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Exporting Telecommunications Regulation: The United States-Japan Negotiations on Interconnection Pricing

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I. INTRODUCTION

On February 15, 1997, seventy countries working within the framework of the World Trade Organization (WTO) agreed on a multilateral reduction of regulatory barriers to competition in international telecommunications services.[1] At the time, the signatory nations to the WTO agreement on telecommunications services represented markets generating ninety-five percent of the $600 billion in global telecommunications revenues.[2] Beginning January 1, 1998, those nations started a phased process to open their telecommunications markets to competition. Since 1997, the U.S. government has attempted to use the WTO agreement on telecommunications services as a vehicle for "exporting" American principles of telecommunications regulation to other nations.

Part II of this Article explains how in 1997 the United States took the position that the WTO agreement on telecommunications services requires

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1. World Trade Organization, The WTO Negotiations on Basic Telecommunications (Feb. 17, 1997) (unofficial briefing document). For an analysis of the WTO agreement, see J. GREGORY SIDAK, FOREIGN INVESTMENT IN AMERICAN TELECOMMUNICATIONS 367–94 (1997). *See also* EDWARD M. GRAHAM & J. DAVID RICHARDSON, GLOBAL COMPETITION POLICY (1999); John H. Harwood II, William T. Lake & David M Sohn, *Competition in International Telecommunications Services*, 97 COLUM. L. REV. 874, 881–84 (1997).

2. Edmund L. Andrews, *U.S. Remains Odd Man in Global Push for Phone Deal*, N.Y. TIMES, Feb. 14, 1997, at D1; Anne Swardson & Paul Blustein, *Trade Group Reaches Phone Pact*, WASH. POST, Feb. 16, 1997, at A33.

signatory nations to follow the practices of the Federal Communications Commission (FCC) on interconnection pricing under the Telecommunications Act of 1996.[3] That effort has culminated in the current initiative by the Office of the United States Trade Representative (USTR) to use the implicit threat of trade sanctions to influence Japan's domestic regulatory policy on the pricing of mandatory competitor access to the unbundled elements of the local network belonging to the operating companies of Nippon Telegraph and Telephone Corporation (NTT).

Part III examines the substantive difficulties of applying the FCC's interconnection policies to Japan. It appears that the USTR is unaware that, for more than five years, many American experts on telecommunications policy have disagreed whether American consumers have benefited from the very FCC policies that USTR would have Japanese regulators emulate. Moreover, the USTR's initiative ignores that the transition to cost-oriented rates for interconnection and retail telecommunications services has been a difficult and unfinished process in the United States. The cost models used by the FCC to set interconnection prices have significant deficiencies, and actual interconnection prices both within and outside the United States diverge considerably from the estimates of the FCC's cost models. Variations across countries in the prices of inputs have a significant effect on the costs of interconnection. In particular, regulators treat depreciation costs differently—and, from an economic perspective, more reasonably—in Japan than in the United States. Such substantive economic considerations suggest why the FCC's policy in this area has generated continuous litigation since 1996, including two Supreme Court cases, and is too unresolved for the United States to force on its trading partners.

Part IV asks whether the USTR has the detailed knowledge, the expertise, and the proper incentives to negotiate trade agreements on interconnection pricing. The public policy issues associated with telecommunications regulation are far more complex than those associated with industrial and agricultural products. We question the propriety of using the USTR to influence the domestic regulatory policy of another country on a topic as complex as the efficient pricing of mandatory access to unbundled network elements. The USTR's power to formulate trade policy on this subject resides in officials who are unlikely to possess the economic expertise and resources necessary to evaluate the consumer-welfare implications of the policies that they would have Japan and other nations adopt.

For these reasons, the USTR cannot credibly make the interconnection pricing policies of another nation a legitimate concern of U.S. trade policy.

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3. Pub. L. No. 104-104, 110 Stat. 56. (Feb. 8, 1996).

II. Did the WTO Agreement on Telecommunications Services Incorporate the FCC's Interconnection Policy?

Commenting on the applicability of the U.S. model of telecommunications liberalization to other nations, Robert Crandall wrote that "[t]he most contentious single issue in implementing the 1996 Telecommunications Act in the United States is the measure of cost to be used in setting rates for wholesale unbundled elements."[4] Despite that economic assessment in 1997, and despite its confirmation over the following four years, interconnection pricing is today the very aspect of the Telecommunications Act of 1996 that the USTR aggressively seeks to impose on other nations in the name of enforcing the WTO agreement on telecommunications services.

A. TELRIC Pricing Under the FCC's First Report and Order on Interconnection

To promote competition in the provision of local telecommunications services in the United States, Congress enacted the Telecommunications Act of 1996, which provides for three different forms of competitive entry in local exchange markets: (1) facilities-based entry; (2) resale of the services of the incumbent local exchange provider (ILEC); or (3) leasing of unbundled network elements (UNEs) by the ILEC to competitive local exchange carriers (CLECs). UNEs are components or functions of the network that a CLEC may lease and connect with its own facilities without building an entire network. The availability of unbundled loops enables the CLEC to deploy its own switches and to lease loops to connect to customers' premises.

With respect to the pricing of UNEs, the 1996 legislation requires that prices be "based on the cost" of providing the network element.[5] Two issues immediately arise. First, which elements should an ILEC have the legal duty to unbundle—that is, to offer for sale on a disaggregated basis—at regulated, cost-based rates to CLECs, so that they can produce their own services? Second, how should mandatory access to the ILEC's unbundled local loops be priced? Despite the importance of the first question, this Article addresses only the second question because it is the focus of the USTR's negotiations with Japan.[6]

In its *First Report and Order* on local interconnection, issued in August 1996, the FCC introduced the concept of total element long-run incremental cost (TELRIC) to set UNE prices.[7] Because TELRIC only considers

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4. Robert W. Crandall, *Telecommunications Liberalization: The U.S. Model*, *in* Deregulation and Interdependence in the Asia-Pacific Region 415, 428 (Takatoshi Ito & Anne O. Krueger, eds., 2000). *See also* Martin Cave & Robert W. Crandall, Telecommunications Liberalization on Two Sides of the Atlantic (2001).

5. 47 U.S.C. § 252(d)(A)(i) (2001).

6. The first question is analyzed in detail from an economic perspective in Jerry A. Hausman & J. Gregory Sidak, *A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks*, 109 Yale L.J. 417 (1999).

7. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, First Report and Order, CC Dkt. Nos. 96-98, 95-185, 11 F.C.C. Rcd. 15,499 (1996) [hereinafter *First Report*

incremental costs of a long-run nature, the total UNE price is the sum of the forward-looking long-run incremental cost of an efficient network *and* a reasonable[8] portion of forward-looking common costs.[9] Analysis based on historical costs, a second cost-based approach, can serve as a validation check on proposed TELRIC estimates.

TELRIC pricing has been controversial in the United States. The FCC's interconnection policies in general, and its TELRIC methodology in particular, have many economic shortcomings.[10] The TELRIC methodology excludes incumbent firms' shared and common costs, discourages facilities-based investments, and effectively subsidizes inefficient competition by granting a CLEC a free option on sunk investments that are subject to technological uncertainty.[11]

There is no reason why TELRIC should always be less than embedded costs. For example, TELRIC may exceed embedded costs if loops must be placed underground in the future (as required in many U.S. locations).[12] The two factors that can cause TELRIC and embedded costs estimates to diverge are (1) changes in investment costs (decreasing investment costs can cause embedded costs to exceed TELRIC), and (2) changes in depreciation sched-

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and Order], *aff'd in part and vacated in part*, Iowa Utils. Bd. v. FCC, 120 F.3d 753 (8th Cir. 1997), *rev'd in part and aff'd in part sub nom.* AT&T Corp. v. Iowa Utils. Bd., 525 U.S. 366 (1999), *vacated in part and refused to review in part*, Iowa Utils. Bd. v. FCC, 219 F.3d 744 (8th Cir. 2000), *cert. granted sub nom.* Verizon Communications, Inc. v. FCC, 531 U.S. 1124 (2001). TELRIC pricing is codified in the FCC's rules at 47 C.F.R. § 51.501 *et seq*. For a critique of the *First Report and Order*, see J. Gregory Sidak & Daniel F. Spulber, Deregulatory Takings and the Regulatory Contract: The Competitive Transformation of Network Industries in the United States (1997); J. Gregory Sidak & Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 Colum. L. Rev. 1081 (1997) [hereinafter Sidak &. Spulber, *Tragedy of the Telecommons*].

8. In the *First Report and Order*, the FCC suggested that one "reasonable" cost allocation method "would be to allocate common costs using a fixed allocator, such as a percentage markup over the directly attributable forward-looking costs." *First Report and Order*, *supra* note 7, at 15,853 ¶ 696. For example, the Illinois Commerce Commission ordered GTE and Ameritech to offer unbundled network elements at TELRIC plus 28.86%. *See* Illinois Commerce Comm'n v. Illinois Bell Telephone Co. Order, 2000 WL 562306, at 46 (Ill. Comm. Comm'n Mar. 29, 2000). The California Public Utilities Commission ordered Pacific Bell to offer its UNEs at TELRIC plus 19%. *See* Governing Open Access to Bottleneck Services, 197 P.U.R.4th 369 (Cal. Pub. Util. Comm'n Nov. 18, 1999).

9. There is continuing debate in the United States as to whether the incumbent provider should be required to base its costs on a hypothetical network that is "superior" to its own or, alternatively, on its actual forward-looking costs of providing the network element. For a comprehensive review of that debate, see Sidak & Spulber, *supra* note 7; Dale E. Lehman & Dennis L. Weisman, The Telecommunications Act of 1996: The "Costs" of Managed Competition (2000); Alfred E. Kahn, Letting Go: Deregulating the Process of Deregulation (1998); Alfred E. Kahn, Whom the Gods Would Destroy, or How Not to Deregulate (2001).

10. For an in-depth criticism on the FCC's version of TELRIC pricing, see Hausman & Sidak, *supra* note 6; Sidak & Spulber, *Tragedy of the Telecommons*, *supra* note 7; J. Gregory Sidak & Daniel F. Spulber, *Givings, Takings, and the Fallacy of Forward-Looking Costs*, 72 N.Y.U. L. Rev. 1068 (1997).

11. Sidak & Spulber, *Tragedy of the Telecommons*, *supra* note 7, at 1107–10. Alternatively, one of us has advocated the combination of the market-determined efficient component-pricing rule (M-ECPR) with a system of competitively neutral end-user charges. Such a system would establish a cost-based pricing environment that compensates incumbents and creates present and future incentives for efficient competitive entry. *Id*. at 1093–1107.

12. Lehman & Weisman, *supra* note 9, at 65.

ules (protracted regulatory depreciation periods can cause embedded costs to exceed TELRIC).[13]

In 1996, the FCC relied upon proxies based largely on a cost model sponsored by the major long-distance carriers. These estimates were used to provide pricing guidance to the state public utilities commissions (PUCs) for interim UNE rates.[14] While the FCC's pricing guidelines were stayed by the Eighth Circuit,[15] PUCs relied upon various models including the Hatfield Associates model(HAI), the Benchmark Cost Proxy Model(BCPM) and internal ILEC models to produce forward-looking costs. The PUCs often set higher rates that were closer to embedded costs than those recommended by the FCC. Several years later, the FCC developed its own hybrid cost proxy model (HCPM) for purposes of universal service. The HCPM was the result of FCC objectives to combine the "best" features of the HAI and BCPM models as well as to address the flaws that many critics saw in those models. HCPM forward-looking cost estimates are generally much higher than the FCC's original proxy costs and are often closer to embedded costs than the rates set by state PUCs.[16] The FCC's proxy rates for unbundled loops are presented in Figure 1 below and can be compared to the actual rates adopted by PUCs in Figure 2.

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13. *Id*. at 70–73. *See also* SIDAK & SPULBER, *supra* note 7, at 200; *infra* text accompanying notes 86–92.

14. Cost proxy models were initially developed in the context of "universal service" policy reform preceding the passage of the 1996 Act. U S WEST offered the first model relying upon census data about population density in 1994. *See U S WEST Proposal: Targeting High Cost Funding to High Coast Areas using U.S. Census Block Groups*, CC Dkt. No. 80-286 (Oct. 28, 1994). In 1995, U S WEST was joined by MCI, Sprint, and NYNEX in developing the Benchmark Cost Model (BCM). *See Benchmark Cost Model: A Joint Submission by MCI Telecommunications, NYNEX, Sprint, and U S WEST*, CC Dkt. No. 80-286 (Sep. 12, 1995). Ultimately, differences of opinion led to MCI sponsoring separately the "Hatfield model," named for the consulting firm that developed it, Hatfield Associates, and later the "HAI model," reflecting the consulting firm's change of name. AT&T ultimately joined in sponsoring this model. U S WEST and Sprint, along with BellSouth, continued sponsorship of the Benchmark Cost Proxy Model (BCPM), and relied upon the consulting firm, Indetec, to enhance the detail of the model. Both the BCPM and HAI have regularly been upgraded to meet FCC requirements of cost models or other improvements. Nonetheless, they yield widely different results, owing primarily to differences of opinion regarding input assumptions. *See generally Federal-State Joint Bd. on Universal Serv.*, 13 F.C.C.R. 21,323 (Oct. 28, 1998).

15. *Iowa Utils. Bd. v. F.C.C.*, 109 F.3d 418, 427 (8th Cir. 1996).

16. LEHMAN & WEISMAN, *supra* note 9, at 78. Lehman and Weisman estimated that the mean difference between HCPM and embedded costs was 0.07%.

FIGURE 1: STATE PROXY CEILINGS FOR LOCAL LOOP ($ U.S.)[17]

State	Proxy Ceiling
Alabama	17.25
Arizona	12.85
Arkansas	21.18
California	11.10
Colorado	14.97
Connecticut	13.23
Delaware	13.24
District of Columbia	10.81
Florida	13.68
Georgia	16.09
Hawaii	15.27
Idaho	20.16
Illinois	13.12
Indiana	13.29
Iowa	15.94
Kansas	19.85
Kentucky	16.70
Louisiana	16.98
Maine	18.69
Maryland	13.36
Massachusetts	9.83
Michigan	15.27
Minnesota	14.81
Mississippi	21.97
Missouri	18.32

17. AMENDMENTS TO THE CODE OF FEDERAL REGULATIONS, Appendix D.

Montana	25.18
Nebraska	18.05
Nevada	18.95
New Hampshire	16.00
New Jersey	12.47
New Mexico	18.66
New York	11.75
North Carolina	16.71
North Dakota	25.36
Ohio	15.73
Oklahoma	17.63
Oregon	15.44
Pennsylvania	12.30
Puerto Rico	12.47
Rhode Island	11.48
South Carolina	17.07
South Dakota	25.33
Tennessee	17.41
Texas	15.49
Utah	15.12
Vermont	20.13
Virginia	14.13
Washington	13.37
West Virginia	19.25
Wisconsin	15.94
Wyoming	25.11

Even within individual states, prices for unbundled loops appear to vary in accordance with local changes in underlying costs. For example, population dispersion and geographical conditions vary greatly across regions. The sharp contrast between densely populated areas and remote areas necessitates different network architectures and hence different costs in different parts of an ILEC's access network. The notion that access prices should conform to local circumstances is well documented in U.S. regulatory history. In the *First Report and Order*, the FCC empowered state PUCs to arbitrate "geographically deaveraged"[18] UNE rates to meet the 1996 Act's mandate that rates for interconnection and unbundled elements be "based on the cost . . . of providing the interconnection of network elements."[19] After surveying the state PUCs' different costing methods for geographically deaveraged "zones," the FCC concluded that "three zones are presumptively sufficient to reflect geographic cost differences in setting rates for interconnection and unbundled elements, and that states may, but need not, use these existing density-related rate zones."[20]

The FCC recognized that UNE costs must be assessed in light of states' varying population densities and geographical conditions. Most American states have established three density-based zones for access pricing.[21] Figure 2 shows the deaveraged monthly unbundled loop rates established by the state PUCs in the United States, according to a report released in 2001 by the National Regulatory Research Institute, an organization created and supported by all of the independent public utility regulators in the United States.

18. *First Report and Order*, *supra* note 7, ¶ 764.
19. 47 U.S.C. 252(d)(1)(a)(i) (1996).
20. *First Report and Order*, *supra* note 7, ¶ 765.
21. Eleven states have created four zones, and one state created five.

FIGURE 2: MONTHLY UNBUNDLED LOOP RATES, 2001 ($ U.S.)[22]

State	Zone 1	Zone 2	Zone 3	Zone 4	Average
Alabama	15.24	24.75	44.85		19.04
Arkansas	18.75	31.60	71.05		
Arizona	21.98				
California	10.03	13.51	25.53		
Colorado	19.65	26.65	38.65	84.65	
Connecticut	8.95	12.03	13.28	19.69	12.49
District of Columbia	10.81				
Delaware	10.07	13.13	16.67		12.05
Florida	13.76	20.13	44.40		
Georgia	14.21	16.41	26.08		16.51
Idaho	25.52				
Illinois	2.59	7.07	11.40	11.40	9.81
Indiana	8.03	8.15	8.99		8.20
Iowa	20.15				20.15
Kansas	11.86	13.64	23.34		14.04
Kentucky	17.44	22.23	25.84		19.65/20.00
Louisiana	19.35	22.84			
Maine	12.67	15.59	23.00		17.53
Massachusetts	7.54	14.11	16.12	20.04	14.98
Maryland	12.11	12.85	18.40	25.96	14.50
Michigan	8.47	8.73	12.54		10.15
Minnesota	8.81	12.33	14.48	21.91	17.87
Missouri	12.71	20.71	33.29	18.23	

22. BILLY JACK GREGG, A SURVEY OF UNBUNDLED NETWORK ELEMENT PRICES IN THE UNITED STATES, Figure 1 (National Regulatory Research Institute Working Paper) (Spring 2001).

State	Zone 1	Zone 2	Zone 3	Zone 4	Average
Mississippi	16.71	21.45	29.75	38.59	
Montana	26.69	27.62	31.36	33.95	27.41
North Carolina	16.71				
North Dakota	16.41	27.66	62.66		
Nebraska	13.56	27.12	54.24		14.32
Nevada	11.75	22.66	66.31		19.83
New Hampshire	14.01	15.87	24.09		17.99
New Jersey	11.95	16.02	20.98		16.17
New Mexico	17.75	20.30	26.23		
New York	11.83	12.49	19.24		14.81
Ohio	5.93	7.97	9.52		
Oklahoma	12.14	13.65	26.25		14.84
Oregon	13.95	25.20	56.21		15.00
Pennsylvania	10.25	11.00	14.00	17.50	14.06
Rhode Island	12.05	16.62	20.59		
South Carolina	18.48	27.87	36.91		
South Dakota	7.01	18.54	24.37		
Tennessee	13.19	17.23	22.53		14.92
Texas	12.14	13.65	18.98		14.15
Utah	14.41	17.47	24.14		20.00
Virginia	10.74	16.45	29.40		13.597
Vermont	7.72	8.35	21.63		14.41
Washington	7.91	14.13	15.90	17.85	11.33
Wisconsin	10.90				
West Virginia	14.99	22.04	43.44		24.58
Wyoming	19.05	31.83	40.11	58.43	
Average ($)	13.49	17.97	29.25	33.16	

As Figure 2 shows, the average monthly price for an unbundled loop in areas with comparatively high population densities (zone 1) was $13.49. The average monthly access price for zone 2 regions was $17.97. The average access price for the least densely populated regions (zone 3) was $29.25.

B. The WTO Agreement on Telecommunications Services

The 1997 WTO agreement on telecommunications services covers market access, foreign investment, and "procompetitive regulatory principles." The WTO outlined the last of those topics in its April 1996 Reference Paper, which requires signatory nations to guarantee, among other things, that foreign carriers be allowed to interconnect with domestic networks at prices that do not result in anticompetitive cross-subsidization.[23] Beyond that, however, the Reference Paper is general and undetailed—perhaps necessarily so—because the policies are intended to apply to a highly diverse set of countries. However, the Reference Paper has turned out to be malleable into any policy outcome that imaginative U.S. regulators can reconcile with the document's unobjectionable desiderata.[24] In particular, Chairman Reed E. Hundt of the FCC portrayed the nearly unanimous acceptance of the Reference Paper at the 1997 Geneva Accord as tantamount to a global endorsement of American regulatory policies embodied in the Telecommunications Act of 1996:

> By this agreement, the Telecommunications Act enacted a year ago by Congress has become the world's gold standard for pro-competitive deregulation. Sixty-five countries have bound themselves to the Reference Paper embodying the Congressional vision of free competition, fair rules, and effective enforcement.
>
> In Buenos Aires three years ago, at the first International Telecommunications Union development conference, Vice President Gore challenged the nations of the world to build a network around the globe linking all human knowledge and creating global opportunities. One year ago, Congress delivered a clear and compelling blueprint for the competition that will build this network. Today, the nations of the world endorsed that blueprint.[25]

Chairman Hundt's view that the Telecommunications Act of 1996 was a blueprint for other countries was shared by then USTR Charlene Barshefsky. Ambassador Barshefsky said: "One year ago, this Congress delivered a clear and compelling blueprint in the 1996 Telecommunication Act. And now,

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23. World Trade Organization, Negotiating Group on Basic Telecommunications, Reference Paper (Apr. 24, 1996) [hereinafter *Reference Paper*], *reprinted in* SIDAK, *supra* note 1, at 397–99.

24. *See, e.g.*, CLAUDE E. BARFIELD, FREE TRADE, SOVEREIGNTY, DEMOCRACY: THE FUTURE OF THE WORLD TRADE ORGANIZATION 56–58 (2001).

25. Statement of FCC Chairman Reed Hundt Concerning WTO Agreement on Telecom Services, (Feb. 15, 1997), http://www.fcc.gov/Speeches/Hundt/st021597.html.

thanks to that bipartisan achievement, the United States has effectively exported American values of free competition, fair rules, and effective enforcement to global telecom services markets."[26]

Moreover, American officials indicated that this "blueprint" for competition did not entail a *deregulatory* process. In the week following completion of the WTO agreement in 1997, Deputy USTR Jeffrey Lang, commenting to a Washington, D.C., audience on the principles contained in the Reference Paper, observed that "to move from what was regarded for 100 years as not just a monopoly but a natural monopoly . . . to a system of enforced competition means not deregulation but *reregulation*. And that is what the pro-competitive principles embody."[27] Curiously, American officials saw reregulation as essential to the promotion of competition.

At the same event Chairman Hundt stated that just as "the laws of physics are everywhere the same, . . . it may well be that the laws of economics can be demonstrated to everywhere be the same," such that there would be no need to have "different ways to resolve issues such as forward-looking pricing."[28] It is true that microeconomic principles are the same everywhere, but that maxim applies to both correct and faulty economics. The danger inherent in Chairman Hundt's view is that if the FCC's reliance on faulty economics produces misguided policies, then the gloss that the FCC placed on the WTO's Reference Paper would force on other nations a set of practices predicated on fallacious economic reasoning, practices that consequently would degrade the efficient operation of their telecommunications systems and harm their consumers.

Since 1997, the USTR has continued to use the Reference Paper to support its belief in exporting American telecommunications policy. At a speech at the Center for Strategic and International Studies on February 29, 2000, Deputy USTR Susan G. Esserman's remarks illustrated that the USTR believed that the Reference Paper was a model for the rest of the world's telecommunications markets.[29] Ambassador Esserman remarked that "the United States' market's remarkable success, especially in information industries, has created a powerful incentive for others to emulate U.S. policies—and a willingness to liberalize."[30]

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26. *WTO Basic Telecom Agreement*, *Hearing Before the Subcommittee on Telecommunications*, *Trade & Consumer Protection*, *of the House Commerce Committee*, 105th Cong., 1st Sess. (1997) (statement of Charlene Barshefsky, U.S. Trade Representative).

27. Remarks by Jeffrey Lang, Deputy U.S. Trade Representative, to the Center for Strategic and International Studies, Washington, D.C. (Feb. 21, 1997) (emphasis added). For a detailed analysis of these remarks, see SIDAK, *supra* note 1 at 372.

28. Remarks by Reed E. Hundt, FCC Chairman, to the Center for Strategic and International Studies, Washington, D.C. (Feb. 21, 1997). For a detailed analysis of these remarks, see SIDAK, *supra* note 1 at 372.

29. Remarks by Susan G. Esserman, Deputy U.S. Trade Representative to the Center for Strategic and International Studies, Washington, D.C. (Feb. 29, 2000), http://www.ustr.gov/speech-test/esserman/esserman_13.html.

30. *Id*.

Contrary to these statements by USTR and FCC officials, it strains credulity past the breaking point to suppose that the nations that signed the WTO agreement on telecommunications services thought that in so doing they had delegated to the FCC the power to set their domestic policies on the economic method by which the price shall be determined for the lease of an incumbent carrier's unbundled loop to a competitor. It would be arrogant for the trade policy of any nation to be predicated on the supposition that the 1997 WTO agreement, incorporating as it did the procompetitive platitudes of the 1996 Reference Paper, codified the regulatory practice of any one signatory nation. Yet, as is next explained, the Trade Representative has approached the U.S.-Japan negotiations on interconnection pricing as if that supposition were correct.

C. USTR's Negotiations with Japan over Interconnection Pricing

As the dominant telecommunications service provider and largest purchaser of telecommunications equipment in Japan, NTT has been at the center of these negotiations on issues ranging from procuring U.S. telecommunications equipment to the establishment of network interconnection rates.

1. Privatization, Deregulation, and Restructuring in the Japanese Telecommunications Market

The Japanese government traditionally maintained strict control over the country's telecommunications industry. Nippon Telegraph and Telephone Public Corporation was organized in 1952. Until 1985, NTT was part of the Ministry of Posts and Telecommunications (MPT). In 1985, the Japanese government began privatizing and liberalizing all sectors of its telecommunications industry. The Japanese Diet passed the Nippon Denshin Denwa Kabushiki Kaisha Law (the NTT law). Pursuant to that law, Nippon Telegraph and Telephone Corporation was incorporated as an ordinary business corporation, and Nippon Telegraph and Telephone Public Corporation was dissolved. Also pursuant to the NTT Law, the MPT began to privatize NTT in 1986.[31]

The Telecommunications Business Law, also passed in 1985, liberalized the telecommunications services sector in Japan. The law ended NTT's monopoly status as the provider of local and domestic long-distance telephone service and the monopoly status of privately owned Kokusai Denshin Denwa (KDD) as the provider of international long-distance service. The law differentiates between resellers of value-added services (designated as Type II operators), which need only register with the MPT, and facilities-based opera-

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31. International Telecommunications Union, World Telecommunications Development 56 (1994) [hereinafter ITU World Development Report]. Shares were sold in three domestic public offerings. The second and third offerings were held in 1987 and 1988. Through those three offerings, the Japanese government sold 34.37% of NTT, raising more than $12 billion. *Id.*

tors (designated as Type I operators), which must obtain a license from the MPT.[32] In June 1997, the Japanese Diet amended the NTT Law to accommodate a plan of reorganization for NTT. This plan was proposed by the MPT and NTT had accepted in principle.[33] Once the reorganization took effect on July 1, 1999, NTT became a holding company with three wholly owned subsidiaries: NTT East, NTT West, and NTT Communications.[34] NTT East and NTT West are both regional fixed-line operators analogous to a regional Bell operating company (RBOC) in the United States. The two NTT companies may not engage in long-distance telecommunications, just as an RBOC may not do so without prior regulatory authorization. The operations of NTT Communications include a wireless company, NTT DoCoMo. Also in June 1997, the Japanese Diet revised the Telecommunications Business Law to promote transparent, fair, and prompt interconnection.[35]

2. USTR's Advocacy of TELRIC Pricing

In 1997, the United States and Japan began the Enhanced Initiative on Deregulation and Competition Policy, which addresses market access for various goods and services, including telecommunications services. From 1999 through March 2000, the U.S. and Japanese governments held unsuccessful negotiations concerning the adoption of a long-run incremental cost (LRIC) methodology for calculating the interconnection prices that NTT may charge its competitors in Japan.[36] In July 2000, however, the U.S. and Japanese governments were able to agree, in theory, upon a series of steps that would reduce the cost and simplify the procedures of access to NTT's network and facilities.[37] Further, there was agreement that the Japanese government would take steps to establish a more independent regulatory structure.[38] Finally, NTT announced significant cost reductions in interconnection rates.[39] On June 30, 2001, Japan and the United States issued their Fourth Joint Status Report, which reaffirmed both countries' determination to promote further deregulation.[40]

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32. *Id.* at 61; INFOCOM RESEARCH, INC., INFORMATION & COMMUNICATIONS IN JAPAN 2001, at 22–23 (2001). A facilities-based operator owns its infrastructure, whereas a value-added operator leases capacity on another carrier's infrastructure.

33. NIPPON TELEGRAPH AND TELEPHONE CORP., ANNUAL REPORT 2001 FOR THE YEAR ENDED MARCH 31, 2001, at 13 (2001) [hereinafter *Annual Report 2001*].

34. *Id.*

35. Third Joint Status Report on the U.S.-Japan Enhanced Initiative on Deregulation and Competition Policy, Ministry of Foreign Affairs of Japan, (July 22, 2000), http://www.mofa.go.jp/region/n-america/us/report0007.html[hereinafter *Third Joint Status Report*].

36. *Id.*

37. *Id.*

38. *Id.*

39. *Id.*

40. Fourth Joint Status Report on the U.S.-Japan Enhanced Initiative on Deregulation and Competition Policy, Ministry of Foreign Affairs of Japan (June 30, 2001), http://www.mofa.go.jp/region/n-america/us/report0106.html.

More specifically, the Third Joint Status Report addressed, among other issues, four topics. First, it reduced certain interconnection rates at the backbone (tandem) and local level. Second, it provided for easier access to NTT's facilities by competitors. Third, it secured Japan's commitment to establish a more independent telecommunications regulatory structure. Fourth, it addressed the expansion of Internet-related competition.[41] Of these four issues, the one having the largest financial influence is the rate that NTT East, NTT West, and DoCoMo may charge competitors to link into and use some portions of NTT's networks. Small variations in interconnection rates have dramatic financial effects on NTT.[42]

In the U.S.-Japan negotiations, the central issue is the economic cost model that NTT will use to establish interconnection rates. Several models are available, and various ones are used in different countries. The USTR has urged the Japanese government, through the MPT, to require NTT to use the "bottom-up" long-run incremental cost model. NTT prefers to use the widely accepted alternative "top-down" LRIC model (with certain adjustments unique to the Japanese market).[43] The negotiations over the choice of a cost model could not be finalized in the July 2000 agreement, with the result that the USTR reached a political arrangement with the Prime Minister's office to reduce, on an interim basis, certain interconnection rates without using *any* specific model as a basis. However, the two governments agreed to review the competing interconnection models at the end of 2002, with the hope of selecting a model at that time.[44]

Further, the July 2000 steps called for periodic reviews by both the U.S. and Japanese governments of other outstanding issues, such as unbundling of the local loop and access to NTT's facilities. A schedule for a review of these other issues was not established, but the USTR intends to review them at least annually in the context of the so-called section 1377 findings that

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41. *Id.*

42. *See Annual Report 2001*, *supra* note 33. NTT reported that the price reductions had, and were expected to have, significant effects on its revenues:

> As a result of the agreement reached between the [Japanese] Government and the U.S. Government, it is estimated that fiscal 2001 revenues of NTT East and NTT West were reduced by approximately ¥52 billion (representing a decrease in revenues of ¥26 billion for each of NTT East and NTT West; fiscal 2002 revenues of NTT East and NTT West would be reduced by approximately ¥89 billion representing a decrease in revenues of ¥45 billion for NTT East and a decrease in revenues of ¥44 billion for NTT West); and fiscal 2003 revenues of NTT East and NTT West would be reduced by approximately ¥107 billion (representing a decrease in revenues of ¥55 billion for NTT East and a decrease in revenues of ¥52 billion for NTT West). . . . For these three fiscal years, the decrease in revenues of NTT East and NTT West is expected to be ¥248 billion (representing a decrease in revenues of ¥126 billion for NTT East and a decrease in revenues of ¥122 billion for NTT West).

Id. at 13–14.

43. On January 6, 2001, MPT became part of the new Ministry of Public Management, Home Affairs, Posts, and Telecommunications. *See* INFOCOM RESEARCH, INC., *supra* note 32, at 22.

44. *Third Joint Status Report*, *supra* note 35.

the Trade Representative makes at the end of March each year.[45] An adverse section 1377 finding can result in trade sanctions and must be taken seriously.

III. The Substantive Challenges of Applying the FCC's Interconnection Pricing Policies to Japan

It is possible that Chairman Hundt did not literally mean in 1997 that the U.S. government considered the signatories to the WTO agreement on telecommunications services obliged to adopt the reasoning of the FCC's *First Report and Order*.[46] Perhaps he was expressing an aspiration. If so, it was more than merely hortatory, since the USTR could make that same aspiration the goal of U.S. trade negotiations with other nations, by means of leverage generated by the implicit threat of trade sanctions.

This second interpretation is consistent with the manner in which Chairman Hundt imposed the FCC's TELRIC model of interconnection pricing on American ILECs even after key provisions of the *First Report and Order* had been vacated by the U.S. Court of Appeals for the Eighth Circuit and a further appeal was pending (for the first time) in the Supreme Court.[47] During that hiatus, the FCC attempted to impose its TELRIC model on ILECs by requiring "voluntary" acceptance of the model by ILECs that had mergers pending before the FCC.[48] In other words, the possibility that its actions might be unlawful under the Telecommunications Act of 1996 did not stop the FCC from trying to impose its TELRIC pricing model through the exercise of statutory powers that were totally unrelated to network interconnection and unbundling.

As Part IV explains, the USTR has considerably greater latitude in defining its agenda than does the FCC. Assuming for the sake of argument that it would in some sense be advantageous to the United States for the USTR to persuade or cajole Japan to adopt the FCC's current model of

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45. 19 U.S.C. § 1377 (2002).

46. *First Report and Order*, *supra* note 7.

47. Iowa Utils. Bd. v. FCC, 120 F.3d 753 (8th Cir. 1997), *rev'd in part and aff'd in part sub nom.* AT&T Corp. v. Iowa Utils. Bd., 525 U.S. 366 (1999). Of course, in one sense it is not obvious what "U.S." policy concerning TELRIC pricing really is: Technically, the state public utilities commissions set the rates for unbundled network elements, and those rates vary from one state to another, as Figure 1 indicates. This consideration suggests that issues of federal preemption may be present, but that is a topic that we do not address here.

48. *See* Application of GTE Corp., Transferor, and Bell Atlantic Corp., Transferee; For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License, Memorandum Opinion and Order, CC Dkt. No. 98-184, 15 F.C.C. Rcd. 14,032 ¶ 277 (2000); Applications of Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission's Rules, Memorandum Opinion and Order, CC Dkt. No. 98-141, 14 F.C.C.R. 14,712, 14,854–925 ¶¶ 348–518 (1999) (discussing conditions); App. C, Conditions, *id*. at 14,964–15,172. For a critical view of the imposition of such conditions in merger approvals at the FCC, see Harold Furchtgott-Roth, *The FCC Racket*, Wall St. J., Nov. 5, 1999, at A18.

TELRIC pricing, what substantive economic questions would such a trade policy need to address?

A. The Difficult Transition to Cost-Oriented Rates for Interconnection and Retail Telecommunications Services

Before the introduction of competition, telecommunications prices typically embodied large cross-subsidies that reflect public policy preferences.[49] In particular, access to the network for residential customers has generally been priced below cost. The preponderance of network costs have been recovered through high usage rates for domestic and international long-distance calling. The economic rationale for this regulatory policy was to promote universal service—the public policy objective of pricing access below cost to encourage all households to connect to the public switched network. Through universal service policies, the nation has sought to harness the positive network externalities, or "bandwagon effects," from increasing the reach of the telecommunications network.[50] This pattern prevailed in Japan, the United States, and many other industrialized countries.

When competition is introduced, retail rates should ultimately be rebalanced to reflect costs. Subsidy schemes that existed before competition are inherently unsustainable under competition. Experience has shown that ways can always be found to bypass any subsidy scheme. Furthermore, subsidies in the future will be vulnerable to bypass via voice-over-Internet protocols (VoIP).

Nevertheless, no country has made a very rapid transition to cost-oriented telecommunications rates. Large increases in local telecommunications prices (to bring them to cost-oriented levels) are politically unpopular. Public policymakers have uniformly insisted on lengthy transition periods to limit the pace at which rates are rebalanced.

After the AT&T divestiture in the United States on January 1, 1984, Congress essentially vetoed the FCC's attempts to complete the transition to cost-oriented rates in as few as eight years.[51] Although the FCC has continued to make progress, the transition is still not complete after eighteen years. The transition is even farther from completion in many state jurisdictions, as is explained below in the examination of U.S. practices concerning interconnection prices.

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49. *See, e.g.*, ROBERT W. CRANDALL & LEONARD WAVERMAN, WHO PAYS FOR UNIVERSAL SERVICE? WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT 165–66 (2000) (discussing pricing of local exchange service below cost).

50. *See, e.g.*, JEFFREY H. ROHLFS, BANDWAGON EFFECTS IN HIGH-TECHNOLOGY INDUSTRIES 177–79 (2001).

51. For an economic analysis of the AT&T divestiture and its aftermath, see ROBERT W. CRANDALL, AFTER THE BREAKUP: THE U.S. TELECOMMUNICATIONS SECTOR IN A MORE COMPETITIVE ERA (1991). For a complementary legal analysis, see MICHAEL K. KELLOGG, JOHN THORNE & PETER W. HUBER, FEDERAL TELECOMMUNICATIONS LAW (1992).

During the transition, interconnectors to the incumbent network pay interconnection charges that include a mark-up designed to provide a contribution toward the fixed costs of network access lines and to help defray the costs of providing local telecommunications service. In many countries, including the United States, interconnection rates are supplemented by universal service charges. These charges contribute toward the costs of serving geographic areas with high costs or low-income or handicapped individuals. Prices of rural telephone service often do not cover its high cost. Instead, urban customers are called upon to subsidize rural customers.

Initially, the FCC developed a system of access charges that AT&T and other long-distance carriers paid to local telephone companies for origination and termination of long-distance calls. These charges included a carrier common line charge (CCLC) that covered part of the cost of the local loop.[52] The FCC also developed a universal service fund supported by payments made to local telephone companies by each long-distance carrier based on the number of pre-subscribed lines. A number of mechanisms were also developed by which larger, lower-cost local telephone companies made one-time contributions to a fund that was distributed to rural, higher-cost companies.

In the early 1990s, competitive access providers arrived on the scene demanding "unbundled" connections to the local telephone networks. The FCC responded by restructuring transport rates to include a non-cost-oriented residual interconnection charge (RIC) that all interconnecting parties paid on a per-minute basis.[53]

As late as 1999, the FCC delayed implementation of full rate rebalancing in the Coalition for Affordable Local and Long Distance Services (CALLS) proposal.[54] Fifteen years after the AT&T divestiture, the FCC was still concerned about too rapid a transition to cost-oriented rates.

Pricing mechanisms have been continually revised as the FCC has gradually moved toward more efficient interconnection price structures and has reduced the implicit subsidies contained in access charges. All interstate telecommunications carriers, not just long-distance companies, are now required to pay a percentage of their revenues to the new federal universal service fund.[55] States have developed similar plans to recover fixed network costs, although access charges tend to be higher in the state jurisdictions, leaving more rate restructuring still to be accomplished. Additionally, a number of state regulators have retained the CCLC that the FCC sought to

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52. *See, e.g.*, KELLOGG, THORNE & HUBER, *supra* note 51, at 469–70 ¶ 9.6.7.

53. *See In re* Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Low-Volume Long Distance Users; Federal-State Joint Board On Universal Service, Sixth Report and Order, etc., CC Dkt. Nos. 96-262, 94-1, 99-249, 96-45, 15 F.C.C.R. 12,962 (2000).

54. *See id*. CALLS is a consortium of the following members: AT&T, Bell Atlantic, BellSouth, GTE, SBC, and Sprint.

55. 47 U.S.C. § 254 (2001). *See also* Kline & Co. v. MCI Communications Corp., 98 F. Supp. 2d 69, 70 (D. Mass. 2000).

phase out in its rate rebalancing efforts.[56] Despite the many years that have passed, the United States has still not completed the rebalancing of its rates.

In most other countries, there is no distinction between domestic local and long-distance networks and no divided regulatory jurisdiction. Interconnection to incumbent networks is therefore a simpler matter. Rates are generally predicated not on the nature of the traffic, but on the technical configuration of interconnection sought.

In this context, the United Kingdom first employed "access deficit charges" (ADCs) as a non-cost-oriented mark-up to interconnection rates.[57] Since then, a number of other countries, including Australia, Canada, New Zealand, and several others, have instituted explicit ADCs for this purpose.[58] ADCs are employed in addition to universal service programs.

More generally, mark-ups above cost-oriented interconnection charges can provide a clear and nondiscriminatory mechanism for recovery of fixed network costs during the transition period while rates are being rebalanced.[59] Such mark-ups prevent arbitrage by end users seeking to avoid paying a share of the fixed network costs by switching carriers for long-distance and international services. A uniformly applied ADC does not bias the selection of one carrier over another. It allows long-distance and international competitors to compete with the incumbent on a level playing field. Competitive success then depends on offering high-quality long-distance and international services at low cost (apart from the non-discriminatory mark-up). It does not depend on the discriminatory arbitrage opportunities that would exist with unbalanced rates, absent such a mark-up.

In Japan, regulators have yet to adopt explicit mark-ups (for example, ADCs) above cost-oriented interconnection rates. Japan's universal service program is still in developmental stages. Such measures, if adopted, would ease Japan's transition to a fully rebalanced rate structure. Without such measures, Japan would be called upon to complete in a few years what the United States has failed to complete in more than seventeen years. The USTR can insist, upon threat of trade sanctions, that Japan make this transition immediately, but truculence in the name of free trade carries no assurance that it will accomplish what U.S. policymakers have been unable to do at home.

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56. The CCLC, as well as many other intrastate rates, vary by state because rates are set according to each carrier's costs in that state. Interstate rates will vary by company, unless the FCC requires a specific price or cost support to exceed that price. For example, residential interstate line rates above five dollars require cost support, since five dollars is an implied cap it may only be exceeded with cost justification.

57. *See, e.g.*, Ingo Vogelsang & Bridger M. Mitchell, Telecommunications Competition: The Last Ten Miles 278–80, 287, 289–91 (1997).

58. *See* Marco Gatti,et al., Benchmark Comparisons Q1/Q4, 2001 (Ovum 2001); International Telecommunications Union: Seminar on Regulatory and Tariff Issues for the Caribbean Countries (Montego Bay, Jamaica, July 4 - 7, 2000); International Telecommunications Union: Trends in Telecommunication Reform (Convergence and Regulation) 84–86 (1999).

59. *See, e.g.*, Sidak & Spulber, *supra* note 7, at 334–35, 376–78, 388–91.

B. The Deficiencies of Bottom-up Cost Models

To implement a regime of interconnection prices that are based on the forward-looking long-run incremental cost of particular network elements, regulators must first produce reliable estimates of LRIC. Regulators sometimes use so-called "bottom-up" models for this purpose, but such models have serious problems.

It is inappropriate to rely exclusively on so-called bottom-up models to generate regulatory estimates of incremental cost. Bottom-up models have serious deficiencies that skew cost estimates downward and yield unrealistic cost projections. Forward-looking top-down models, based on actual experience, are a superior alternative. Top-down models do, however, tend to overstate what costs *should be* (versus what they *have been*) unless specific adjustments are made. The best analytical approach of all may be to use both top-down and bottom-up models and reconcile the results.

Cost models can help regulators set appropriate prices for network interconnection and develop appropriate methods for effective support of universal service. Either top-down or bottom-up cost models may be used for this purpose. Top-down models rely on actual operating data, including expenses and investment account balances, to estimate forward-looking economic costs of operating and maintaining the network. Bottom-up models rely on simple engineering models of hypothetical networks to estimate costs. In theory, if there were perfect information and no strategic behavior (by the ILEC *or* the regulator), the bottom-up estimate of the long-run incremental cost of a network element would be the same as the top-down estimate. In actuality, of course, information is not perfect and strategic behavior is present in the regulatory process. Thus, bottom-up estimates of cost will diverge from top-down estimates.[60]

Bottom-up models provide estimates of what the costs of an *efficient* firm would be. The exercise entails "educated guesses" about a network design using the most modern technology and hindsight as to factors such as demand, population growth, population density, and the like. Bottom-up en-

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60. This real-world divergence between bottom-up and top-down cost models motivates the CLECs' strategy of requesting "recombination" of unbundled network elements to create a substitute for wholesale provision of the ILEC's total service. *See, e.g.*, SIDAK & SPULBER, *supra* note 7, at 335–37, 561–63. This divergence creates an opportunity for arbitrage:

> The fact that the entrant seeks to establish its right to recombine network elements indicates that the entrant expects that the prices for those elements necessary to provide basic service—the loop and port—will recover a lesser amount of common costs than will the wholesale price of basic service. In other words, the entrant's demand to recombine elements signals the entrant's belief (1) that the incumbent LEC's forward-looking common costs are *not* de minimis, and (2) that summing up the prices of UNEs will allow the entrant to pay a smaller amount toward the recovery of the incumbent LEC's shared costs and common costs than would the entrant's purchase of wholesale service for resale. Viewed in those terms, recombination of network elements is a form of arbitrage induced by distortions in the regulated pricing of those elements and wholesale services.

Id. at 336. The Eighth Circuit and the Supreme Court either did not understand this regulatory distortion or did not consider it contrary to the Telecommunications Act of 1996. *See id*. at 561–62 (discussing Iowa Utils. Bd. v. FCC, 120 F.3d 753, 813–14 (8th Cir. 1997)); *Iowa Utilities Board*, 525 U.S. at 393–95.

gineering models can potentially provide insights about cost trade-offs among different inputs and the costs of deploying state-of-the-art technology when and where it is appropriate to do so.

Bottom-up models do, however, suffer the significant disadvantage of being divorced from actual experience. Consequently, one can never be certain that the estimated costs could be achieved by an actual firm, no matter how efficient. Engineering cost models (necessarily) simplify the real world, with the result that costs tend to be underestimated. The most important simplification is that they fail to account for conditions that were relevant at the time the actual investments were made. Rather, model results are based on a telecommunications network built under current conditions and technology. In actuality, because a telecommunications company provided service in the past, it had to configure itself to meet past demand.[61] Given its past activities, its costs of providing service today depend upon this past configuration. The costs are generally higher than if facilities were built *de novo* to meet today's demand.

The federal appellate courts have confirmed that the cost models that regulators use to set interconnection prices must factor in reality. In July 2000, the U.S. Court of Appeals for the Eighth Circuit vacated the pricing standard that the FCC had used to determine what incumbent local exchange carriers (ILECs) may charge competitive local exchange carriers (CLECs) telephone companies for interconnection and use of unbundled network elements.[62] The Eighth Circuit held that TELRIC pricing was based on a *hypothetical* network that did not permit the ILECs to recover their *actual* costs.[63]

The model used by Japan's Ministry of Posts and Telecommunications (MPT) is a bottom-up model that comes with the defects that inhere in such models. In addition, the MPT model—like the model developed by the HAI consulting firm and the FCC's HCPM—uses dubious methodology that exacerbates these inherent defects. In particular, the MPT model calculates the costs of a network in which remote switches are substituted for many host switches in the actual NTT network. MPT's hypothetical network would have lower reliability than NTT's actual network, because multiple routing occurs only after a call reaches a host office. A cable fault between the remote switch and the host switch (a link where there is not multiple routing) leads to disruption of telephone service. Thus, MPT has not estimated the costs of NTT's *actual* network, but a hypothetical network with *lower* reliability.

Regardless of the merits of any particular cost model, top-down models based on actual operating experience provide a more realistically grounded

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61. *See, e.g.*, SIDAK & SPULBER, *supra* note 7, at 419–25.

62. Iowa Utils. Bd. v. FCC, 219 F.3d 744 (8th Cir. 2000), *cert. granted sub nom.* Verizon Communications, Inc. v. FCC, 121 S. Ct. 877 (2001).

63. *Id.* at 750–51.

method for estimating interconnection costs. Top-down models evaluate a plant on a current-cost basis, taking account of technological developments that may have diminished the value of existing plant. They estimate cost-volume relationships, distinguishing fixed and variable costs, as well as service-specific, shared, and common costs. Top-down models also analyze secular cost trends to provide a basis for projecting likely future costs.

One criticism of top-down modeling is that it may overestimate the costs of an efficient firm, unless appropriate adjustments are made. This bias can occur because top-down models inherently capture actual experience, including any inefficiencies that have occurred.

Some regulators have sought to reconcile the different results of bottom-up and top-down cost models to get a good grasp of actual cost relationships. A useful example of this "hybrid" approach is provided by the United Kingdom. OFTEL, the U.K. telecommunications regulator, reconciled British Telecommunication's cost estimates based on a top-down model with those derived from a bottom-up model developed by an industry-wide working group.[64] OFTEL determined that the bottom-up model could underestimate incremental costs by as much as fifty percent.[65] OFTEL now undertakes to reconcile annually the results of the top-down and bottom-up models and to develop interconnection rates from a hybrid estimate of costs derived from the two models. This approach is widely viewed as a success, providing a means of capturing benefits from both types of modeling approaches while providing a check against any systematic biases.

C. The Relationship of Actual Interconnection Prices to the Prices Derived from the FCC's Cost Models

Actual interconnection prices exceed the levels indicated by the FCC's cost models. One can observe this deviation of an ILEC's hypothetical costs from its actual interconnection price both in the United States and abroad.

1. Interconnection Prices in the United States

Most actual prices for interconnection in the United States substantially exceed the FCC's estimates of incremental costs. These include prices set or approved by the FCC itself, as well as those set by state regulators. The FCC's cost estimates are based on its bottom-up HCPM, developed to address the issue of universal service support to rural areas. Estimates of usage costs in this model are derived from the bottom-up model developed by the HAI consulting firm for MCI and AT&T. The HAI model estimates the costs of interconnection to be between about 0.2 and 0.3 cents per minute.[66]

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64. Oftel, NETWORK CHARGES FROM 1997, http://www.oftel.gov.uk/publications/1995_98/pricing/ncc1.htm (May 1997).

65. *Id.*

66. These estimates were derived by Strategic Policy Research Inc. in a run of the HAI model on data

In the United States, unlike many foreign countries, there are multiple interconnection charges, depending on the type of call being processed, rather than the type of interconnection provided. The U.S. approach is inherently defective because it invites arbitrage. For this reason, many countries have rejected the U.S. approach. Their interconnection charges depend on the interconnection configuration—not the type of call.

The cheapest interconnection charges in the United States are for local calls. In practice, even local interconnection rates are often higher than the FCC's incremental cost estimates. As shown in Figure 3, local interconnection rates exceed the FCC's estimates in many states. In some states, the rates are several times the FCC's cost estimates.

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for the state of Massachusetts. The host interconnection cost of approximately 0.2 cents per minute reflects the HAI model-generated estimate of non-line port end office switching (0.173 cents per minute). The tandem interconnection cost of approximately 0.3 cents per minute includes the additional HAI model-generated estimates of tandem switching (0.069 cents per minute) and direct transport (0.071 cents per mile per minute).

FIGURE 3: LOCAL INTERCONNECTION RATES, SELECTED STATES, 1999[67]

	Host (cents per minute)	**Tandem (cents per minute)**
Alabama	0.18	0.29
Arkansas	0.70	0.90
California	0.09	0.10
Colorado	0.28	0.52
Delaware	0.11	0.20
Georgia	0.18	0.29
Illinois	0.37	0.50
Kansas	0.92	1.21
Louisiana	0.21	0.43
Maryland	0.33	0.59
Michigan	0.41	0.70
Mississippi	0.02	0.03
New Jersey	0.18	0.37
New York	0.01	0.02
Oregon	0.15	0.16
Pennsylvania	0.19	0.29
Tennessee	0.19	0.30
Texas	0.12	0.21
West Virginia	0.24	0.86
Compare: HAI	*0.20*	*0.30*

Note: The host price applies to interconnection at the originating or terminating end office. The tandem price applies to interconnection at a tandem office and includes one mile of transport. Prices do not include charges for signaling.

67. State regulatory commissions (data on file with authors).

A second type of interconnection charge is for origination and completion of interstate and international communications. These charges, called interstate "access charges," are set by the FCC, and account for the majority of interconnection revenues in the United States. As shown in Figure 4, below, interstate access charges far exceed the FCC's cost estimates. The implied average mark-up of price over cost for interconnection ranges between 180% and 430% for different types of interconnection.

FIGURE 4: INTERSTATE PER-MINUTE ACCESS CHARGES, BY CARRIER (CENTS PER MINUTE)[68]

	Originating charge per minute	**Terminating charge per minute**	**Total charge per minute**
ALLTEL	1.50	1.43	2.93
BellSouth	0.69	0.64	1.33
Cincinnati Bell	0.75	0.71	1.46
Citizens	3.49	2.06	5.55
Global Crossing	1.88	1.14	3.02
Iowa Telecom	2.90	1.06	3.96
Qwest	0.71	0.68	1.39
SBC	0.75	0.71	1.46
Sprint	1.25	0.88	2.13
Verizon	1.10	0.69	1.79
All Price Caps (weighted by mintues of use)	0.92	0.71	1.63
NECA (small carriers)	4.20	4.41	8.61
ALL Price Caps and NECA (weighted by minutes of use)	1.06	0.85	1.91
Compare: HAI	*0.2–0.3*	*0.2–0.3*	

A third type of interconnection is intrastate switched access, which applies to long-distance calls within a single state. While intrastate and interstate access are functionally similar services, intrastate access rates are regu-

68. Data on file with authors.

lated by the state commissions that have a wide range of services under their jurisdiction. In some states, switched access rates are quite low—comparable to the FCC's cost estimates. In most states, however, the rates far exceed even the high levels of interstate access charges described above. Figure 5, below, contains the intrastate access charges for the Bell operating company or GTE (now merged into Verizon) for a number of states. Among the lowest access fees is that in Illinois, which is approximately $0.005 per minute for originating access. Even Illinois' low price, however, exceeds the FCC's range of $0.002 to $0.003 per minute. In sharp contrast to Illinois' price, the price to originate *and* terminate a call in New Mexico and Wyoming exceed $0.10 per minute.

As the following Section explains, the preponderance of U.S. intrastate access charges far exceed NTT's average interconnection charge in Japan of $0.0151 per minute.

FIGURE 5: INTRASTATE PER-MINUTE ACCESS CHARGES, BY STATE (CENTS PER MINUTE)[69]

	Originating charge per min.	Terminating charge per min.	Total charge per min.
Arizona	3.405	2.420	5.825
Colorado	2.629	4.188	6.817
Florida, BellSouth	2.044	2.811	4.855
Florida, GTE	4.470	5.346	9.816
Illinois	0.502	0.415	0.917
Maine	2.401	1.711	4.112
Massachusetts	0.618	3.506	4.124
New Mexico	5.448	5.448	10.896
Pennsylvania	0.998	0.998	1.997
Texas	1.741	2.934	4.675
Vermont	4.796	4.796	9.593
Washington	1.161	0.169	1.330
Wyoming	6.164	6.164	12.328
Compare: HAI	*0.2–0.3*	*0.2–0.3*	

Note: The total originating and terminating charges are the sum of common line, tandem switching, local transport termination, and local switching rates.

69. Data on file with authors.

In view of these prevailing rates, the FCC's cost estimates are not at all reflective of what competitors *actually pay* for any kind of interconnection in the United States. In addition, actual interconnection prices in the U.S. often exceed NTT's actual rates in Japan.

2. Interconnection Prices Outside the United States

Interconnection prices in most industrialized countries far exceed the FCC's cost estimates. NTT's interconnection charges average $0.0151 per minute,[70] well within the range of interconnection rates established throughout the world. Figure 6 shows interconnection rates in eighteen industrialized countries.[71] Although NTT's rates in Figure 6 are above the median, five of the other countries have higher rates. One might reasonably expect NTT's rates to be toward the upper end of the range because, as is explained below, NTT faces high prices for key inputs, especially land and buildings.

It bears emphasis that interconnection prices in *every* country in Figure 6 far exceed the FCC's incremental cost estimates, which range from $0.002 to $0.003 per minute. Indeed, the minimum interconnection rate is over two and a half times the upper end of the range of the FCC's estimated costs. As noted above, even U.S. interconnection rates, on average, far exceed the FCC's estimates of incremental costs.

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70. In this Article, conversions to U.S. currency are at purchasing power parity (PPP). It is widely recognized by economists that PPP provides a better index for international comparisons of real values than does the exchange rate. The exchange rate reflects only goods and services that are traded internationally. In contrast, the PPP reflects a broad basket of goods, some of which (such as real estate) cannot practically be sold for consumption abroad. The OECD, in particular, typically uses PPP rather than exchange rates to make international comparisons of real economic variables.

71. These rates apply to interconnection rates for local, domestic long-distance, and (in most cases) mobile interconnection. They exclude interconnection for international calls.

FIGURE 6: AVERAGE INTERCONNECTION PRICES, JANUARY 2001
(U.S. $ PER MINUTE)[72]

	Country	Termination	Origination
1	Austria	0.0131	0.0132
2	Belgium	0.0144	0.0139
3	Canada	0.0115	0.0115
4	Denmark	0.0091	0.0091
5	Finland	0.0181	0.0175
6	France	0.0135	0.0128
7	Germany	0.0092	0.0092
8	Ireland	0.0100	0.0100
9	Italy	0.0179	0.0179
10	Japan	0.0151	0.0151
11	Netherlands	0.0177	0.0188
12	New Zealand	0.0268	0.0296
13	Norway	0.0092	0.0092
14	Portugal	0.0305	0.0373
15	Spain	0.0148	0.0148
16	Sweden	0.0088	0.0089
17	Switzerland	0.0123	0.0123
18	United Kingdom	0.0076	0.0081

72. Extracted from BENCHMARK COMPARISON 2001-I (Ovum)*supra* note 58, at 7, 11. The exchange rates are the PPP rates presented by Ovum, *id*. at 46. The rates apply to wireline interconnection for both local and domestic long-distance calls. Except for Canada, the same rates apply for traffic originating on mobile networks.

D. The Effect of Input Prices on Interconnection Costs

Differences in input prices account for much of the difference between interconnection prices in Japan and in the United States or the United Kingdom. The costs of supplying telecommunications services, including interconnection, differ across countries. One reason for such differences is that carriers in different countries face different input prices. This consideration is especially important with respect to comparisons between Japan and the United States or United Kingdom

1. Land

Land is a critical input for telecommunications networks, from outside plants to switching centers and business offices. Land values are exceptionally high in Japan because of its high population density. Tokyo commercial land prices are almost twice as high as those in New York, the most expensive U.S. city. Similarly, commercial land prices in London are only about 60% of commercial land prices in Tokyo.[73] Japanese price levels remain high despite decreases in land values over the last ten years.[74]

2. Construction

Construction costs also bear directly on the costs of telecommunications networks. Costs are incurred in building switching centers, constructing conduit, and laying distribution lines. The costs of construction in Japan are high *vis-à-vis* the United States and the United Kingdom. For example, U.S. regulatory cost models assume construction costs ranging from $833 per square meter to $1,667 per square meter, which is consistent with data in the U.S. construction market.[75] In sharp contrast, Japanese construction costs in 1997 ranged from $2,025 to $2,147 per square meter for the prefecture of Kumamoto (a medium-sized population center served by NTT West). One reason for higher construction costs in Japan is that construction projects must meet high earthquake resistance standards that are generally not required in the United States except in California.

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73. Japanese Association of Real Estate Appraisers, World Land Survey of 1996 (Strategic Policy Research Inc. analysis of Figure 4, "Land Price of the Most Expensive Commercial Area" of major world cities); Japanese Real Estate Institute, Tokyo Urban Land Price Index for Commercial Land (on file with Harvard International Law Journal). We deflated Tokyo prices by the index for 2001 and inflated New York and London prices by assuming a three percent annual inflation to 2001.

74. India Times, *Land Prices in Japan Fell 10th Straight Year* (Mar. 23, 2001), http://www.indiatimes.com.

75. U.S. Census data indicate construction costs of $936 per square meter. *Construction Contracts—Value of Construction and Floor Space of Building, by Class of Construction: 1980–1996*, Statistical Abstracts of the United States Table No. 1182 (2000).

3. Effect on Interconnection Costs

Higher land and construction prices in Japan translate directly into higher investment in land and buildings. In particular, total land and building assets of U.S. ILECs at the end of 1999 were worth approximately $24.3 billion.[76] These assets were largely dedicated to switching centers. The value of these assets amounted to approximately $138.83 per access line in 1999. In contrast, total land and building assets of NTT East and NTT West at the end of the 1999-2000 fiscal year were approximately $11.5 billion.[77] These assets amounted to $220.03 per access line in 1999.

Most land and building assets are used in the provision of switching services at traffic-sensitive rates. It is therefore instructive to examine U.S. ILEC and NTT land and building cost differences on a per-minute basis. Based on NTT's 1999 estimated usage per access line, Japanese costs would be much lower if the costs of land and buildings in Japan were as low as in the United States.[78] The value of U.S. ILEC land and building assets amounted to approximately $0.0271 per minute of retail traffic, based on NTT's traffic pattern in 1999.[79] NTT's land and building assets amounted to approximately $0.04294 per minute of use of the NTT network in 1999.

A comparison of these amounts reveals that differences in land and building costs alone account for a difference of approximately $0.0158 per minute between the United States and Japan, assuming the same (NTT's) traffic pattern in both countries. This per-minute difference of more than one-and-one half cents amounts to a significant part of interconnection costs.[80]

Comparing U.S. ILEC and NTT land and building assets per access line, NTT assets are almost twice those of U.S. ILECs for each access line served. This difference reflects the United States as a whole, not only New York City, the most expensive city in the United States. A larger cost difference between the United States as a whole and Japan, than between New York and Tokyo, would be expected.

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76. Federal Communications Commission, 2000 Statistics of Common Carriers, for year ended December 31, 1999, Table 2.7 at 42, Table 4.09 at 198 (data reported by all ILECs) [hereinafter 2000 Common Carrier Statistics] (on file with Harvard International Law Journal).

77. Data provided by NTT West (on file with the authors).

78. NTT's traffic per access line was calculated with data from NTT West and the following reports: Ministry of Posts and Telecommunications, Japan, Communications in Japan 2000: Expanding Frontiers: IT in the 21st Century, at 45 (2000); Ministry of Public Management, Home Affairs, Posts and Telecommunications, Outline of the Telecommunications Business in Japan, at 14 (Feb. 2001).

79. 2000 Common Carrier Statistics, *supra* note 76, Table 2.7 at 42, Table 4.10 at 205 (data reported by all ILECs).

80. Although capital costs are lower in Japan than in the United States, this difference is not enough to offset the significant difference in cost between the two countries.

4. Other Major Input Cost Differences

Other input cost differences are also significant. Another major cost difference between the United States and Japan is labor cost. Manufacturing wages in Japan are about 1.6 times the corresponding U.S. and U.K. wages.[81] Additionally, the cost of laying cable is greater in Japan than in the United States where about half of all cable is directly buried, which NTT is not permitted to do because of Japan's high population density. It would prevent effective use of narrow public rights of way by multiple users, such as providers of electric power, water, and sewer services. Further, laying fiber in conduit in Japan is subject to stringent repair and repavement requirements. Often, NTT is only permitted to do construction at night and must have the road fully repaved by morning. More lenient requirements in the United States lead to lower telecommunications costs but considerably more inconvenience for motorists.

Also adding to higher costs, Japan is dependent upon foreign resources for coal and petroleum. Japan's cost of electricity per kilowatt hour is the highest among OECD countries.[82] The most recent data available on industrial use prices per kilowatt-hour indicate that Japan's electricity price ($0.143) is almost four times the U.S. price of electricity ($0.039) and over twice the British price for electricity ($.064).[83] Among OECD countries, Italy has the next highest per-kilowatt hour rate ($0.088), which is about half that of Japan's.[84]

In short, differences in actual input costs between the United States and Japan should not be disregarded. In fact, they explain much of the difference between U.S. and Japanese interconnection costs.

E. Depreciation in Japanese Cost Models

In telecommunications-cost modeling, depreciation expense has critical importance. It reflects the decline in value of plant and equipment used to supply output. That value may decline because of physical wear and/or obsolescence. Regardless, the decline in value of plant and equipment is part of

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81. Japan Labor Research Organization, International Labor Comparisons (on file with Harvard International Law Journal).

82. Energy Information Administration, U.S. Department of Commerce, Japan: Country Analysis Brief (as of Apr. 2001).

83. Energy Information Administration, U.S. Department of Commerce, Electricity Prices for Industry: U.S. Dollars per Kilowatt Hour (data are from third quarter 2000), http://www.eia.doe.gov. Although prices in California have risen significantly due to the electricity shortages in that state, California Public Utilities Commission information indicates that some industrial customers in that state could pay as much as $0.12 per kilowatt hour under the current circumstances. That level is still 3/4 of the Japanese cost. Additionally, some large California cities are served by municipally owned utilities and are unaffected by these rate increases. Furthermore, it is not clear that the average cost of electricity for industrial customers across the U.S. would rise near the level experienced in Japan due to the situation in one, albeit large, state. Therefore, differences in the cost of electricity remain a reasonable point of comparison between the United States and Japan.

84. U.K. Electricity Association, Prices: Latest, http://www.electricity.org.uk.

the cost of supplying output and should be properly reflected in cost modeling.

In the United States, the FCC and state regulators have set depreciation lives for regulated telecommunications carriers. The resulting depreciation expense has not sufficed to reflect actual declines in values of assets.[85] Consequently, the large local exchange carriers report much lower asset values to their stockholders than are implied by inadequate regulatory depreciation in the past. For the same reason, telecommunications carriers outside the United States typically depreciate assets much more rapidly than would be allowed by U.S. regulators. U.S. regulatory depreciation expense for the large telecommunication holding companies in 1999 was only 7.0% of net fixed assets.[86] In contrast, depreciation expense reported on financial reports of (the companies that are now) BellSouth, SBC, Verizon, and Qwest averaged 16.6% of net fixed assets in 1999. Average depreciation expense for incumbent telecommunication operators in the European Union and Canada was 17.0% of net fixed assets in 1999. U.S. tax depreciation also exceeds regulatory depreciation, because it is done on an accelerated basis (relative to straight-line depreciation).

Despite this faster depreciation used in other countries, some prominent U.S. cost models—in particular, the HAI and the FCC's HCPM—use regulatory depreciation lives to reflect declines in asset values. As a result, the models substantially underestimate actual depreciation cost and do not conform to international practice.

Depreciation has become an area of controversy with regard to Japanese cost models. Figure 7 shows depreciation lives used in the NTT Top-Down Model and in the model developed by the Cost Study Group, formed under the auspices of the MPT. The depreciation rates for copper cable and conduit are the same in the two models. Depreciation lives in the NTT Model are shorter for the other categories of assets—switching, optical cable, buildings for facilities, and buildings for common use. Depreciation lives used in the NTT Model are "legal service lives," as determined by Japan's Ministry of Finance. These lives are commensurate with NTT's actual experience.

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85. The likely reason for this regulatory practice has been to reduce telecommunications prices in the short run albeit at the cost of higher prices and other problems in the future.

86. *See* 2000 COMMON CARRIER STATISTICS, *supra* note 76, Table 2.8 (account 6560) and Table 2.7 (account 260).

FIGURE 7: EQUIPMENT CATEGORY SERVICE LIVES IN YEARS[87]

Equipment Category	NTT Top Down Model (legal service lives)	Service Lives of Study Group, MPT Model
Switching	6	11.9
Optical Cable	10	11.2
Copper Cable	13	13
Conduit	27	27
Building for Facilities	22.1	33
Building for Common Use	21.2	37

The predominant switching technology of today's telecommunications networks is circuit switching, which is rapidly becoming obsolete. New technologies—such as soft switches and other packet-switching technology (including those that use the Internet Protocol, or IP)—are the future of communications networks.[88] Just as digital switching overtook analog switching technology ten to fifteen years ago, packet switching is overtaking circuit-switching technology today. AT&T has publicly stated its intention to replace its older U.S. circuit-switched network with a packet-based network, even for voice services.[89] The depreciation life for switching equipment in the MPT Model, 11.9 years, does not reflect the expected future declines in asset values for a technology that is rapidly becoming obsolete. The depreciation life in the NTT Model (6 years) is much more reasonable for such a technology.

Both the NTT and MPT Models rely on a 13-year life for copper equipment. This life, though shorter than U.S. depreciation lives, is reasonable because copper is being and will continue to be replaced with broadband technology over the next several years. Much of embedded copper cable is not suited for Information-Age services, and its useful days are nearing an end. A 13-year proposed economic life is quite long under these conditions.

Optical-fiber cable itself is undergoing significant changes. Newer technologies, such as digital wave division, have higher performance, and their prices are rapidly declining. Indeed, in March 2001 Lucent introduced its Ultrawave™ family of "next-generation" optical fiber.[90] These fibers provide

87. Data on file with authors.

88. *See, e.g.*, Forbes, *Switchcraft*, (Mar. 19, 2001), http://www.forbes.com.

89. Jason K. Krause, *How AT&T Got the Internet*, INDUSTRY STANDARD, Aug. 9, 1999; Ianna Outlines Plan to Evolve the AT&T Network, http://www.att.com/ technology/ip/iannaplan.html.

90. Press Release, Lucent Technologies, Lucent Technologies introduces breakthrough UltraWave™

significantly more channels for long-distance communications than single-mode fiber can. Additionally, Corning has upgraded its single-mode fiber offerings to include Metro Cor™ fiber, which enables wave division multiplexing on larger metropolitan rings with less investment in electronics and laser technology.[91] The depreciation life of 11.2 years in the MPT Model is too long to reflect declines in asset values under these circumstances. Indeed, the service life of 10 years in the NTT Model is conservatively long.

The NTT Model uses depreciation lives of 38 years for communications buildings and 45 years for common buildings. MPT's depreciation lives for buildings are somewhat longer—for example, 45 years for communications buildings. These lives are all well within the range of depreciation lives used by U.S. companies. In Japanese accounting, however, the aggregate building category also contains many assets that are not considered "buildings" in common usage, such as housing for remote terminals. These assets have much shorter lives than communications buildings or common buildings. The appropriate depreciation life for this aggregate building category is therefore much shorter than the appropriate depreciation lives for communications buildings or common buildings, considered alone. Evaluated in this light, NTT's depreciation life of 22.1 years for the aggregate building category is reasonable.[92]

In short, the legal service lives, defined by Japan's Ministry of Finance and used by NTT, are grounded in actual experience of Japanese communications carriers. NTT's depreciation lives are reasonable and appropriate given the state of rapid technological change.

F. Summary and Implications

The setting of interconnection rates using forward-looking costs models has been an intellectually challenging endeavor in the United States, an endeavor that is not yet finished, let alone easily transferred to another country with different circumstances. One could, of course, argue more generally that the FCC's implementation of the Telecommunications Act of 1996 has simply been wrong because it creates managed competition, not real competition. From that perspective, it is too narrow for a regulator to focus on the issue of local network access pricing. In other words, the effect of efforts to reduce such pricing is to reduce facilities-based competition in the United States or, at least, to reduce new investment in facilities. The USTR's efforts might also have the same effect in Japan. Indeed, perhaps the USTR's goal

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family of transoceanic fibers that more than doubles capacity of each fiber (Mar. 20, 2001), http://www.lucent.com/press/0301/010320.nsa.html.

91. White Paper, *Move It with MetroCor™ Fiber*, http://www.corning.com.

92. The primary difference between this depreciation life and MPT's is the method of calculating the weighted average. The NTT method of calculating the weighted average is correct, in that it yields the correct amount of depreciation expense if applied to the total plant cost in the aggregate building category. The MPT weighted average does not yield the correct amount of depreciation expense under these circumstances.

should be to encourage the Japanese to push for U.S. participation in greater facilities-based competition in Japan. For the time being, however, interconnection pricing remains the principal focus of the U.S.-Japan negotiations, and so it is critical that the interconnection policy that the USTR urges Japan to adopt is one that rests on sound economic analysis.

Unfortunately, significant shortcomings limit the usefulness of the cost models used by the FCC to set interconnection prices, and those cost models motivate the USTR's position with respect to Japan. Actual interconnection prices diverge considerably from the estimates of the FCC's cost models, both within and outside the United States. Variations across countries in the prices of inputs significantly affect actual interconnection costs. Moreover, in light of the rapid technological obsolescence of telecommunications assets, Japanese regulatory policy toward depreciation costs is more realistic than is American policy. These considerations underscore the technical sophistication and economic rigor that are necessary when one modifies one nation's interconnection pricing models for use in an entirely different nation. The next section will focus on questions of whether the policies of the Office of the USTR embody that requisite sophistication and rigor.

IV. Knowledge, Expertise, and Accountability in the Negotiation of Interconnection Policy

Though frequent critics of the FCC's policies, we find ourselves in the odd position of defending the agency's institutional competence and the integrity of its decision making process. We do so because, on an issue like the pricing methodology for unbundled elements of the local telecommunications network, the FCC, for all its faults, is the epitome of Frankfurterian administrative perfection when compared with the making of foreign telecommunications policy by the Office of the USTR. We consider first the accountability of policy making. We then consider the expertise and detailed knowledge required to make policy.

A. Accountability

Two factors contribute to the accountability of policy making on interconnection pricing at the FCC. The first is the transparency of the rule making process and the related requirement that the FCC explain fully the intellectual basis for its policy pronouncements. The second factor is the availability of judicial review of the FCC's decisions, which serves as a check on both the process and substance of the agency's policy making. With respect to both factors, the USTR faces less accountability than does the FCC when making telecommunications policy concerning interconnection pricing.

1. Transparency

The FCC is often criticized for being a forum for rent seekers. Although it is hard to dispute that the FCC has through the years done much to earn that criticism, the FCC at least can claim the virtue of being subject to several basic requirements of transparency and accountability. The same cannot be said of the USTR when it undertakes to dictate the telecommunications regulations that other nations must adopt to avoid trade sanctions.

The vast majority of the FCC's policy initiatives advance through the notice-and-comment process of the Administrative Procedure Act. With few exceptions, the agency does not announce major policy shifts through adjudication.[93] On any rule making of substantial importance, the FCC will publish a notice of proposed rule making (NPRM), which may be dozens of pages long. In response, interested parties file detailed comments and reply comments, often accompanied by expert affidavits of economists or engineers. In a rule making proceeding on a subject as complex as the pricing of local interconnection, such filings collectively would run into the thousands, if not tens of thousands, of pages.

Equipped with a voluminous public record, the FCC's staff then writes for the Commission a "report and order" that may run a hundred pages or more. (The *First Report and Order* on interconnection pricing exceeded 600 pages in length.) The report and order carefully footnotes arguments and factual propositions raised or challenged by commentators. To be sure, the FCC on occasion mischaracterizes a legitimate argument that it finds inconvenient and then knocks down its own straw-man rendition of the argument—or, to mix metaphors, it may simply sweep the argument under the rug and decline to address it in the report and order.[94] But these tendencies are constrained, at least in principle, by the availability of judicial review, about which more will be said presently. Parties interested in the proposed rule making may make ex parte presentations to commissioners or staff (except in the week-long "sunshine period" immediately preceding a Commission vote on the particular item in question), but such meetings must be publicly disclosed and the party making the presentation must lodge a brief summary of it with the secretary of the FCC for public inspection.[95] When the FCC announces its new policy through the promulgation of a rule, it pub-

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93. One notable and controversial exception was the FCC's abolition of the Fairness Doctrine in 1987. *See* Syracuse Peace Council, 2 F.C.C. Rcd. 5043 (1987), *recons. denied*, 3 F.C.C. Rcd. 2035 (1988), *aff'd sub nom*. Syracuse Peace Council v. FCC, 867 F.2d 654 (D.C. Cir. 1989).

94. For example, the FCC badly mischaracterized the efficient component-pricing rule (ECPR) in its *First Report and Order* on local interconnection and then rejected the use of the straw-man rule that it erroneously called the ECPR. *See* SIDAK & SPULBER, *supra* note 7, at 344–45, 351–79. Subsequently, in *Iowa Utilities Board*, Justice Breyer criticized the FCC on this score. With respect to the "FCC's decision to prohibit use" of the ECPR, 525 U.S. at 878, he noted: "The FCC rejected that [ECPR] system, but in doing so it did not claim, nor did its reasoning support the claim, that the use of such a system would be arbitrary or unreasonable." *Id*.

95. 47 C.F.R. § 1.1206 (2002).

lishes its report and order electronically on its Web site and subsequently in hard copy in the *FCC Record*, which routinely exceeds 10,000 pages in length each year.

In contrast, the process and substance of the USTR's decision making on interconnection pricing are far less transparent. The USTR's annual request for comments on compliance and review of Section 1377 telecommunications trade agreements runs only three pages in the *Federal Register.*[96] Only the 2000–2002 reviews of Section 1377—public comments that the USTR solicits—may be accessed from the USTR Web page.[97] Because a company (or individual) can request that its comments remain confidential, the USTR is effectively able to make trade policy decisions on the basis of undisclosed documents. If a non-confidential comment or document cannot be found on the USTR's Web site, it may be read only by appointment in the USTR public reading room during a five-and-a-half-hour period on business days.[98] Ex parte presentations to the USTR are not subject to the disclosure requirements that apply at the FCC.

There is much that the USTR could do to make its processes more transparent. Public comments, meetings, and filings could be made as accessible as those filed with the FCC. Doing so would reduce the risk that important trade policy decisions would be implemented without full disclosure of all information and filed comments. Furthermore, annual reviews of telecommunications and other trade agreements could be made more accessible to every interested party instead of requiring a visit to a reading room during limited hours. The FCC's Web page, which allows access to current and past comments and decisions could be emulated by the USTR.

2. Judicial Review

The USTR's policy decisions on interconnection pricing are less accountable than those of the FCC because the federal appellate courts are less likely to engage in judicial review of the USTR's decisions than the FCC's decisions.

Notwithstanding their obligation to defer to agency interpretations of law under the *Chevron* doctrine,[99] the U.S. Courts of Appeals reverse the FCC's most portentous rule makings with regularity. In one case, the D.C. Circuit said that the FCC had "done a remarkable job of rebutting the presumption of its own expertise."[100] In particular, the FCC's *First Report and Order* on interconnection pricing has gone to the Supreme Court twice between 1998 and 2001, most recently after the Eighth Circuit struck down the agency's

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96. *See, e.g.*, Office of the United States Trade Representative, Request for Comments Concerning Compliance with Telecommunications Trade Agreements, 66 Fed. Reg. 1715 (Jan. 9, 2001).

97. *See* http://www.ustr.gov/sectors/industry/telecom. shtml.

98. *See supra* note 96.

99. *See* Chevron U.S.A. v. Natural Res. Def. Council, 467 U.S. 837, 842–45 (1984).

100. ALLTEL Corp. v. FCC, 838 F.2d 551, 562 (D.C. Cir. 1988) (Bork, J.).

TELRIC pricing model. Regardless of whether the these federal appellate courts affirm or vacate specific features of the FCC's policies on interconnection, the fact remains that the courts scrutinize those policies with a high degree of rigor and skepticism. Moreover, a number of federal appellate judges were scholars on the application of economics to regulatory issues before their appointments to the bench. Such jurists bring economic sophistication to the usual judicial review of FCC rule making. They hold the FCC to high intellectual and procedural standards, and much effort at the FCC is devoted to bulletproofing an agency decision for the inevitable phase of appellate litigation.

Judicial review of the USTR's decisions is quite a different matter. The D.C. Circuit, in a decision by Judge Stephen Williams, has left little doubt that the chances of securing judicial review of a decision by the Trade Representative are miniscule. In 1992, Public Citizen, the Sierra Club, and Friends of the Earth sued the Trade Representative and the President, claiming that they had failed to prepare, under the National Environmental Policy Act (NEPA),[101] environmental impact statements concerning the USTR's then-current negotiations regarding the North America Free Trade Agreement with Canada and Mexico (NAFTA) and the Uruguay Round of the General Agreement on Tariffs and Trade (GATT). In *Public Citizen v. Office of the United States Trade Representatives*, the D.C. Circuit affirmed the dismissal of the interest groups' complaint on the ground that they had "failed to identify any 'final agency action' judicially reviewable within the meaning of § 10(c) of the Administrative Procedure Act (APA)."[102] The district court had dismissed the complaint for lack of standing, an issue that the D.C. Circuit did not address.[103] The Trade Representative made an array of additional defenses based on lack of jurisdiction, lack of ripeness, preemption of NEPA by federal trade legislation, and constitutional grounds, as well as on the ground that the USTR was not an "agency" subject to NEPA.[104]

So much resistance from both the USTR and the courts to judicial review on jurisdictional, justiciability, and constitutional grounds does not bode well for the rare plaintiff who could successfully run the gauntlet to have his complaint reviewed on the merits. And, if the Trade Representative's failure to file an environmental impact statement does not constitute a final agency action for purposes of APA review (assuming arguendo that NEPA applies to USTR), then it would also seem likely that a final agency action could not be found in the USTR's failure to consider substantive economic arguments about the shortcomings of TELRIC pricing when formulating U.S. international trade policy with respect to Japan's telecommunications sector. This

101. 42 U.S.C. § 4332(2)(C) (1988).
102. 970 F.2d 916, 917 (D.C. Cir. 1992) (Williams, J.) (citing 5 U.S.C. § 704 (1996)).
103. *Id.* (citing Public Citizen v. USTR, 782 F. Supp. 139 (D.D.C. 1992)).
104. *Id.* at 918.

absence of effective judicial review raises the specter that the Office of the USTR might increasingly become the locus of decision making on complex matters of regulatory policy precisely because its relative insulation from judicial review permits the USTR to decide those matters arbitrarily.

One can certainly argue that a department within the Executive Branch should not be subject to the same requirements for transparency and judicial review as an independent administrative agency. If the USTR is not subject to transparency and judicial review, however, there are clear disadvantages to its making policy in an area of economic activity where transparency and judicial review are especially beneficial. Telecommunications policy—whether for the United States or, through implicit threats of trade sanctions, for foreign countries—is such an area of economic policy making, in no small part because of the expertise and detailed knowledge required to make responsible decisions.

B. Expertise and Detailed Knowledge

Two separate lines of argument lead to the same conclusion that the USTR lacks the expertise and detailed knowledge required to make policy on interconnection pricing. That the two lines of argument produce the same answer is significant, because they build from quite different—perhaps mutually inconsistent—beliefs about the proper role of politics in the decisions of an independent regulatory agency like the FCC. Reasonable minds (including those of co-authors) can differ on which set of beliefs is preferable. But one need not resolve that difference of opinions to see that serious problems result when, lacking the requisite expertise and detailed knowledge, the USTR makes policy on a subject as complex as interconnection pricing.

1. Independent Regulatory Organizations

An important provision of the WTO agreement on telecommunications services is the commitment to have independent regulatory organizations carry out telecommunications regulation.[105] One widely held belief is that it is efficacious to have appropriately designed independent organizations perform this regulatory function. Such an organization is thought to be the institution best able to acquire and retain the detailed knowledge and expertise necessary for effective telecommunications regulation. It should be insulated to some extent from political pressures, and therefore have some ability to carry out policies based on expert analysis, without getting bogged down in day-to-day politics.

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105. The WTO's Reference Paper provides: "The regulatory body is separate from, and not accountable to, any supplier of basic telecommunications services. The decisions of and the procedures used by regulators shall be impartial with respect to all market participants." *Reference Paper*, *supra* note 23, at ¶ 5.

From this perspective, it is ironic that the USTR's actions in the U.S.-Japan negotiations on interconnection pricing, which ostensibly are intended to promote the WTO agreement on telecommunications services, have undermined the critical provision of that agreement concerning independent regulatory organizations. The essence of the USTR's exporting of U.S. telecommunications policies is to wrest decision making power from foreign regulators and give it to the USTR itself. But the USTR does not have the detailed knowledge of telecommunications and expertise that the foreign regulatory organization can be expected to have. It also may lack detailed knowledge of the country into which the U.S. policies are to be imported.

What the USTR does have, by virtue of its being part of the Executive Branch, is susceptibility to political pressures. The USTR's policies therefore inevitably politicize telecommunications regulation in the foreign country. The interconnection policies of Japan thus are molded to satisfy American political purposes rather than the informed judgments of an independent regulatory authority in Japan which, consistent with principles of the WTO agreement and its associated Reference Paper, would otherwise base its decisions on expertise and detailed knowledge concerning the industry it regulates.

2. Political Change and Deference

An alternative set of beliefs would accept as given the susceptibility of the USTR to political influence and, indeed, regard that susceptibility to be a useful policy instrument that is legitimately subject to redirection following electoral change. From this perspective, the relevant questions are whether the USTR is sufficiently nimble in responding to electoral change, and whether the USTR, because it lacks expertise and detailed knowledge, improperly defers, to parties outside the political scope of the Executive Branch (whether at independent agencies or in the private sector), too much when shaping the international trade policy of the United States.

To persons holding such beliefs, the U.S.-Japan interconnection negotiation exhibits an improbable tail-wags-dog quality. The President is empowered to negotiate U.S. trade policy. For advice, he delegates under statute certain powers to the Trade Representative, a cabinet level official whose appointment the Senate must confirm. The Trade Representative in turn delegates this policy formulation to his subordinates, only some of whom are Senate-confirmed appointees. For advice, the USTR staff defers to the FCC's International Bureau, created in 1997, whose work is often considered abstruse even among persons who are conversant about domestic telecommunications regulation. Because of that abstruseness, the International Bureau may have a lighter degree of oversight from the FCC's chairman and commissioners than does the Common Carrier Bureau, where domestic interconnection policy is made.

Electoral change makes this sequence of delegation and deference more problematic. Although the 2000 election resulted in the Republicans taking control of the White House, and thus control of the Office of the USTR, the telecommunications negotiations that the USTR was pursuing with Japan by the end of 2001 were predicated on the policies promulgated five years earlier by an FCC chairman, Reed Hundt, who was closely associated with the previous Democratic administration. Certainly, some informed observers regard Chairman Hundt and his *First Report and Order* on interconnection pricing as controversial—not simply as a matter of substantive telecommunications policy, but politically as well in the sense of using agency action to advance interpretations of the Telecommunications Act of 1996 that did not accord with the statute that Congress had recently enacted.[106] This concern about overreaching behavior by the FCC was compounded when Chairman Hundt announced his view in 1997 that the signatory nations to the WTO agreement on telecommunications services had obliged themselves to copy the same TELRIC pricing methodology, promulgated by the FCC in August 1996, which has since caused much controversy and litigation in the United States.

By design, a bureaucracy like the FCC or the USTR remains in motion in the same direction unless acted upon by the external force of political change. In other words, a bureaucracy has inertia. It is not realistic to expect that bureaucrats will redirect their agency until told to do so. Conversely, a political actor charged with leading a bureaucracy cannot expect it to change directions until that actor recognizes that the bureaucracy is off course and exercises the leadership required to point it toward a different destination. Consequently, it is incumbent upon a new FCC chairman and a new Trade Representative to take a fresh look at the policies that they have inherited from their predecessors, thereby to ensure that those policies accord with the larger political objectives of the administration that appointed them. If the FCC chairman and the Trade Representative fail to do so, they may unwittingly find themselves being dragged along by the bureaucracy's faithful execution of a policy that deserves to be changed.

These considerations of bureaucratic inertia and electoral change have special relevance to the U.S.-Japan negotiations on interconnection pricing. By the fall of 2001, the new Trade Representative was evidently unaware that his staff, by continuing to pursue faithfully the policies of his predecessor, had unwittingly sent the new Trade Representative out with an untenable

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106. *See* Reed E. Hundt, You Say You Want a Revolution: A Study of Information Age Politics (Yale Univ. Press 2000). Mr. Hundt writes: "The conference committee compromises [for the Telecommunications Act of 1996] had produced a mountain of ambiguity that was generally tilted toward the local phone companies' advantage. But under principles of statutory construction, we had broad discretion in writing the implementing regulations. Indeed like the modern engineers trying to straighten the Leaning Tower of Pisa, we could aspire to provide the new entrants to the local telephone markets a fairer chance to compete than they might find in any explicit provision of the law." *Id*. at 154. *See also* Glen O. Robinson, *Reed Hundt, Revolutionary Manqué*, 4 Green Bag 2d 197 (2001) (critical review of Hundt, *supra*).

bargaining position. In October 2001, the Supreme Court heard oral argument in a case in which the U.S. Court of Appeals for the Eighth Circuit had struck down the FCC's TELRIC model for setting interconnection rates.[107] The USTR, in exporting U.S. telecommunications policies to Japan, seems unaware of how controversial those policies are in the United States. If the Supreme Court affirms the Eighth Circuit's decision in whole or part, the Trade Representative will be left in the humiliating position of explaining to the Japanese government why it should adopt the same specific pricing model for interconnection that the Supreme Court of the United States has found to be an unlawful interpretation of the Telecommunications Act of 1996. Even if the Supreme Court reverses, and vindicates the FCC's version of TELRIC pricing, one must ask whether risking such international humiliation is the most prudent way for the USTR to conduct its negotiations with Japan.

Not all responsibility for averting this possible embarrassment to the United States in the U.S.-Japan interconnection negotiations rests with the Trade Representative, however. Because of his expertise and detailed knowledge of telecommunications, and because of his understanding of the larger policy objectives of the President who appointed him, Chairman Powell of the FCC is uniquely able to warn the Trade Representative of the risk in the U.S.-Japan negotiations while the Supreme Court is deciding a case on the FCC's TELRIC pricing policies. Neither the Trade Representative nor his staff can replicate that expertise internally. To anyone who has seriously studied the complexities of access pricing and network unbundling in telecommunications, it is preposterous to think that the Trade Representative and staff could sufficiently be equipped as an institution to tell another nation how to write its domestic telecommunications regulations.[108] Even the brief overview in Part II of the complexities inherent in TELRIC cost models demonstrates why that is so.

Why, therefore, should anyone expect that the USTR would begin to immerse itself in the analytical subtleties of interconnection pricing? That is not its comparative advantage or its mandate. The primary role of the USTR is to negotiate trade deals and to develop and coordinate U.S. trade policy.[109]

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107. *Iowa Utilities Board v. FCC*, 219 F. 3d 744, 754 (8th Cir. 2000).

108. For excellent surveys of the economic subtleties of this subject, see Jean-Jacques Laffont & Jean Tirole, COMPETITION IN TELECOMMUNICATIONS (MIT Press 2000); Mark Armstrong, *The Theory of Access Pricing and Interconnection*, HANDBOOK OF TELECOMMUNICATIONS ECONOMICS (forthcoming 2002).

109. Congress in the Trade Expansion Acts of 1962 and 1974 created the USTR, and its final authorization was set in President Carter's Executive Order 12188 of January 4, 1980. It established the USTR as the administrator of overall trade policy, and as the nation's chief trade representative:

> The Trade Representative shall have primary responsibility, with the advice of the interagency organization established under section 242 of the Trade Expansion Act of 1962 (*19 U.S.C. 1872*) (hereinafter referred to as the "Committee"), for developing, and for coordinating the implementation of, United States international trade policy, including commodity matters and, to the extent they are related to international trade policy, direct investment matters. The Trade Representative shall serve as the principle advisor to the President on the impact of other policies of the United States Government on international trade.

Reorganization Plan No. 3 of 1979, *reprinted in* 19 U.S.C. § 2171(b)(1) (1982).

For the USTR, the attainment of an agreement is a goal unto itself, without regard to the demonstrable economic effects of the agreement on consumer or producer welfare in another nation. It is not the USTR's job to make substantive regulatory policy for domestic application in the United States. Nor should it be the USTR's job to coerce foreign governments to adopt domestic policies that the USTR regards as beneficial to U.S. exporters. In responding to such coercion, the foreign government would know full well that the USTR did not understand the consequences (for the foreign country) of those domestic policies—especially in an area as complex as telecommunications policy. The foreign government might also reasonably conclude that the USTR did not care about those consequences. The best outcome that could be hoped for under these circumstances is that the USTR would use up an excessive amount of bargaining leverage (that could be more effectively used elsewhere) for modest trade gains. More likely, the whole process would be counterproductive.

In short, it is not the prerogative of the career staff at the USTR to abandon unilaterally a preexisting policy of trade negotiation. It should not be surprising that they do not do so. Nor can the career staff at the FCC be expected to reverse course unilaterally and advise the USTR to abandon the approach to interconnection pricing that has been the foundation for the U.S.-Japan negotiations. Rather, it is the responsibility of the chairman of the FCC to inform the Trade Representative when it is necessary or desirable to take a fresh look at the current trade policy. A fresh look may be justified in a number of circumstances—when a relevant Supreme Court decision is pending, when economic research calls into question the efficacy of an existing policy, or when an election brings to power new leaders whose policy directions differ in pertinent respects from those of their predecessors. All three of these considerations are present in the case of the U.S.-Japan negotiations on interconnection pricing.

V. Conclusion

The World Trade Organization (and the Office of USTR within the WTO structure) have a legitimate mission to break down barriers to market access. That mission increasingly gets the WTO into the business of judging whether domestic regulation creates such barriers to foreign entrants. At the present time, however, there is no bright line between what is a legitimate concern of the WTO (or, perhaps more accurately stated, of WTO members when examining the regulatory practices of other WTO members) and what is overreaching behavior by a given nation that possesses special influence over its trading partners. This Article has addressed a case that is not a close call, but rather is a clear case of overreach.

It is presumptuous for USTR and FCC officials to assert that the 1997 WTO agreement on telecommunications services codified the policies of the Federal Communications Commission on interconnection pricing under the

Telecommunications Act of 1996. The Trade Representative should not compound that presumptuousness by threatening to seek trade sanctions before the WTO if another nation will not mimic the FCC when promulgating domestic policy on the regulated pricing of mandatory competitor access to the network and unbundled elements of that nation's incumbent telecommunications carrier. The FCC's interconnection policy has not yet proven itself worthy of emulation. The USTR should not try to force other countries to emulate policy that is under close scrutiny by U.S. courts.

American trade negotiators need to have more detailed knowledge and expertise to understand the economic consequences of their imposition of FCC cost models before they impose them on another country. It is far from clear that the USTR currently possesses that detailed knowledge and experience. But it is clear that the time is long overdue for the President and the Trade Representative, aided by the advice of the FCC chairman, to examine whether U.S. trade policy in this area has gone seriously awry.