex for abusive practices in the freight transport service. The practices denounced were: (i) artificially increasing tariffs for interlinear traffic and registering them as special services, as a way to escape from regulation,<sup>53</sup> and (ii) raising the cost of car hire services with the purpose of rendering TFM less efficient and thus displacing it from the market. The CFC ordered Ferromex to charge TFM tariffs for interlinear services and car hire services that were no higher than those charged to other customers.

<sup>52</sup> Source: OECD (2006) Access to Key Transport Facilities, Competition Policy Roundtables.

<sup>53</sup> Special services tariffs were freely set by the concessionaire.

## 5. Conclusion

82. When a firm owns an input that is indispensable for the provision of services in a downstream market, and it is economically infeasible to duplicate or substitute this input, there is what is known as an essential facility. In turn, broadly speaking, the *essential facilities doctrine* holds that dominant firms may incur antitrust liability if they do not provide access to their facilities on a non-discriminatory basis where sharing is feasible and the facility can be not duplicated. The doctrine has been subject to much scholarly and judicial criticism, and there have been increasing calls to abandon its use. The main criticisms are: first, that the doctrine is too open-ended; second, that application of the doctrine creates adverse incentives for the incumbent and entrants; and third, that the doctrine cannot be meaningfully applied by courts.

83. With regards to the first criticism, Areeda (1990) argues that the doctrine has expanded to ‘*the limits of its language, with little regard to policy.*’ However, concern about an overly expansive application of the essential facilities doctrine seems overstated. As Frischmann and Waller (2008) emphasise, courts have been gradually applying the doctrine more stringently and more sparingly. Even in circumstances when the essential facilities doctrine has been explicitly applied by the lower courts, they have proved to be equally expert at distinguishing meritorious cases from frivolous ones in which a competitor capable of duplicating the facility simply preferred not to go to the trouble and expense.

84. In practice, the doctrine has been narrowed in a number of important legal cases in both the United States and European Union. In the United States, the *MCI* Test sets out the necessary elements that must be satisfied in order to determine that the essential facilities doctrine is applicable. In the European Union, the ECJ judgment in *Bronner* laid down an onerous three-stage test that must be satisfied in order to find that a refusal to grant access constitutes a violation of the law. In particular, the determination as to whether the essential facility doctrine applies is taken without reference to the size of the actual firm seeking access.

85. In some legal cases, the narrowing of the doctrine may have gone too far. For instance, in *Trinko* (2004), the US Supreme Court took the position that in industries under specific regulation, there is limited scope for the application of antitrust law in matters such as the forced sharing of assets. Arguably, the US Supreme Court decision discards the essential facilities doctrine where it is most useful. First, the facts of the case reveal that despite the role of the regulator there was room for antitrust litigation. Indeed, the defendant, Verizon, was ready to incur litigation expenses that were far in excess of the modest fine imposed by the regulator, ‘*to avoid the one set of penalties that actually would be effective in mandating non-discriminatory access.*’<sup>54</sup> Second, the assessment of whether Verizon was providing access to its competitors on terms less favourable than it did to its own local customers was a straightforward question. Even critics of the essential facilities doctrine, like Areeda, accept that antitrust intervention may be feasible when a regulatory agency already exists to control the terms of access.

86. The second criticism of the essential facilities doctrine is that, from a long-term perspective, granting access to an essential facility may have a negative welfare impact because it reduces the incentives to invest in welfare-enhancing facilities. This would occur, for instance, if access has to be provided at average (*ex post*) cost without taking into consideration *ex ante* risks. Under *ex post* cost-based pricing, investments which succeed earn back their cost, while investments which do not succeed earn back less than their cost. This regulatory truncation of profits either delays or dampens socially desirable investments.

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<sup>54</sup> Frischmann and Waller (2008).

87. Profit truncation, however, does not arise where the regulator can commit to proper pricing regulation that values *ex ante* risk. This pricing requires that the regulator set prices such that the profits of the firm are above-normal when the investment is successful. However, it might be difficult for the regulatory agency to compensate the firm for past risks, especially when those risks did not materialise. In fact, when setting an access price after the relevant investment has been sunk, the regulator will be tempted to set a low tariff, as this will result in downstream goods or services being produced at a lower price. Hence, the truncation problem arises because a regulator's *ex ante* commitments regarding access prices have limited credibility. However, this possibility may be exaggerated, insofar as, if the regulator is not short-sighted, he will take into account the effect of profit truncation on future investments.

88. Another difficulty related to setting an adequate price is that computing risk-inclusive prices is far from simple, given that for regulators it is difficult to quantify a project's risk and to give it a monetary value, while facility owners will tend to exaggerate their costs and access seekers typically undervalue access costs. If the regulator is unable either to compute prices that compensate for the risks borne by the firm in the past or to commit to these prices, then an access holiday, which would grant a period of time over which the facility would not be subject to access regulation, provides a desirable alternative.

89. Where a regulatory agency or court chooses to mandate sharing of a facility, regulating access conditions to the facility becomes of the utmost importance. The difficulties of determining access conditions to a facility has led some authors to advance a third criticism, namely that disputes over access to essential facilities should be resolved in regulatory proceedings rather than through antitrust litigation. At the very least, it is argued, the doctrine should not be invoked unless a regulatory agency capable of adequately supervising access conditions exists.

90. Thus there seems to be less opposition to the doctrine when applied to regulated industries. An essential facility, by definition, is likely to involve both a natural monopoly and a competitive segment of a market, and so it may require either the intervention of a regulatory or a competition agency to resolve issues relating to sharing of the essential assets. Law cannot foresee all future market contingencies. Since laws are incomplete, antitrust may be useful to interpret the legislation in circumstances where it is not evident whether the sharing of assets and access conditions are mandated by law or not.

91. Even in industries where essential facilities are established *ex ante* and subject to detailed regulation, there is still a role for antitrust. If the facility owner also participates in the competitive segment, he may employ his privileged position in the upstream market to sabotage downstream entrants. Since regulation reduces the upstream rents, ideally down to the break-even level, any rents are to be found in the downstream unregulated market. Sabotage renders downstream independent firms less competitive, in terms of quality of service, when compared with the integrated facility owner. The obvious remedy against this form of discrimination is the enforcement of conditions of access. Although regulatory agencies have superior expertise and knowledge of the industry under their supervision, antitrust agencies are better qualified to apply competitive analysis to cases involving essential facilities. Additionally, antitrust agencies may check decisions of the regulatory authority to identify behaviour falling within the purview of antitrust law. This oversight role for antitrust institutions becomes important whenever there is a risk of capture of the regulatory agency.

92. Antitrust intervention is particularly useful in essential facilities cases where refusal of access is a collective instead of an individual decision. A refusal to supply that denies another firm access to an allegedly essential facility also requires evaluation for possible collusive behaviour, which competition analysis is best suited to accomplish. In addition, implementing the remedy is simple: impose an obligation to open ownership on an equal basis to access seekers. Admission to a joint venture is therefore a one-time remedy that does not require day-to-day control by the court.

93. In short, the essential facilities concept is a useful one for policy-makers. Prior to privatising a vertically integrated facility, governments should decide whether to privatise the company as an integrated monopoly, or whether to restructure the industry to sell separately the essential facility component and the potentially competitive components and introduce sectoral regulation. Application of the so-called essential facilities doctrine, as an antitrust law concept, is most useful in combination with regulation. Generally, the strongest essential facility cases have occurred in markets that are neither entirely regulated nor entirely unregulated. Although courts and regulators have a complementary role regarding access to facilities, antitrust litigation is also useful on its own, especially in cases where refusal of access is a collective rather than an individual decision. Moreover, given that addressing access problems by legislative means may not occur in a timely manner, antitrust law and institutions may be the sole instrument available to deal with access problem that arise.



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