# THE RELATIONSHIP BETWEEN COMPETITION LAW AND TELECOMMUNICATIONS REGULATION: A COMPARATIVE ASSESSMENT

by

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## ABSTRACT

This thesis seeks to contribute to solving the debate about the framework of rules and institutions applicable to public utility sectors, by adopting both economic theories, such as natural monopoly, network effects, and public goods, and practical analysis of the telecommunications sectors for both Australia and the United States. Governments must reevaluate the framework regulating public utility sectors whenever rapid technological advancements occur. This thesis argues that the antitrust authority better enforces competition rules, and that the sector-specific authority better enforces technical and universal service rules. The justification of the special competition rule concerning bottleneck facilities access should be limited. As for the universal service scheme, the enforcer should ensure competitive neutrality and adopt pro-competitive instruments. This framework would allow for a more market-oriented and economy-wide regulatory administration, as well as enforcement of the universal service scheme based on a more accurate reflection of the fundamental values of citizens.

## RÉSUMÉ

Cette thèse cherche à contribuer à la discussion du cadre des règles et des établissements pour des secteurs de service public en adoptant les deux théories de sciences économiques telles que le monopole naturel, l'effet de réseau et l'analyse bien public et pratique dans le secteur de télécommunications en Australie et aux Etats-Unis. Un gouvernement est exigé pour réévaluer le cadre pour régler les secteurs de service public selon l'avancement technologique rapide. Cette thèse argue du fait que l'autorité anti-trust meilleure impose des règles de concurrence comme l'autorité secteur-spécifique impose mieux des règles techniques et universelles de service. Le raisonnement de la règle de concurrence spéciale au sujet de l'accès d'équipements de goulot d'étranglement devrait être limité. Quant à l'arrangement universel de service l'enforcer devrait assurer la neutralité concurrentielle et adopter l'instrument pro-concurrentiel.

Ce cadre tient compte de plus d'administration de normalisation basée et économie-large de marché-mécanisme aussi bien que l'application de l'arrangement universel de service basé sur une réflexion plus précise de la valeur fondamentale parmi des citoyens.

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## TABLE OF CONTENTS

# INTRODUCTION

This thesis seeks to contribute to solving the debate about the framework of rules and institutions applicable to public utility sectors, by adopting both an economic theory approach and a practical analytical approach. Public utility sectors such as telecommunications, electricity, gas, and air transportation, once recognized as natural monopoly industries, were highly regulated by sector-specific rules and institutions in terms of public interest. There was no room for thoughts of market competition. Yet, for about twenty years now these industries have been the focus of liberalization and privatization, mainly as the result of rapid technological developments.

On one hand, in order to promote competition in markets that have been liberalized and privatized, the first priority is to eliminate anti-competitive measures such as cartels and abuses of market power. Yet, there is usually a dominant firm that still holds high market share in each sector and controls facilities that are essential for new entities to go about their business. On the other hand, the government had or has enforced public policy, such as the provision of universal service provision, by imposing the obligation solely on the monopolist in exchange for protecting it from competition. However, with the introduction of competition, traditional measures to enforce public policy, such as implicit cross-subsidies have become unworkable.

The narrowest purpose of this thesis is to identify, using a theoretical approach, the rules that are required in public utility sectors and how they may be implemented. A second objective is to analyze, from a practical standpoint, the legal regime applicable to

public utility sectors, to examine its validity, and, if possible, to show some of its policy implications. Rapid technological developments alter industry cost structures, hasten market entry, and break down traditional industry boundaries. This is a primary reason why public utility sectors are now being deregulated and competition is being introduced.

With respect to its first objective, this thesis defends the argument that antitrust authority better enforces competition rules, and that sector-specific authority better enforces technical and universal service rules. The application of special competition rules concerning bottleneck facilities access should be limited. Universal service should involve competitive neutrality and adopt pro-competitive instruments. Such a framework would allow for a more market-oriented and economy-wide regulatory administration, as well as enforcement of the universal service policy based on a more accurate reflection of the fundamental values of citizens. With respect to its second objective, this thesis examines the telecommunications sectors in both Australia and the United States, as this sector is one of the most advanced with regard to both deregulation and competition, and each of these countries seem to have adopted different approaches in their rules and institutions.

# Chapter I

## BASIC POINTS OF ECONOMIC REGULATION

### A. FREE MARKET COMPETITION AND ANTITRUST LAWS

In most industries, according to economic theory, the first priority is the market mechanism, because one can expect that good results will come from the interplay of independent companies under conditions of unrestricted entry, independent competitive endeavors, and free contracts. "The main body of microeconomics theory can be interpreted as describing how, under proper conditions - for example, of economic rationality, competition, and laissez-faire - an unregulated market economy will produce optimum economic results."[1] If the market mechanism is in place, neither government agencies nor private companies need assume explicit overall responsibility for prices and quality of service. Government is required only to preserve the competitive market mechanism, ensuring that the mechanism works like a well-oiled machine. The only privilege conferred on private companies is the opportunity to compete, and their only responsibility is for each to look after its own interests.[2]

Typically, in the absence of regulation, the only thing left for the government to do, as far as the economic activities of firms are concerned, is to police the unregulated markets. Rules designed to maintain a workably competitive marketplace should be

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[1] Alfred E. Kahn, *The Economics of Regulation Principles and Institutions*, vol. 1 (Cambridge, Mass.: MIT Press, 1970) at 17.
[2] Alfred E. Kahn, *The Economics of Regulation Principles and Institutions*, vol. 2 (Cambridge, Mass.: MIT Press, 1970) at 115.

required[3] since, if the basic mechanism of competition were violated, the benefits of unrestrained competition would not be realized.[4] Essentially, an antitrust scheme (rules and institutions) plays a general role in economy-wide industries.

Generally, an antitrust scheme aims to maintain and promote competition in the market and usually works to prohibit certain forms of private enterprise. An antitrust scheme is different from governmental regulation in that regulation aims to replicate the results of competition or to correct the defects of competitive markets[5] by ordering firms to behave in specific ways.[6]

## B. FAILURE OF MARKET AND ECONOMIC REGULATION

However, in the real world, it is extremely difficult to find a purely unregulated market or industry, that is, one without licensing or pricing regulations, quality or quantity of goods or services restrictions, obligations of proper representation, advertising regulations, and so forth. In a number of industries, including, of course, public utility sectors, even if all issues are eventually decided through the political process, which is deeply affected by complex social needs and interests, rationales or justifications for governmental intervention into economic activities are, in most cases, explained from the

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[3] Stephen Breyer, *Regulation and Its Reform* (Cambridge, Mass.: Harvard University Press, 1982) at 156.

[4] Alan Stone, *Regulation and Its Alternatives* (Washington, D.C.: Congressional Quarterly Press, 1982) at 75.

[5] Breyer, *supra* note 3 at 157.

[6] Only rarely do antitrust enforcement agencies create detailed and affirmative legal obligations that characterize classical regulation. (The FTC and DOJ, however, may enter litigation, resulting in a decree that creates a small regulatory system.)

standpoint of economic efficiency or welfare. Currently, most regulatory schemes are based on economic interests. From an economic perspective, when a government intervenes in the marketplace, such intervention should be justified primarily by the following three factors, (since, without the intervention, desired outcomes would not be gained): natural monopoly, network effects, and public good. In order to ascertain the facts and to determine the best rules for public utility sectors, it is helpful to utilize economic theory and models.

Regarding the relationship among economists, lawyers, and regulators, Judge Stephen Breyer has stated that while economists are required to explain their assumptions so that regulators can able to understand and consider the importance of the factors that have been held constant, the job of lawyers, who must understand expert witnesses, is to open up the "black box" for regulators and explain exactly what the model means; it is then up to the regulators to decide how to adjust the model's suggested solution or what weight to assign to it.[7] If this is true, it would be helpful to use the economic model, even though it is fairly simple, as a framework for argument and discussion in order to consider the best scheme of regulation for public utility sectors.

## C. FAILURE OF REGULATION AND REGULATORY INSTITUTIONS

Even if government finds some justification to regulate or intervene in economic

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[7] Stephen Breyer, "Economists and Economic Regulation" (1985) 47 U. Pitt. L. Rev. 205 at 208, 209.

activities, one cannot ignore general complaints about the so-called "failure of regulation." Regulations cost a lot, and the amount includes not only direct governmental costs but also indirect costs, which are estimated to be double or triple the direct costs. Too little is obtained in return for such large expenditures. The regulatory process is unfair and unwieldy. Additionally, some complain that the regulatory process is fraught with delays.[8] Others argue that the regulatory process has been fundamentally unresponsive to democratic control and lacks legitimacy because regulators are appointed rather than elected, and yet they wield incredible power. Therefore, an appropriate institutional structure and economically justifiable rules should be pursued.

## D. NECESSITY OF DEREGULATION

Based on findings regarding regulatory failure, even if there is justification for governmental intervention, it should be undertaken in the least restrictive way possible. Additionally, regulators should be required to review in a continuous, periodic manner whether or not the current degree of regulation is the least restrictive, in accordance with changes in the current markets and industry situations, such as technological developments. This review could bring the benefits of a competitive market, which is the preferable economic mechanism for achieving allocative,[9] productive,[10] and dynamic

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[8] Breyer, *supra* note 3 at 2.

[9] Allocative efficiency is present when goods and services are allocated to the use in which they have the greatest value.

[10] Productive efficiency is present when producers use goods and services in such a manner as to minimize costs, subject to technological constraints.

efficiency.[11] Deregulation can achieve greater efficiency in entry and investment decisions, can lower administrative costs, can eliminate pricing distortions, can increase innovation, and can offer greater opportunities for customer choice,[12] making deregulation of critical importance.

## E. ANOTHER PERSPECTIVE: HEALTH AND SAFETY

Public utility sectors should be subject to regulations that pursue both non-economic and economic goals. In the telecommunications sector, general regulations related to health and safety have been established. For instance, health concerns arising from exposure to electromagnetic radiation, through mobile communications handsets, have sparked the emergence of such regulations.[13] (Under EC law, they would then be recognized as "essential requirements" [14] that justify certain restrictions on the free provision of service by, or the free establishment of, telecommunications firms.)[15] In any event, the need for non-economic regulation of the public utility sector is well recognized, and accordingly, it will not be dealt with here.

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[11] Dynamic efficiency refers to decisions made over time, including investment efficiency and technological innovation.

[12] J. Gregory Sidak & Daniel F. Spulber, "Deregulation and Managed Competition in Network Industries" (1998) 15 Yale J. on Reg. 117 at 120.

[13] Pierre Larouche, *Competition Law and Regulation in European Telecommunications* (Oxford: Hart Publishing, 2000) at 359.

[14] See *e.g.* EC, *Commission Directive 90/387 of 28 June 1990 on the establishment of the international market for telecommunications services through the implementation of open network provision*, [1990] O.J.L.192/1.

[15] Larouche, *supra* note 13 at 359.

# Chapter II

## RESIDUAL MONOPOLY AND BOTTLENECK FACILITIES ACCESS RULES

### A. THEORETICAL APPROACH

#### a. TRADITIONAL STYLE OF REGULATION

One can find many principal components of regulation that governments had once adopted to control the market behavior of firms in the public utility sectors, firms, for example, in the telecommunications, electricity, gas, and transportation industries, including: control of entry, price setting, prescription of quality and conditions of service, and the imposition of an obligation to serve all applicants under reasonable conditions.

#### b. NATURAL MONOPOLY AS A JUSTIFICATION

One of the most traditional justifications for governmental regulation of a firm's prices and profits is the existence of a "natural monopoly." Some industries, it is claimed, cannot efficiently support more than one firm. For example, electricity producers and local telephone companies find it progressively cheaper, up to a point, to supply extra units of electricity and telephone service respectively.[16] The critical and comprehensive characteristic of this natural monopoly is the inherent tendency to decrease unit costs over the entire market. The principle source of this tendency is the necessity of making a large investment so as to serve all customers on demand. These costs may remain fixed

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[16] Breyer, *supra* note 3 at 15.

no matter how many units are sold. To the extent that this is true, average costs per unit decline in an inverse proportion to the number of units sold.[17] Where such "economies of scale" exist, unit costs for service would rise significantly if more than one firm supplied service in a particular area.[18] Even in the case where one can find the apparent presence of increasing costs, it could still be a natural monopoly, so far as one company can serve any given number of demanders (for example, all in a community) at a lower cost than two or more companies could. The critical factor in the naturalness of a monopoly is the presence or absence of economies of scale internal to the firm.[19]

### c. TRADITIONAL CHARACTERISTICS OF PUBLIC UTILITY SECTORS

Public utility sectors have certain common and interrelated characteristics: first, they involve a continuous and essentially immovable connection between supplier and customer or locality, as evidenced by the term "public utility"; second, such services are largely non-storable (this is true of transportation, electricity, and telecommunications, but not of gas); third, the company is responsible for supplying instantaneously on demand – at the flick of a switch, at the click of a thermostat, or with the lifting of a telephone receiver; and finally, the demands of both individual customers and the system as a whole fluctuate widely from one point in time to another (one can find significantly different demands during rush hour or non-rush hour in the transportation market, during

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[17] Kahn. *supra* note 1 at 119.
[18] Breyer, *supra* note 3 at 15.
[19] Kahn, *supra* note 2 at 123.

business hours or non-business hours in the telecommunications market, during day or night in the electricity market, during winter or summer in the gas market, and so on.).[20] Because of the characteristic described above, public utility sectors had once required a heavy investment in capacity sufficient to meet the peak demand. Hence, those who tried to regulate public utility sectors might have assumed that economies of scale were applicable to these sectors as a whole, and that such sectors were totally natural monopoly when the regulation was established,

### d. EFFECTS OF RAPID TECHNOLOGICAL DEVELOPMENTS AND INNOVATION

In the face of rapid technological change, the natural monopoly of yesterday may be transformed into a natural arena of competition policies.[21] The telecommunications sector constitutes a good example, what with the emergence of private microwave systems, communication satellites, and transoceanic cables, and more recently, mobile and wireless networks. Technological developments and innovation in the public utility sectors, with the introduction of services never seen before, lower the cost of building facilities and equipment, and then alter the cost structure of the industry itself.[22] This reality significantly sheds light on the weakness of the justifiability of traditional public sector regulation, which is based on the assumption that the sectors are natural monopolies in their entirety.

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[20] *Ibid.* at 121.
[21] *Ibid.*
[22] Jean-Jacques Laffont & Jean Tirole, *Competition in Telecommunications* (Cambridge, Mass.: MIT Press, 2000) at 273.

## e. RETHINKING NATURAL MONOPOLY

The traditional regulatory scheme should be rethought, in accordance with rapid technological changes and other economic and social transitions. One widely accepted method for governing regulated industries, as discussed by Kahn, is to regulate "in such a way as to produce the same results as would be produced by effective competition, if it were feasible."[23] Kahn has also stated:

> [T]he role of the government remains essentially negative - setting maximum prices, supervising expenditures, specifying minimum standards of service, in short, contravening the decision of private persons only after the fact, only when their performance has been or would otherwise be obviously bad. The most important task of a government is to define and develop institutional arrangements that will provide correspondingly powerful incentives and pressures on regulated industries.[24]

Therefore, the first task of a regulator is to ascertain, for each public utility sector, the exact scope of the natural monopoly, that is, to define the parts of the business where internal economies of scale constitute a strong case, on grounds of efficiency, for permitting only a single supplier.[25] Yet the decision need not to be an all-or-nothing one. It may be possible to allow competition in those branches that are not naturally monopolistic along with, perhaps, joint ownership or joint utilization of the facilities.[26] Additionally, even if a whole or segmented natural monopoly can justify regulation on the grounds of efficiency, the government is still bound to assess whether the situation

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[23] Kahn, *supra* note 1 at 15.
[24] *Ibid.* at 18.
[25] Kahn, *supra* note 2 at 125.
[26] *Ibid.*

should be permanent or temporary. If it is temporary, periodic reviews of the activities should be conducted.[27]

### f. FINDING A SEGMENT OF A STILL NATURAL MONOPOLY

The government should restrict the scope of its regulation within a segment of business to the point where economies of scale are still applicable, as far as the natural monopoly model is concerned. At the same time, the other segments of business in a public utility sector should be deregulated, so that the market mechanism can take over, as long as there is no other justification for regulation.

In order to ascertain the proper scope of regulation, each sector must be divided into separate business parts in accordance with its cost structure. The telecommunications sector, for instance, could be divided into "fixed local loops", which are local networks between each terminal and the head office, including the switching system, as well as into fixed long-distance lines, international lines, and others (mobile lines, optical-fiber lines, etc.). The electricity sector could be divided into generation, transmission (broad and narrow or long and short), and distribution parts, as could the gas sector. On one hand, the business parts, such as long-distance and international lines in the telecommunications sector, and generation and distribution in the electricity and gas sectors, could be put under competitive pressure when economies of scale no longer apply. On the other hand, the business parts, such as fixed local loops in the

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[27] Stone, *supra* note 4 at 71.

telecommunications sector, and transmission in the electricity and gas sectors, should be further evaluated to determine whether economies of scale are still applicable or not. In relation to entry into the airline industry, it is claimed that there are arguably no significant economies of scale, even though there are significant economies of scale associated with the Computer Reservation Systems (CRSs) business.[28]

### g. POLICING MARKETS BY ANTITRUST SCHEME

From an economic efficiency perspective, what is still required for the government overseeing these sectors is to periodically advance the deregulation process and to police the deregulated markets based on the antitrust scheme, which should be adapted, if necessary and possible, for the specific characteristics of the industry. Based on the natural monopoly model, government intervention in the sector cannot be justified if scale economies are no longer applicable, even for the specific segment. However, in reality, one could find, at least for some time, a residual monopolistic situation consisting of dominant incumbents with substantial market power, and the government should take into account specific industry characteristics in order to implement any antitrust scheme in a proper and efficient way.

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[28] Richard Janda, "The Retreat of Command-and-control Regulation and the Hesitant Advance of Antitrust in the Airline Industry" in *Contemporary law 1994: International Congress of Comparative Law, Athens, 1994* (Montreal: Institute of Comparative Law, McGill University, 1995) at 632.

## B. PRACTICAL SCHEME IN THE TELECOMMUNICATIONS SECTOR

### a. FEATURE OF THE LOCAL LOOP IN TELECOMMUNICATIONS: RESIDUAL MONOPOLY

It is not difficult to see how transmission segments in the electricity industry or in a natural gas pipeline might have a natural monopoly, since they apparently carry with them huge construction costs, do not have technological substitutability, and cannot be built freely under geographical limitations. Unlike those industries, this is not the case in the telecommunications industry. The local loop of wirelines in the telecommunications sector could potentially be substituted by other technologically advanced equipment, such as wireless, satellite, and optical fiber. Nevertheless, to date the alternative network has not necessarily reached a stage to hold empirical and practical substitutability, considering the unmistakable gaps among them of current rates of penetration and price levels and the other market structures. One can still find a residual monopolistic character in the local loop segment, even though the degree to which this holds true depends on the country's socio-economic conditions, and its industrial and market structures.

From a technological standpoint, the local loop should no longer be considered a natural monopoly in an economic sense.[29] According to many empirical economic studies, it should be possible to have several competing local service providers without

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[29] For example, Shin and Ying argue that while local exchange carriers in the United States may have monopoly status in their markets, their results show that economically, they are not classic natural monopolies. See Richard T. Shin & John S. Ying, "Unnatural Monopolies in Local Telephone" (1992) 23:2 RAND J. of Econ. 171 at 181.

raising the network's overall costs too much.[30] Even though it seems difficult to clearly evaluate whether or not the local loop still has scale economies, wireless, cable TV, and other technologies are now challenging the conventional local loop based on wireline technology and buried copper.[31] Wireless technologies arguably have lower sunk costs or (equivalently) smaller required indivisible capital investments.[32] In many cases, wireless is already reportedly cheaper per new subscriber than wireline, and also has much flatter cost curves, which show that scale no longer brings any real cost advantage.[33]

In contrast, there is still room to investigate to what degree empirical market data could be pursued to prove its substitutability. Any practical experience on how quickly substitutability of wireline is proceeding must be proven. To date, however, the substitutability of a wireline local loop cannot be perfectly predicted in a practical sense. The local incumbent still definitely holds a monopolistic position because he had been granted a monopolistic franchise to deliver the service for a long time. The market structure still shows a higher penetration rate of wireline service, though how quickly the substitutability increases varies from one place to another. For example, the growth rates of cellular mobile subscribers in India or China from those of subscribers in Australia and the United States (see table below).

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[30] James Bond. "Telecommunications Is Dead, Long Live Networking" (1997) 119 Public Policy for the Private Sector 2 at 2.
[31] *Ibid.*
[32] Peter L. Smith & Gregory Staple, *Telecommunications Sector Reform in Asia Toward a New Pragmatism*, World Bank Discussion Papers No. 232 (1994) at 10.
[33] Bond, *supra* note 30 at 2.

[Penetration rate of main telephone line and cellular mobile][34]

| | Total telephone subscribers (per 100 inhabitants 2002) | Main telephone lines (per 1000 inhabitants 2002) | Cellular mobile subscribers (per 100 inhabitants 2002) | Cellular mobile subscribers (as % of total telephone subscribers 2002) | Cellular mobile subscribers CAGR (%) 1995-2002 |
|---|---|---|---|---|---|
| Australia | 117.83 | **53.86** | 63.97 | 54.3 | 27.9 |
| Canada | 101.26 | **63.55** | 37.72 | 37.2 | 24.3 |
| China | 32.78 | 16.69 | 16.09 | 49.1 | **78.1** |
| India | 5.19 | 3.98 | 1.22 | 23.4 | **107.5** |
| Japan | 117.36 | **58.58** | 62.11 | 51.5 | 31.4 |
| United States | 114.70 | **65.89** | 48.81 | 42.6 | 22.6 |
| Africa | 6.60 | 2.70 | 4.19 | 61.0 | 75.8 |
| Americas | 64.92 | 35.25 | 29.74 | 45.8 | 30.0 |
| Asia | 23.89 | 12.13 | 12.19 | 50.3 | 52.4 |
| Europe | 89.83 | 40.93 | 50.21 | 55.1 | 49.5 |
| Oceania | 88.93 | 40.44 | 48.53 | 54.6 | 28.7 |
| World | 36.35 | 18.04 | 18.77 | 51.0 | 43.6 |

Additionally, quite a few people seem reluctant to use wireless telecommunications services in the same way as they use wireline because the price varies; the local wireline service in some countries and price gaps between wireline and wireless might still be quite significant. (See tables below).

[34] ITU, *Basic Indicator, Main Telephone Lines*, and *Cellular Subscribers*, 24 April 2003, online: ITU <http://www.itu.int/ITU-D/ict/statistics/> (date accessed: 24 September 2003).

[Basket of residential telephone charges (excluding international calls and calls to mobile networks) and pricing structures, August 2002.[35] USD]

| | Fix | Usage | Total | Pricing structure |
|---|---|---|---|---|
| Australia | 155.85 | 196.86 | 352.74 | Unmetered and per call |
| Canada | 226.05 | 45.49 | 271.54 | Unmetered |
| Japan | 217.70 | 211.57 | 429.27 | Metered and Units |
| The United States | 163.37 | 242.74 | 406.11 | Metered/flat rate/unmetered and Seconds/per call |

[Basket of low-user (25 calls per month) mobile telephone charges, August 2002[36] including VAT. USD]

| | Fix | Usage | Total |
|---|---|---|---|
| Australia (Optus) | 0 | 143.28 | 143.28 |
| Canada (Telus) | 2.20 | 133.51 | 135.71 |
| Japan (NTT Docomo) | 286.02 | 75.97 | 361.99 |
| The United States (AT&T) | 0 | 152.46 | 152.46 |

[Basket of medium-user (75 calls per month) mobile telephone charges, August 2002[37] including VAT. USD]

| | Fix | Usage | Total |
|---|---|---|---|
| Australia (Telstra) | 260.40 | 152.85 | 413.25 |
| Canada (Telus) | 248.12 | 72.44 | 320.56 |
| Japan (NTT Docomo) | 333.81 | 263.49 | 597.30 |
| The United States (Cingular) | 409.07 | 46.20 | 455.27 |

[Basket of high-user (150 calls per month) mobile telephone charges, August 2002[38] including VAT. USD]

| | Fix | Usage | Total |
|---|---|---|---|
| Australia (Telstra) | 455.70 | 386.72 | 842.42 |

[35] OECD, *Communications Outlook 2003* (Paris: OECD, 2003) at 168-69, 178.
[36] *Ibid.* at 184.
[37] *Ibid.* at 185.
[38] *Ibid.* at 189.

| | | | |
|---|---|---|---|
| Canada (Telus) | 292.15 | 229.72 | 521.87 |
| Japan (NTT Docomo) | 333.81 | 598.88 | 932.69 |
| The United States (AT&T) | 475.07 | 55.44 | 530.51 |

Moreover, as long as alternative means of communication, such as wireless, remain more expensive than wireline, the incumbent will continue to hold substantial market power, since constructing a local wireline network requires high sunk costs, even though its operation entails relatively low operational costs.[39] Today, one can hardly imagine any firm entering into the local loop market by establishing traditional copper lines alongside those that the incumbent has already provided to each end user. (On the contrary, a firm would enter with wireless or optical-fiber equipment in a relatively narrow area to provide broadband service.)

Therefore, whether the current market structure of the local loop has residual monopolistic conditions should be assessed, even if it is not purely a natural monopoly in an economic sense. In other words, the segment may be going through transition from a natural monopoly (which also means a legal monopoly) to market competition.

### b. REMOVAL OF REGULATORY BARRIERS TO ENTRY INTO LOCAL LOOP

Here, a comparative study between Australia and the United States will commence, focusing on the legal scheme concerning the local loop residual monopoly. However,

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[39] Michel Kerf & Damien Geradin, "Controlling Market Power in Telecommunications: Antitrust Vs. Sector-Specific Regulation: An Assessment of the United States, New Zealand and Australian Experiences" (1999) 14 Berkeley Tech. L.J. 919 at 926.

before discussing the regulatory scheme, one should pay attention to the deregulatory aspects of the telecommunications sector. In both countries, all explicit legal barriers to entry into any segment of the telecommunications market have been removed as a result the deregulation process. This being the case, an incumbent who had once been totally protected by the legal monopoly scheme is now potentially challenged by competitive operators, even in local markets.

In the United States, Section 253 of the Telecommunications Act 1996 removes all legal and regulatory barriers to entry in local markets by prohibiting all state statutes or regulations impeding the ability of "any entity to provide any interstate or intrastate telecommunications service." [40] With respect to relations with other types of communications operators, cable operators, for example, may provide local telecommunications service, [41] and telecommunications operators can now provide cable television service directly to subscribers in their service areas. [42] Also, telecommunications operators may offer cable television and may choose from a list of options as to how they will be regulated. [43] Additionally, Section 160 of the Telecommunications Act 1996, entitled "Regulatory Flexibility," enables the Federal Communications Commission (FCC) to forbear from applying provisions of this Act if it determines that forbearance "will promote competitive market conditions," [44] even

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[40] 47 U.S.C. §253(a) However, Section 253(b) reads that "[n]othing in this section shall affect the ability of a State to impose, on a competitively neutral basis and consistent with Section 254, requirements necessary to preserve and advance universal service, protect the public safety and welfare, ensure the continued quality of telecommunications services, and safeguard the rights of consumers."
[41] *Ibid.*, §253(a).
[42] *Ibid.*, §533(b).
[43] *Ibid.*, §§571(a)(2)-(4).
[44] *Ibid.*, §160.

though the FCC may not forbear from applying the requirements of Section 251(c) or 271(a) (bottleneck facilities access regulation and incentive regulation) until it determines that those requirements have been fully implemented.[45]

Similarly, the Australian government decided to open all segments of the telecommunications sector to full competition in 1997. Even though persons wishing to use telecommunications infrastructures to provide service to the public must be licensed, licenses are available on application with no technical or financial entry hurdles, and there is no limit on the number of infrastructure providers.[46]

### c. AN ANTITRUST-RULES APPROACH TO BOTTLENECK FACILITIES

#### i. GENERAL ANTITRUST RULES

In both countries, antitrust rules are established to prohibit anticompetitive measures such as cartels, price discrimination, exclusive dealings, and abuses of dominant power, and to investigate mergers and acquisitions that may substantially lessen competition. Such rules also apply to the telecommunications sector.

In the United States, antitrust laws are applicable to any telecommunications operator. The two major deferral antitrust laws in the United States are the Sherman Act[47] and the Clayton Act.[48] Section 1 of the Sherman Act makes all contracts, combinations, and conspiracies that unreasonably restrain interstate commerce illegal. Section 2 of that

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[45] *Ibid.*, §160(d).
[46] *Trade Practice Act 1974* (Cth.), s. 42.
[47] 15 U.S.C. §§1-7.
[48] *Ibid.*, §§12-27.

same Act makes any attempt to monopolize or conspire to monopolize any part of interstate commerce illegal. However, monopolies are not illegal *per se*. For example, it would be unlawful if a firm were to the only supplier, not because its product or service was superior to others, but because it restrained competition through anticompetitive conduct. Also, the Clayton Act makes a number of business practices illegal where the effect of the practice might be to substantially reduce competition or to create a monopoly. The most important sections of the Clayton Act are Section 2, which deals with price discrimination (as amended by the Robinson-Patman Act of 1936), Section 3, which deals with tying and exclusive dealing contracts, and Section 7, which deals with mergers and joint ventures (as amended by the Celler-Kefauver Act of 1950).

Similarly, Australia relies on general antitrust rules, but they are complemented by telecommunications-specific rules integrated within the same antitrust legislation. The predominant general antitrust rules, applicable to the Australian economy as a whole, are included in Part IV of the Trade Practice Act. Section 45(1)(b) of the Act prohibits contracts, arrangements, or undertakings that have the purpose or the effect of substantially lessening competition. Such arrangements include contracts that contain exclusionary provisions, fix prices, or limit the supply or acquisition of goods or services. Sections 47, 48, and 49 prohibit, like in the United States, exclusive dealings, retail price maintenance, and price discrimination respectively. Section 46 prohibits a corporation that has a substantial degree of market power from taking advantage of that power for the purposes of eliminating a competitor or preventing the emergence of a competitor. Section 50 prohibits a corporation from purchasing shares or assets of another business if,

as a result, the corporation would be in a position to dominate a market for goods or services, or would substantially strengthen its power to dominate a market.

As illustrated above, one of the most significant differences between the two sets of antitrust rules are their legal forms. Whereas the United States developed its antitrust rules, which seem quite simple and abstract by themselves, mainly through the piles of court judgments and authorities' interpretations, Australia integrated supplemental cross-sector access rules into one body of antitrust legislation.

### ii. ESSENTIAL FACILITIES DOCTRINE

With respect to mandatory access, Australian antitrust legislation contains a cross-sector access regime that ensures general access to bottleneck facilities.[49] Under Part IIIA Section 44G(2)(c) and 44H(4)(c), the relevant minister may mandate access to bottleneck facilities required in order to provide a service deemed to be of national significance. The terms of access are determined either through a commercial agreement between the access provider and the access seeker or through arbitration by the country's antitrust regulator, the Australian Competition and Consumer Commission (ACCC).

On the other hand, US antitrust legislation does not incorporate such a regime. However, Section 2 of the Sherman Act can be used by the Department of Justice (DOJ), one of the public antitrust enforcers, or by private litigants, to prevent dominant firms from adopting measures that are abusive to new entrants. In *MCI Communications v.*

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[49] *Trade Practice Act 1974* (Cth.), Part IIIA.

*AT&T*, the Seventh Circuit found that AT&T's refusal to grant MCI access to its local telecommunications network constituted an "act of monopolization." The Seventh Circuit set the essential facilities test as follows: A plaintiff seeking access to a facility must establish: "(1) control of the essential facility by a monopolist; (2) a competitor's inability practicably or reasonably to duplicate the facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility."[50] Pursuant to the essential facilities doctrine, a dominant firm that controls an essential element of infrastructure must grant its competitors access to it under nondiscriminatory terms. The essential facilities doctrine could thus provide an alternative avenue for new entrants seeking to obtain access to the incumbent's network and facilities.

However, the essential facilities doctrine adopted in the United States has its own limitations. The doctrine, it seems, can apply the general antitrust rules only under three circumstances: (1) when the remedy is used to grant access under the same conditions as those already granted to others, (2) when it is used to grant access to the plaintiff that he has already enjoyed before, or (3) when it is used to refer to conditions established by a specialized regulator.[51] Judges may have difficulty finding specific solutions (*e.g.*, indicating a specific price), when access must be granted for the first time and there is no specialized regulator.[52] This may lead to the further requirements of appropriate disclosure and strictly enforced structural solutions. Moreover, those focused on the issue of access to bottleneck facilities argue that general antitrust rules have their

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[50] *MCI Communications v. AT&T*, 708 F.2d 1081 at 1132 (7th Cir. 1982).
[51] George A. Hay, "Reflections on Clear" (1995) 3 Competition & Consumer L.J. 231 at 240. Warren Pengilley, "The Privy Council Speaks on Essential Facilities Access in New Zealand: What are the Australian Lessons?" (1995) 3 Competition & Consumer L.J. 28 at 29.
[52] Kerf & Geradin, *supra* note 39 at 982.

own limitations with regard to introducing competition in markets where none existed before.

### d. A SECTOR-SPECIFIC RULES APPROACH TO BOTTLENECK FACILITIES

#### i. SECTOR-SPECIFIC RULES

Even though both countries have different forms of specific rules, they have each taken heavy-handed and highly precise approach to the issue of access to bottleneck facilities.

In the United States, Section 251 of the Telecommunications Act 1996 imposes asymmetrically heavy duties, such as just and reasonable rates for interconnection, the obligation to provide unbundled network elements, wholesale pricing, and collocation on Incumbent Local Exchange Carriers (ILECs). ILECs are required to provide, at just and reasonable rates, interconnection "at any technically feasible point with the carrier's network,"[53] to provide competitors unbundled network elements upon request,[54] to offer for resale "at wholesale rates any telecommunications service that the carrier provides at retail to subscribers,"[55] and to permit firms seeking interconnection to locate their equipment on the ILEC's premises.[56] In order to implement Section 251 and to ensure compliance with the requirements of the Section, the FCC has the authority to establish and enforce detailed rules and standards.[57] On August 1996, the FCC released its "First

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[53] 47 U.S.C. §251(c)(2)(b).
[54] *Ibid.*, §251(c)(3).
[55] *Ibid.*, §251(c)(4)(a).
[56] *Ibid.*, §251(c)(6).
[57] *Ibid.*, §251(d) & (g).

Report and Order",[58] containing its findings with regard to the implementation of the policy principles contained in Section 251. This document addresses three types of entry into the local telephone market: (1) full facilities-based entry, (2) the purchase of unbundled network elements from the ILECs, and (3) resale of the incumbent's retail services. The FCC prescribed certain rules to permit competing carriers to choose efficient points at which to interconnect with the ILEC's network. In addition, the FCC set forth a methodology to be used by state utility commissions in establishing rates for interconnection and the purchase of unbundled element. According to the Order, this pricing methodology must be based on the incumbent's Total Element Long-Run Incremental Cost (TELRIC).

On the other hand, Australia incorporates telecommunications sector-specific rules as to the bottleneck access issue in the antitrust legislation. Telecommunications-specific provisions were introduced in Part XIC of the Trade Practices Act so as to provide access to bottleneck facilities in the telecommunications sector.[59] Part XIC establishes a regulatory regime derived from Part IIIA of the Trade Practice Act. It is aimed at facilitating access for all competitors to bottleneck facilities in

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[58] U.S., Federal Communications Commission, "Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers" (1996) 11 F.C.C.R. 15 at 499.

[59] Other than the regulation of bottleneck facilities access, the regulation of anticompetitive conduct in the telecommunication sector is stipulated in Part XIB of the Trade Practice Act. Under Part XIB, the onus of proof might in some cases be reversed with the telecommunications operator having to prove that it did not engage in anti competitive conduct. Additionally, the penalties that can be imposed for violations of Part XIB provisions are more severe than those that can be imposed for violations of Part IV provisions. Section 151AJ(2) prohibits a telecommunications operator holding a substantial degree of power in a telecommunications market from taking advantage of that power with the effect, or likely effect, of substantially lessening competition in that or any other telecommunications market. Additionally, it prohibits the conduct irrespective of purpose, so long as it has the effect, or likely effect, of substantially lessening competition. Under Section 151AL, if the ACCC believes that a telecommunications operator is engaging in anticompetitive conduct, it can issue a competition notice setting out the particulars of the violation.

the telecommunications sector. The ACCC can "declare" which telecommunications services constitute bottlenecks.[60] In other words, the ACCC can mandate access to those facilities. Providers of such services are then subject to standard access obligations. Such obligations include the obligation to supply the declared services and permit interconnection of their facilities under conditions equivalent to those which they reserve for themselves, to provide billing information associated with the declared services, and to supply those services that might be required to enable an access seeker to access the customer equipment necessary to use the bottleneck facilities. In July 1999, the ACCC decided to declare fixed local service, thereby mandating access to Telstra's local network.[61] With respect to the interconnection pricing rule, the antitrust regulator developed access pricing principles in early 1997.[62] Those principles are used when deciding whether to approve or reject firms' request for access or when arbitrating disputes related to access. Costs related to access should embody four main characteristics: (1) they should be cost-based; (2) they should be non-discriminatory; (3) they should not be inflated so as to reduce prices and thus competition in other markets; and (4) they should not be predatory (*i.e.*, they should at least cover incremental costs). Access prices can be calculated by using what is known as the total service long-run

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[60] *Trade Practice Act 1974*, (Cth.), ss. 152AL (2)-(3), 152AR(2).

[61] So far the following services have been declared: domestic PSTN (Public Switched Telephone Network), domestic GSM (Global System for Mobiles), and CDMA (Code Division Multiple Access) originating and terminating service; transmission capacity service; digital data access service; conditioned local loop service; analogue subscription television broadcasting carriage service; unconditioned local loop service; local PSTN originating and terminating service; local carriage service; ISDN(Integrated Services Digital Network) originating and terminating service; and line sharing service. See Australia, Commonwealth, Australian Competition and Consumer Commission, *Expiry Dates for Declared Services* (Canberra: Australian Competition and Consumer Commission, 2003).

[62] See Australia, Commonwealth, Australian Competition and Consumer Commission, *Access Pricing Principles – Telecommunications* (Canberra: Australian Competition and Consumer Commission, 1997).

incremental cost (TSLRIC) model.

The core of the regulation is the mandatory interconnection of an incumbent to the bottleneck facilities at a reasonable rate. In this regard, both countries' rules are virtually the same, as the ILEC or the provider of the declared service must also interconnect to the bottleneck facilities at a just and reasonable rate, which is calculated using the long-run incremental cost model. Additional obligations in the United States, such as the unbundling network element (UNE) provision and wholesale pricing, seem to be more burdensome than in Australia. The major difference between them is the characteristic of their regulators rather than the rules themselves. While sector-specific authority enforces access rules in the United States, antitrust authority does so in Australia. One of the most notable similarities between the two countries concerns the disincentive to properly invest and impediments to facilities-based competition. Opponents to this regulation argue that competition would be more intense if competitors were forced to build their own facilities.[63] Also, it would be necessary to protect incumbents' incentive to invest by preventing new entrants from "freeloading" on their facilities.[64]

### ii. ARBITRATION PROCESS

In the United States, Section 252 of the Telecommunications Act 1996 establishes three

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[63] See Elizabeth A. Nowicki, "Competition in the Local Telecommunications Market: Legislate or Litigate?" (1996) 9 Harv. J.L. & Tech. 353. See also John T. Soma, *et al.*, "The Essential Facilities Doctrine in the Deregulated Telecommunications Industry" (1998) 13 Berkeley Tech. L.J. 556.
[64] Nowicki, *supra* note at 354.

different procedures for completing or litigating interconnection agreements (voluntary negotiation, mediation, and arbitration). First of all, an ILEC receiving a request for interconnection, service, or network elements pursuant to Section 251 may negotiate and enter into a binding agreement with the requesting carrier without regard to the statutory duties assigned to it.[65] Second, if the parties are unable to come to an agreement on their own, either party may request that the state utility commission participate in the negotiation and mediate any differences.[66] Finally, if an agreement has not been completed within 135 days after the initial interconnection request, either party may ask the state commission to arbitrate any remaining issues.[67] If the state commission does not carry out its responsibilities under Section 252, the FCC may take over and preempt the state commission's power under that Section.[68] A carrier that is not satisfied with the state commission's arbitration decision may appeal it, but only to a local federal district court, which will determine whether or not the decision fulfills the requirements of the Act.[69]

Similarly, in Australia, the specific terms and conditions under which access providers must provide access to bottleneck facilities may be determined in one of three ways: (1) through commercial agreements between access providers and access seekers; (2) through arbitration if the parties cannot agree; or (3) through the implementation of "access undertakings," which constitute commitments on the part of access providers

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[65] 47 U.S.C. §252(a)(1).
[66] *Ibid.*, §252(a)(2).
[67] *Ibid.*, §252(b)(1).
[68] *Ibid.*, §252(e)(5).
[69] *Ibid.*, §252(e)(6).

regarding the conditions under which they will provide access.[70] When access terms and conditions are determined through arbitration, the ACCC is the arbitrator.[71] When access terms and conditions are determined through the implementation of an "access undertaking", the ACCC is called upon to determine whether the undertaking is acceptable.[72]

Such an arbitration process as discussed above should facilitate the resolution of interconnection issues, typically among the most frequent and difficult regulatory problems in telecommunications, since the process gives priority to voluntarily and commercially negotiated solutions. Regulatory intervention should only be necessary when such solutions cannot be found.[73]

### iii. INCENTIVE REGULATION FOLLOWED BY STRUCTURAL REFORM

#### (1) STRUCTURAL SEPARATION RESULTING FROM THE COURT'S DECISION

While Australia has never experienced the structural reform of its telecommunications sector, the same cannot be said of the United States, which once restructured its telecommunications sector by vertically separating AT&T into regional Bell Operating Companies (BOCs) and long-distance service companies.

Pursuant to a judgment,[74] AT&T agreed to divest its twenty-two BOCs into seven independent local exchange carriers in return for permission to enter into other

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[70] *Trade Practice Act 1974* (Cth.), ss. 152AY, 152BV.
[71] *Ibid.*, Part XIC, Division 8
[72] *Ibid.*, Part XIC, Division 5
[73] Kerf & Geradin, *supra* note 39 at 1004.
[74] *United States v. AT&T Co.*, 552 F. Supp. 131 (D.D.C. 1982) at 186-94.

lines of business and to compete with virtually no restrictions in long-distance market. The object of the judgment was most likely to encourage competition by separating those portions of AT&T that could do business in markets economically capable of sustaining competition from those portions of AT&T that could do business in markets able to sustain only one firm. Thus, AT&T's manufacturing arm, Western Electric, and AT&T's long-distance service were separated from the Bell system's local operating companies. The judge may have assumed that competition among several manufacturers and among several different long-distance companies was possible and indeed desirable, and that the local operating companies, if separated from long-distance lines and from each other, would continue to provide local service as natural monopolies regulated by state utility commissions. The BOCs were only permitted to provide local telephone service; they were specifically prohibited from entering into certain lines of business, including long-distance service, information services, and telecommunications equipment manufacturing. In addition, they were bound to provide all competing long-distance carriers with nondiscriminatory access to their local exchange network.[75] Some critics have argued that at the time when the decision was made Judge Greene began to hold the administrative power to decide whether or not to let the BOCs enter into new lines of business in the future with a waiver and triennial review process.

[75] *Ibid.* at 197-200.

### (2) INCENTIVE REGULATION

In the United States, the Telecommunications Act 1996 introduced an incentive regulation that gives the BOCs reason to open the local loop market. Section 271 allows BOCs to provide long-distance (interLATA) services to their own customers provided three conditions are met. First, the BOC must negotiate with one or more competitors interconnection agreements that satisfy the requirements of Section 271(c)(2)(B), the so-called "competition check list." The requirements contained in this list essentially relate to the interconnection obligations imposed in Section 251.[76] Second, the FCC cannot approve the BOC's application unless it determines that "the requested authorization is consistent with public interest, commerce, and necessity."[77] Third, the BOC is required to create a separate affiliate to provide long-distance services, which must operate independently from its BOC parent, keep separate books and records, and have separate offices, directors, and employees.[78] All transactions between an affiliate and its BOC parent must be "on an arm's length basis."[79] The FCC has the final authority to rule on a BOC's Section 271 application.

In reality, BOCs can control various markets, insofar as other operators cannot provide services in those markets without accessing the BOC's bottleneck facilities. From the standpoint of promoting competition in the local market as well as in others, an incentive regulation can work as it ensures that the incumbent does not misuse its market

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[76] 47 U.S.C. §271(c)(2)(B).
[77] *Ibid.*, §271(d)(3).
[78] *Ibid.*, §§272 (a)(1), (b)(2)-(3).
[79] *Ibid.*, §272(b)(5).

power. Also, an incentive regulation can make up for a lack of detailed interconnection rules and specialized regulatory bodies. However, some opponents argue that emphasis should be placed on the fact that any imposed separation between different types of services might create an artificial situation and thus result in unnecessary costs in this age of rapid technical evolution. Entry into the interLATA service market is one of the few incentives available to entice BOCs to open their bottleneck facilities.

## C. SUMMARY AND POLICY IMPLICATION

### a. SUMMARY OF THIS CHAPTER

When an industry is regulated by a government under the justification of a natural monopoly, there is an inherent tendency within the industry of unit costs to decrease throughout the entire market. Public utility sectors had long been recognized as natural monopolies as a whole, since it was acceptable that a heavy investment sufficient to meet capacity at peak demand was required. Specific features of the sectors contributed to this viewpoint, such as the continuous and essentially immovable connection between supplier and customer or locality, the non-storability of services, the responsibility to supply instantaneously on demand, and widely fluctuating demand. However, current technological developments and innovation in the public utility sectors, with the introduction of many services never seen before, lowers the costs associated with building the facilities and manufacturing the equipment that supplies their goods or services, and then changes the cost structure of the industry itself. In the face of such

rapid change, regulators should rethink their regulatory policies, keeping in mind the principle of regulating "in such a way as to produce the same results as would be produced by effective competition, if it were feasible." The first task of the government is to determine, for each of the public utility sectors, the proper scope of the natural monopoly, that is, to limit the parts of the business that are to be regulated, where internal economies of scale constitute a strong case on grounds of efficiency for permitting only a single supplier. Even if a whole or segmented natural monopoly can justify regulation on such grounds, the government is still bound to inquire as to whether the regulation is permanent or temporary. If it is temporary, a periodic review of the activities is necessary. At the same time, the other segments of business in public utility sectors should be deregulated to return to the basis of the market mechanism, as long as there is no other justification for such regulation. In ascertaining the proper scope of the regulation, each sector should be divided into separate business parts in accordance with its cost structure.

### b. POLICY IMPLICATIONS

Technological progress continues to change the cost structure of industries and to introduce innovation and new services. Substitutability of the local loop is increasing and, in an economic sense, we can no longer speak of natural monopolies. However, contradicting this theory, some empirical studies show that specific segments such as the local loop wireline are still dominated by incumbent operators. In real markets,

incumbents still hold large market shares as residual monopolists and control bottleneck facilities as well.

With respect to bottleneck facilities access regulation, policy implications stemming from the above discussion are as follows. First of all, a switch from sector-specific regulation to general antitrust rules must be made, especially in the telecommunications sector, where advanced technologies are most prevalent. However, during their transition from being a natural monopoly to engaging in market competition, antitrust rules by themselves may not always be sufficient to combat residual monopolists. Sector-specific regulation could be allowable, as far as it covers the shortcomings of antitrust rules, such as an inability to provide solutions. Second, sector-specific regulations also have disadvantages. Specific solutions brought about by mandatory interconnection and compulsory pricing would impede facilities-based competition and reduce the amount of new investment by incumbents. Third, voluntary negotiation through the arbitration arrangements and incentive regulations might potentially be supplemental options since they could cover the insufficiency of rules and implemental ability as well as make regulators take a step backward, at least at first. Nevertheless, these options will never result in the same outcome as a competitive market. In the case of an incentive regulation, if the regulator were to fail to choose service markets to be entered as an incentive, the outcome might actually be worse.

In conclusion, with respect to regulation regarding access to bottleneck facilities, it is preferable to adopt the antitrust-rules approach, but allowable to choose some measures based on a sector-specific rules approach in the short term, during the

transitional period. Even if some market segments are still monopolistic, the regulatory scheme should be oriented toward competition, insofar as technological advancements and market-driven behaviors further facilitate practical substitutability in the local loop.

# Chapter III

## NETWORK EFFECTS AND TECHNICAL INTERCONNECTION RULES

### A. THEORETICAL APPROACH

#### a. PUBLIC UTILITY SECTORS AND NETWORK EFFECTS

Public utility sectors such as telecommunications, transportation, electricity, and gas are usually defined as network industries, and the number of economic studies of such industries, for example, in terms of network effects, network externalities, and bandwagon effects (though these terms seem to have the same meaning in the context of traditional public utility sectors) has greatly increased, providing important insights into the competitive dynamics of the industries.[80]

#### b. NETWORK EFFECTS: THE MORE PEOPLE, THE MORE BENEFITS FOR ALL

According to the most influential economic studies, the terms "network effect" and "network externality"[81] are defined as "the utility that a user derives from consumption of the good [that] increases with the number of other agents consuming the good."[82]

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[80] See Willian J. Kolasky, "Network Effects: A Contrarian View" (1999) 7 Geo. Mason L. Rev. 577.

[81] One commentator argues that while "network effects" should be applied to markets with increasing returns on scale, "network externalities" are reserved for markets in which increasing returns create suboptimal conditions. S.J. Liebowitz & Stephen E Margolis, "Network Externality: An Uncommon Tragedy" (1994) 8 J. Econ. Persp. 133 at 135. However, other authors have accepted that terminological remark. See Michel L. Katz & Carl Shapiro, "System Competition and Network Effects" (1994) 8 J. Econ. Pers. 93.

[82] Michel L. Katz & Carl Shapiro, "Network Externalities, Competition, and Compatibility" (1985) 75 AM. Econ. Rev. 424 at 424.

"Bandwagon effects,"[83] under Rohlfs' definition, have the same meaning as network externalities when applied to networks.[84] Network effects can be divided into two types, direct physical effects and indirect virtual effects.[85] While the network effects that VCRs, PC operating systems, and computer software have are indirect virtual effects,[86] those which public utility sectors have are primarily direct physical effects. Regarding direct network effects, the benefit to each subscriber is access to other subscribers, and thus the value of the network to each subscriber increases as the number of subscribers increases.[87]

### c. DIFFERENCE BETWEEN NATURAL MONOPOLY AND NETWORK EFFECTS: DEMAND-SIDE OR SUPPLY-SIDE

While public utility sectors may exhibit characteristics of a natural monopoly and network effects at the same time, other industries, such as the VCR and software

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[83] "Bandwagon effects mean effects which increase the benefits that consumers derive from a product or service as the user set expands. In the formal terms of economic theory, bandwagon effects are external demand-side scale economies." Jeffrey H. Rohlfs, *Bandwagon Effects in High-Technology Industries* (Cambridge, Mass.: MIT Press, 2001) at 195.

[84] *Ibid.* at 14, 195. The other effect of bandwagon effects is "complementary bandwagon effects", which apply to products whose value derives, at least in part, from the use of competitively supplied complementary products. (*i.e.*, hardware, software)

[85] Following Katz and Shapiro, network markets are viewed as falling on a continuum that may roughly be divided into actual networks, virtual networks, and simple positive feedback phenomena. Mark A. Lemley & David McGowan, "Legal Implications of Network Economic Effects" (1998) 86 Cal. L. Rev. 469 at 488.

[86] Goods constitute virtual networks when they provide inherent value that increases with the number of additional users of identical and/or interoperable goods. Virtual network goods need not be actually linked to a common system as are the constitutions of a communications network; very strong positive feedback effects tied to functional compatibility are sufficient. Lemley & McGowan, *supra* note 85 at 491.

[87] Gerald R. Faulhaber, "Access [not equal to] Access + Access" (2002) Law Rev. Mich. St. U. Det. 677 at 679.

industries, may have network effects without any characteristics of a natural monopoly. It should be noted that natural monopolies and network effects are very different market structures (or failures), and one should distinguish between them to establish the proper scheme of intervention in relation to them. Whereas the problem in the case of a natural monopoly is one of scale economies of supply, which means that the marginal and average costs of production for a particular market decline throughout the demand curve, network effects are demand-oriented rather than supply-oriented. The shape of the demand curve is affected by existing demand. Even though the two problems may in practice be difficult to distinguish, theoretically they are distinct and as such may require different policy treatments.[88]

### d. MAIN CHARACTERISTICS OF NETWORK EFFECTS: TOTAL SURPLUSES ARE MAXIMIZED BY MONOPOLIES

Theoretically, one of the most important characteristics of network industries arises from the existence of network effects. As Economides points out, the long-run market equilibrium is extremely unequal and far from competitive, even though free entry is possible and an infinite number of firms have entered.[89]

First of all, when a network achieves a critical mass, it becomes attractive to prospective subscribers and subscribers of other smaller networks, and they soon move

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[88] Lemley & McGowan, *supra* note 85 at 484.

[89] See Nicholas Economides, "Competition Policy in Network Industries: An Introduction" in Dennis Jansen, ed., *The New Economy: Just How New is It* (Chicago: University of Chicago Press, 2003), online: <http://www.stern.nyu.edu/networks/biblio_hframe.html> (date accessed: 24 September 2003).

to join the network to obtain the added value of more network subscribers. This increases the size of the network even further, making it even more attractive to persons still subscribing to smaller networks, and demand may grow extremely rapidly (as a result of positive feedback). As a result, extreme inequalities in market share and profits occur. ("winner-takes-most" markets).

Next, while both consumer and total surpluses are lowest for monopolies in non-network industries, in industries having significant network effects, under conditions of non-interconnection (incompatibility) between competing networks, consumer surplus is lowest but total surplus is highest for monopolies. According to the Economides-Flyer model, although consumer surplus is increasing in the number of active firms, total surplus is decreasing in the number of firms, based on the fact that when there are fewer firms in the market, there is more coordination, and the network effects are greater.[90] As the number of firms decrease, the network effects increase more than the dead weight loss, so that total surplus is maximized for monopolies.

Finally, in network industries, once a few firms are in operation, the addition of new competitors, even under conditions of free entry, does not significantly change the structure of market sharing strong network effects. The remarkable feature of non-interconnection (incompatibility) equilibrium is the extreme inequalities in market shares and profits, which are even sustained under conditions of free entry. In network industries, free entry brings into industries an infinite number of firms, but it fails miserably to reduce or to flatten the distribution of market shares.[91]

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[90] Economides, *supra* note 89 at 12.
[91] *Ibid.* at 13.

### e. INTERCONNECTION EQUILIBRIUM: ONE INTERCONNECTED NETWORK IS BEST

In public utility sectors, as network industries, a switch from non-interconnection (without-interlinking or incompatibility) equilibrium to interconnection (interlinking[92] or compatibility[93]) equilibrium is required in order to achieve higher consumers' and total surpluses for any number of firms.[94] Interconnection almost always carries with it substantive benefits because it increases the value of the product to each user and consequently increases demand while limiting the existence of monopolistic suppliers.[95] With interconnection, each consumer enjoys the benefits of network effects with respect to all the interconnected networks in the industry.[96] In other words, as Katz and Shapiro point out, interconnection raises the gross consumption benefits enjoyed by consumers subscribing to only one firm's network, and eliminates the cost associated with holding duplicate equipment in order to participate in two or more different networks to reach everyone.[97] This means, assuming that innovation and product availability would not be reduced, that the best of all worlds would be to have public standards and full interconnection.[98] Consequently, if, for one reason or another, the market could not efficiently promote interconnection, governmental intervention would be justified. Some

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[92] In network industries. interlinking is achieved by the interconnection of the physical networks of various suppliers. Rohlfs , *supra* note 83 at 35.

[93] "With respect to complementary bandwagon effects, interlinking is achieved through compatibility, which allows the same complementary product (*e.g.*, software) to be used in conjunction with the base products (*e.g.*, hardware) of all suppliers." *Ibid.* at 36.

[94] Economides, *supra* note 89 at 14. The terms "interlinked" and "compatible" are used interchangeably by Katz and Shapiro. Katz & Shapiro, *supra* note 82 at 424.

[95] Rohlfs, *supra* note 83 at 37-38. Additionally in the start-up market, interlinking makes it easier for an industry to reach a critical mass. *Ibid.* at 38

[96] *Ibid.*

[97] Katz & Shapiro, *supra* note 81 at 109.

[98] Economides, *supra* note 89 at 20.

cases are examined below.

Horizontally Related Case: When two networks provide complementary components and are only vertically related, interconnection is mutually profitable, and the exclusion of rivals is not consistent with profit-maximizing behavior, even though interconnection negotiations or disputes may occur because the profit generated from the provision of end-to-end services will have to be divided between the two network operators.[99] In contrast, when two networks offer substitute services and are horizontally related, or when two networks have the structure of a network of interconnected networks (it is often called a "network of networks" and encompasses both horizontal and vertical elements), each network has every reason to compete as hard as possible and to try to prevent the other firms from providing their products or services to customers.[100] As a result, a network operator has good reason to attempt to foreclose or marginalize an opponent network by refusing to interconnect.

Mature Market Case: In the case of horizontally related networks, the degree of incentives to interconnect will depend on the maturity of the market. In a start-up market, where the initial networks may be so small that they are unattractive to potential customers, competing firms may interconnect so that the industry as a whole is more attractive to customers.[101] On the contrary, in a mature market where a single, large firm exists, the firm will have an incentive to refuse to interconnect, while all other firms clearly have an incentive to interconnect with the firm.

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[99] Nicholas Economides, "Principle of Interconnection: A Response to "Regulation of Access to Vertically-Integrated Natural Monopolies"" (Paper presented to the New Zealand Ministry of Commerce, October 1995) at 2.
[100] *Ibid.* at 2.
[101] Faulhaber, *supra* note 87 at 692.

### f. SHORTCOMINGS OF INTERCONNECTION: COST-TAKING AND DISINCENTIVE TO INNOVATION

Even though interconnection expands the size of each network to the total membership of all networks, in the real network industry, whether voluntary or mandatory, it may lead to huge costs and eliminate incentives to innovation.

The potential costs of compatibility (interconnection in this context), as Katz and Shapiro point out, depend upon the mechanisms through which compatibility is achieved.[102] One mechanism is standardization, whereby systems are designed to have interchangeable components. The other mechanism is adaptors, which attach to a component of one system in order to allow it to interface with another system. However, the costs of the interconnection of physical networks in traditional network industries by either method may not be especially high with modern technology, even though the costs can vary, depending on the particular circumstances.[103] Moreover, one of the most critical drawbacks concerning interlinking (interconnection in this context) is that it may reduce incentives to innovate. A firm might have insufficient incentives to develop new technologies unless the firm can gain a valuable competitive edge with a new technology by refusing to interlink.[104]

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[102] Katz & Shapiro, *supra* note 81 at 110.
[103] Rohlfs, *supra* note 83 at 35, 43.
[104] *Ibid.* at 43.

### g. JUSTIFICATION FOR GOVERNMENTAL INTERVENTION

From a network-effects perspective, governmental intervention in public utility sectors in order to ensure interconnection should be justified[105] as long as horizontally related network operators are competing in a mature (after critical mass) market; it is hard to expect the largest firm to interconnect voluntarily. Even where intervention is justified, a government should take into account the possible shortcomings of interconnection. At the same time, the government must prevent the firm with the largest market share and the strongest network effects in the market from unfairly leveraging its market power in other markets.

## B. PRACTICAL SCHEME IN THE TELECOMMUNICATIONS SECTOR

### a. NETWORKS FEATURES IN THE TELECOMMUNICATIONS SECTOR: OVERVIEW

The telecommunications sector clearly exhibits characteristics of network effects since the value to subscribers of a network is positively affected when an additional subscriber joins and enlarges the network.[106] The utility that a consumer derives from joining a telecommunications network, for example, depends on the number of other households

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[105] As long as network effects are not realized in any market transaction, it is theoretically possible for governmental intervention to improve market performance, since market outcomes may be inefficient in the network industry. However, before concluding that governmental intervention is justified in practice, it should be noted that our understanding of network effects is still in its infancy and as network effects and their related phenomena are complex and multifaceted the concept needs to be discussed more carefully. Kolasky, *supra* note 80 at 584. The theoretical implications of network markets have not been fully elaborated, even in economic literature. Lemley & McGowan, *supra* note 85 at 485. As Katz and Shapiro mentioned, "we are far from having a general theory of when government intervention is preferable to the unregulated market outcome." Katz & Shapiro, *supra* note 81 at 113.

[106] Katz & Shapiro, *ibid.* at 94.

or businesses that have joined the network.[107] The more customers a person can call or be called by, the more valuable the network is to that person. Thus, we are all better off connected to the same telecommunications network than we would be if we were connected to different networks. The presence of network effects does not imply that a telecommunications network run by a single firm is a regulated natural monopoly. It merely illustrates that one network is the most efficient structure. The number of different firms that participate in that one network is purely a question of interconnectivity. Therefore, to internalize network effects, some intervention in the transaction process is required.[108]

According to OECD statistics,[109] the United States and Australia have 2,222 and 89 fixed PSTN (Public Switched Telecommunications Networks which include local, national, and international networks) operators, 420 and 4 cellular operators (plus 6 other IMT-2000 operators), and more than 200 and 5 wireless local loop (fixed wireless) operators respectively. Additionally, in the United States, about 1.5 million people subscribe to telephone service provided by cable networks. Moreover, a form of wireless local area network commonly referred to as a W-LAN, or WiFi, has emerged to provide broadband communications service, and the network is viewed as being a potential competitor, as well as complementary, to high-speed mobile networks.[110] Regarding costs, the interconnection of telecommunications networks may require investments in physical assets, such as switches and routers, ongoing variable costs, and the monitoring

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[107] Katz & Shapiro, *supra* note 82 at 424.
[108] Lemley & McGowan, *supra* note 85 at 551.
[109] OECD, *supra* note 35 at 35.
[110] *Ibid.* at 28.

and/or blocking of non-conforming uses.[111] However, the total costs required to ensure interconnection in the telecommunications sector may be far lower than in other public utility industries. Additionally according to the International Telecommunication Union, there are more than 2,700 Recommendations, which are standards that define how telecommunications networks operate and inter-work to guarantee the interconnectivity and interoperability of networks and enable telecommunication services to be provided worldwide.[112]

From a network effects perspective, governmental intervention to interconnect each telecommunications network may be justified, since the sector has strong network effects, a huge number of various kinds of individual technological networks, relatively low cost structures with respect to interconnection as a result of technological advances, and the necessity to coordinate detailed technical standards in order to interconnect equipment.

### b. SECTOR-SPECIFIC RULES APPROACH: GENERAL DUTY OF INTERCONNECTION

The regulation of interconnection seems to be simpler than other regulatory issues. In Australia, standard conditions with which licensed operators must comply include an obligation for those operators to gain access to their facilities and to obtain information

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[111] Faulhaber, *supra* note 87 at 692.

[112] See ITU, Telecommunication Standardization Bureau, ITU-T Telecommunication Union Standardization Sector, *General Overview*, online: ITU <http://www.itu.int/ITU-T/> (date accessed: 24 September 2003).

on their network.[113] Similarly, in the United States, each "telecommunications carrier" is required to interconnect with other carriers.[114]

### c. ANTITRUST RULES APPROACH: A NEW ARGUMENT IN THE HIGH-TECHNOLOGY NETWORK INDUSTRIES

As described above, the main function of the general antitrust rules is to eliminate anticompetitive behaviors from the market. Therefore, it is not easy for the antitrust rules to directly order all telecommunications operators to interconnect with each other regardless of whether they have significant market power or engage in anticompetitive behaviors. In reality, there are incumbents who have significant market power in the local telecommunications market, but the issue of interconnection with the incumbents' networks falls within the scope of the bottleneck facilities access problem discussed earlier. However, if a discriminatory or unfair behavior with which regulators cannot deal by applying the current sector-specific rules occurs, general antitrust rules are still available as a last resort.

More broadly, apart from the interconnection of telecommunications networks, new firms with innovative goods and services, such as Microsoft with Windows and

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[113] See Australia. Commonwealth, Department of Communications and the Arts, *Australia's Open Telecommunications Market: The New Framework* (Canberra: Department of Communications and the Arts, 1998).

[114] 47 U.S.C. §251(a). Additionally, all Local Exchange Carriers (LECs) are barred from either prohibiting or imposing discriminatory conditions on the resale of telecommunications services. Other than the general obligation of interconnection, LECs are also required to provide number portability and dialing parity and to provide access to their poles, conduits, and other rights of way to competing providers of telecommunications services. *Ibid.*, §§251(b)(1)-(4).

AOL with Instant Messenger, could suddenly emerge and briefly establish a dominant position in the market in a high-technology business field. These goods and services, while closely related to the telecommunications industry, are outside the industry in the traditional sense. Therefore, in this sort of expanding area of business, regulators cannot manage with sector-specific rules. Here, the importance of antitrust rules becomes clear: They can be applied to economy-wide activities. We should now reexamine in turn whether it is still appropriate for the enforcer to rely upon the traditional antitrust law approach in evaluating an economic rationale for behaviors of firms that provide network effect goods and services (*e.g.*, an excessively low price to get critical mass and an excessively high price to redeem the capital investment once critical mass has been reached).

## C. SUMMARY AND POLICY IMPLICATIONS

### a. SUMMARY OF THIS CHAPTER

"Network effects" is defined as the utility that a user derives from consumption of a good that increases with the number of other agents consuming the good. Most networks in public utility sectors have direct physical effects. Whereas the problem in the case of a natural monopoly is one of scale economies of supply, network effects are demand-oriented rather than supply-oriented. Theoretically, one of the most important characteristics of network industries that arises from the existence of network effects is that the long-run market equilibrium is extremely unequal and far from competitive, even

though free entry is possible, and countless of firms have already entered. In such industries, a switch from non-interconnection equilibrium to interconnection equilibrium is required in order to achieve higher consumer and total surpluses, no matter how many firms are involved. In some cases, firms tend to interconnect voluntarily, while in other cases they do not. Whether firms have incentives to interconnect depends mainly on the market structure of the network. In cases where two networks are only vertically related, interconnection is mutually profitable, whereas in cases where two networks are horizontally related or where two networks have the structure of a network of interconnected networks, each network has every reason to compete very hard and to try to prevent the other from providing its products or services to the customer. Additionally, in a mature market where one single firm has a large market share, the firm has an incentive to refuse to interconnect, while all other firms clearly have an incentive to interconnect. Therefore, from a network-effects perspective, governmental intervention in public utility sectors to ensure interconnection seems justified in the case of horizontally related mature networks since it is unlikely the largest firm will interconnect voluntarily. Even where intervention is justified, the government should consider the possible shortcomings of interconnection. Interconnection in the real network industry, whether voluntary or mandatory, may entail huge costs and may eliminate incentives to innovate. At the same time, a firm with strong network effects in a market must be prevented from unfairly and inefficiently leveraging its market power in related markets.

### b. POLICY IMPLICATIONS

Arguments about network effects are extremely complicated, as a variety of opinions exist on the topic. However, as far as the direct network effects found in public utility industries are concerned, guaranteed interconnection is arguably important. Especially in the telecommunications sector, the guarantee of interconnection is more desirable than in other utility sectors because the number of networks is increasing, the cost of standardization is relatively low, and the coordination of technical standardization is a must. According to the above discussion, antitrust rules cannot be applied to guarantee the general interconnection obligation because the purpose of installing interchangeability between individual networks is outside its basic aim to eliminate anticompetitive behavior. In contrast, as both countries have appropriately established, sector-specific regulations are justified in imposing the duty of interconnection on all network operators.

In conclusion, as far as the traditional telecommunications industry is concerned, guaranteed interconnection is a necessary condition from a network-effects viewpoint. However, technological developments shed new light on the problem of anticompetitive behavior in the network effects-related market. Other issues remaining to be addressed are how the regulator, beyond the role of simple interconnection guarantor, will enforce antitrust rules in the new expanding networks industry.

# Chapter IV

## PUBLIC GOOD AND UNIVERSAL SERVICE RULES

### A. THEORETICAL APPROACH

#### a. PUBLIC UTILITY SECTORS AND UNIVERSAL SERVICE

In public utility sectors like telecommunications, electricity, gas, and transportation, regulators often put a high value on the "equal access" of all consumers to the service at an "affordable tariff".[115] One can hardly imagine operating a home without these public services. There was no serious concern when these industries were operated by regulated monopolies because monopolists were generally charged with the duty to provide service to specific areas; they were also strictly controlled under rate-of-return pricing policies and thus could manage by applying cross-subsidization between "profitable" and "unprofitable" users. That is to say, universal service was an achievement of the regulated monopoly and the required cross-subsidization mechanism inevitably distorted prices, market entry, and investment decisions throughout industries almost from the moment of these industries' inception.[116] However, with the arrival of new entrants into markets having undergone deregulation proceedings, industries are now open to full or partial competition, and former monopolists are unable to finance these obligations through cross-subsidies because competitors are trying to find and enter into the most profitable segments of the market, such as the urban, low-cost, and high-volume

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[115] Philippe Chone, Laurent Flochel & Anne Perrot, "Allocating and Funding Universal Service Obligations in a Competitive Market" (2002) 20 Int'l J. of Indus. Org. 1248 at 1248.
[116] A.H. Barnett & David L. Kaserman, "The Simple Welfare Economics of Network Externalities and the Uneasy Case for Subscribership Subsidies" (1998) 13 J. of Reg. Econ. 245 at 245.

sub-markets in order to engage in cream-skimming. Additionally, there are emerging apprehensions that some consumers might not receive services any longer, or might face different tariffs in response to consumption patterns and cost characteristics.[117]

### b. WHAT IS UNIVERSAL SERVICE?

Even though the definition of universal service may vary, to a large extent, in accordance with the socio-economic characteristics of each country, industry, and even period, some crucial elements have consistently been associated with this concept. A universal service obligation could be defined as the obligation of an operator(s) to provide all users with a range of basic services of good quality at an affordable rate.[118] Here, one of the most critical problems is specifying the basic policy objectives and setting up the mechanism that will be used help to achieve them as effectively as possible. From a traditional and empirical perspective (except with the theoretical approaches described later), the universal service obligation can arguably be recognized as a set of limitations on the operator's pricing incentive. In many instances, uniform pricing is imposed upon the operator under the obligation as an additional requirement, and thus the operator may not differentiate his prices (or pricing policies) on the basis of geography or demand characteristics (*e.g.*, households or firms). In addition to pricing restrictions, a certain level of service may be required, ranging from minimum quality standards to a precise

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[117] Chone. *et al.*, *supra* note 115 at 1248.
[118] H. Cremer, *et al.*, "Universal Service: An Economic Perspective" (2001) 72 Ann. of Pub. & Coop. Econ. 1 at 7.

definition of the range of basic services. However, these additional requirements may be a way for the regulator to prevent the operator from lowering quality in order to keep prices lower than the competition.[119]

### c. JUSTIFICATION FOR INTERVENTION AS TO PROVIDING UNIVERSAL SERVICE

The various forms of subsidization schemes in tariff settings are based on public goods theory and also on the theory of network externalities (It is a better term than "network effects" since here market inefficiency is represented.). While the latter, as a demand-driven approach, has been invoked as the main argument by policy makers to increase subscribership levels,[120] the former, as a supply-driven approach, is embraced by some authors in relation to the redistribution policy.[121]

#### i. ECONOMIC JUSTIFICATION: EXTERNALITIES

Some authors argue that a policy that increases subscribership to levels greater than those that would result from normal competitive market forces are theoretically justified by the network externalities that arise from the value that current subscribers to a network

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[119] *Ibid.* at 12.

[120] Demetrius Yannelis, "On the Simple Welfare Economic of Network Externalities" (2001) 28:4 Int'l J. of Soc. Econ. 344 at 344.

[121] In some other cases, universal service is required based on regional policies, in order to encourage households and firms to locate in rural areas, to prevent those already installed in the rural areas from moving away, and to prevent rural areas in themselves from declining. However, the effects of universal access to some networks on a regional basis may be quite complex; for example, access to an efficient transportation network may speed up a region's decline rather than fostering its development. Cremer, *et al.*, *supra* note 118 at 18.

receive when additional subscribers are connected to that network.[122] Because individual subscribers do not generally take into account the added value received by existing subscribers in making their decision to connect to the network, the competitive (marginal cost) pricing of network access is thought to lead to a socially suboptimal level of subscription.[123] In this case, some way to impose taxes and charges on free-loaders, including subsidizing schemes, would be justified.

While this argument has some appeal, especially in the early developmental stages of some public utilities, it also has some limitations.[124] Other authors are strongly opposed to that position.[125] Reportedly, the welfare losses endured in the name of universal service have reached the tens of billions of dollars over the years.[126] It is also clear that network externalities, even if substantive in overall magnitude, do not generally justify subscribership subsidies, and, based on the empirical realities of telecommunications markets, subscribership subsidies of any kind are unlikely to improve social welfare.[127] It has also been argued that subscribership subsidies may not be Pareto-improving if network externalities diminish and become infra-marginal at a

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[122] See Jonathan Michie, "Network Externalities – The Economics of Universal Access" (1997) 6:4 Utilities Policy 317 at 323. See also Barnett & Kaserman, *supra* note 116 at 246.
[123] *Ibid.* at 246.
[124] Cremer, *et al.*, *supra* note 118 at 13.
[125] Barnett and Kaserman have shown that such a subsidy will not, in general, produce a Pareto Optimum except under the stringent conditions of using a simple two-person model where network externalities are present. Barnett & Kaserman, *supra* note 116 at 253. Cremer, *et al.* argue that it may not be evident that network externalities automatically result in an inefficiently low degree of network participation in that, for instance, when a firm finds it profitable to coordinate consumers, the firm also benefits from network externalities by increasing consumers' willingness to pay and thus the obligation is not be necessary. Cremer, *et al.*, *supra* note 118 at 15. See also Yannelis, *supra* note 120 at 344.
[126] James M. Griffin, "The Welfare Implications of Externalities and Price Elasticities for Telecommunications Pricing" (1982) Rev. of Econ. & Statistics 64 at 65.
[127] Barnett & Kaserman, *supra* note 116 at 253.

very high penetration rate.[128] Nevertheless, opponents of this view do not seem to deny the justification of network externalities and some of them even admit that, in some cases, subscribership subsidies are justified, unless network externalities are negligible and infra-marginal.[129] Therefore, it seems fair to say that network externalities are a possible justification for government intervention with respect to providing universal service, although some of their possible limitations should also be kept in mind.

### ii. ECONOMIC JUSTIFICATION: TRADITIONAL PUBLIC GOOD THEORY

While there is no universally accepted definition of a "public good," according to one of the traditional definitions, a good can be considered public if its use by one agent does not prevent other agents from using it (it is non-excludable in possession); individual consumption does not exhaust the good (it is non-rivalrous in consumption), as is the case for a private good.[130] Also, traditional public good theory seems to imply that the government is justified if it intervenes in order to reach the appropriate supply level for the public good.

Regarding the non-rivalrous aspect, a network in most public utility sectors is recognized as non-rivalrous if anyone can access the network (provided that there is enough capacity), and if the use of the network by any subscriber does not diminish the

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[128] Yannelis, *supra* note 120 at 347.
[129] *Ibid.* at 347.
[130] Jean-Jacques Laffont, *Fundamentals of Public Economics*, trans. by John P. Bonin & Helene Bonin (Cambridge, Mass.: MIT Press, 1998) at 33.

use of or benefit to any other subscriber (provided that there is no congestion).[131] As to the non-excludable aspect, even though such exclusion is physically possible, society finds it unacceptable that anyone should be excluded from receiving public utility services, since these services bind the nation together, are essential for the functioning of a democracy, and are important for any number of other ethical reasons. Based on these arguments, the use of or access to the network by an individual can be considered a private good, but the network as a whole (or access to the network) can be treated as a public good. Therefore, in this case, governmental intervention to reach the appropriate supply level seems to be justified.

### iii. ANOTHER POSSIBLE RATIONALE

Even though both arguments, that of network externality and that of traditional public good, have similar characteristics to the extent that social welfare might be limited to suboptimal levels and might thus require some governmental action, they are not always perfect rationales for intervention. As demonstrated above, network externalities are one possible justification for governmental intervention as to the universal service obligation, but it has weak aspects when mature public utility sectors have already reached relatively high subscribership levels. Moreover, the traditional economic explanation of the public good theory, which is based on non-rivalrous and non-excludable features, does not seem to be good enough to justify intervention; for example, sufficient capacity and

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[131] Yannelis, *supra* note 120 at 345.

non-congestion of networks cannot always be guaranteed. A further rationale is needed.

First, it seems fair to say that a universal service scheme brings benefits to markets as a whole, since a network is most valuable to all market participants when as many people as possible connect to it due to the network or bandwagon effects discussed above. In this sense, the universal service scheme should establish the fundamentals and sustainability of markets and consequently should enable customers to expect more benefits of competition, such as lower prices, improved quality, choice, and innovation.

Another stringent proposal that fills any gaps, or replaces traditional economic explanations, is to re-conceptualize public goods as outcomes of normative regimes.[132] Traditional economic accounts of public goods are based on non-rivalry and non-excludability, such as in the case of a lighthouse, but not all of the assumed public goods are inherently non-rivalrous and non-excludable. Yet it seems more persuasive to assume that access to networks is designed to be non-rivalrous or non-excludable within the regime of public goods than to assume that some set of characteristics inherent to them makes them so. This norm should be based on a shared meaning of "good" for the public as a whole, and social welfare functions representing a consistent set of ethical preferences. Here, public goods are not a thing, like the traditional lighthouse, but rather are a normative regime.[133] The same goes for antitrust schemes as long as they have shared meanings and social welfare functions. Universal service schemes, such as rules concerning definition, collocation, and allocation, as well as antitrust schemes, ought to be recognized as part of a whole regime for public goods.

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[132] This idea comes from Professor Richard Janda, Faculty of Law, McGill University.
[133] *Ibid.*

An alternative argument, which is more broad, is that regulatory principles laid down for regulators are not limited to those concerned with maximizing of economic efficiency, but include those based on more egalitarian or rights-based factors; these are not simply imported through value judgments of particular regulators but are founded on legal principles.[134] Even though this perspective should help regulators to establish appropriate public policies, the scope of the argument here is mainly to analyze the economic aspects of justifications for regulation (some of which may be justified by the legal principle), and thus an analysis of the justification concerning legal principles is outside the scope of this chapter. Of course, values of economic efficiency and legal principles are sometimes integrated, and are otherwise diverse, and, roughly speaking, depend on the historical facts and political situations that are present when the policy was established.

### iv. REDISTRIBUTION POLICY INSTRUMENTS

Keeping in mind the argument that public utility networks or services have

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[134] Tony Prosser, *Law and the Regulators* (Oxford: Clarendon Press, 1997) at 30. Similarly, Balnaves and Richardson have interpreted the concept of equity when applied to telecommunications in the following way.

> [S]ocial equity as equality entails satisfaction of the basic telecommunications need (however defined) for all and identification of individual circumstances which might prevent citizens from meeting that need. The primary goal of social equity therefore, is to guarantee the basic telecommunications need for all, which includes essential access to and participation in the telecommunications network. Equality in meeting needs, however, does not extend to those individual telecommunications needs which are not basic.

See Mark Balnaves & Evelyn Richardson, *Social Equity and Telecommunications: The Application of the Principles of Social Equity to the Telecommunications Arena* (Melbourne: Telecom Australia, 1990).

characteristics of the public good, the universal service obligation can be justified as a way of contributing to the provision of this public good.[135] For their part, traditional and practical universal service obligations can be viewed as a special type of redistributive pricing, a policy meant to affect redistribution through the intervention of price mechanisms.

One should compare this policy with another type of redistribution policy, one involving the public provision of private goods, that is, income taxation and/or direct transfers[136] or in-kind transfers, like education, child care, and health care, that are provided either free of charge or at highly subsidized prices.[137] These direct subsidies could reduce some of the most striking inequalities in society and eliminate the distortion effects associated with the incorrect pricing of services, since prices can be maintained at levels that reflect costs established by the market mechanism.[138] A direct payment plan provides the recipient with a choice, if one is available, utilizes the market mechanism, and lessens the need for the complex fact-finding proceedings required to determine the cost of services to a provider.[139] Moreover, if the government were able to directly subsidize needy subscribers, the budgetary allocation would provide a precise way to

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[135] Artle and Averous demonstrate that the telecommunications system possesses the essential property of public goods through its provision of access. Roland Artle & Christian Averous, "The Telephone System as a Public Good: Static and Dynamic Aspects" (1973) 4:1 Bell J. of Econ. & Mgmt. Sci. 90 at 90.

[136] Cremer, *et al.*, *supra* note 118 at 14.

[137] There is another possible option by which recipients are given a dollar amount, in the form of credits or coupons, to spend among a list of alternatives but the choices recipients make may not be the ones society thinks best (*e.g.*, communications coupons on cable TV service or video rental rather than basic telephone service). Marlin Blizinsky, "Question For Outlining A Universal Service Policy" in Cherry *et al.*, ed., *Making Universal Service Policy* (Mahwah, N.J.: L. Erlbaum Associates, 1999) 59 at 62.

[138] OECD, *Universal Service Obligations in a Competitive Telecommunications Environment* (Paris: OECD, 1995) at 83.

[139] Blizinsky, *supra* note 137 at 64.

measure the proper extent to which universal service should be subsidized in monetary terms, and additionally, universal service targets and programs would be reviewed each year in order to determine whether they were still relevant.[140] In this case, however, on the grounds of taxation theory, one should be concerned with the possibility of "excess burden" inefficiencies arising from higher levels of taxation or prices, as well as with the income distortions introduced by the taxation system.[141] The more critical point is, though not from a purely economic perspective, that there is little reason to select this option, since budgetary and political constraints may prevail so that operators will bear the cost of the universal service scheme.[142]

In summary, indirect redistribution policies are optimal in a second-best sense when the necessary information, such as the identity of the sick or needy individual to be entitled, cannot be obtained in order to implement potentially more efficient policies like direct transfers.[143] The obligation can be used to achieve two types of redistribution: one is directed towards high-cost consumers, and the other is targeted to low-income or needy individuals.

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[140] OECD, *supra* note 138 at 84.

[141] *Ibid.*

[142] *Ibid.*

[143] Provision at subsidized prices may create incentives for over-consumption and thus imply an inefficient outcome. Consequently, if the objective of the public authorities is to help low-income individuals, it would appear more efficient to do so directly, through a personalized transfer. However, the authorities can hardly observe individual characteristics and identify the needy. Cremer, *et al.*, *supra* note 118 at 15.

### d. COST OF UNIVERSAL SERVICE OBLIGATION

Even though a general procedure for measuring the cost of the universal service obligation has yet to be developed, there are currently two competing possibilities. The first is the profitability cost of the universal service obligation. In this regard, focusing on the supply side, the cost of the universal service obligation is defined as the loss in profit incurred by the operator due to the obligation.[144] This cost is evaluated by comparing the profit levels of the operator under the alternative market equilibria, with and without the universal service obligation.[145] However, because of its basis in accounting practice, the costs cannot be calculated accurately if the price and market structure change substantially when the universal service obligation is abandoned, or if the operator has a direct benefit, such as reputation or a long-term strategy for serving certain non-profitable consumers. Moreover, if a government regulates the operator and restrains his profit level, the profitability cost is not the appropriate concept to use, since the profitability cost for the operator is, in principle, equal to zero.[146]

The second concept for measuring universal service costs is the welfare cost of the universal service obligation. This cost can be defined as the deadweight loss caused by the universal service obligation. In other words, the cost is obtained by comparing the total surplus achieved at a hypothetical equilibrium without a universal service obligation

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144 *Ibid.* at 19.

145 It requires a forward-looking approach to determine the equilibrium of a hypothetical state in which the universal service obligation is removed. Net Avoidable Cost and Fully Distributed Cost approaches are examples. *Ibid.* at 20.

146 *Ibid.*

with the total surplus realized under the obligation.[147] When uniform pricing is imposed as a requirement of universal service, the total surplus is usually lower than it would be when marginal pricing is taken against high-cost and low-cost customers respectively. However, one should not only focus on the difference between total surpluses, but should also take into account the whole scheme of the redistribution policy, because redistributive benefits are brought to society.[148] It is similar to the equity-efficiency trade-off framework.

### e. FINANCING OF THE UNIVERSAL SERVICE OBLIGATION

The design of the universal service obligation and its financing mechanism may influence the very nature of competition in the markets of deregulated public utility sectors, since it affects both the viability of the incumbent and the entry into the sector. To take full advantage of efficiency gains from potential or actual competition, it becomes important to design the universal service obligation and its financing mechanism in a competitively neutral way.[149] Competitive neutrality requires that no excess protection be granted to an operator under the obligation of universal service, and that the obligation be compensated for in an appropriate way, so that its viability is not threatened by the possibility of less efficient entrants.[150] Competitive neutrality includes

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147 *Ibid.* at 21.
148 *Ibid.*
149 *Ibid.* at 24. OECD, *supra* note 138 at 15, 137. Milton L. Mueller, Jr., *Universal Service Competition, Interconnection, and Monopoly in the Making of the American Telephone System* (Cambridge, Mass.: MIT Press and AEI Press, 1997) at 174.
150 Cremer, *et al.*, *supra* note 118 at 24. Mueller, *supra* note 149 at 176.

not only the neutrality of competitors but also the neutrality of the types of technology to be used so that the most efficient technology is applied.[151] Explicitness is also needed to ensure that universal service support payments are competitively neutral. Thus, subsidies should be readily quantifiable, and their distribution clearly accounted for, rather than buried in regulations and complex cost allocation procedures.[152] However, it is far from easy to find a single mechanism that is appropriate for all sectors and for all countries, since the choice of the appropriate financing mechanism will entail various trade-offs that are largely sector- and country-specific. Nevertheless, it would be useful to analyze some options of mechanisms in establishing the appropriate universal service scheme in accordance with sector characteristics. From the standpoint of ensuring competitive neutrality, several options of financing schemes should be compared.

### i. CROSS-SUBSIDY

First, with respect to financing schemes, there is a category in which universal service obligations are imposed *a priori* on a single, specified operator. Within this category, one finds both a universal service funding system and a cross-subsidy system. Historically, the cross-subsidy system has been adopted in public utility sectors as part of the regime of a legal monopoly. Regulators, as well as monopolists, seem to have tendencies to enforce cross-subsidies without the public even noticing. Some traditional rate-making practices supported by them could help clarify how the cross-subsidy system should be

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[151] Mueller. *ibid.* at 174.
[152] *Ibid.*

managed. For example, Kaserman and Mayo, focusing on subsidy flows, arguably identify some rate-setting practices as erroneous concepts: [153] (1) long-distance customers subsidize local customers by pricing on the basis of fully-distributed costs; (2) business customers subsidize residential customers by the value of service pricing; (3) light users subsidize heavy users by flat-rate pricing for local service; and (4) urban customers subsidize rural customer by rate averaging. According to the efficient-pricing principle, which requires marginal cost-based pricing, rates based on these traditional practices are inefficient because the rates are not compatible with the principle. At least from an economic perspective, the rates are arguably far from the "just, reasonable and nondiscriminatory rates" usually stipulated as the traditional legislative mandate in public utility sectors, even though regulators might arbitrarily interpret words like "nondiscriminatory" in favor of themselves. Nevertheless, when the monopolist was protected from competition by the legal scheme, a cross-subsidy system using these pricing practices did not seem to bring any critical problems as far as the provision of universal service was concerned.

However, in moving from a legal monopoly to competition, the increasing intensity of competitive market forces will eventually necessitate the marginal cost-based pricing structure, regardless of regulatory action or inaction, because competition inevitably drives prices to the marginal cost.[154] The feasibility of cross-subsidies is then totally threatened by the emerging competition. When the operator under the obligation

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[153] David L. Kaserman & John W. Mayo, "Cross-Subsidies in Telecommunications: Roadblocks on the Road to More Intelligent Telephone Pricing" (1999) 11 Yale J. on Reg. 119 at 126-31.
[154] Kahn, *supra* note 1 at 151.

is solely responsible for its financing, if the settings are almost the same as in the case of the monopoly, competition may limit the ability of the operator to use cross-subsidies because of cream-skimming by entrants.[155] Therefore, it would be more advantageous to use a universal service funding system with as many operators as possible than to cross-subsidize with a sole operator.

### ii. ACCESS SURCHARGES

One of the possible realities of the funding model is access surcharges, which only arise if the competing operators must use part of the network or service of the incumbent operator under the obligation. Competing operators are charged a fee when accessing or using the incumbent operator's network or service. While this option can be used to keep transaction costs down, it has two major problems. One is that it inevitably increases the complexity of access charge calculations. The other is that it becomes unfeasible where there is the possibility of bypassing the network or service of the incumbent exists, or if the network or service provided by the incumbent does not constitute a competing operator's input, which has to be used in fixed proportions.[156]

With respect to the access charge calculation, heated debates have erupted again and again among proponents of the efficient-pricing principle discussed above. They argue that the incumbent operator's fixed cost, which has no relationship to the

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[155] *Ibid.* at 221. Robert W. Crandall & Leonard Waverman, *Who Pays for Universal Service?* (Washington, D.C.: Brookings Institution Press, 2000) at 131. OECD, *supra* note 138 at 81.
[156] Cremer, *et al.*, *supra* note 118 at 30.

volume of usage by competing operators, should not be charged to them.[157] Kahn advocates that efficient pricing requires a two-part tariff consisting of a fixed charge (for example, in the telecommunications sector, a charge to cover the non-traffic sensitive costs of access like wire poles and switching equipment) and a variable charge (a charge to cover the traffic-sensitive costs of network usage, like expenditures to operate switches and carry signals, as well as those related to billing and collection).[158] Each component of the tariff would reflect the marginal cost of the respective service (*e.g.*, customer access, long-distance usage, and local usage). Kaserman and Mayo support Kahn's argument.[159] Given that the costs of various services for the incumbent operator are allocated on the basis of criterion other than the marginal cost of providing those services, the incumbent operator could recover a significant portion of his fixed costs from the carrier access charges competing operators would pay for each and every usage. These access charges should account for the costs of the competing operators' services. The end result would be that the prices of the competing operators' service would exceed marginal costs, and thus would push provision of the service to below an efficient level. The efficiency losses in the US telecommunications sector, which keep long-distance rates above cost, are estimated to amount to $1.5 to $10 billion annually.[160] Additionally,

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[157] The opposite argument is presented by Gabel and Kennet, who insist that a two-part tariff. as recommended by Kahn and others, will not necessarily substantially improve overall economic efficiency. David Gabel & Mark D. Kennet, "Pricing of Telecommunications Service" (1993) 8 Rev. of Indus. Org. 1 at 2-3. See David Gabel, "Recovering Access Cost: The Debate" in Cherry *et al.*, ed., *Making Universal Service Policy* (Mahwah, N.J.: L. Erlbaum Associates, 1999) 135.

[158] Alfred E. Kahn, "The Road to More Intelligent Telephone Pricing" (1984) 1 Yale J. on Reg. 139 at 140.

[159] Kaserman & Mayo, *supra* note 153 at 127.

[160] *Ibid.* at 121. James M. Griffin, "The Welfare Implications of Externalities and Price Elasticities for Telecommunications Pricing" (1982) 64 Rev. of Econ. & Statistics 59 at 65. It is also demonstrated that at the observed relative price, the welfare losses resulting from cross-subsidization range between $1.55 and $1.58 billion annually. It is further insisted that high demand elasticity of long-distance service,

the artificially elevated price of the competing operator's service, above the marginal costs of the access surcharge system, should discourage demand for the service and consequently the design and adoption of innovative new technologies that employ the competing operator's service.

A bypass occurs when a customer directly connects to a competing operator's network. In circumventing the incumbent operator's network, the competing operator does not pay the access charge that normally would generate money for funding. Customers can bypass the incumbent operator's network either by purchasing special access service from the competing operator (service bypass) or by constructing a private connection to the competing operator's network (facility bypass).[161] Bypassing is the start of a negative spiral that brings with it serious funding issues. The revenue base from which the regulator collects funds will eventually erode, as an increasing number of customers of the competing operators' service bypass the incumbent operator's network. Revenue losses from such bypassing will lead to increased access charges for the remaining customers in order to maintain the original funding level. The increased access charges would also demand new, less expensive bypass technology and the development of such technology would increase the amount of bypass, resulting in a

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combined with the large departure of toll prices from marginal costs, produces relatively large welfare loss triangles - certainly in the neighborhood of $10 billion annually for the United States. John T. Wenders & Bruce L. Egan, "The Implications of Economic Efficiency for US Telecommunications Policy" (1986) 10 Telecomm. Pol'y 33 at 36.

[161] An example of service bypass in the telecommunications sectors is that long-distance carriers have developed "nodal" services that effectively unbundle the purchase of access and long-distance transmission services, permitting very large telecommunications users to shop around for access service. Examples of facility bypasses are direct fiber connections provided by one of the so-called "competitive access providers" and connection to a long-distance carrier via a microwave linkage. See Kaserman & Mayo, *supra* note 153 at 137.

further erosion of the revenue base.[162]

### iii. UNIVERSAL SERVICE TAX OR FEE

Another option is a universal service tax or fee, meaning specific taxes levied on competitors' sales. This option has advantages over access surcharges in that it is more efficient, as well as more transparent, since, in this case, the financing of universal service is clearly separate from other issues, such as the marginal cost of access and the financing of the network's fixed costs, which may affect the determination of the access charge.[163] Furthermore, it is more feasible, irrespective of bypassing or input substitution. A universal fund, which would most likely be collected on the basis of all operators' revenues, is a much better option than attempting to compensate incumbents through access surcharges.

However, even though the options described above have advantages and disadvantages, one commonality should be noted: Due to the system's inherent inability to choose the obligated operator, none of these universal service funding systems would perform well unless the incumbent operator itself had a real incentive to become efficient.

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[162] *Ibid.* at 138.

[163] Cremer, *et al.* further argues that whereas these two options should adversely affect the price determination of competing operators, lump-sum entry fees, which can be implemented by selling or auctioning off licenses to operate in the sector, should not result in distorted prices since a sunk-entry cost does not affect the pricing decision of a profit-maximizing operator. However, this option may adversely affect entry and, from a dynamic perspective, may have a negative effect on welfare as they may reduce the number of active operators and prevent the entry of otherwise efficient firms. Cremer, *et al.*, *supra* note 118 at 30.

### iv. Franchising system

If there were room available to choose which operator was granted the universal service obligation, there would be a greater number of potential options. For instance, a universal service operator could be designated as part of the financing mechanism. In other words, the universal service obligation could be franchised.

Franchising is a system whereby operators would submit a bid consisting of the subsidy they would require to fulfill the universal service obligation. The franchise would be awarded, for a given period of time, in a given locale or national geographical area, to the least demanding operator.[164] Franchising has advantages over other options in that, by using this mechanism, the obligation would be assumed by the most efficient operator at a (close to) minimum cost. Moreover, a number of distortions associated with cross-subsidies or the funding system described above could be avoided. The franchising system would give carriers an opportunity to seek a USO franchise and implement delivery strategies, rather than being locked into paying compensation for services provided by an incumbent carrier that they would compete against in other segments of the market. Additionally, it is reasonably expected that competition would help to lower delivery costs and improve the provision of universal service. Moreover, it would allow carriers to bid for the opportunity to apply new technologies that might reduce delivery costs. [165] Still, there are some possible shortcomings. One might question the regulator's

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[164] *Ibid.* at 32. OECD, *supra* note 138 at 82.
[165] See Stephen McEllhinney, *Who Wants It? Tendering the Universal Service Obligation* (Melbourne: Communications Law Centre, 1999).

competence, delays, and inflated participation costs, and it is also possible that carriers might collude with each other in response to the regulator's requests for comments and other expressions of interest. Otherwise, the tendering process might lead pre-qualified carriers to bid for particular service components or a regional sub-unit of the national universal service obligation.[166] Additionally, the regulator could not compel franchises to establish uniform prices across different areas. While uniform pricing within a given area could be imposed as part of the franchising contract, it appears that it would be much more difficult to ensure uniformity of prices throughout an entire country.[167] Therefore, if a regulator were to adopt a franchising system to finance the universal service obligation, the regulator should monitor and eliminate, if present, any collusion and other imperfect competition difficulties, as well as establish an appropriate compensation scheme, in addition to launching the appropriate bidding scheme itself, taking into account factors related to the specific industry, such as the technology, the number of potential actors, the kind of auction used (reservation price or announced reservation price, local character or not) and so on.

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[166] See *ibid.* Cremer, *et al.* similarly argue that if the number of expected bidders is small and/or if collusion amongst bidders cannot be ruled out, franchising becomes less attractive, or if the regulator cannot credibly commit to an appropriate compensation scheme, the franchisee may not invest enough on the specific assets and significant production inefficiencies may result. Cremer, *et al.*, *supra* note 118 at 34.

[167] Cremer, *et al.*, *ibid.* at 34.

## B. PRACTICAL SCHEME IN THE TELECOMMUNICATIONS SECTOR

### a. OVERVIEW OF THE TELECOMMUNICATIONS SECTOR

Theodore Vail, former president of AT&T, was the first to advocate the concept of universal service, meaning the interconnection of all telephone exchanges and users.[168] Vail's competitive strategy was to absorb all independent operators into the "universal" system by making them noncompetitive feeders through sublicensing, instead of fighting to eliminate them.[169] In the 1970s, however, a politically motivated attempt to salvage the fortunes of the regulated monopoly system changed the meaning of universal service to the popular one, which is linked to household penetration rates and regulated monopolies.[170]

The telecommunications industries of most developed countries, whether dominated by private companies or public corporations, had no serious problem with the structure wherein cross-subsidies implicitly, from profitable to non-profitable segments of the industry, played a major role in the execution of universal service. At that time, before dramatic developments changed the face of the telecommunications sector, the content of universal service was simply access to basic "plain old telephone service"[171] for anyone needing it. Concerning the affordability of universal service, each country had

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[168] Mueller, *supra* note 149 at 97. Also, AT&T Annual Report No.43 in 1911 reads "[the Bell System] believes that the telephone system should be universal, interdependent and intercommunications, affording opportunity for any subscriber to any exchange to communicate with any other subscriber of any other exchange within the limits of speaking distance."

[169] Mueller, *supra* note 149 at 101.

[170] *Ibid.* at 150.

[171] OECD, *supra* note 138 at 22.

a slightly different point of view.[172]

Competition in the most profitable markets is threatening the feasibility of this traditional mechanism, and technological advances are bringing a lot of sophisticated new services like touch-tone and ISDN to the forefront. Therefore, regulators are trying to reconstruct the universal service obligation mechanism in a competitively neutral way. Ambitious politicians and policy makers nowadays are insisting that the quality and quantity of "basic service" be extended, arguing that the new information superhighway must lead to every home and provide access to a correspondingly broader array of information services.[173]

### b. FRAMEWORK OF THE UNIVERSAL SERVICE SCHEME IN BOTH COUNTRIES

Firstly, the statutory frameworks for the provision of universal service in Australia and the United States will be summarized.

In the United States, the essential elements of its universal service policy are contained primarily in Sections 254 and 214(e) of the Telecommunications Act 1996. Section 254 contains provisions related to the creation of definition(s) for universal service, the identification of specific groups of end-users for which the availability of universal service is to be assured, the establishment of explicit universal service fund(s), the quantification of amounts for an explicit fund(s), the collection mechanism(s)

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[172] OECD, *Universal Service And Rate Restructuring In Telecommunications* (Paris: OECD, 1991) at 26.

[173] Glen O. Robinson, "The "New" Communications Act: A Second Opinion" (1996) 29 Conn. L. Rev. 289 at 325.

available for raising money for an explicit fund(s), and a distribution mechanism for distributing funds for the benefit of targeted groups of end-users. The target groups of end-users are identified in Section 254 as low-income customers, customers living in rural (high-cost) areas, certain educational institutions and libraries, and health care providers serving customers in rural areas. Universal service providers are basically designated by state commissions under Section 214(e).

On the other hand, the Australian universal service policy is designed to safeguard access to a minimum level of essential telecommunications services for all persons in Australia. It recognizes the fundamental role of telecommunications in supporting effective participation in Australian society. In 1999, the government revised the legislative framework for telecommunications that had been established with the reforms of 1997 and created separate regulation for consumer issues, including the universal service regime.[174] In the process, the universal service regime was also been reconstructed under the Telecommunications (Consumer Protection and Service Standard) Act 1999 (the Consumer Protection Act), which commenced on July 1999.

The universal service regime, set out in Part 2 of the Consumer Protection Act, consists of the Universal Service Obligation (USO) and the Digital Data Service Obligation (DDSO). The regime is funded by an industry levy imposed under the Telecommunications (Universal Service Levy) Act 1997. Arrangements for the assessment, collection, recovery, and disbursement of USO levies are set out in Division 13 of the Consumer Protection Act, which requires all persons participating in an eligible

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[174] Stephen McElhinney, "Telecommunications Liberalization and the Quest for Universal Service in Australia" (2001) 25 Telecomm. Pol'y 233 at 239.

revenue period to contribute to the USO and DDSO levy for a claim period proportional to their share of total industry-eligible revenues.

Attempts to compare both schemes of universal service will be presented below, but here one of the most significant differences should be pointed out. In the United States, the definition of universal service varies with the end-user group to be targeted. For example, the definition of universal service for educational institutions includes all commercially available telecommunications services, whereas for residential customers, it is restricted to certain voice-graded services. However, in Australia the USO simply ensures that all people, no matter where they reside or carry on business, have reasonable access, on an equitable basis, to standard telephone services. Thus, this definition of the Australian USO seems to focus primarily on geographical aspects. In essence, the role of universal service has been to ensure widespread access to basic telephone services. This focus on ubiquity in Australia differs from in the United States, where the universal service regime provides for, aside from people in rural areas, libraries, educational organizations, health facilities, and low income-customer services at concessional rates.

### c. DEFINITION: WHAT SERVICES SHOULD BE PROVIDED TO WHOM?

#### i. FUNDAMENTAL VALUES

From an economic perspective, as was argued above, a universal service policy should be adopted when justified by network externalities, characteristics of the public good. Also, from a broader perspective, other possible justifications might include its fundamental

and sustainable function in markets and public good as the outcome of a normative regime. If one emphasizes the latter justifications, one should further pursue the shared meaning of "good" for the public or the social welfare functions that represent a consistent set of ethical preferences because they are the basis of the norm. The shared meaning and social welfare functions should be fundamental values in citizens' lives, and fundamental values should be democratic, economic, and social. To clearly distinguish one of these values from another is not always easy because they may be based on factors applying to individuals, network suppliers, or society at large.[175] However, in the telecommunications sector at least, where a comprehensive universal service policy can enhance access and quality of life for individuals no matter how poor or marginalized they might be at the micro level, universal service offers a potent policy tool to advance democracy and the economic development of the entire nation at the macro level.[176]

### ii. TRADITIONAL AND BASIC TELEPHONE SERVICE

Fundamental values can only be ensured through access to communications technologies. Such access should be recognized not only as the ability to listen to the views of others, but also as the ability to do far more (*e.g.*, ability to transmit own views, argue each other, and collect opinions). For example, Emerson argues that "the right of all members of society to form their own beliefs and communicate them freely to others must be

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[175] Blizinsky, *supra* note 137 at 61.
[176] Marlin Blizinsky & Jorge Reina Schement, "Rethinking Universal Service: What's On the Menu" in Cherry *et al.*, ed., *Making Universal Service Policy* (Mahwah, N.J.: L. Erlbaum Associates, 1999) 69 at 81.

regarded as an essential principle of a democratically-organized society".[177] The US Supreme Court has taken a similar view, holding that "in the realm of religious faith, and in that of political belief ... [the right] to persuade others to his own point of view ... in spite of the probability of excesses and abuses [are] essential to enlightened opinion and right conduct on the part of the citizens of a democracy".[178] The notion that basic telephone service should be provided as a universal service could be explained under this statement.

In the United States, the following services and functionalities are stipulated in Section 254(c)(1) of the Telecommunications Act 1996 and in Rule 54.101 of Part 54, Title 47 of the Code of Federal Regulations (CFR): voice-graded access to public-switched networks; some (unspecified) amount of local usage; dual-tone multifrequency signaling or its functional equivalent (*e.g.*, touch-tone service); single-party service or its equivalent; and access to emergency services, operator services, interexchange services, and directory assistance. Under the Rule, this definition is used for the purpose of determining universal service support for residential and single-line business customers in rural, insular, and high-cost areas.

In Australia, the USO ensures that all citizens, wherever they reside or carry on business, have reasonable access, on an equitable basis, to: standard telephone services, payphones, [179] and prescribed carriage services (although none have been

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[177] Thomas Irwin Emerson, "Toward a General Theory of the First Amendment" (1963) 72 Yale L.J. 877 at 956.

[178] *Cantwell v. Conneticut*, 310 US 296 (1940).

[179] The universal service provider in Australia is required to supply, install, and maintain payphones throughout the nation. *Telecommunications Act 1999* (Cth.), s. 9C. To date, Telstra as a universal service operator reportedly operates about 37,000 payphones under the USO, which includes a requirement that they be "reasonably accessible" to the community. A further 44,000 payphones are

prescribed[180]).[181] Standard telephone service is a carriage service for the purposes of voice telephony, or an equivalent service that meets the requirements of the Consumer Protection Act.[182] Residential telephony customers must be offered under the untimed local-call obligation[183] the option of untimed local calls, an extremely common price structure in the US local service market. It should also be noted that whereas the United States scheme seems to pay a lot of attention to low-income customers, the Australian scheme seems to pay a lot of attention to people with disabilities. Standard telephone service includes the option of telephone handsets and customer equipment for people with disabilities under the requirement of the Disability Discrimination Act 1992.

These basic telephone services should bring the benefit of access to the political process to individual participants as well as to society. A perceived inability to participate in the process may lead to social unrest and to defining laws resulting from that process as illegitimate. If this is true, it could be argued that society and individuals both benefit.[184] Therefore, citizens must have reasonable access to society's principal mechanisms for communication. Receiving news about politics and political issues is not enough in order to be a well-informed citizen.

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privately operated by community clubs and small businesses. Similar quality of service requirements apply to payphones as to STS, with additional requirements relating to accessibility for people with disabilities. See Telestra Corporation, *Universal Service Plan, Payphone Fact Sheet* (Melbourne: Telestra Corporation, 1999).

180 *Telecommunications Act 1999 ibid.*, ss. 9D, 9F.

181 *Ibid.*, ss.5(2), 9(1).

182 *Ibid.*, ss. 5(2), 6(1).

183 *Ibid.*, Part 4.

184 Blizinsky, *supra* note 137 at 60.

### iii. DIGITAL DATA SERVICE

We are living in an economic age that increasingly creates and shares information, and it has become crucial for businesses and individuals to maximize access to the interconnected information infrastructure. The notion that we need to exchange information via digital equipment (*e.g.*, touch-tone telephone[185]) or through the Internet (*e.g.*, ISDN basic service) should be acknowledged as a fundamental economic value, if this situation is taken into account. As illustrated above, touch-tone dialing has already been included within the obligation of the provision of basic telephone service.

Regarding ISDN basic service, in Australia the universal service obligation is complemented by the Digital Data Service Obligation (DDSO)[186]. The DDSO provides, upon request, higher speed service. The Telecommunications Legislation Amendment Act (1999) contains provisions for the inclusion of a digital data capability within the USO. It is defined as "general digital data service" (GDDS) or "special digital data service" (SDDS).[187] The GDDS is a carriage service that is provided by a digital data capability broadly comparable to that provided by a data channel with a data transmission speed of 64 kilobits per second supplied to end-users as part of the

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[185] Touch-tone dialing is required for a broad array of customer applications, ranging from simple telephone answering machines through sophisticated voice-mail messaging systems, information-database retrieval services, interactive services such as on-line banking, merchandise ordering, airline-hotel reservation, and so on. OECD, *supra* note at 51.

[186] *Telecommunications Act 1999* (Cth.), ss. 5(2), 10.

[187] Telstra is the sole declared GDDS provider and makes available on request to at least 96% of the Australian population, a service broadly comparable to a 64kbit/second data channel. There are two declared SDDS providers (Telstra and Hotkey Internet Services Pty Ltd since May 2002) for the remaining 4% of the Australian population not able to access GDDS on request. Australia, Commonwealth, Australian Communications Authority, *Annual Report 2001-2002* (Canberra: Australian Communications Authority, 2002) at 67.

designated basic-rate ISDN service (the quality of service should be kept at the same level as those services supplied by Telstra immediately before July 1997 and should comply with the standards set for such services by the European Telecommunications Standards Institute).[188] The SDDS is a carriage service that provides a capability for the delivery of digital data to an end-user broadly comparable to the corresponding capability provided by a data channel with a data transmission speed of 64 kilobits per second supplied to end-users as part of the designated basic-rate ISDN service.[189]

In the United States, some state public utility commissions have decided that ISDN basic services are a basic service,[190] even though the similar obligations of the ISDN service are not stipulated in the federal scheme. Moreover, health care providers serving persons residing in rural areas can benefit from a broader range of services. Rule 54.613 provides that supported services include commercially available telecommunications services, and, additionally, telecommunications services that are available in urban areas are to be supported and made available to eligible health care providers in rural areas. Regarding the commercially available telecommunications services, eligible health care providers are charged only an urban rate for each supported service, which is defined as the rate for a similar service in the closest city in the state having a population of 50,000 or more, taking distance charges into account.[191] The rural rate is defined as the average of the rates actually being charged to commercial

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188 *Telecommunications Act 1999* (Cth.), ss. 5(2), 10A(1), 10F.
189 *Ibid.*, ss. 5(2), 10B(1), 10E.
190 For example, the state of Massachusetts Department of Public Utilities concluded that New England Telephone's ISDN basic service offering is a "basic monopoly service" that is necessary for a customer to obtain access to the ISDN-based digital capabilities of the public switched network. OECD, *supra* note 138 at 52.
191 47 C.F.R. § 54.605 (2003).

customers for identical or similar services in the rural area in which the health care provider is located.[192] Regarding the telecommunications services available in urban areas, eligible health care providers that lack toll-free access to an Internet service provider (ISP) may receive the lesser of the toll charges incurred for 30 hours of access to an ISP or $180 per month in toll charge credits to be charged for connecting to an ISP.[193]

### iv. BROADBAND SERVICE ARGUMENT

From a social value perspective, access to communications services, even if not limited to telecommunications, offers benefits such as encouragement of a sense of shared values and mutual responsibility. Social interactions form part of the socialization process through which society seeks to engender loyalty to itself. The network is an essential ingredient for overcoming social fragmentation and, consequently, for enabling participation in the community.[194] Together, the major structural shifts from monopoly to competition, as well as from a single provider to multiple service providers, are occurring simultaneously with technological developments in the telecommunications sector. Considering both the fundamental social value and the structural shift, one may understand the pressure to expand the definition of universal service to include broadband services.

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[192] *Ibid.*§ 54.607 (2003).
[193] *Ibid.*§ 54.621 (2003).
[194] Blizinsky, *supra* note 137 at 75.

So far, neither country has expanded its definition of universal service to include broadband access service for all customers. Yet, one can find indications that the United States intends to do so. US educational institutions and libraries could greatly benefit from commercially available telecommunications services as a much broader range of services would be supported through universal service mechanisms. Rule 54.502 stipulates that supported services include all commercially available telecommunications services, while Rule 54.503 elaborates on that, stating that supported services include Internet access and the installation and maintenance of internal connections.[195] In its Report and Order, the FCC elaborated that internal connections include interior wires, as well as routers, hubs, network file servers, and wireless local networks, but not personal computers.[196] Additionally, there seems to be a strong sense that the government should ensure that all Americans have access to information: the concept of universal service is being extended to ensure that information resources will be available to all, at affordable prices.[197] As in the United States, one of the major issues in Australia is whether standard telephone service should be upgraded to include network information and communication services, even though only 8% of households have a computer and a modem (1996).[198]

It is difficult to distinguish that which should be mandated from that which

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[195] Voice mail will be added from July 1.2004 by revise of this Section. 68 Fed. Reg. 36,931, 36,942.
[196] U.S., Federal Communications Commission, *Report and Order in the Matter of Federal-State Joint Board on Universal Service*, (CC Docket No.96-45) (Washington, D.C.: Federal Communications Commission, 1997) at paras. 451-63.
[197] Coin R Blackman, "Comment Universal Service: Obligation or Opportunity?" (1995) 19 Telecomm. Pol'y 171 at 171.
[198] Kirsty Williamson, "Extending Universal Service: Social and Economic Issues" (1999) 1:2 J. of Pol'y. Reg. & Strategy for Telecomm. Info. & Media 177 at 179, 180.

should be market-driven. Admittedly, universal service is a dynamic concept that will evolve in accordance with changes in social circumstances. Based on society's important role in ensuring that its citizens are offered as many opportunities as possible, it is appropriate to encourage access through educational institutions and libraries supported by the universal service scheme. Nevertheless, a much more careful study and debate should be undertaken about what universal service should mean in the context of the digital information age. Only once a service acquires democratically, economically, or societally fundamental values should the service be included in the universal service definition. Additionally, one should keep in mind that even if the service were mandated, other questions would still remain, like how to eliminate digital illiteracy and train next generation workers.

## v. SERVICE FOR POOR AND LOW-INCOME CUSTOMERS

Statistics indicate that the lack of a telephone is strongly associated with income.[199] Based on this fact, the governmental task of achieving fundamental values in society may never be perfectly accomplished unless the government takes other appropriate measures to raise the income level of low-income earners. As discussed above, from the standpoint of equalization, governmental intervention to reduce inequalities in a society should be

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[199] Blizinsky & Schement, *supra* note 176 at 76. Poverty, or low income, is a primary predictor of nonsubscribership. More than two-thirds of those without telephone service have annual incomes of $15,000 or less. One of the noteworthy findings in recent analyses of census data on telephone subsicribership is the very high rate of non-subscribership among those households dependent on public assistance. See U.S., Bureau of the Census, *Current Population Survey* (Washington, D.C.: Bureau of Census, 1994).

justified as a way of contributing to the provision of the public good. The government should primarily aim to support basic telephone services, but should not limit itself to that goal. Insofar as the fundamental values in a society rationalize the universal service provision, the measures should be expanded to include supporting further services for low-income earners that reflect fundamental economic and social values.

In the United States, low-income customers can receive basic telephone service under two universal service support mechanisms – Lifeline service and Link-Up assistance. Lifeline service is the provision of retail local service, which includes the service and functionality enumerated in Rule 54.101.[200] Carriers cannot collect a service deposit in order to initiate Lifeline service if the customer voluntarily elects toll blocking.[201] The federal Lifeline support amount for all eligible carriers shall equal the tariffed rate in effect for the primary residential End User Common Line charge of the incumbent local exchange carrier serving the area in which the qualifying low-income consumer receives service.[202] Additional federal Lifeline support of up to $25 per month could be available if the carrier makes some certification to the Administrator.[203] Link-Up is an assistance program for qualifying low-income customers that reduces the carrier's customary charges for initiating a telecommunications service for a single connection at the customer's principal place of residence. The qualifying low-income

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[200] Lifeline service is the same as the universal service for people living in rural areas; toll limitation is included. 47 C.F.R. § 54.401(3) (2003). Toll limitation is defined as consisting of both toll blocking and toll control. *Ibid.*, § 54.400 (2003). Toll blocking does not allow the completion of outgoing toll calls, whereas toll control allows consumers to specify a certain amount of toll usage that may be incurred on their telecommunications channel per month or per billing cycle.

[201] *Ibid.*, § 54.401 (2003).

[202] *Ibid.*, § 54.403 (2003).

[203] *Ibid.*, § 54.403 (a) (2003). Under Rule 54.407, all the preceding amounts are paid directly to the eligible telecommunications carrier providing Lifeline service to qualifying low-income customers.

customer pays half of the customary charges, or $30, whichever is less, and is permitted to pay for the charges that are accrued for commencing service on a deferred schedule and without interest.[204] Interest charges not charged to the customer shall be for connection charges in an amount of up to $200, and deferral is possible as long as it does not exceed one year.[205]

More broadly, from the perspective of achieving fundamental societal values for low-income earners, it is becoming a governmental task to support them through additional steps like accessing information carried by broadband services, which encourages a sense of shared values and mutual responsibility in a society. Universal service provided in the United States to schools and libraries is viewed in that way. Under the universal service scheme, as discussed above, schools and libraries could receive broadband information carriage service at a discounted rate. The discounted rates, ranging from 20% to 90%, are allocated to schools and libraries based on indicators related to the levels of poverty and the cost of providing telecommunications services in the geographical areas where they are located, as established in a related matrix.[206] If the total annual fund is exhausted, schools and libraries then pay the competitively bid, but non-discounted, prices. However, rules of priority have been established to ensure that funds are used for the benefit of the most economically disadvantaged (poorer) schools and libraries.[207]

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[204] *Ibid.*, § 54.411 (2003).
[205] *Ibid.*, § 54.413 (2003). Eligible telecommunications carriers may receive reimbursement from federal universal service support funds for the revenue foregone in reducing their customary charge for commencing service and for providing a deferred schedule for payment of the charges assessed under the Link-Up program.
[206] *Ibid.*, § 54.505 (2003).
[207] *Ibid.* § 54.507(g) (2003).

### d. RECONCILING THE UNIVERSAL SERVICE OBLIGATION AND MARKET COMPETITION

Deregulation has proceeded, and competition has been heating up in various telecommunications markets. Admittedly, some values may be more important than the market distortions caused by governmental invention. As long as each member of a society attempts to achieve a shared fundamental value, perhaps that value is too important to be left to the market, since substantial competition may cause a serious misallocation, especially during this period of transition from legal monopoly to market competition. Nevertheless, it should be possible to design a policy that utilizes market allocations, balancing market mechanisms and fundamental values. If access to a communications network, whether it be traditional or technologically advanced, holds a shared fundamental value in a society, a regulator is justified to intervene in the market and to enforce the universal service scheme in order to achieve the value. Even then, however, reconciliation between universal service obligations and market competition is possible. Such reconciliation can be accomplished in two ways. Regulators must ensure competitive neutrality in order to neither advantage nor disadvantage any operator and must try to adopt pro-competitive instruments that can improve productive, allocative and dynamic efficiency in markets.

### e. COMPETITIVE NEUTRALITY

#### i. OVERVIEW

During the transition from monopoly to competition, it is inappropriate to rely exclusively on market mechanisms to spread and maintain the provision of basic and advanced telecommunications services. At the very least, local telecommunications access should be subsidized if universal affordability is required, and it is even possible to designate a particular type of service as a "universal service". Therefore, regulators should reconcile the aim of a competitive, deregulated telecommunications market with universal service obligations. As discussed above, it becomes important to design the universal service obligation and its financing mechanism in a competitively neutral way in order to take full advantage of efficiency gains from actual and potential competition.

From the perspective of a global framework, the competitively neutral provision of the universal service obligation should be consistent with the Reference Paper of the GATS. With respect to the competitive neutrality of the universal service obligation, the WTO Reference Paper[208] sensibly states that any member, including Australia and the United States, is required to administer that obligation in a transparent, non-discriminatory, and competitively neutral manner, and that it be no more burdensome than necessary for the kind of universal service defined by the member, even though any member can define the kind of universal service obligation it wishes to maintain and such obligations will not be regarded as anti-competitive *per se*.

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[208] *Agreement on Telecommunications Services (Fourth Protocol to the General Agreement on Trade in Service)*, 1997, 36 I.L.M. 354 at 362 [WTO].

Complying with theoretical and international requirements, both countries have established the principle of competitive neutrality with respect to the universal service obligation through concrete legislation and/or complementary regulatory rules. On one hand, in the United States, Section 254(b) of the Telecommunications Act 1996 provides several principles upon which the Federal-State Joint Board[209] and the Federal Communications Commission (FCC) are to base their policies. These principles require: that the availability of quality service be just, reasonable, affordable, and sufficient; that federal and state mechanisms be specific, predictable, and sufficient; and that all providers of telecommunications services make equitable and non-discriminatory contributions to the preservation and advancement of universal service. Additional principles may also be established by the Federal-State Joint Board and the FCC under Section 254(b)(7). An additional principle of competitive neutrality was recommended by the Joint Board and adopted by the FCC. The FCC Report and Order states: "Universal service support mechanism and rules should be competitively neutral. In this context, competitively neutral means that universal service support mechanism and rules neither unfairly advantage nor disadvantage one provider over another, and neither unfairly favor nor disfavor one technology over another."[210] Thus, both federal and state universal service support mechanisms must be competitively neutral. Competitive

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[209] Federal-State Joint Board has established under Section 410(c) that it should proceed to recommend changes to any of its regulations in order to implement Sections 214(e) and 254, including the definition of the services that are supported by Federal universal service support mechanisms and a specific timetable for completion of such recommendations. In addition to the members of the Joint Board required under Section 410(c), one member of such Joint Board shall be a State-appointed utility consumer advocate nominated by a national organization of State-utility consumer advocates. 47 U.S.C.§254(a).

[210] FCC, *supra* note 196 at para. 47.

neutrality of state universal service policies is also mandated by Section 253(b). Violation of competitive neutrality is a basis for FCC preemption of a state or local government statute, regulation, or legal requirement under Section 253(d). Thus, competitive neutrality is required by both the Act and the FCC Report and Order.[211]

In Australia, Section 8A of the Consumer Protection Act states as a principle of universal service obligations that the obligations should be fulfilled effectively, efficiently and economically, and in ways that are consistent with Australia's open and competitive telecommunications regime. Additionally, the obligations should be responsive to the needs of consumers as far as they are practicable.[212] The fulfillment should generally be open to competition among carriers and carriage service providers.[213] Based on this competitive compatibility, the following principles are also stipulated: specific and predictable funding arrangements to advance the fulfillment of the universal service obligation, particularly in high-cost areas, should be available; providers of telecommunications services should contribute, in a way that is equitable and reasonable, to the funding of the USO and DDSO; information about the basis on which decisions are made for the purposes of the universal service regime should generally be open to public scrutiny, and the universal service regime should be flexible and able to deal with rapid changes in both the telecommunications industry and the needs of consumers.

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[211] Barbara A. Cherry & Steven S. Wildman, "Review of Federal Universal Service Policy In the United States" in Cherry, *et al.*, ed., *Making Universal Service Policy* (Mahwah, N.J.: L. Erlbaum Associates, 1999) 167 at 170.

[212] *Telecommunications Act 1999* (Cth.), s. 8A(b).

[213] *Ibid.*, s. 8A(c).

### ii. TECHNOLOGICAL BIAS INHERENT TO DEFINITION OF UNIVERSAL SERVICE

As discussed above, competitive neutrality includes not only the neutrality of competitors but also the neutrality of the type of technology to be used, so that the most efficient technology will be utilized. Therefore, treating all providers in the same way may not further competitive neutrality. In particular, some rules, although applied equally to all firms, may create a bias against one technology or business practice. For example, a rule or an actual situation where universal service funding could only be provided for wireline equipment would be biased against wireless providers.[214] Also, laws, which necessarily require that regulators include some services within the definition of universal service while excluding others, are by themselves an important breach of competitive neutrality.[215] These problems seem avoidable, as well as inherent in the definition of what services could be paid for by the funding system. Is there any option other than simply stepping out of the way and letting market tendencies determine the diffusion of service, if a regulator really wants to accomplish competitive neutrality? The answer is no. The Australian scheme has a possible way to avoid or eliminate competitive bias with respect to the technology or standard of service. In Australia, universal service providers can offer, apart from standard telephone service, approved non-standard "alternative telecommunications service (ATS)" in fulfillment of the

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[214] See Steve G. Parsons. "Economic Efficiency and the Support of Universal Service in Rural Markets" (Paper presented to the Federal-State Joint Board on Universal Service Seeks Comment on Certain of the Commission's Rules Relating To High-Cost Universal Service Support and the ETC Designation Prosess, June 2003).

[215] Mueller, *supra* note 149 at 176.

universal service obligation.[216] ATSs are service packages that provide basic telephony, but have the flexibility to deviate from standard USO services, for example, in terms of technology (*e.g.*, mobile) or terms and conditions (*e.g.*, pricing). ATSs are permitted from the standpoint of increasing choices for consumers and market-entry opportunities for service providers. Such an instrument, ensuing flexibility of standards, with respect to technology and management, could be a reasonable counter, even though the potential problem of the regulator's competence when he decides to approve or disapprove an operator's ATSs emerges..

### iii. COST CALCULATION

#### (1) UNIVERSAL SERVICE COSTS IN THE BLACK BOX

The result of cost calculation would vary in accordance with which question is asked, and how, and this is the cause of a great deal of fierce debate among regulators, incumbents, and competing operators. In Australia, the 1989 Bureau of Transport and Communications Economics (BTCE) study group, using the avoidable cost methodology, produced a figure for the universal service obligation of Australian $240 million, whereas Telestra's own study, using the fully distributed cost methodology, produced a figure of $800 million.[217] In the United States, there are also numerous studies that attempt to quantify the various subsidy amounts. The amounts from these studies range

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[216] *Telecommunications Act 1999* (Cth.), ss. 5(2), 8E. Telstra is able to offer ATSs but only in addition to its standard service.

[217] In the United Kingdom, a figure in the range of £90-£160 million per year was calculated using a developed version of BTCE methodology. U.K., OFTEL, *A Frame Work for Competition: A Consultative Document on the Future of Interconnection and Related Issues* (1994) at 40-48.

from US $1.1 billion to $20 billion.[218]

### (2) COST CALCULATION PROCESS

In Australia, the Minister must quantify subsidies for each universal service area in respect of each service obligation. Sections 16, 16A, and 16B of the Consumer Protection Act require that the Minister determine subsidies for the supply of services under the universal service obligation (USO) in a universal service area up to three years in advance. Section 16A requires that the Minister seek ACA advice on subsidies prior to determining or changing USO subsidies for a universal service area. It can be assumed that the ACA has considerable flexibility in determining methodologies or processes for calculating recommended USO subsidies, as it usually applies various cost calculation models during each period. Historically, universal service obligation subsidies have reflected annual avoidable costs of supply minus revenues earned. For several years prior to the enactment of the 1997 Act, the cost to Telstra of fulfilling the USO was assessed using a model developed in the late 1980s by the BTCE. On September 1998, however, the ACA published the *Net Universal Service Costs Avoidable Costs Determination 1998* which reflected a costing model developed by Bellcore International Inc in consultation with the ACA, Telstra, Optus and Vodafone and which was to apply for the years 1997-1998 onwards. At the same time, the government enacted the Telecommunications Laws Amendment (Universal Service Cap) Act 1999, which caps Telstra's subsidy claim

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[218] Carol Weinhaus *et al.*, "Overview of Universal Service" in Cherry, *et al.*, ed., *Making Universal Service Policy* (Mahwah, N.J.: L. Erlbaum Associates, 1999) 111 at 115.

at $253.52 million. The cap is also extended to the 1998-1999 and 1999-2000 financial years.

The qualification process of the universal service obligation in the United States varies according to end-user group; one could easily find, however, that there is still a huge debate concerning how the cost of service in high-cost areas can be calculated most appropriately. Quantification of support for high-cost areas had been left largely unresolved in the FCC order. As of this point in time, the FCC has decided that the methodology to be used to calculate the cost of providing universal service for high-cost areas should be based on forward-looking economic costs.[219] Broad arguments among interested groups continue to erupt concerning which model of cost calculation should be applied. However, the framework of the qualification system has become established by the FCC Rules.

According to the Rules, basically, whereas rural carriers' costs of providing for high-cost customers are calculated based on the historical cost method, non-rural carriers' costs are based on the forward-looking cost method. Incumbent local exchange carriers (ILECs) and competitive eligible telecommunications carriers in rural areas[220] are to receive some kind of support based on their embedded historical cost. Such historical costs include: (1) local switching support, which an incumbent local exchange carrier that has been designated an eligible telecommunications carrier and that serves an

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[219] Forward-looking costs are the costs that properly reflect the value of resources that will be used up (or dedicated to an activity for some period of time) in the future because of a decision and a consequent action.

[220] Carriers ought to be certified by an administrator under Rule 54.314.

area of 50,000 or fewer access lines shall receive for local switching costs;[221] (2) transferred telephone exchanges support, which a carrier shall receive for the acquired telephone exchanges cost at the same per-line support levels for which those exchanges were eligible prior to the transfer of the exchanges;[222] (3) competitive eligible telecommunications carrier support, which the competitive carrier shall receive to the extent that the competitive carrier captures the subscriber lines of an incumbent local exchange carrier (LEC) or serves new subscriber lines in the incumbent LEC's service area for per-line recovery basis,[223] and so on.[224] In contrast, for non-rural carriers,[225] a specific forward-looking economic cost model has been adopted by the FCC to determine the amount of federal universal service support that will be provided to carriers in that State. The total amount of forward-looking support available shall be determined according to the following methodology: (1) For each State, the FCC's cost model shall determine the statewide average forward-looking economic cost (FLEC) per

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[221] Local switching costs are calculated by a formula, that the carrier's projected annual unseparated local switching revenue requirement shall be multiplied by the local switching support factor (defined as the difference between the 1996 weighted interstate DEM(Dial equipment minutes of use) factor and the 1996 unweighted interstate DEM factor.). 47 C.F.R. § 54.301 (2003).

[222] *Ibid.*, *§* 54.305 (2003).

[223] This support could be subdivided into three categories: (1) When a competitive eligible telecommunications carrier serves loops in the service area of a rural incumbent local exchange, the carrier shall receive support for each line it serves in a particular service area, based on the support the incumbent LEC would receive for each such line. (2) When using switching purchased as unbundled network elements to provide the supported services, the carrier shall receive the lesser of the unbundled network element prices for switching or the per-line DEM support of the incumbent LEC, if any. Or when using loops purchased as unbundled network elements, the carrier shall receive the lesser of the unbundled network element prices for the loop or the incumbent LEC's per-line payment from the high-cost loop support, LTS, and Interstate Common Line Support mechanisms, if any. (3) When providing the supported services using neither unbundled network elements nor wholesale service, the carrier will receive the full amount of universal service support that the incumbent LEC would have received for that customer. *Ibid.*§ 54.307.

[224] Other than this high-cost rural area support, the FCC specifies the long-term support that an eligible telecommunications carrier that participates in the association Common Line pool shall receive. *Ibid.*, *§* 54.303 (2003).

[225] Carriers ought to be certified under Rule 54.313.

line of providing the supported services. (2) The FCC's cost model shall determine the national average FLEC per line of providing the supported services. (3) The national cost benchmark shall equal 135 percent of the national average FLEC per line. (4) The support shall be provided to non-rural carriers in each state where the statewide average FLEC per line exceeds the national cost benchmark.[226]

### (3) CRITICS AND ALTERNATIVES

There are some issues left to be argued on the current qualification system. First, from an efficiency perspective, a qualification system that rewards a carrier for their full historical costs creates incentives for inefficient behavior by the incumbent. Under the historical cost model, as with the rate of return regulation, the incumbent has no incentive to minimize costs because cost reductions do not necessarily lead to a sustained increase in earnings, and increases in costs lead to price adjustments sufficient to create a corresponding increase in revenues (Averch-Johnson effect).[227] Furthermore, the incumbent may not be encouraged to invest much in the innovation of superior products and services because such superiority will not lead to extra earnings.[228] Second, focusing on ensuring competitive neutrality, a qualification system that asymmetrically provides full historical cost recovery for the incumbent, but per-line recovery for competitors, creates a bias in favor of the incumbent.[229] These inappropriate approaches

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[226] *Ibid.*, § 54.309(a) (2003).
[227] Breyer, *supra* note 3 at 47, 49.
[228] Kahn, *supra* note 1 at 53.
[229] Parsons, *supra* note 214 at 5.

lead to anti-competitive outcomes and reduce economic efficiency as well as increase the total required funding amounts. Therefore, in order to ensure economic efficiency and competitive neutrality, the approach taken should be to adopt the forward-looking economic cost model when regulators quantify the universal service obligation costs, regardless of whether service is rural or not.

### iv. CONTRIBUTOR

#### (1) OVERVIEW

The issue concerning who should contribute to the universal service subsidy is one of the most important and fundamental problems confronting it. As discussed above, an implicit cross-subsidy system in which an incumbent subsidizes himself is no longer efficient or feasible. Under the access surcharge system, competitors who must access the incumbent network should be contributors, but this system also has bypass problems, as well as the disadvantage of inefficiency. Therefore, it is desirable that as many operators as possible contribute to the funding system.

#### (2) COMPARISON

However, in the United States, contrary to this argument, a telecommunications carrier that "provides interstate telecommunications services" is required to contribute to the federal fund under Section 254(d) of the Telecommunications Act 1996, even though

Section 254(b)(4) of Telecommunications Act 1996 states that the mechanism for collecting universal service funds should consist of equitable and nondiscriminatory contributions from all telecommunications service carriers. Whereas, in applying Section 254(d), the FCC decided that the definition of a carrier providing interstate telecommunications services should be construed broadly, by including both wireless and wireline providers,[230] the FCC's Report and Order indicates that, to ensure regulatory certainty, some entities are not carriers and are not required to make contributions, such as enhanced and information service providers.[231] The FCC also defined the revenue base against which contributions from telecommunications carriers for federal universal service support mechanisms are to be levied. In this regard, rule 54.706(b) states that contributions should be levied on collected interstate and international revenues. However, telecommunications service providers outside of carriers who provide interstate telecommunications service are not levied, which seems to conflict wit the competitive neutrality principle, when the former competes with the latter in a market.

The Australian contribution scheme ensures competitive neutrality much more efficiently, since universal service obligation subsidy claims are funded through a levy on all carriers, and contributions are proportional to the carriers' shares of total industry

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[230] Interstate telecommunications include, but are not limited to: (1) cellular telephone and paging services; (2) mobile radio services; (3) operator services; (4) personal communications services (PCS); (5) access to interexchange services; (6) special access service; (7) WATS; (8) toll-free service; (9) 900 service; (10) message telephone service (MTS); (11) private line service; (12) telex; (13) telegraph; (14) video services; (15) satellite service; (16) resale of interstate services; and (17) payphone services. 47 C.F.R.§54.706(a) (2003).

[231] FCC, *supra* note 196 at para. 788. Also, entities providing open video systems (OVS), cable leased access, or direct broadcast satellite (DBS) services are not required to contribute on the basis of revenues derived from those services. Non-profit health care providers, broadcasters, and systems integrators that derive less than 5% of their systems integration revenues from the resale of telecommunications will not be required to contribute to universal service. *Ibid.*§54.706(d) (2003).

"eligible revenue". A participating person is any carrier or carriage service provider[232] if prescribed, that was a carrier at any time during the eligible revenue period.[233] To ensure that contribution factors are available when it is time to calculate contributions, eligible revenue is assessed for the financial year prior to the USO claim period.[234] The levy for the financial year is assessed, recovered, and disbursed during the financial year following the claim period.[235] The calculation of eligible revenue is determined by the ACA.[236] To simply put, eligible revenue is calculated as the gross sales revenue of the participating person and its related parties minus a series of revenue and expense deductions. The ACA ought to monitor and enforce the USO scheme and require the disclosure of information on which certain decisions under the regime are based.[237] Section 20R of the Act establishes a formula for calculating each participating person's levy debit or contribution to the USO subsidy. The formula in Section 20R relies on all participating persons being in a position to pay their levy debit in order for the full amount of levy credit or payments due to be covered.[238]

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[232] Under Section 20(1)A(b), the Government decided in 2000 that consideration should be given to requiring carriage service providers (CSPs) to contribute directly to the USO subsidies. A provision had been made for the Minister to include CPSs in the USO funding base by determination. No such determination has been made.

[233] *Telecommunications Act 1999* (Cth.), ss. 20A(1)-(2).

[234] *Ibid.*, s. 20B.

[235] For example, contributions for the 2000-01 USO levy were based on eligible revenue for 1999-2000 and were collected and paid in early 2001-02.

[236] *Telecommunications Act 1999* (Cth.), s. 20B(1).

[237] *Ibid.*, s. 20E. As to collection process, Eligible revenue returns are gathered annually with the ACA, 90 days after the end of the eligible revenue period. A detailed assessment of a participating person's eligible revenue is usually completed by the ACA in the following months (Section 20F). Claims for levy credits are submitted to the ACA by each universal service provider (USP) within 45 days of the end of the claim period (Section 20J). A USP's levy credit is the total of all amounts of USO and DDSO subsidies to which the participating person is entitled for the claim period.(Section 20J(2)).

[238] If one or a number of participating persons do not fully pay their USO levy debits, levy shortfall problems would result and universal service providers would not be fully paid. For this case, Subsection 20R(3) provides for the Minister to vary the formula in Section 20R of the Act for calculating USO contributions to cover defaults on an ongoing basis. Actually, the formula in Section 20R of the Act is

### (3) FURTHER ORIENTATION

Advanced technologies and market competition are making traditional industry boundaries outdated. Within the communications business field, publishing, telecommunications, broadband/cable TV, and computer (hard and software) now overlap,[239] as companies are crossing traditional industry boundaries to form new hybrids. These companies use technologies that allow products and services to become increasingly interchangeable. Furthermore, from a broader standpoint, other utility companies, such as electricity, gas, and transportation firms, have entered into this business field. It seems difficult to say that regulators, which have developed each public sector policy differently, can manage to keep up with this market dynamism. They continue to treat each industry's products and services differently, depending on the traditional regulation of the industry. In some instances, public policies are creating artificial barriers between industries.

The Australian funding system seems to have more advantages than the one in the United States, in that the former employs more contributors, levies them on the basis of wider segments of revenue, and uses a more sales proportion-conscious formula of levy calculation. However, the development of new technologies and competition will

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modified by the *Levy Debit Formula Modification Determination (No.1) 2002* to put in place a mechanism to deal with defaults. The modification levies in an equitable manner from remaining participating persons an additional amount sufficient to cover any levy defaults that have been carried forward and the levy contributions of any participating persons who are reasonably anticipated to default in the current claim period. The intention in drafting this provision is to provide a means of ensuring that universal service providers are, from 2001-2002, fully funded in a timely manner. The mechanism has effect for the 2001-2002 claim period onwards.

[239] Weinhaus, *et al.*, *supra* note 218 at 119.

erode the current foundation for the universal service obligation. This concern will increase when the fundamental values of the society expand the menu of universal service to include broadband information communicating service. Moreover, from the perspective of competitive neutrality, it is important to ensure that there be no advantage nor disadvantage among content service providers, carriage service providers, equipment manufacturers, and multiple service providers, if their services have a competitive relationship in various markets. Hence, the idea that more firms, including content providers, hardware manufacturers, and application writers, should, to some extent, contribute to universal service funding should be evaluated. Disappearing traditional industry borders and inevitable relations within the wider business field justify and require it.

### f. COMPETITIVE APPROACH

#### i. OVERVIEW OF THE DESIGNATION PROCESS

From the perspective of reconciling the universal service obligation and competition, the most distinguishable differences between the United States and Australia, at least at the legislative level, can be found in the issue of the designation of universal service providers to whom funding support should be given. In the United States, only "eligible carriers," those usually designated by state public utility commission, are allowed to receive support from the funding mechanism. In contrast, in Australia, competitive universal service operators, even when they must be approved by the Australian

Communications Authority (ACA), can enter into specific areas of the market to receive universal service support from the funding mechanism. This is known as a "contestability arrangements." Roughly summarized, the Minister for Communications, Information Technology, and the Arts (the Minister) determines the universal service areas (USAs) with respect to one or more service obligations.[240] USAs can be divided into two categories: one is contestable USAs, which should be additionally determined by the Minister, and the other is default non-contestable service areas. With both types, a service obligation must be fulfilled by a Primary Universal Service Provider (PUSP: Telstra has been designated as the PUSP for all of Australia by the Act itself.).[241] However, in areas of contestable USAs, not only PUSP but also competing universal service operators (CUSP)[242] can fulfill universal service obligations with appropriate subsidies.

Additionally, both countries have adopted other pro-competitive approaches, such as competitive bidding systems, in order to enforce the universal service policy in a more efficient way. The United States has built a competitive bidding system into the universal service scheme of academic institutions, libraries, and health care providers in rural areas. Australia has also adopted a competitive bidding system, the National Relay Service program.

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[240] *Telecommunications Act 1999* (Cth.). s. 9G..
[241] *Ibid.*, s. 12A.
[242] *Ibid.*, s. 13A.

### ii. ENSURING COMPETITIVE NEUTRALITY

#### (1) BIAS COMING FROM EMPHASIS ON FACILITIES-BASED COMPETITION

With respect to eligibility to receive funding support, in the United States, Section 214(e)(1) of the Telecommunications Act 1996 provides in part: A common carrier designated as an eligible telecommunications carrier (1) offers the services that are supported by the Federal universal service support mechanism under Section 254(c), either by using its own facilities or a combination of its own facilities and resale of another carrier's services (including the services offered by another eligible telecommunications carrier); and (2) advertises the availability of such services and the charges using a media of general distribution. In Australia, applicants must prove their technical and corporate competence and experience to the ACA before they can become a CUSP.[243] Understandably, regulators require at least a minimum level of administrative and financial competence in this regard, but it is doubtful that preparation of one's own facilities should be included within the requirement of minimum competence. Regarding this point, two specific features of the universal service scheme in the United States, argued by some authors, [244] reflect regulators' commitment to technological improvement. First, regulators strongly favor facilities-based competition. No carrier that conducts its business solely by reselling services provided by another carrier can receive federal service support. Second, the specifics of the federal universal service

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[243] *Ibid.*, s. 13B(1).

[244] Jim Chen, "Managing Univesal Service in the Public Interest" Comment (May 2003) CC docket No. 96-45 at 13.

administration reinforce facilities-based competition. Without a doubt, deciding how to facilitate facilities-based competition in the telecommunications sector by itself is one of the important issues, but any attempt to solve this issue by modifying the universal service scheme would create a bias against competing service providers not holding any facilities.

### (2) IS THERE ANY ARBITRARINESS?

For a prospective universal service provider, if, how, and when he is designated or approved by a regulator is the most important issue. If the process is unclear and unforeseeable, the provider's incentive to apply may be limited. Moreover, if the regulator had any arbitrariness in designating the provider to receive the support, competitive neutrality would be distorted.

In the United States, eligible carriers are designated by state commissions.[245] If no carrier is willing to provide universal service supported by federal universal service support mechanisms to an unserved community or portion thereof, the eligible carrier is to be designated for interstate purposes by the FCC and for intrastate purposes by the state commission.[246] Exceptionally, under Section 254(h)(1)(B), all telecommunications carriers are required to provide certain educational institutions and libraries with telecommunications services. Similarly, in Australia, a CUSP must be approved by the ACA, meeting its information requirements with regard to policy statements and

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[245] 47 U.S.C. §214(e)(2).
[246] *Ibid.*, §214(e)(3).

marketing plans, which detail the applicant's provisioning arrangements.[247] The policy statements and marketing plans must be offered for public comment, and a description of how this comment was considered must be provided in the application submitted to the ACA for approval.[248] Once approved, these documents establish the basis for service provision by the CUSP and any enforcement action by the ACA.[249]

Public participation and mandatory reaction to it within the application process in Australia should be positively evaluated from the perspective of process clearance. However, no further legislative rules to govern the designation process can be found in either country. If an inefficient operator were designated by an arbitrary regulator, the whole scheme of universal service would not be competitively neutral at all.

### iii. FEASIBILITY OF PRO-COMPETITIVE INSTRUMENTS

#### (1) OVERVIEW

Ensuring competitive neutrality is the minimum requirement for regulators if the universal service obligation and competition are to be reconciled. Yet additional pro-competitive instruments should be adopted where possible. As discussed above, a franchising system is one such instrument, since the system bestows upon all participants the competitive opportunity to play the obligation with financial support and delivers an incentive for providers to become more efficient. More generally, a competitive bidding

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[247] *Telecommunications Act 1999* (Cth.), s. 13B(2).
[248] *Ibid.*, ss. 13H, 13J, 13K.
[249] *Ibid.*, s. 13D

system could be adopted when the public sector procures goods and services in an efficient way by using specific funds or its general budget. Any system that presents an opportunity for many operators to enter "the universal service market" and thus mount in each provider an incentive to be more efficient can be viewed as a pro-competitive instrument. From the perspective of promoting competition in the telecommunications sector, such an instrument should be evaluated positively.

### (2) INTRODUCING THE COMPETITIVE BIDDING SYSTEM

Had the United States adopted pro-competitive instruments, competitors might have entered the market to provide universal service support. Instead, the country chose to limit their options to a competitive bidding process. With respect to universal service for schools, libraries, and health care providers, the identity of the carrier and the most cost-effective, commercially available telecommunications service to be provided are determined through the competitive bidding process. An annual cap on federal universal service support for schools and libraries (health care providers serving persons in rural areas) is set at $2.5 billion ($400 million) per funding year.[250] Schools, libraries, and health care providers who are eligible to receive universal service are required to seek competitive bids for discounts.[251] Some additional rules are also stipulated. Eligible services provided at a discount cannot be sold, resold, or transferred.[252] In order to

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[250] 47 C.F.R. §§ 54.507, 54.623. (2003).
[251] *Ibid.*, §§ 54.504, 54.603. (2003).
[252] *Ibid.*, §§ 54.513(a), 54.617 (2003).

aggregate their demands and seek bids for service, schools, libraries, and health care providers are permitted to participate in consortia, which could include other eligible schools and libraries, eligible health care providers, and public sector governmental entities.[253]

Similarly, when Australia established its National Relay Service (NRS) program,[254] which is similar to but distinct from the USO, it adopted a competitive bidding process in order to contract with possible providers.[255] In essence, the NRS reflects the egalitarian motivations that underpinned the establishment of the USO in that it provides people who are hearing- or speech-impaired with access to a service equivalent to standard telephone service through the relay of voice, modem, or telephone typewriter communications.[256] NRS operates as a translation service between voice and non-voice users of standard telephone service. NRS is provided by the Australian Communications Exchange (ACE) under a contract to the government. The contract to deliver NRS was originally given to the ACE in 1995. In late 1997, the NRS Consultative Council initiated a competitive tendering process.[257] Expressions of interest were sought from potential NRS providers that outlined the approach to the services and the cost of delivery. They were assessed by the Consultative Council in 1998, with the tender being granted to the ACE in June 1998 for a period of five years. Performance of

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[253] *Ibid.*, §§ 54.501(d)(1), 54.601 (2003).
[254] *Telecommunications Act 1999* (Cth.), Part 3.
[255] The other major program is Extended Zones, which provides, untimed local calls, untimed Internet access, and other upgrade services to people living in the most sparsely populated areas of Australia. A contract to provide improved telecommunications services in the extended zones was finalized between the Government and Telstra on June 2001, resulting in a package of services that exceeded the minimum tender requirements. Australia, Commonwealth, Australian Communications Authority, *Annual Report 2001-02* (Canberra: Australian Communications Authority, 2002) at 70.
[256] McElhinney, *supra* note 174 at 242. *Telecommunications Act 1999* (Cth.), ss. 94, 97.
[257] McElhinney, *supra* note 165.

the NRS provider is monitored and assessed by the ACA annually.[258]

Both countries' legal schemes and competitive bidding process practices should be evaluated positively as they provide the opportunity for competitors to challenge the incumbents to realize the benefits of providing universal service support. However, as discussed above, the competitive bidding-type system has several disadvantages. Especially with respect to the practices of both countries, a regulator's inability to enforce bidding, collusion between bidders, inflation of universal service costs, and inefficient results pose potential problems. It would be difficult to determine directly whether or not these problems have been solved. Furthermore, they are general concerns inherent to the competitive bidding process, rather than telecommunications sector-specific problems. However, an annual cap on universal service support, consortia making, limited-period offering, and yearly monitoring constitute workable counterplots. Regulators at least seem satisfied by the results of the obligated providers.[259]

### (3) CONTESTABILITY ARRANGEMENTS

#### (a) POLICY OBJECTIVES

On July 2001, Australia launched its "contestability arrangements", a unique universal service obligation system that can provide more equitable access to universal service subsidies, reduce underlying delivery costs, and increase consumer choice. This

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[258] *Telecommunications Act 1999* (Cth.), s. 95.
[259] U.S., Federal Communications Commission, *2002 Annual Program Performance Report* (2003). Australia, Commonwealth, Australian Communications Authority, *NRS Provider Performance Report 2001-02* (2002).

pro-competitive instrument is meant to facilitate competition in the telecommunications sector, reconciling the universal service obligation and market competition.

On April 2001, the Minister, by declaration under the Section 11E, established two pilot areas,[260] each of which are subdivided into a number of universal service areas (USAs) with respect to a contestable service obligation. The Minister had declared a per service subsidy amount for each standard telephone service (STS) or alternative telecommunications service (ATS) provided under the USO within these USAs. It was publicly explained that "USO contestability arrangements are part of the Government's initiative to introduce competition in the delivery of the USO to regional Australia and provide opportunities for improved service quality and greater choice for regional consumers," and "under the new arrangements, telecommunications companies will be able to compete for industry-funded subsidies for the provision of USO services."[261] A telecommunications company other than Telstra wishing to enter a contestable market must seek approval from, and be qualified by, the ACA to operate as a competing universal service provider.

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[260] The two pilot areas the Minister has determined are General-West and South-West Victoria and South-East South Australia (the Greater Green Triangle area of South-West Victoria and South-East South Australia, expanded to include the Central Goldfields and Greater Bendigo); and North-East New South Wales and inland South-East Queensland (stretching from Kempsey in NSW inland to Caloundra Shire in Queensland). The two pilot areas have been divided into USAs based on 37 local government areas. Thirteen of these in the Central-West and South-West Victoria and South-East South Australia pilot area have been further divided into census collection districts. The total number of USAs in both pilot areas is 213,187 in the Central-West and South-West Victoria and South-East South Australia pilot area, and 26 in the North-East New South Wales and Inland South-East Queensland pilot area. ACA, *supra* note 255 at 8.

[261] Australia, Commonwealth, Australian Communications Authority, Media Release, No. 62-16 "ACA Calls for Comment on USO Contestability Projects" (October 2000). The policy objectives of USO contestability are: to increase consumer choice, benefits to consumers in terms of pricing, service innovation, and service quality, to improve infrastructure and regional investment, including employment, provide more equitable access to USO subsidies, and reduce the underlying costs of delivery of USO services. Australia, Commonwealth, Australian Communications Authority, *Universal Service Obligation Contestability Guidelines Version 1.1* (July 2001) at 8.

### (b) POSITION OF TELSTRA AS PRIMARY UNIVERSAL SERVICE PROVIDER

The Consumer Protection Act specifies that all USAs must have a PUSP,[262] and Telstra is the declared PUSP for the whole of Australia under transitional legislative arrangements.[263] In its role as the PUSP, Telstra will continue to be responsible for providing payphones and STS in the pilot areas. All USPs are required to have a policy statement and marketing plan for the service it proposes to offer, but transitional legislative arrangements require that Telstra's existing universal service plan to meet the requirements of its policy statement and marketing plan in relation to STS. The legislation provides the option for other providers to be declared as PUSPs in the future.[264] Telstra may not leave a USA unless, or until, the Minister has declared a replacement PUSP. For now, all subsidies are paid to Telstra in its default position as the sole USP in any given USA.

### (c) POSITION OF COMPETITIVE UNIVERSAL SERVICE PROVIDERS

A CUSP can be approved in relation to more than one USA. Such approval entitles the CUSP to claim and be paid the declared per service subsidy that is attached to each relevant USA. A CUSP must offer services in the USA on and from the date it has specified in its application, as approved by the ACA.[265] As is the case with the PUSP,

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[262] *Telecommunications Act 1999* (Cth.), s. 12A.
[263] *Ibid.*, s. 12D.
[264] *Ibid.*, s. 12A(2)(a).
[265] *Ibid.*, s. 13D(1).

CUSPs must provide their USO service upon request to all customers in the USAs for which they are approved, backed by a policy statement and a marketing plan. However, unlike the PUSP, a CUSP may flexibly withdraw its USO service offering from a USA, subject to 45 days notice and a provision for transfer of the customer to another USP.[266] If a customer has services connected by two or more USPs and a subsidy entitlement applies to only one service, that customer must select one of those providers as the nominated USP.[267] Only the nominated USP can claim a subsidy for the service.[268]

### (d) POSITION OF NON-UNIVERSAL SERVICE PROVIDERS

A non-universal service provider may offer voice and other telecommunications services in the pilot areas, but these services are not be eligible for a USO subsidy. Similarly, CUSPs may choose to offer services in areas located outside USAs, such as the built-up areas of townships, which are generally excluded from the pilot areas. These offerings are also not eligible for attract a subsidy.

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[266] *Ibid.*, s. 13E.

[267] Australia, Commonwealth, Australian Communications Authority, *the Universal Service Subsidies (2001-03 Contestable Areas) Determination 2001* (2001) at para. 5(e).

[268] Until a customer elects otherwise, where the PUSP (Telstra) supplies a service to the customer, it is the nominated USP. The ACA is developing a customer nomination form that will be used to record the customer's nominated USP. The form will be for use where two or more services are provided to a customer. It will be the responsibility of the gaining nominated USP to provide a copy of the transfer form to the original nominated USP. The gaining nominated USP will not be eligible to receive a subsidy until this copy is provided. ACA, *supra* note 261 at 14.

### (e) FEASIBILITY

Under the contestability arrangements, one may find a universal service market where the incumbent and competing operators compete for universal service subsidies. Contestability arrangements are a more market-driven approach than the competitive bidding system in that the arrangement guarantees to some extent, for the potential competitor, free entry into and withdrawal from the market, even though there are some minimum restrictions to warranty the level of universal service, such as the requirement of approval on the part of the regulator, compulsory service offerings, and some intervention into the marketing plans. Under the contestability arrangements, there is no limit to the number of CUSPs that can operate in a USA.

By the end of June 2002, no applications from aspiring competitors had been submitted.[269] Some critics might argue that contestability arrangements inherently lack the feasibility to draw new entities. Of course, it may be that it is too early to assess the progress of the arrangement because it has only been two years since the launch of this trial, and there is insufficient empirical data on which to base any concrete conclusions. More generally, the efficacy of a policy depends on the socio-economic situation of an industry and a country as a whole. The assessment of contestability arrangements, and a study of possible design modifications, should be undertaken in the future.

To conclude, contestability arrangements, such as the one adopted in Australia, are an important option that should be considered. Theoretically, the contestability

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[269] See ACA, *supra* note 255 at 68.

arrangements have advantages that, without decreasing quality or quantity of universal service, facilitate market entry and exploit operators' own valuations of the costs, revenues, and other benefits of providing universal service instead of imposing an external costing method. Practically, it seems that we are very much at the early stages of figuring out how this arrangement might work.

## C. SUMMARY AND POLICY IMPLICATIONS

### a. SUMMARY OF THIS CHAPTER

The universal service obligation can be defined as the obligation of an operator to provide all users with a range of basic services of good quality at an affordable price. Additionally, from an empirical perspective, it can arguably be regarded as a set of restrictions on the operators' pricing policies. While some economists traditionally insist that network externalities justify increasing subscribership levels above those that would result from normal competitive market forces, others argue that network externalities do not generally justify subscribership subsidies. Some experts believe that these services have features of the public good themselves, but the network does not always have a non-rivalrous and non-excludable character. Arguably, the best justification is that universal service establishes fundamentals and the sustainability of markets, and that every citizen shares a fundamental value with it. As far as practical universal service obligations are concerned, the obligations can be seen as a special case of redistributive pricing, where the redistribution policy can be categorized as either direct or indirect.

Direct subsidies can reduce some of the most striking inequalities in society and avoid the distortion effects associated with the incorrect pricing of services, since prices can be maintained at levels that reflect costs under the market mechanism. However, indirect redistribution policies are optimal in a second-best sense when the necessary information, such as the identity of the needy individual to be entitled, cannot be determined so as to implement potentially more efficient policies like direct transfers.

To take full advantage of efficiency gains from actual or potential competition, it is critical to design the universal service obligation and its financing mechanism in a competitively neutral way. Explicitness is also required to ensure that universal service support payments are competitively neutral, and thus subsidies should be readily quantifiable. However, it is far from an easy task to determine one single mechanism that would be appropriate in all sectors and in all countries, since the choice of an appropriate financing mechanism entails various trade-offs that are largely sector and country-specific. Nevertheless, in comparing the advantages and disadvantages of several models of universal service systems, one reaches some specific conclusions outlined below. Among the models in which universal service obligations are imposed *a priori* on a single specified operator, universal service funded by all operators should be more advantageous than cross-subsidization with a sole obligated operator. More precisely, access surcharges, universal service taxes, and lump-sum entry fees could be demonstrated as a reality of the universal service funding system. Yet, while each system has its drawbacks and advantages, they all have one common disadvantage, that universal service would be threatened if the incumbent operator itself were not efficient.

In contrast, if a universal service operator could be designated as part of the financing mechanism, a franchising system could overcome all these drawbacks, except for its difficulty in ensuring uniformity of prices throughout an entire country. Where a regulator use a franchising system to finance the universal service obligation, the regulator should monitor and eliminate, if present, any collusion and other imperfect competition difficulties, and should establish an appropriate compensation scheme, in addition to launching the appropriate bidding scheme itself, taking into account factors related to the specific industry, such as the technology, the number of potential actors, and the kind of auction used.

### b. POLICY IMPLICATIONS

From the perspective of reconciling the universal service obligation and market competition, based on the discussion above, universal service obligation schemes in the Australian and US telecommunications sectors should be evaluated positively, in that both countries are moving forward to ensure more competitive neutrality as well as to adopt pro-competitive instruments within the scheme.

With technology developing so rapidly, cost structures in the industry having changed so significantly, and new services as well as new management methods emerging, the policy orientations recognized by both countries' universal service schemes should be as follows: First, the services included within the scope of universal service support should depend upon the shared fundamental values in that society.

Universal service, in accordance with the expansion of these shared fundamental values, including democratic, economic, and social ones, has expanded to include not only basic telephone service, but also digital data service and, in part, broadband service. If every citizen in a society begins to recognize that access to a technologically advanced communications network is a fundamental value, then access will be put onto the service menu.

Second, ensuring competitive neutrality is easier said than done. The universal service scheme must not bestow any advantages or disadvantages in relation to benefits, costs, or standards. Therefore, with the rapid development of technology, the scheme should be routinely reevaluated. Technological standards to be adopted to provide universal service should not be based on fixed and traditional technologies but should be flexible enough to include various technologies, as far as they have the same function. The cost calculation model should change from historical cost-based to forward-looking cost-based. The number of contributors to universal service funding should increase as much as possible. The policy of promoting facilities-based competition should be separated from the universal service policy. Regulators' free hand to manage the scheme should be governed as more explicitly rule-based.

Finally, incorporating pro-competitive instruments into the universal service scheme is a trend. Pro-competitive instruments could present an opportunity for competitive operators to enter "the universal service market" and thus provide an incentive for the incumbent operator to become more efficient. Instruments such as the competitive bidding system will be adopted more widely. Also, though it is too early to

assess their practical feasibility positively or negatively, contestability arrangements like the ones in Australia may be one of the best options.

# Chapter V

## REGULATORS' POSITION IN THE RULE AND DECISION MAKING PROCESS

Whereas previous chapters discuss the normative approach to analyzing the justifications for the regulation of public utility sectors mainly from an economic perspective and deal with additional comparative studies about the legal schemes of the telecommunications sectors in Australia and the United States, this chapter discusses how regulations should be implemented by an administrative agency or agencies.

### A. THEORETICAL APPROACH

#### a. CENTRALITY OF THE REGULATORS' ROLE

In order to analyze the regulation-making process, it is helpful to consider implications provided by two kinds of traditional theories, namely, public interest theory and the economic theory of regulation. Both theories focus on political aspects. The former seems to emphasize voters' morality, while the latter seems to try to analyze complicated political processes in the context of demand-supply relationships in an economic sense. Yet, in addition to them, it is argued that a regulatory agency's autonomous and self-governing rule and decision making should be more emphasized.

### i. TWO TRADITIONAL THEORIES

Public interest theory holds that regulation is supplied in response to a public need for inefficient or inequitable market practices to be corrected, and that regulators seek, to the best of their abilities, to secure the public interest as defined in their enabling statutes.[270] According to this theory, even if the public is injured by regulation, this is the cost of some social goal, an obvious perversion of regulatory philosophy.[271] However, this theory cannot very well explain why there are external economies, diseconomies, and monopolistic market structures that remain to be corrected. Additionally, proponents insist that failure to achieve these purposes results from the mismanagement of regulatory agencies. This view, however, is also criticized, such that socially undesirable results of regulation are frequently desired by groups that work influentially on legislators setting up the regulatory scheme, also, it is believed that this argument lacks evidence that regulatory agencies actually do fail.[272]

Based on Stigler's argument, the economic theory of regulation holds that regulations are demanded by economic groups in order to use the potential public resources and improve their economic status, and then are supplied through the political process, which allows relatively small groups to obtain favorable regulations, from amongst the available options such as the direct subsidy of money, control of over-entry by new rivals through protective tariffs, affection to substitutes and complements by

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[270] Richard A. Posner, "Theories of Economic Regulation" (1974) 5:2 Bell J. of Econ. & Mgmt. Sci. 335 at 335. Breyer, *supra* note 3 at 10.
[271] George J. Stigler, "The Theory of Economic Regulation" (1971) 2:1 Bell J. of Econ. & Mgmt. Sci. 3 at 3.
[272] Posner, *supra* note 270 at 336.

encouraging or discouraging their production, and price control.[273] This theory regards regulation as a good that is "sold" by a government in return for the votes and resources of those who benefit from such regulation. This theory differs from the original capture theory, which holds that regulators come to be dominated by the industry regulated, in that it admits the possibility of "capture" by any interest group, such as consumers. Critics against capture theory believe that regulation can be changed in favor of groups other than industry, and also that not all regulatory agencies stick to a specific industry.[274] By using the analogy of cartel theory, Posner explains that any individual firm has an incentive to avoid joining the efforts of his group to obtain the regulation (the free-loader problem), and also that it is easy for firms to coordinate the efforts if the number of firms is small, even though the free-loader problem enables a large number of firms to discourage private cartelization but to encourage regulation.[275] What is more, this theory points out that, as far as the political process is democratic, decision making must be made simultaneously by the largest number of persons interested or disinterested in each issue, and thus legislators establish political parties and try to determine whether the coalition of the voters' interest is more durable than any other political party's proposal.[276] Consequently, the regulations could be designed for the benefit of politically effective consumer groups or of an alliance between the industry and a supplier group.

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[273] Stigler, *supra* note 271 at 3.
[274] Posner, *supra* note 270 at 342-45.
[275] *Ibid.*at 343.
[276] Stigler, *supra* note 271 at 11.

## ii. A VIEW FOCUSED ON THE CENTRALITY OF THE ADMINISTRATORS' ROLE

### (1) INTRODUCTION

Even though both theories illustrated above focus on political aspects, the former seems to emphasize voters' morality, which is not always the same as their self-interest, and the latter seems to try to analyze complicated political processes in the context of demand and supply in an economic sense.

Nevertheless, regulation is neither solely the result of voters' morality nor easily explained solely in terms of the relative political power game. Are regulators too dominated by legislators to exercise their power in a sensible way? Are regulators' roles in the regulation-making process too limited, too small, to be seriously considered? Answers to both questions are arguably no. Regulatory agencies' self-governing power needs be emphasized more when the process of regulation making is argued. Proponents of the theory of economic regulation seem to at least acknowledge regulators' efficient management,[277] but whether and how they evaluate the roles of the administrator is not always clear. It is true that there are certain limitations (*e.g.*, that the administrators' actions and inactions must be justified under their operating statutes and the general policies underlying these statutes). Indeed, a democratic decision-making system requires it. Nevertheless, legislators cannot continuously regulate a complex area, and thus they must delegate most regulatory functions to the regulatory agency. Furthermore, as far as public utility sectors are concerned, some of the most concrete and detailed

[277] Posner, *supra* note 270 at 338. Stone, *supra* note 4 at 202-03.

focuses of fierce debate among a number of interests are assumed to be dealt with at the administrative level. The courts, the head of the executive branch, other administrative offices, and even legislators may be concerned about the outcome of a particular regulatory proceeding. Obviously, the more important the problem, the more likely it is that others will intervene. The possibility of such intervention is often enough to force the administrator to seriously consider how defensible its decisions are. Consequently, as argued by Stone, the administrator's rule and decision making is best characterized as pluralistic and, above all, rational in that it must supply convincing reasons, based on law and policy, for actions that are taken.[278] It may be true that this view is not acceptable to some agencies because of the premise that minimum independency and specific expertise must be ensured, but the "consumerist" measures, which were not an obvious product of interest-group pressures, could be well explained by this view. This view might be said to focus on the aspect of the regulator's "*noblesse oblige*" within the framework of democracy and the constitutional check and balance system, in addition to the voter's morality as well as coalition of various interest groups.

### (2) RESTRICTION ON THE ADMINISTRATOR'S POWER

In order to understand the centrality of the administrator's role and the necessary conditions required for that role to be carried out during regulation making, it is critical to analyze how delegated power is restricted by other branches and other administrators.

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[278] Stone. *ibid.* at 230.

**By the courts:** The power of a court to reverse or remand an administrator's decision provides administrators with a very strong incentive to abide by constitutional, administrative, and other legal requirements. If an administrator does something forbidden by the Constitution, a statute, or rule, or does something not specially authorized by a statute or rule, the action or inaction will be reversed by the courts. In addition, the administrator must show enough reason for the action taken, to avoid a reversal of the decision by the courts, since the court may scrutinize the records to determine whether or not the agency scrupulously abided by the Constitution, pertinent statutes, and the agency's own rules.[279]

**By the head of the executive branch:** The head of the executive branch, such as the president, governor-in-chief, or prime minister, may appoint administrators and also may remove them or effectively request their resignation. Exceptionally, members of independent commissions who are appointed for a term of several years may not be removed, but usually the chairman may be exchanged with another member. Additionally, budgetary offices, which may be one of the major executive offices highly influenced by the head of the executive branch, must in most cases approve the administrator's budgetary requests before they are submitted to the legislative branch. This gives the head of the executive branch not only the power to cut budgets but also to approve or disapprove specific policy and budgetary items.[280] Moreover, this process may provide an appropriate opportunity for some administrators to compete with each other in the context of the effectiveness and efficacy of policy and management. Other than those,

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[279] *Ibid.* at 201.
[280] *Ibid.* at 232.

presidential support with the administrator and presidential power to settle jurisdictional disputes between administrators may influence an administrator's decision making.[281]

**By the legislative branch:** It has become increasingly difficult for the legislative branch to control the delegated issues any longer, yet it has sought to impose restrictions upon the ways in which administrative officials operate in order to ensure that they abide by fair practices and supply reasons for their actions based on an agency's authorization legislation, since citizens cannot exercise their displeasure regarding administrative performance through voting. One restriction on administrative officials is the law concerning administrative procedure, which typically requires that all administrative decisions include findings and conclusions of fact and law, and reasons for each of these.[282] Additionally, in the case of nomination by the president of an independent commission's member, the legislative branch usually has power to confirm it.

### b. WHAT IS THE POWER AN ADMINISTRATOR ENJOYS?

### i. DELEGATION

The delegation of power to make laws, by the legislative branch, is basically justified as the legislative branch does not have enough time or knowledge to debate on technical matters.[283] Given the nature of the legislative branch's process, it would be impractical to require debate about questions of detail, which can be better resolved in less formal

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[281] *Ibid.*

[282] *Ibid.* at 199.

[283] Roderick A. Macdonald, "Understanding Regulation by Regulations" in Ivan Bernier & Andree Lajoie, ed., *Regulation, Crown Corporations and Administrative Tribunal* (Toronto: University of Toronto Press, 1985) at 92-93.

and more informed contexts. With respect to lack of information, specialists are required to formulate the delegated legislation, but they must be members of other governmental branches in order to preserve the values of democratic decision making.[284] Other possible justifications for delegation are the necessity for rapid decision making in cases of emergency, the need to experiment with legislation, especially in a new field, the need for flexibility in the application of laws, and unforeseen contingencies that may arise during the introduction of new and complex pieces of legislation.[285] Aside from ministries and bureaus in executive departments, the legislative branch creates independent administrative commissions and agencies, under the justification that the problems issued are technical as well as political in nature and should be handled accordingly.[286] Experts rather than political favorites should be appointed as commissioners.

### ii. GENERAL CHARACTERISTICS

To some degree, the power of rule making is ordinarily transferred to administrators through the process of delegation. Delegated legislation frequently contains discretionary language such as "just and reasonable rate" or "unfair methods of competition". This vagueness is found throughout, from the purpose of the legislation to the definitions of terminology. Consequently, it enables the administrator to impose his own values and

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[284] *Ibid.*at 92.
[285] *Ibid.*
[286] Stone, *supra* note 4 at 198.

priorities upon the activity.[287] The administrator can make substantive rules by clarifying the vagueness of the legislation as far as it is allowed by the legislative language and appropriate interpretation.

The other important task delegated to an administrator is adjudication. Adjudication can involve the formal trial of a firm or person charged with a violation by the agency, or a proceeding in which various participants seek some benefit. The administrator has a clear incentive to develop an informal procedure for negotiating with affected interests and securing promises of compliance, but such a procedure should be evaluated as a rational response to the fact that the administrator's resources are scarce and limited, since the procedure will save considerable funds, time, and manpower. [288] As the work of the legislature grows, the legislative branch can be expected to delegate more and more of its work to administrators and to exercise progressively less and less control over them.

### iii. CONCLUSION

Due to legislators' lack of time and knowledge, and because the subject matter needs to be treated in a non-political way, the power of regulation making is delegated to the administrators. Even though they can enjoy adjudication and setting priorities, as well as formulating substantive rules in each given field by clarifying the discretionary language of legislation, their actions are restricted by the courts, as well as by the heads of the

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[287] *Ibid.*at 202.
[288] *Ibid.*at 205.

executive branch and the legislative branch. Those functions should work properly in order to maintain the centrality of the administrators' work in the rule- and decision-making process.

### c. WHO ENFORCES WHICH RULES?

So far, we have discovered reasons why legislators delegate the power to make rules and decisions, and the general character of the power delegated. In addition, in previous chapters, we identified competition rules, technical rules, and universal service rules as being economically justified regulations in public utility sectors. So, the next issue to be addressed concerns who enforces which rules. As the answer depends on a country's general legal framework and regulatory history, the best solution will certainly vary from country to country and even across industries within the same country. However, based on the purposes of such delegation and the characteristics of the power, one should focus on the similarities and differences among the three types of rules. If the differences in character among these rules are significant, choosing separate bodies will be advantageous because the choice will better meet the purposes of the delegation.

#### i. DIFFERENCES IN CHARACTER BETWEEN RULES

As concluded in the previous chapter, economically justified regulation in public utility sectors should be categorized into general competition rules, universal service rules, and

technical (interconnection) rules. Additionally, for the short term, it is acceptable to include bottleneck facilities access rules, within the competition rules category. First the characteristics of these rules must be clarified before engaging in a discussion of who should enforce them, and how. One can find significant differences between the characteristics of these rules if one considers the following subject matters: jurisdiction, goals, approach, mutuality, political sensitivity, information needed, expertise, remedies, and relationship with the courts. These differences arguably make the option of separate bodies more advantageous.

**Jurisdiction**: Whereas competition rules are enforced as a set of economy-wide prohibitions that constitute a type of market constitution, together with other framework laws of general application, universal service rules and technical rules are sector-specific and require a definition of their jurisdictional boundaries.

**Goals**: Competition rules basically require enforcers to eliminate anticompetitive behaviors and to concentrate on economic efficiency. In contrast, universal service rules are typically assigned a considerably broader range of goals which are rooted in distributional issues.

**Approach**: Competition rules highly regard the market mechanism and firms' incentives, on the basis that healthy competition can maximize consumer welfare. Universal service rules, on the other hand, sometimes resort to direct control in the market on the basis that markets are either inherently imperfect or will not produce a desirable distribution of benefits.

**Unilateral rules and bilateral rules**: Except for when directing the supply of a product

or service by the government, all forms of regulation, as argued by Cherry and Wildman, may be classified as either unilateral rules or bilateral rules.[289] Based on their argument, unilateral rules are performance requirements without any assurance by the government that the affected firms will be able to generate revenues sufficient to cover the associated costs, whereas bilateral rules are those rules from which firms receive some form of compensation in exchange for meeting government-specified performance obligations. Bilateral rules can be subcategorized into bilateral agreements, which are performance requirements that are coupled with financial compensation, and bilateral commitments, which are performance obligations accepted by firms in exchange for which the government accepts some degree of responsibility and provides some form of assurance for the financial health of the firms taking on these requirements.[290] Here it can be said that the antitrust scheme could be considered a unilateral rule, and the universal service scheme, including symmetric external subsidies and public utility contracts for provision of on-going service, could be considered a bilateral agreement or commitment.

**Political sensitivity:** More political sensitivity is involved in dealing with the universal service rules than with the competition rules.

**Information needed**: Whereas competition rules rely on complaints rather than on industry, and gather information only when necessary in connection with a possible

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[289] Barbara A. Cherry & Steven S. Wildman, "Unilateral and Bilateral Rules: A Framework for Increasing Competition While Meeting Universal Service Goals in Telecommunications" in Cherry, *et al.*, ed., *Making Universal Service Policy* (Mahwah, N.J.: L. Erlbaum Associates, 1999) 39 at 41. Their arguments are concluded like that in order to ensure the sustainable compatibility between universal service and market competition; unilateral rules concerning competition should be applied symmetrically, and unilateral rules concerning the universal service obligation should be converted to bilateral agreements or commitments. *Ibid.* at 56.

[290] *Ibid.* at 41, 42.

enforcement action, universal service rules typically require enforcers to intervene more frequently and to ensure a continual flow of information from the regulated industry. Technical rules require on-going monitoring and the application of sector-specific expertise, and have little direct relevance to competition questions.

**Timing**: While competition rules are an *ex post* enforcement approach, except in the critical area of merger reviews, universal service rules and technical rules generally apply an *ex ante* prescriptive approach.

**Expertise**: Competition rules require legal skills, which are extensively needed in conducting case-specific investigations and in persuading courts to take action, as well as economic skills, which are especially necessary in understanding market definitions, in determining whether a firm is dominant, and in estimating the anticompetitive potential of a particular practice or merger. In contrast, universal service rules require the ability to manage accounting information, and the power to specify an accounting system in order to ensure regulators have relevant, clear information. Technical rules require engineering skills.

**Remedies**: Competition rules enable enforcers to adopt structural remedies, and enforcers are more likely to opt for structural remedies than code-of-conduct remedies. Price setting is the last possible resort, since most competition agencies' natural desire is to leave that function to the private market as much as possible. On the contrary, universal service rules and technical rules typically impose and monitor various behavioral conditions.

**Relationship with the courts**: Competition rules sometimes require enforcers to go to

court to obtain orders and levy fines. Other times, private actions supplement the competition rules. In contrast, universal service rules and technical rules require enforcers to draw up and enforce industry-specific rules or even firm-specific rules, presumably based on information and expertise extending beyond what a court could apply.

Again, that which the competition rules require enforcers to hold and ensure is significantly different from that which is required by the universal service rules. As a result, it seems too difficult for a sole unified body to enforce both sets of rules in a sufficiently compatible way. It may be true that a unified economy-wide body could coordinate inconsistencies among regulatory rules and implementations more easily, establish economic-wide policies more vigorously with a good balance in decision making, and achieve some resource savings. However, this approach is not compatible with the conclusion above. Additionally, in practice, most countries, at least OECD members, have already established a lot of bodies, such as the antitrust authority and the sector-specific authority, and the experiential and institutional cultural differences between them are not so quickly and easily eradicated.[291] Moreover, there is a risk that trying to change or mix institutional and cultural issues could compromise the ability to perform core functions.

In conclusion, the competition rules should be allocated to one body in an economy-wide manner, and the technical rules and universal service rules should be

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[291] OECD. Directorate for Financial, Fiscal and Enterprise Affairs, Committee on Competition Law and Policy, *Relationship Between Regulators and Competition Authorities*, Doc. No. DAFFE/CLP(99)8 (1999) at 8.

allocated to one body in each specific sector, since this combination is the best response to differences in character between those rules. Yet, some supplemental measures are required to cover the shortcomings of this option, as there is the possibility of inconsistency in the implementation of those rules.

### ii. RULE ALLOCATION

From a short-term and practical standpoint, it is reasonable to assume that the antitrust and sector-specific authorities that already exist can be used to enforce the competition rules, universal service rules, and technical rules. From a long-term standpoint, we are able to freely establish a new administrative agency to implement regulatory rules.

The antitrust authority seems to have accumulated expertise, experience, and basic institutional characteristics to protect competition from anti competitive behavior, and thus holds an overwhelming comparative advantage in competition protection, especially in investing and prosecuting anticompetitive conduct, such as cartel behavior and reviewing mergers. Additionally, the antitrust authority could benefit from its economy-wide view. Sector-specific authority is better suited to addressing universal service rules and technical rules, which are on-going rather than periodic in nature and are heavily based on sector-specific knowledge. Therefore, the competition rules should be allocated to the antitrust authority, whereas the universal service rules and technical rules should be allocated to the sector-specific authority.

As discussed above, during the transitional period from a monopoly to market

competition, deciding which authority should enforce bottleneck facilities access rules is also a problem. As long as they are competition rules, antitrust authority should enforce them. However, the access rules inevitably involve cost calculations and a price-setting process, which requires a large amount of cost data and specific expertise, as well as continuous monitoring to ensure compliance with those rules. Therefore, it might be acceptable during the transaction period to allocate the access rules to the sector-specific authority. Nevertheless, in this case, the antitrust authority should be able to concurrently eliminate abuse by dominant firms through the competition rules.

### d. INTERFACE BETWEEN ANTITRUST AUTHORITY AND SECTOR-SPECIFIC AUTHORITY

The antitrust and sector-specific authorities complement each other because neither of the authorities can solely maintain the regime required to keep a market functioning and sustainable, as discussed before. The whole regime inevitably involves many regulatory schemes that may be implemented by different authorities. Additionally, we can find further need for them to work together in cases where their implementations are interrelated and overlapping.

As noticed above, when competition rules, universal service rules, and technical rules are enforced by different bodies, a specific mechanism should be established to avoid their inconsistent application, since the application of one type of rule sometimes negatively influences that of another. With respect to the relationship between

competition rules and technical rules, the adoption and enforcement of technical standards can be used to distort or restrict competition in any market (*e.g.*, adoption of standards that are only used by the incumbent is disadvantageous to competitors.). With respect to the relationship between competition rules and universal service rules, as argued in the previous chapter, the sector-specific authority should ensure the principle of competitive neutrality.

Based on the fact that public utility sectors are now in the process of introducing and promoting market competition, the antitrust authority, with its economy-wide view, could and should try to fulfill the technical standard rules and universal service rules by cross-sectoral view of the regulatory rules and administration as far as the implementations of the competition rules, technical rules, and universal service rules are interrelated and overlapping. It is desirable that the antitrust authority be given a wide jurisdiction or a vigorous captaincy so that the authority can coordinate the compartmentalized administrations from the broader perspective of market competition.

Measures to coordinate their overlapping implementations could be categorized as formal and informal. Where there is a relatively strong legislative initiative to determine the policy priority of each authority, formal measures can be adopted. Otherwise, informal measures can basically be argued between authorities.

**Oversight-type mechanism:** An extreme example of a formal measure is to bestow legislatively upon the antitrust authority the power of vetoes and other refusals to grant permission for decisions made by the sector-specific authority. If the antitrust authority has sufficient competence and expertise regarding decisions made by the sector-specific

authority, this measure could be workable. Bottleneck facilities access rules fall into this category. When the rules are enforced transitionally by the sector-specific authority, the antitrust authority must have the power to approve, disapprove, and modify related decisions brought by the sector-specific authority because the antitrust authority has stronger expertise and experience regarding competition issues. Additionally, the antitrust authority should be extensively involved in any continuous review of whether such rules are justified by a residual monopoly because the antitrust authority is in a better position than the sector-specific authority to make this decision and should have less self-interest in unnecessarily continuing such transitional rules.

**Consultation-type mechanism:** More reciprocally, the antitrust authority could be given a legislative mandate to represent its own opinion, which must be significantly weighted by the sector-specific authority. Universal service rules and technical interconnection rules fall within this category. As long as those rules are inherently different in character, and treated in that way, the antitrust authority could not move aggressively into the core realm of universal service rules and technical rules. However, at least from the broader perspective of market competition, the antitrust authority could better evaluate whether rules and decision making by the sector-specific authority ensures competitive neutrality.

**Branch head's initiative:** Additionally, the head of the executive branch could initiate, to some extent, each authority's priority setting through budgetary and personnel allocation processes and through evaluating mission statements that show the authority's prioritized tasks. This option could work if the antitrust authority were under the direct control of the head of the executive branch. If the antitrust authority is under the

budgetary and personnel control of a sector-specific minister, it might be difficult to expect the Minister to initiate the same priority setting as would be expected from the head of the executive branch.

**Non legally-binding measures:** Informal measures include forming special task teams beyond vertically divided administrations and concluding agreements between authorities. Informal measures could be an effective way to allocate resources and engage in rapid decision-making, but they might lack legal binding and democratic legitimacy.

## B. PRACTICAL SCHEME IN THE TELECOMMUNICATIONS SECTOR

### a. HOW RULES ARE ALLOCATED IN THE TELECOMMUNICATIONS SECTOR

As illustrated above, if public interest theory were perfectly true, telecommunications market competition would be enhanced at the same time as universal service is being promoted. However, this is not the case, and this reality provides strong evidence that this theory is not perfect in explaining regulatory behavior. Rather, the economic theory of regulation, which holds that regulators favor policies that benefit interest groups, seems to explain the historical aspect of telecommunications policy quite adeptly. Regarding inefficient cross-subsidies, Kaserman and Mayo note that consumers are the primary beneficiary of the existing system, and that the group is also likely to be the source of substantial political support for regulatory commissioners and the principals

they represent.[292] Nevertheless, can this theory also perfectly explain the recent advantageous policy developments, such as dynamic deregulation, vigorous policy changes toward rate rebalancing, and the introduction of pro-competitive measures in the universal service scheme? Here, the view focused on regulators' centrality in the rule and decision-making process should be examined using an example from the telecommunications sector. In this regard, the characteristics of regulators, namely the antitrust and sector-specific authorities, will be analyzed. Then, measures that are necessary so as to avoid inconsistencies in implementation among them will be presented.

### i. ANTITRUST AUTHORITY IN THE UNITED STATES AND AUSTRALIA

The federal government of the United States has the Department of Justice (DOJ) as one of its antitrust authorities. The Antitrust Division of the DOJ implemented the general economy-wide antitrust laws, mainly the Sherman Act and Clayton Act. The decisions of the Antitrust Division may be pressured since the division is headed by a politically appointed Assistant Attorney General. As to its relationship with courts, the Antitrust Division frequently files both civil and criminal actions simultaneously. Federal courts routinely hear and decide antitrust cases brought by the division or individuals, including those involving telecommunications carriers. Federal courts also enforce compliance with the terms of the consent decrees adopted to settle civil antitrust actions.

The Australian government established the Australian Consumer and Competition

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[292] Kaserman & Mayo, *supra* note 153 at 145.

Commission (ACCC), which administers the antitrust and consumer protection provisions as well as those of new telecommunications-specific antitrust rules of the Trade Practices Act in 1997. In contrast to the DOJ, the ACCC seems to face little pressure since seven commissioners in the ACCC are appointed by the Governor General with precisely specified[293] and enumerated grounds for terminating the appointment.[294] Additionally, the Australian government may not direct the ACCC on any competition-related issue in the Act.[295] A certain number of ACCC decisions can be appealed, first to the Australian Competition Tribunal (ACT), which is a non-judicial body presided over by a Federal Court judge and comprising two other members, an economist and a businessperson.[296] The ACT can review all aspects of ACCC decisions.[297] ACCC and ACT decisions are enforced by the Federal Court through injunctions to halt anticompetitive conduct. ACT decisions can be appealed to the Federal Court, but only on questions of law.

### ii. SECTOR-SPECIFIC AUTHORITY IN THE UNITED STATES AND AUSTRALIA

Established by the federal government of the United States, the Federal Communications Commission (FCC) is not an executive branch agency headed by a cabinet officer, but rather an independent administrative commission. The FCC consists of five

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293 *Trade Practice Act 1974* (Cth.). s. 7.
294 *Ibid.*, s. 13.
295 *Ibid.*, s. 29.
296 *Ibid.*, Part III, IX.
297 Australia, Commonwealth, Department of Communications and the Arts, *Australia's Open Telecommunications Market: The New Framework* (Canberra: Department of Communications and the Arts, 1998) at 35.

commissioners, with no more than three from the same political party, nominated by the President and confirmed by the Senate.[298] The commissioner serves a five-year term, which is subject to renewal at the discretion of the President. The FCC enforces the Telecommunications Act, which includes not only universal service rules and technical rules, but also bottleneck facilities access rules. In contrast, the Australian government has the Minister for Communications, Information Technology, and the Arts, as well as the Australian Communications Authority (ACA) as sector-specific law enforcers. Neither of them have the power to enforce any competition rules. However, the ACA has primary responsibility for the technical aspects of telecommunications regulation, such as issuing licenses that have, for the most part, technical conditions[299] and registering the codes of technical standards developed by the associations of the telecommunications industry representatives.[300] ACA members are appointed by the Governor General, but an appointment must be terminated in the case of unsatisfactory performance.[301] The ACA may request that an association develop a certain code, and if it fails to do so, the ACA can develop the standards itself. The Minister is responsible for enforcing universal service rules, such as determining substantive rules concerning definitions, cost calculations and collection, and for designating providers. As far as the universal service scheme is concerned, the Minister is the main decision maker and his power is obviously far stronger than that of the ACA, considering that its main tasks concerning universal service are to decide whether to approve applications by providers pursuant to the rules

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298 47 U.S.C. §§154(a), (b)(5).
299 *Telecommunications Act 1997* (Cth.), s. 56.
300 *Ibid.*, s. 117.
301 *Australian Communications Authority Act 1997* (Cth.), s. 37.

determined by the Minister and to give advice to the Minister. Therefore, the enforcement of universal service rules in Australia should be vulnerable to the intentions of the executive branch much more so than in the United States, at least at the federal level. Yet it should be kept in mind that in the United States, the local governments commit, to some degree, to the implementation of the federal universal service scheme.

### iii. FEDERAL-STATE PROBLEM IN THE UNITED STATES

One of the most significant problems in the United States is the relationship between the federal and state levels, with respect to implementation of universal service rules and some parts of the competition rules.[302] Other than the FCC, each US state has a state commission, which commonly oversees other industries, including energy and transport companies, and thus typically has cross-sectoral jurisdiction. In the telecommunications field, state commissions have traditionally concentrated their efforts on rate regulation, universal service obligations, and some local competition issues.

First, the FCC's price-setting initiative was immediately challenged by a group of ILECs and state legislators following the enactment of the Telecommunications Act 1996. They insisted that the authority to enforce local competition provisions is primarily under the jurisdiction of states. Many of the local competition rules, including rules of TERLIC formula pricing for interconnection and unbundled access fees, were argued to

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[302] Australia also has such state regulators to enforce economic regulation of state-based markets as the New South Wales Independent Pricing and Regulatory Tribunal and the Victorian Office of the Regulator General. These bodies have responsibilities, including technical ones, across a range of industries and have a close association with the ACCC. See OECD, *supra* note 291 at 107.

be invalid. Even though the appellate court judged in favor of the state, the Supreme Court finally overturned the judgment, ruling that the FCC had general jurisdiction to implement the 1996 Act's local competition provisions, and that the FCC's rules governing unbundled access were consistent with the Act as well.[303]What should be kept in mind is that ambiguity about the regulatory bodies' jurisdiction would result in costs related to judicial proceedings, delays, and possibly regulatory errors.

Second, other than the local level's rules, such as the local universal service support scheme, there is a complex allocation of rules process outlined in the Telecommunications Act with regard to the FCC and each state commission. State commissions are required by the Act to carry out various functions, such as the implementation of universal service obligations and the review of BOCs' applications to enter the long-distance market, as well as arbitration of negotiations concerning interconnection, service, and unbundled elements.[304] A state commission is usually comprised of several commissioners appointed by the governor and confirmed by state legislators.[305] These commissioners are often state politicians who are directly influenced by local voters' interest. Therefore, decisions of the state commission usually involve more political sensitivity than those of the FCC.

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[303] See *AT&T Corporation, et al., Petitioners v. Iowa Utilities Board et al.*. 525 U.S. 366; 119 S. Ct. 721; 142 L. Ed. 2d 834 (1999).
[304] 47 U.S.C. §§ 214, 254, 271, 252.
[305] John A.K. Huntley, "Commission and the Provision of a Universal Telecommunications Service" (1994) 17 World Competition 5 at 7, 14.

### b. RELATIONSHIP BETWEEN ANTITRUST AUTHORITY AND SECTOR-SPECIFIC AUTHORITY

As discussed above, if a government chooses to allocate regulatory rules to more than one regulatory body, an additional cooperation system is needed in order to avoid inconsistencies in the implementation of rules. A consultation-type mechanism should be adopted between the enforcers of the competition rules and the universal service rules or those of the competition rules and the technical rules. An oversight-type mechanism should be adopted between enforcers of the competition rules and the transitional access rules.

In the United States, a statutory cooperation mechanism exists between the DOJ and the FCC concerning the incentive regulation against BOCs. Even though Section 271 of the Telecommunications Act 1996 gives ultimate authority for a BOC's application approval to the FCC, as a part of the approval process the FCC must consult with the DOJ and give the DOJ evaluation "substantial weight". However, the FCC is not actually bound by the DOJ assessment. Likewise, the DOJ is not bound to adhere to the competition checklist the Act provides. Instead, the Act reads that the DOJ may use any standard that it deems to be appropriate. The general standard that the DOJ actually uses to determine whether Section 271 approval should be granted is whether the relevant local exchange market is "fully and irremediably open to competition".[306] However,

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[306] U.S., *The State of Competition in the Telecommunications Marketplace: Three Years after Enactment of the telecommunications Act of 1996: Before the Subcommission. On Antitrust, Business Rights, and Competition of the Senate Judiciary Comm.*, 106th Cong. (1999).

despite the fact that the DOJ is free to base its opinion on standards other than those comprised in Section 271, the two bodies have adopted fairly similar criteria to review BOC applications, such as whether all entry strategies contemplated in the 1996 Act are available in the state.[307] There is no further coordination system between the DOJ and FCC in the United States, in spite of the fact that the DOJ and the FCC have concurrent responsibilities to investigate merger plans[308] and that universal service rules and competition rules are inevitably interrelated. In Australia, with regard to technical issues, the ACCC must consult with the ACA concerning the model terms and conditions to apply to telecommunications services, subject to an access regime.[309] Additionally, the ACCC and the ACA have measures to mutually charge a member of one institution with the other institution's associate member.[310]

Both countries have established a consultation system by statute for limited occasions. The one in the United States is not sufficient because the incentive regulation, which is one of the competition rules, is required to be subject to the oversight-type mechanism. As far as competition rules are concerned, the oversight-type mechanism is not found in the United States. Also, the consultation-type mechanism between universal service policy and competition policy is not yet found as a formal measure.

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[307] Kerf & Geradin, *supra* note 39 at 953.
[308] 47 U.S.C. § 601(b). 15 U.S.C. § 18.
[309] *Trade Practice Act 1974* (Cth.), s. 152AQB.
[310] OECD, *supra* note 291 at 110.

## C. SUMMARY AND POLICY IMPLICATIONS

### a. SUMMARY OF THIS CHAPTER

This chapter introduced two types of traditional theories, the public interest theory and the economic theory of regulation. Each of these theories attempts to explain how regulations are formulated. Even though both theories are based on the political realities of a democratic society, such as voters' morality or the ratio of interest groups, they are not always perfect. In addition to them, a slightly different view, one focusing on the centrality of the administrator in the regulation-making process, was also presented. This view, rather than being a substitute for, is a complement to both theories. It is based mainly on such constitutional check and balance mechanisms as follows. First of all, some power to make rules and decisions is delegated by the legislative branch to administrators Due to the legislator's lack of time and knowledge, as well as the need for treatment in a non-political manner. Although, once delegated to the administrators, the power is no longer under the direct control of the legislators, all other branches, such as the courts, the head of the executive branch, and other executive offices, impose sufficient pressures on the administrators to force them to utilize the delegated power in rational and defensible ways. The next issue is the allocation of the delegated power among administrative institutions. Arguably, the allocation of power among institutions depends on the differences in character of the delegated powers, that is to say, the competition rules, the technical rules, and the universal rules. In order to achieve the purposes of delegation, implementation should properly reflect these differences. On the

premise of reality, the antitrust authority should enforce the competition rules, and the sector-specific authority should enforce the universal service rules and possibly the technical rules. Finally, in order to avoid inconsistencies in implementation, oversight- and consultation-type mechanisms among the authorities and the executive head's initiative and other informal measures should be established.

### b. POLICY IMPLICATIONS

Based on the discussion above, characteristics of antitrust authority and sector-specific authority in both countries can essentially be explained as follows: In the United States, the DOJ enforces competition rules, while the FCC enforces technical rules and universal service rules. There are, however, two exceptions. One is that the transitional bottleneck facilities access rules are enforced not by the DOJ, but by the FCC. The other is that the implementation of universal service rules involves, to some degree, each state commission. In Australia, the ACCC enforces competition rules, including the transitional bottleneck facilities access rules, the Minister has a strong initiative to determinate substantive universal service rules, and the ACA implements technical rules and universal service rules.

With respect to measures to distribute the rules, distribution is basically in line with the purposes of the delegation of rule-making power by legislators, as discussed above, and properly reflects the differences in character among these rules. The allocation of access rules to the FCC is exceptional but acceptable as a transitional

approach until the residual monopoly disappears. However, the United States has another dimension of rule allocation between the federal and state levels concerning transitional bottleneck facilities access rules and universal service rules. This issue must inevitably be linked with the broad constitutional debate about the power distribution between the federal and state governments and thus resides outside the scope of this chapter. Nevertheless, given a public utility sector's wide jurisdiction from a perspective of the state's own concerns, it could be argued that implementation of the universal service rules in the United States is no less pressured by the local legislators, than is their implementation in Australia by the federal legislators.

With respect to the appointment of the institutions' members or heads, while membership of the ACCC and the FCC is protected from the executive branch by statutes, heads of the DOJ and the Department of Communications, Information Technology, and the Arts are cabinet members. It may be true that because of its limited but discretional priority setting, the DOJ's decision whether or not to file a particular case under consideration would be influenced negatively by the executive branch, but on such an occasion, the private person or firm can bring the case to court separately.

With respect to restrictions from the legislative branch, the US Congress enacted the Administrative Procedure Act[311] in order to ensure fairness and objectivity in the process of rule and decision-making by federal administrators.

In conclusion, the restrictions on delegated power for both types of authorities from the other branches or administrators seem to function well, and they will most

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[311] 5 U.S.C. §§551-59.

likely force those authorities to make rules and decisions in more reasonable and defensible ways. However, it should be kept in mind that neither country has an appropriate mechanism for coordinating overlapping rules between authorities. While both authorities could keep in contact with each other in an informal manner, and they might share common views on issues that are overlapping their tasks, such a non-binding relationship would be insufficient, as both authorities' priority sets on the basis of the delegated powers are so different.

# FINAL CONCLUSION

In this final conclusion, issues argued above are summarized. A government should reevaluate the laws and policies that regulate public utility sectors in accordance with rapid technological advancements. Based on the fundamental economic theory and empirical analysis of telecommunications sector practices in Australia and the United States, a option for the government consists of two parts, namely, short-term perspectives, which provides special care for residual monopolies, and long-term perspectives, which focuses on general market competition.

*Background*

(1) Generally, rapid development in technology affects, more or less, various business fields in ways that: change their cost structures; lower the prices and fees of goods and services; enhance the quality of goods and services; introduce new types of goods and services; and tempt more operators into entering the market.

(2) The public utility sectors, such as electricity, gas, transportation, and telecommunications, are no exception. More seriously, technological development is breaking down traditional industry borders and reconstructing, negatively and positively, the fundamental values shared by all citizens.

(3) However, technological advancements do not have enough power to instantly wipe out the harmful effects left by a residual monopolist, which is likely to still hold sufficient market power.

*Short-term perspective*

(1) During the transitional period from a legal monopoly to market competition, a residual monopolist once protected legally from competition still is likely to have substantial power in the market.

(2) To tackle the residual monopolist, bottleneck facilities access rules are required in addition to general competition rules. It is preferable that the antitrust authority enforce them, but the sector-specific authority would also be acceptable. To maximize network effects, interconnection rules are required. It is preferable that the sector-specific authority enforce them, as it has high technical expertise.

(3) To supply the public good, universal service rules are required. This option is widely open to the sector-specific authority, but ensuring competitive neutrality is an inevitable condition.

(4) To coordinate overlapping rules between authorities, appropriate mechanisms are required. While the antitrust authority should hold veto power vis-à-vis decisions concerning bottleneck facilities access rules, the antitrust authority should have a legislative mandate to issue, from a broader perspective of market competition, opinions that are significantly weighted by the sector-specific authorities.

*Long-term perspective*

(1) The residual monopolist's power decreases, and competition is workable within any market. Firms operate their own businesses freely, with technological advancements and plenty of imagination, and without being stuck to the traditional industry boarder.

(2) To police market competition, the antitrust authority, as an economy-wide viewer, has the primary role of enforcing competition rules. Transitional rules such as those related to bottleneck facilities access are no longer needed, and should be eliminated.

(3) To maximize network effects, interconnection rules are still required. The antitrust authority plays another role, that of considering the impact of network effects on competition in extended markets that are interrelated and adjacent to the traditional public utility markets, if any.

(4) To supply the public good, universal service rules are still required. In addition to ensuring competitive neutrality, the sector-specific authority is required to adopt pro-competitive instruments in order to provide as many opportunities for competing firms to receive monetary support as possible.

(5) To coordinate overlapping rules between authorities, appropriate mechanisms are still required. The antitrust authority should have a legislative mandate to issue, from the broader perspective of market competition, opinions that are significantly weighted by the sector-specific authorities. An initiative to set policy priorities by the head of the executive branch through budgetary and personnel control over each authority is preferable.

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