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Sloan School of Management

The Economics of the Tauzin-Dingell Bill: Theory and Evidence

Paper 128

August 22, 2001

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"The Economics of the Tauzin-Dingell Bill: Theory and Evidence"

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Executive Summary

A bill introduced by the powerful chairman and ranking member of the House Energy and Commerce Committee purports to enhance consumer choice in telecommunications and boost deployment of high-speed data services and Internet connections. This paper demonstrates that the effect of this bill will be the opposite. The bill will harm the prospects for competition, and, with competition reduced or eliminated, consumer choice will atrophy. Prices will rise, high-speed access to the Internet will be significantly deterred and even stricter regulation will be necessary.

The bill, H.R. 1542, co-authored by Reps. Billy Tauzin (R-La.) and John Dingell (D-Mich.), would allow incumbent local exchange carriers (ILECs) – the largest of which are the Bell Operating Companies (BOCs) – to strengthen a *de facto* monopoly. The Tauzin-Dingell bill would exacerbate an already feeble competitive situation in which many CLECs have been forced to cut employment and expansion plans and even to go bankrupt. The bill would gut the Telecommunications Act of 1996 by exempting an important and growing share of the incumbent carriers' business from compliance with the market-opening provisions of the Act. Importantly, the Tauzin-Dingell bill would prematurely relieve the BOCs of the line-of-business restriction against offering interLATA services that has heretofore protected the CLECs from unfair competition and provided an important inducement to the BOCs to comply with the pro-competitive provisions of the Act. The bill would weaken regulatory oversight in the near term – but as we explain, with the predictable result that stronger regulation would be needed in the future.

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We show that CLECs have already suffered because the Tauzin-Dingell bill, even in prospect, has increased regulatory uncertainty. This has induced CLECs to delay investments that are essential for them to grow larger in order to survive and compete. Meanwhile, consumers have suffered because the BOCs have reneged on commitments to compete against each other.

Our research establishes the anti-competitive nature of the Tauzin-Dingell bill by showing that, on days of positive news about the bill and its predecessor, stock prices of CLECs suffer large declines. Over a time period stretching back a little more than one year, the market capitalization of publicly traded CLECs dropped about 84 percent, compared with a decline over the same period of 48 percent for the NASDAQ Composite Index with CLECs removed. We find that almost half of the 84 percent decline in CLEC

market cap (\$95 billion out of \$204 billion) occurred on the handful of days that contained positive news about the Tauzin-Dingell bill.

While its supporters say that the Tauzin-Dingell bill is deregulatory, the bill will actually lead to more regulation. It will speed the demise of the CLEC industry and reinforce domination of the ILECs, from local service through high-speed data services. It is highly unlikely that politicians will permit unregulated monopolists to have such power and will thus return telecommunications to strict public-utility regulation, from top to bottom.

The Tauzin-Dingell bill, in summary, stands squarely in opposition to competition and deregulation. The result for consumers will be less choice, higher prices and poorer quality.

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Economic Implications of the Tauzin-Dingell Bill

I. Introduction.

The grandly named "Internet Freedom and Broadband Deployment Act" (HR-1542), authored by Representatives Billy Tauzin (R-La) and John Dingell (D-Mich), is being promoted as a way to boost consumer choice for Internet services and to enhance the deployment of high-speed data services. In fact, the bill is likely to produce the exact opposite result, severely harming prospects for the emergence of sustainable and effective telecommunications competition.

There is no real consumer choice without competition, and there is no real competition without competitors. The Tauzin-Dingell bill would eviscerate key provisions of the Telecommunications Act of 1996 (TA96) that have given birth to the competitive local exchange carrier (CLEC) industry. The severe weakening of the CLECs—or their demise—will lead, predictably, to the further strengthening and entrenchment of the incumbent local exchange carriers (ILECs) that retain *de facto* monopoly ownership over the network facilities used to provide access to local and long distance telephone service, as well as advanced communication services such as Internet access and high speed data services. The Tauzin-Dingell bill, under the false banner of deregulation, would provide an unearned windfall to the largest of the ILECs – the Bell Operating Companies (BOCs) – in the form of new and expanded opportunities to exploit their monopoly power unrestricted by regulatory oversight. The bill cannot logically be considered deregulatory because the enormous increase in monopoly power it would produce will necessitate the introduction of new regulations in the future.

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This paper explains why the Tauzin-Dingell bill is anticompetitive and provides empirical evidence of the harm that has already resulted from it. In particular, we show that positive news about the Tauzin-Dingell bill – that is, news that suggests the bill is more likely to pass – has devastated the share prices of CLECs in a statistically significant manner, and also has led to significant reductions in capital spending. Finally, we discuss the impact of the bill on the prospects for the emergence of effective competition for local telecommunications services.

II. Telecommunications Regulation, Competition, and the Tauzin-Dingell Bill

The Tauzin-Dingell bill has three key provisions. First, it would relax the line-of-business restrictions on the BOCs that have limited their participation in interLATA

(long-distance) services, without requiring the BOCs to comply with the Section 271 checklist included in the TA96. Second, it would free the ILECs from obligations under the TA96 to offer unbundled network elements or allow resale of high-speed data and Internet access services (e.g., line sharing for DSL service). Third, it would preclude the Federal Communications Commission (FCC) or state public utility commissions (PUCs) from regulating those services now or in the future. On the surface, each of these steps may appear deregulatory; to understand why this is not the case, it is worth considering a little history.

Today, we have robust competition in many telecommunications markets, ranging from customer premise equipment (telephones, pagers, personal computers) to mobile wireless services to domestic and international long-distance data and voice services. This competition has yielded substantial benefits for consumers in the form of expanded

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choice, improved quality, faster innovation, and lower prices. In each of these markets, there are multiple facilities-based competitors as well as active wholesale markets for key inputs. This healthy state of competition, however, took many years to develop.

II.A Structural Separation Facilitated Competition in Long Distance

Through most of the 20th century, the telephone network was a regulated end-to-end monopoly. Over time, with innovation and demand growth, competition emerged along the value chain. Competition came first to customer premise equipment in the 1960s¹ and then began to emerge in long-distance services in the late 1970s. In 1984, AT&T was structurally separated into a prospectively competitive long-distance company and seven (now, through mergers, four) regional BOCs.² The BOCs provided local access and telephone services as regulated monopolies.

Structural separation was a severe remedy, but it was thought necessary in order to assure the existence of emerging long-distance competition. It allowed firms such as MCI (now part of Worldcom) and Sprint to compete equitably with AT&T in obtaining access to the local facilities used to originate and terminate calls. Absent structural

¹ In 1968, the FCC issued its famous *Carterfone* decision, opening customer premise equipment markets to competition. Earlier, in 1956, the Department of Justice settled its first antitrust case against AT&T when it signed the consent decree that imposed line-of-business restrictions on AT&T's manufacturing arm, Western Electric, that were intended to protect the emerging computer equipment market from Western Electric's monopoly power associated with its control of the market for telecommunications equipment. Thus, there is a long history for the use of line-of-business restrictions in telecommunications.

² The original seven RBOCs -- Ameritech, Bell Atlantic, Bell South, Nynex, PacBell, Southwestern Bell, and US West -- have become four, Bell South, Qwest, SBC, and Verizon. Following passage of the Telecommunications Act of 1996, in a rash of mega-mergers SBC (formerly, Southwestern Bell) acquired Ameritech, PacBell, and SNET (the independent ILEC that provided service in Connecticut); Verizon (formerly, Bell Atlantic) acquired Nynex and GTE (the largest non-BOC local exchange provider in the United States); and Qwest (a new telecommunications provider) acquired US West.

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separation, regulators believed that AT&T would have had a natural incentive and ample opportunity to discriminate against competitors needing local access services, a situation that would have aborted long-distance competition before it could take root and thrive.

The divestiture of AT&T created a structure that provided a clear regulatory demarcation between the newly competitive long-distance (interLATA) markets and the monopoly local-access (LATA) markets. The BOCs had no incentive to thwart longdistance

competition and thus would comply with equal-access rules because they had been divested and prohibited from reintegrating to compete in interLATA services. Even with incentives properly aligned, long-distance competition took a long time to establish itself. AT&T remained subject to dominant carrier oversight until 1995, more than ten years after divestiture, when its market share had fallen to 52 percent.

In addition to limiting the ability of the BOCs to leverage their monopoly power over essential facilities into adjacent markets, the BOC line-of-business restrictions helped minimize regulatory costs by providing a clear demarcation between competitive, less regulated markets and monopolistic, heavily regulated markets. This reduced the costs of regulatory oversight and the distortionary effects of regulation.

II.B Telecom Act of 1996: A New Regulatory Framework to Introduce Local Competition

With the success of long-distance competition, the emergence and growth of traditional and new services such as the Internet, the rising importance of communications services in a global economy, and greater awareness of the high costs of sustaining public utility regulation, policymakers began to focus on how to introduce

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effective local telecommunications competition. The TA96 proposed a bold new regulatory framework for promoting this objective.

The core problem was that local loops remained an essential bottleneck facility. The ILECs possessed the only network capable of ubiquitous origination and termination in their serving areas. These facilities provide the "on" and "off" ramps to information highways for most telecommunications services. The extensive local networks owned by the ILECs had been built over decades and represented billions of dollars in sunk investments, much of which had been subsidized by a variety of implicit and explicit public subsidy mechanisms.³ In the face of an entrenched and uncooperative monopolist, the economic barriers to entry were simply too high for local competition to establish itself outside of a few major metropolitan areas. The ubiquitous network of the ILECs and their *de facto* monopoly share of local service markets provided them with scale and scope economies and positive network externality benefits not attainable by new competitors. Without being able to interconnect to the ILEC's local access facilities on an equivalent, non-discriminatory basis, a CLEC was unable to offer a competitive product that would allow it to establish itself in the marketplace.

The TA96 recognized the need to create a level playing field that would provide all competitors – both incumbents and entrants – efficient incentives to invest in local facilities and a fair opportunity to compete in local access and telephone service markets. Therefore, the TA96 mandated that the ILECs unbundle their networks and provide

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resale of retail services at non-discriminatory, cost-based, wholesale rates, and that the ILECs negotiate interconnection agreements with CLECs to facilitate the reciprocal exchange of traffic. The TA96 recognized that the ILECs had a natural incentive to resist implementation of these market opening rules and empowered the FCC with responsibility for implementing the TA96. In addition, the BOCs – the largest of the ILECs – were required to comply with the unbundling and resale conditions mandated in the TA96 *before* they would be granted relief from the line-of-business restrictions that precluded their participation in in-region interLATA service markets.⁴ The checklist for compliance was spelled out in Section 271 of the TA96.

II.C Failure to Implement the Telecom Act of 1996

It has been over five years since the TA96 was passed and the ILECs remain just as strongly entrenched in their monopoly control over local services, providing service to over 90 percent of the end-user access lines.⁵ In most states, ILECs have yet to provide CLECs the equal access to non-discriminatory Operating and Support Systems (OSSs)

³ For example, interLATA access charges and universal service subsidies. In addition, retail pricing regulation enforced implicit subsidies from business to consumers, urban to rural, and long distance to local services.

⁴ The BOCs were prohibited only from participating in interLATA services within their service regions; they were not precluded from participating in out-of-region interLATA services. This is important because it is within-region that the BOCs monopoly power is strongest. In contrast, if one accepted the BOCs often repeated

claims that they wished to compete in interLATA services because of the alleged monopoly profits being earned there, then we should have expected to see the BOCs aggressively trying to offer outof-

region interLATA services. While this did not happen (giving the lie to the BOCs' claims), we did see the BOCs investing overseas and in other out-of-region ventures such as cellular services.

⁵ According to the FCC, as of June 2000, CLECs accounted for 6.7 percent of all end-user access lines. Of these, 66.2 percent of the CLEC lines were provided using ILEC facilities, and the vast majority of those were via Total Service Resale (see *Local Telephone Competition: Status as of June 30, 2000*, Common Carrier Bureau, Federal Communications Commission, December 2000).

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that is essential for the smooth working of wholesale markets.⁶ Many states have adopted prices for unbundled network elements (UNEs) that are too high, exceeding reasonable estimates of economic costs, and in many cases, exceeding retail prices for certain classes of customers.⁷ Universal service and access reform is still incomplete, which means that the ILECs continue to benefit from implicit subsidies embedded in inefficient regulatory rate elements that drive a wedge between the prices faced by end-users and competitors and the costs incurred by the ILECs.

⁶ The electronic software Operating and Support Systems (OSS) used to order, provision, bill, and repair/maintain services are an essential component of providing local telephone service and CLECs need equal and non-discriminatory access to these systems to compete effectively with the ILECs. There is no comprehensive data on the status of these systems because their status varies state-by-state, and within a state, ILEC by ILEC. Many states have yet to initiate comprehensive third-party testing of the OSS that are currently in place to see if these comply with the equal-access, non-discriminatory requirements of the TA96, and the results of the tests that have been completed have been challenged in numerous cases. For example, the Department of Justice found the OSS offered by SBC in Texas to be inadequate and discriminatory, denying CLECs equal access to DSL-based services and UNEs (see *Evaluation of the United States Department of Justice*, In the Matter of Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services In Texas, Before the Federal Communications Commission, CC Docket No. 00-4, February 14, 2000). In Missouri, SBC's OSS fail to adequately reflect that a CLEC is providing service to a customer which is necessary for the CLEC to have non-discriminatory access to critical repair and maintenance functions. Also, SBC's performance data for important OSS functions has been misrepresented, which further complicates the evaluation of testing data (see *Comments of AT&T Corp.*, In the Matter of Application by SWBT Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., d/b/a/ Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Missouri, Before the Federal Communications Commission, CC Docket No. 01-88, April 24, 2001). SBC has preferred to continue to pay fines levied by the FCC under the terms imposed by the FCC for approval of its merger with Ameritech. These fines are capped at unrealistically low levels, and yet, SBC paid over \$6 million in fines in 2000 for failing to offer competitors acceptable service as required by the TA96 (see Dick Kelsey, "SBC's \$88,000 Non-Compliance Fine Will Stand," *Newsbytes*, May 29, 2001).

⁷ As of August 2000, only 31 states had approved permanent UNE rates and there were still 14 that had not deaveraged UNE rates to reflect differences in costs over the ILEC's serving area. Moreover, in many states, the UNE rates exceeded the retail rate for flat rate residential service (see "Unbundled Network Elements: An RBOC Rate and Policy Analysis," *TeleFOCUS*, August 11, 2000). The fact that a number of states still do not have permanent UNE rates demonstrates that the TA96 has still not been implemented. When rates are not deaveraged, they are likely to be substantially above economic costs in low cost areas such as major metropolitan areas where CLECs are most likely to have focused their initial efforts. When the UNE loop rate exceeds the retail rate for residential service, it is obvious that UNEs are effectively useless to competitors wishing to serve residential consumers (especially since the loop represents only part of what is required to support telephone service).

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The limited extent of this progress is due in large part to the failure of regulators adequately to enforce the market-opening provisions of the TA96. At every stage along the way, the ILECs have sought to overturn or weaken the pro-competitive provisions of the TA96, arguing to exclude elements or services from unbundling or resale provisions or arguing for wholesale prices that would be so high as to render the market-opening provisions irrelevant. The BOCs immediately appealed the FCC's first order establishing the economic standard to be used to set cost-based rates for unbundled network elements on the grounds that the Commission had overstepped its jurisdiction by seeking to set rates for intrastate commerce.⁸ The Supreme Court eventually upheld the FCC's jurisdiction, but parties are still awaiting a decision as to whether the incremental cost standard known as TELRIC that the FCC adopted and that was endorsed by virtually all state commissions is acceptable.⁹ The failure to implement clear pricing standards and enforce the provisions of the TA96 as originally anticipated has taken a toll on CLECs.

The CLECs reasonably anticipated that competing against an entrenched monopolist would be difficult. They understood that even with the equal-access

⁸ See *First Report and Order*, In the Matter of Implementation of Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, Released August 8, 1996.

⁹ TELRIC stands for "Total Element Long Run Incremental Cost." TELRIC estimates are supposed to reflect the cost that an efficient provider would face if it were to invest in a new network of sufficient size to serve existing demand. TELRIC estimates are forward-looking, long-run (i.e., include all variable and fixed costs, including those that would be sunk following entry), incremental costs. Because costs are estimated on an element (as opposed to service) basis (i.e., for a loop rather than for local service which shares the loop with long distance), shared and common costs are minimized. Nevertheless, the FCC's pricing rules include an allowance for the recovery of common costs. It is also worth noting that TELRIC is *not* the economic cost faced by an ILEC but is higher than an ILEC's costs because the ILEC's network has already been built and much of that investment is sunk. Prices for network elements were to be set at per unit TELRIC, which is computed by dividing the TELRIC by the demand served. When priced in this way, CLECs would be able to benefit from the scale and scope economies that otherwise would be attained only by the ILEC. See *First Report and Order*, note 8, *supra*, paragraphs 671-702.

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provisions mandated by the TA96, they would face much higher unit costs until they gained market share.¹⁰ However, the CLECs were counting on the TA96 and on policymakers keeping their compact to force ILECs to open their markets to competition. And, in the meantime, the CLECs expected that they would be protected from abuse of the ILECs' monopoly power until such time as market forces could reasonably substitute for regulatory oversight in disciplining the market power of the incumbent carriers. The CLECs could offset their disadvantage of higher overall costs by exploiting opportunities to offer bundled long distance and local services or participate in emerging market niches that were unavailable to at least the largest ILECs (the BOCs) until the BOCs

successfully complied with Section 271. In this way, CLECs were able to help share the costs of investing in infrastructure by offering high-speed data services and Internet access services to end-users and to other clients, such as Internet Service Providers (ISPs).

In addition, when ILECs abused their market power to set interconnection rates that substantially exceeded the costs for terminating traffic from another carrier,¹¹ some

¹⁰ Although TELRIC pricing of UNEs reduces the scale/scope economy effect associated with leased network facilities, it does not address scale/scope economies associated with retail-level costs or with investments in CLEC-owned facilities. The need to finance these higher costs places a heavy burden on CLECs.

¹¹ Under the TA96, ILECs were required to negotiate reciprocal compensation rates to prevent ILECs from imposing asymmetric rates that would charge CLECs substantially more for terminating CLEC traffic than the ILEC would pay the CLEC for terminating ILEC traffic. The incremental costs for terminating traffic, in any case, are quite low, and there is a general presumption that traffic will be balanced – unless of course, rates are set above costs. CLECs were the weak party in the interconnection negotiations because they were the ones who had to have an agreement to operate. Consequently, early interconnection agreements often included reciprocal compensation rates that significantly exceeded reasonable estimates of economic costs. Only after the CLECs learned how to use these high rates to their advantage did ILECs start negotiating more reasonable rates. For example, MCIWorldcom reported that then-independent CLEC's MFS and Brooks Fiber (now subsidiaries of MCIWorldcom) were subject to reciprocal compensation rates of up to \$0.015/mou, compared to current rates that are typically more like \$0.002-

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CLECs were, ironically, able to take advantage of these rates by signing up ISPs that terminate substantially more traffic than they originate.¹² This action took advantage of the TA96's reciprocal compensation rule, which was designed to prevent ILECs imposing asymmetric discriminatory interconnection rates on CLECs. When hoisted on their own petard of above-cost reciprocal compensation rates, the ILECs responded by (1) pushing for reform of the reciprocal compensation rules, for which the ILECs had previously argued, and relief from obligations incurred under earlier interconnection agreements; and (2) negotiating new interconnection rates that more closely approximate the economic costs for terminating traffic. In the meantime, however, reciprocal compensation provided much needed funding to cash-starved CLECs and ISPs, helping to spur investment in Internet and competitive local access infrastructure.

The intent of the TA96 was to provide a framework that would allow sustainable local competition to become irreversibly established which would then make continued public-utility style regulation of the incumbent no longer necessary. The line-of-business restrictions protected an important portion of the CLECs' business from BOC monopoly power. Of course, the CLECs did not expect the line-of-business restrictions on the BOCs to be retained indefinitely. Rather, they expected that the shelter afforded by these rules would persist until such time as the CLECs were able to take effective advantage of the TA96's unbundling provisions. The CLECs knew they ultimately would have to face the \$0.003/mou (see, Bradley Stillman, *Ex Parte Presentation from MCIWorldcom*, Federal Communications Commission, CC Docket No. 96-08, November 10, 2000).

¹² ISP traffic is asymmetric because dial-up Internet access involves subscribers calling the local point of presence (POP) for the ISP. If this POP is a CLEC customer, then all of those modem calls represent terminating minutes for which the ILEC owes a reciprocal compensation payment.

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BOCs as competitors, but they expected that this competition would take place on a more level playing field, as promised by the TA96. And, if the ILECs did seek to abuse their market power, the TA96 would provide the CLECs with shelter and, as in the case of

reciprocal compensation, with an opportunity to give the incumbents a dose of their own medicine.¹³

II.D Tauzin-Dingell bill seeks to relax line-of-business restrictions prematurely

The Tauzin-Dingell bill, however, now proposes to set aside some of the most important line-of-business restrictions imposed on the BOCs immediately – that is, *before* their markets have been adequately opened to competition. This premature relaxation of the TA96 competitive provisions will make it even less likely that the TA96 framework will be put in place as promised and as relied upon by CLECs. By seeking to limit the role of the FCC and state PUCs to regulate communication services, the Tauzin-Dingell bill weakens the effectiveness of regulatory oversight and increases regulatory uncertainty. Supporters of the Tauzin-Dingell bill seek to hide these profound effects by seeking to characterize it as only a marginal change in existing policy, applying only to a subset of emerging markets where the BOCs' market power does not extend. As we explain below, if released from the line-of-business restrictions, the BOCs would be able to exert substantially more monopoly power over high-speed data services and Internet

¹³ Note, the incentive for CLECs to preferentially seek to serve customers with predominantly terminating traffic only arises with reciprocal compensation if interconnection rates are set above economic costs. The ILECs reasonably anticipated that the CLECs would be adversely harmed by above-cost rates because of the higher financial risk posed by the contingent liability associated with reciprocal compensation payments, but failed to anticipate how these rates might impact ILECs once the CLECs were able to attract significant numbers of ISPs as customers.

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access. Moreover, the regulatory treatment of these markets is not readily separable from the regulatory treatment for traditional telephone services.

II.E Internet Access, High-speed Data, and Telephone Markets Are Not Independent

The Tauzin-Dingell Bill, as noted, is premised on the assertion that interLATA high-speed data and Internet access are unique and separate markets – distinct from voice telephone service. If this were true, it would lend credence to the belief that an exemption applied to these services would not affect the implementation of the TA96 with respect to traditional telephone services. However, the markets for these services are not unique. First, many of the facilities used to support telephone, Internet or other data services are shared. This is especially the case for the bottleneck last-mile loop facilities. The whole logic behind pricing unbundled elements at TELRIC was that it sidestepped the problem of allocating shared costs by assigning them to the underlying facility. The Tauzin-Dingell legislation, if approved, would appear to reintroduce *service*, rather than element-based cost allocation and, hence, would recreate the cost-sharing allocation problem (with all of the attendant risks of cross-subsidization, etc.).¹⁴

Second, these markets are not distinct from an investor or carrier perspective. No network provider today would invest in a telephone-only, facilities-based network; however, some might invest in a data-only network. Data traffic is what is driving network investment decisions in shared facilities.

¹⁴ For example, if the subscriber already pays the full TELRIC cost of the loop for telephone access then an ILEC that gets to use the loop to provide xDSL has an incremental facilities-cost of zero.

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Third, there is no reason to believe that the cross-price elasticity between telephone services and Internet access or high-speed data services is zero, which is the standard economic basis for determining that two markets are independent. In Europe, where consumers have measured (for example, per-minute) service, the high price of

local calling is widely regarded as a significant deterrent to Internet adoption.¹⁵ In the US, where the norm is to set a flat monthly fee for unlimited local telephone calling and for dial-up Internet access (usually reached via a local telephone number), it would be harder to measure the cross-price elasticity, but this does not mean local and Internet service are unrelated. With a lack of sound empirical evidence to the contrary, it seems that the natural presumption would be that the markets are closely linked since telephone services are either a necessary input (dial-up access to reach an ISP POP or loop facilities to support CLEC-provided xDSL) or substitute (e.g., email versus voice mail, Voice-over-IP versus POTS).

Fourth, the well-noted trend of convergence implies that even to the extent traditional markets for communications services (and service providers) are distinct and separate, this separation will be short-lived. We are moving rapidly to a world of converged networks that will use the Internet (TCP/IP) as the common infrastructure to support multimedia communications across multiple infrastructure platforms (i.e., video, voice, and data sharing the same packetized bitstream pathways across wireless, cable, and traditional public switched telephone network (PSTN) facilities). The anticipation of

¹⁵ Paltridge, S., "Information Infrastructure Convergence and Pricing: the Internet", Information Infrastructure Convergence and Pricing: the Internet, Organization for Economic Cooperation and Development, Paris, 1996. OCDE/GD(96)73.

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this converged voice/data world supports the belief that local services are no longer a natural monopoly and will be able to sustain multiple facilities-based competitors in the future (using a mix of technologies). Many CLECs have business models that have sought to take advantage of this anticipated world. Until such time as the TA96 openaccess

rules are implemented, these CLECs have been pursuing niche strategies under the umbrella afforded by the TA96 line-of-business restrictions to establish themselves as sustainable competitors. High-speed data services and Internet access may be thought of as distinct from voice telephony services only to the extent this convergence has not yet been fully realized.

II.F Tauzin-Dingell Bill Would Effectively Gut the Telecommunications Act of 1996

The Tauzin-Dingell bill seeks to represent itself as not being in conflict with the implementation and goals of the TA96 with respect to promoting competition in telephone services, but, in fact, the bill is in substantial conflict. The Section 271 provisions were intended to provide a carrot to induce the BOCs to comply with the procompetitive unbundling and total service resale provisions mandated by the TA96. The Tauzin-Dingell bill obviously weakens whatever inducement Section 271 might have been expected to provide. Moreover, the bill directly circumscribes FCC and state authority under the TA96. The TA96 called for unbundling at "every technically feasible interface," and it assigned to the FCC authority to establish pricing guidelines. The Supreme Court affirmed the FCC's jurisdiction under the TA96, although it will review the legality of the TELRIC standard this October. The Tauzin-Dingell bill would preempt this review by imposing limits on the FCC's ability to set pricing guidelines for unbundled network elements. The Tauzin-Dingell bill, therefore, substantially rolls back

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the requirements of the TA96 by exempting what is believed to be the fastest-growing

and most promising segment of communication service markets – that is, data services. In gutting the TA96, the Tauzin-Dingell bill would substantially deregulate BOCs before their monopoly power has been effectively limited by competition. This step would break the regulatory compact into which investors and carriers entered with the passage of the TA96 and likely lead to the demise of most CLECs. With the substantial relaxation of the unbundling provisions of the TA96, the BOCs' ability and incentives to engage in anticompetitive efforts to protect their monopoly profits and to leverage their power into adjacent markets would be enhanced. A key focus of this effort would be Internet access services, which offer the attractive prospect (from the ILEC perspective) of both additional revenues and exclusion of potential competitors for core services (e.g., CLEC-offered Voice over IP).

II.G CLECs Are Necessary for Competition to Thrive

As noted above, it is clear that there can be no competition without competitors. With diminished hopes that the BOCs might offer each other effective competition, the focus for assessing competition must turn to the CLEC industry. Therefore, an assessment of CLEC prospects is crucial to an overall assessment of competition in communications services. The stakes are high. The United States cannot simply return to the pre-TA96 world, where the impact of monopoly power was limited to local services. The rise of the Internet, e-commerce, and the BOC mega-mergers have changed the communications landscape. The potential for harm to the US economy in the form of reduced competition in all telecommunications sectors—higher prices and reduced

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consumer choice—is greater because of (1) the increased market power of the BOCs, (2) the increased importance of communications services to the overall economy, and (3) the diminished prospects for future competition in local services if the current crop of CLECs fails.

II.H Regulatory Uncertainty, Incentives to Invest, and the Tauzin-Dingell Bill

The regulatory uncertainty created by the attempt to thwart the TA96 with the Tauzin-Dingell bill is bad for investment. Because the regulatory regime is such an everpresent factor in telecommunication services, at least for the foreseeable future, the regime can have an important impact on incentives to invest. Technical innovation in telecommunications is rapid, and network assets involve substantial lumpy and long-lived investments. Increased uncertainty raises risk premiums associated with these investments which translates into a higher cost of capital to compensate investors for the greater risk posed by the uncertainty.

The impact of uncertainty is further accentuated if the investments will be largely sunk; that is, the investments are not readily reversible, meaning that both entry and exit barriers are high. When considering irreversible investments in the face of uncertainty, the firm's best decision is often to wait to see how the uncertainty resolves itself before the firm commits to invest. Because a substantial portion of investments in local telecommunications infrastructure are likely to be sunk, the decision to invest ought properly to consider the real option value associated with deciding not to wait until uncertainty is resolved. When an investor delays an uncertain irreversible investment, she may learn that the investment is ill-advised (e.g., demand is less than anticipated) and

hence decide not to proceed and thereby avoid incurring sunk costs. Investing early kills this option, and the greater the uncertainty about future events, the more expensive it is to invest early. *Ceteris paribus*, a higher hurdle rate means that less investment will occur, and the effect gets bigger with increased uncertainty.¹⁶ Therefore, the impact of greater regulatory uncertainty is likely to be especially severe in the context of telecommunications, substantially raising the effective cost of capital for investments.¹⁷ It is clear that the high uncertainty introduced by the Tauzin-Dingell bill is exactly the type of force, that would squash investment. This nexus raises the possibility that the BOCs are purposefully lobbying heavily for numerous regulatory and legislative changes because they are well aware that uncertainty about those changes can *itself* accomplish the job of slowing CLEC investment. This strategy may explain why numerous new bills are continually filed on the ILECs' behalf. These games can have their negative effects even if the legislation is eventually overturned.

CLECs are especially vulnerable to the effect of uncertainty because they are more likely to be cash-starved as they seek to build-out their infrastructure and to fund the high costs of market entry than are the ILECs, and especially, the new mega-BOCs. The ILECs are better able to fund investment from current revenues (and may be able to

¹⁶ See, for example, Dixit and Pindyck, *Investment Under Uncertainty*, Princeton University Press, Princeton, 1994.

¹⁷ While these models have been applied in many contexts, the potentially significant impact of increased uncertainty on incentives to invest in telecommunications infrastructure was raised pointedly by Professor Jerry Hausman, in testimony he filed in support of BOC arguments against pricing unbundled elements using a traditional regulatory incremental cost standard. Professor Hausman argued that failure to account for this effect could result in an understatement of the effective opportunity cost of capital—or equivalently, hurdle rate for investment—by a factor of two. (See *Reply Affidavit of Jerry A. Hausman*, In the

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cross-subsidize from protected markets). Because of their smaller size, limited track record, and greater need for financial resources, active and potential CLECs suffer disproportionately when regulatory uncertainty contributes to raising the costs for financial capital.¹⁸ Indeed, the BOCs are certainly aware of this disparity, and they know that simply delaying compliance with the TA96 increases the pressure on the CLECs because it forces them to face higher costs in the near term, and higher capital costs because of increased uncertainty and diminished prospects for their future. Meanwhile, the BOCs continue to earn monopoly profits, while seeking new regulatory relief to leverage their power into new markets.

Finally, because most of the CLECs are dependent on the TA96 provisions for their survival, any threat or uncertainty about adequate enforcement of the procompetitive provisions diminishes their prospects for market success and contributes to raising their cost of capital. This phenomenon is already having its effect on the CLECs as is clear from a series of announcements from many of the participants in the industry, as we will see in the next section.

III. Evidence

In this section, we investigate whether there is evidence supporting the analysis above that suggests that CLECs will suffer if the Tauzin-Dingell bill becomes more likely

Matter of Implementation of Local Competition Provisions in the Telecommunications Act of 1996, CCDocket

No. 96-98, May 30, 1996.)

¹⁸ The threat of failure can be a self-fulfilling prophecy. As the risk of bankruptcy increases, the cost of

capital increases. Without access to capital to fuel their investment and market entry strategies, the CLECs cannot survive.

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to pass. We first look at investment plans, and then consider an event study that explores the impact of the bill on share prices.

III.A Investment plans

CLECs have been scaling back expansion plans, delaying equity financing because of their higher cost of capital, and cutting costs in order to preserve dwindling cash resources. As Table A demonstrates, at least two dozen CLECs have publicly announced plans to scale back investment and/or reduce manpower to deal with the worsening financial situation facing the industry. In just the last few months, Birch Telecommunications, CoreComm, Covad, New Edge, and XO, among others, have announced plans to lay off employees or reduce investment in a desperate effort to cut costs. For example, XO announced a \$2 billion reduction in its investment plans. Such reductions will have a major impact on the ability of these companies to contribute to the construction of the alternative local infrastructure that must exist for local services ever to become effectively competitive. Other CLECs have filed for Chapter 11 bankruptcy protection, including e.Spire, ICG, Northpoint, Teligent, and Winstar. The situation is so bad that the trade publication DSL Reports is maintaining a CLEC/ISP deathwatch (see Table B). Some CLECs, however, have been able to secure additional financing and are acquiring the assets of their less fortunate rivals at fire-sale prices.

For the industry to survive, CLECs need to be able to establish facilities of a minimum efficient scale and coverage to compete adequately with the ILECs. Staying small is not an economically viable option because of the importance of scale and scope economies in this sector, and establishing an appropriate scale of operations requires a

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substantial commitment to investment. In most cases, the CLECs' current attempts to reduce costs by cutting staff and scaling back investment are not efficient responses to competition, but drastic efforts to survive until financial markets might become more favorable for them. Reducing regulatory uncertainty by rigorously enforcing the TA96 provisions would help lower the cost of capital facing CLECs. Instead, the Tauzin-Dingell bill increases that uncertainty.

III.B Without CLECs, ILEC Incentives to Invest in Advanced Services Are Diminished

If the CLECs are driven from the field, then ILECs' incentives to invest in advanced services will be reduced. When the TA96 was originally passed, it was hoped that the BOCs would offer each other significant competition. Nynex would be forced to enter Bell Atlantic's territory, and vice versa, to counter the obvious competitive threat each presented the other. Similarly, SBC could be expected to compete against Ameritech. Of course, this has not happened. The BOCs correctly understood that merger was mutually more profitable than competition. Today, there are just four remaining BOCs, each bigger and stronger monopolists than they were following divestiture or even passage of the TA96. These mega-BOCs are even pulling back from the limited commitments they made to offering out-of-region local competition -- commitments that were a condition for approval of their mergers.¹⁹ If the new, stronger BOCs will not

¹⁹ See Rohde, David, "Bells are failing to compete as they promised," *Network World*, March 5, 2001; Douglass, Elizabeth, "Verizon to Pull Plug on OneSource Service Plan," *Los Angeles Times*, February 26, 2001, Page C1; *Scope of Competition in Telecommunications Markets of Texas*, Report to the 77th Texas

Legislature, Public Utility Commission of Texas, January 2001; or, Horn, Patricia, "SBC trims plans for expansion," *Philadelphia Inquirer*, March 3, 2001.

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honor even their commitments to compete against each other out-of-region, why should we believe they would be more aggressive in deploying advanced services.

It is important to note that Internet and broadband access services were pioneered not by ILECs, but by CLECs, ISPs, and other firms that are now threatened by the Tauzin-Dingell bill. Certainly, the ILECs' record with respect to deployment of ISDN services and, since 1996, the deployment of xDSL services has been severely inadequate. In many cases, xDSL deployments by ILECs occurred only subsequent to offerings of cable modem services. Also, even if we accept, *in arguendo*, that BOC investment will increase, this investment will likely crowd out investment by CLECs, which will find it even less desirable to compete against an entrenched monopolist subject to substantially lighter regulatory oversight than under TA96.

III.C Event Study Shows Tauzin-Dingell Bill's Harm to CLEC Stock Prices

In this section, we demonstrate the extent to which the share prices of CLECs have responded in a statistically significant fashion to news about the Tauzin-Dingell bill. The forces described in the previous sections suggest that the probability of bankruptcy should increase dramatically for CLECs if the Tauzin-Dingell bill becomes more likely. Such an increase should feed through to the share prices of CLECs.

Moreover, because uncertainty about the Tauzin-Dingell bill works to suppress CLEC investment, as we documented in the previous section, then it ought to also suppress the growth of revenues, and again lower CLEC stock prices.

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To investigate whether a strong statistical link between the fate of the Tauzin-Dingell bill and CLEC prices exists, we performed an event study. Through news searches and interviews with persons familiar with the legislative process, we constructed a list of possible "news days" for the Tauzin-Dingell bill. We then gathered daily stock market data for CLECS, and then performed two separate tests. First, for each firm's share price we identified "large movement" days and investigated whether these coincided with significant news concerning the Tauzin-Dingell bill. For each firm, we defined a "large movement" day as one where the share price swung more than two standard deviations from the mean average movement over the previous 100 days. We then aggregated these observations, and identified a day as a "large movement" day for the CLEC industry if more than 10 percent of the sample experienced statistically significant moves. Second, we constructed a CLEC aggregate stock index, and identified the days that had movements more than two standard deviations away from the mean movement for the previous 100 days.

Of course, the extent to which market movements are timed with the release of news is often ambiguous. For example, Huberman and Regeu, in a recent study, found that the share price of Entremed increased dramatically on a day that the New York Times reported results of experiments that were previously in the public domain.²⁰ Apparently, the wide dissemination of the news was enough to create a buying frenzy. For our purposes, we considered both the possibilities that share prices would move the day that an event occurred and the following day, when news coverage provided industry

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expert's analysis of the previous day's events. Alternatively, hearing rules often require

that testimonies be provided prior to the hearing so that they can be broadly distributed. To the extent that a hearing is newsworthy, it could be that the day before is a news day. Because of this, we also looked at the possibility that hearing movements occurred prior to the hearings. We are careful to document the timing of each stock market move, and the reader can judge for him or herself the extent to which the coincidence is noteworthy. If the Tauzin-Dingell bill were favorable to competition, one might expect it to positively impact CLEC prices. The opposite is true. Table C lists the days where CLECs experienced significant negative stock price movements. The table suggests two conclusions. First, there is general agreement between the two methods concerning the dates of statistically significant negative swings. Second, positive news about the Tauzin-Dingell bill has a devastating effect on CLEC share prices. For example, on April 3, 2001, Rep. Tauzin, who is chairman of the House Commerce Committee, remarked on his warm feelings toward incoming FCC Chairman Michael Powell, and announced his plan to introduce his bill after Easter break. In response, a bloodbath occurred, with 14 of the 38 CLECs in the study posting negative movements greater than two standard deviations away from their mean movement over the previous 100 days. The following day, when news coverage emphasized that the legislation was going to move forward quickly, another negative stock market event is identifiable in the data.

²⁰ "Speculating on a Cure for Cancer: A Non-Event that Made Stock Prices Soar," Huberman, Gur, and Tomes Regeu, Columbia Business School working paper.

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Such patterns are observable earlier as well. As described in more detail in Appendix A, the Tauzin-Dingell bill has existed in some form in previous years, so there are many other events that can be investigated. For example, on April 11, 2000, the House Telecommunications, Trade and Consumer Protection Committee held hearings on the issue of broadband deployment. The collective market value of CLECs plunged the day before the hearing, the day of the hearing, the day after the hearing, and again a third day after the hearing, when the United States Telecom Association announced that they supported the bill, and that it was approaching 200 cosponsors for the bill. On March 29, 2000, Rep. Tauzin argued in a House Telecommunications Subcommittee meeting that high-speed Internet legislation should be promoted. Both our methods found that markets moved down significantly when they opened the next day, when news coverage focused on Tauzin's comments regarding the bill. Numerous other events are documented in the table. This evidence suggests that even when one considers all of the other forces buffeting the CLECs, pro-BOC measures, such as those included in the Tauzin-Dingell bill, have a strong negative impact on the CLEC industry that can ill afford to suffer additional adverse financial effects.

How important were these days? To find out we constructed an index of the aggregate market capitalization for all CLECs in our sample. The total value of these CLECs as of March 14, 2000, the day before our first event, was about \$242 billion. As of May 10, 2001, this value had dropped to about \$38 billion, an 84 percent decline. (This compares with a decline of only 9 percent for the Standard & Poor's 500-Stock Index over the same period and a decline of 48 percent for the Nasdaq Composite Index with CLECs eliminated.) We then calculated the proportion of that reduction that occurred

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specifically on days that were associated with this legislation. The answer was striking. The total decline in the market capitalization of CLECs that occurred on the days listed in

Table C was about \$95 billion. Fully 46 percent of that extraordinary decline in value can be explained specifically by Tausin-Dingell event days.

IV. Conclusions

The Tausin-Dingell bill is bad for telecommunications competition; thus it is bad for consumers and for investment in communications infrastructure. The CLEC industry emerged based on the promise that the TA96 would finally create a level playing field that would allow competition for local services. Investors staked billions on the bet that the opening of local markets would create vast opportunities for communication service providers, and, indeed, it looked for a while like that might be the case. Unfortunately, the TA96 has not been implemented as promised, and the CLECs that have counted on its provisions have found their prospects growing dimmer. Meanwhile, the BOCs have succeeded in strengthening their monopoly power through mega-mergers that have substantially increased the total share of lines controlled by the largest of the BOCs, SBC and Verizon. The BOCs know that if regulatory enforcement of local competition rules remains a waiting game, they will surely win. The uncertainty and lack of access to essential facilities on a non-discriminatory basis have raised the cost of capital to CLECs to the point where they are being forced to scale back their operations, reduce planned investment, and, in many cases, enter bankruptcy proceedings.

The Tausin-Dingell bill is seeking to eliminate important line-of-business restrictions, supposedly in the interest of increasing consumer choice and accelerating

investment in advanced communication services. The bill purports to be deregulatory, but it is exactly the opposite. Relaxing regulation on the ILECs, and especially the largest of these, the BOCs, will only enhance their growing market power and accelerate the demise of the CLEC industry. If the CLEC industry ceases to be viable, the US will have to return to public utility regulation of the local telephone network because it is simply not an option to allow the communication lifelines for modern businesses to be under the control of deregulated monopolists. As the results of the event study presented in this paper demonstrate, the Tausin-Dingell bill is speeding this day by heaping further harm upon the CLEC industry.

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Table A: CLEC/ISP Events

(Sources: Trade Press, Press Releases, News)

Date Company Event

16-May-01 PSINet Announces will not pay dividend and considers bankruptcy.

11-May-01 Teligent Announces 37% reduction in employment (900 jobs) as struggles with financial problems.

07-May-01 @Link Networks Shuts down operations and announces plan to liquidate assets.

04-May-01 CorrComm Ltd. (Ohio) Announces plans to eliminate 210 employment positions

26-Apr-01 @Link Networks Chapter 11. Service area cutbacks begin May 31. Company wasn't able to make payments for past services delivered.

26-Apr-01 XO Communications Will cut back its expansion plans by \$2 billion.

25-Apr-01 Winstar Communications Announces Nasdaq delisting.

23-Apr-01 Covad Receives delisting notice from Nasdaq. Company has enough cash to last through first quarter of 2002. Is shifting gears to emphasize achieving profitability rather than focusing on rapid growth.

18-Apr-01 Winstar Communications Enters Chapter 11.

17-Apr-01 Winstar Communications Is considering chapter 11. April 5 it said it would halt domestic and international expansion of its network for the rest of the year. Will cut workforce by 2000.

02-Apr-01 Rhythms Netconnections Announces hiring investment bank Lazard Freres, Inc. to investigate plans to sell company, restructure, or sell assets to get through financial woes. Notice received from Nasdaq regarding potential delisting of stock.

30-Mar-01 Northpoint Communications
Lays off 700 employees.

28-Mar-01 Northpoint Communications
Shuts down its operation. Seeking to liquidate assets under Chapter 11.

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Table A: CLEC/ISP Events (cont)

Date Company Event

23-Feb-01 Birch Telecom Cuts 18% of total workforce. Kohlberg Kravis Roberts & Co is negotiating terms to make \$10 million investment in the company. KKR previously invested \$110 million and owns 51%. Job cuts occurred in conjunction with investment.

23-Feb-01 ConnectSouth Will cease operation by end of March 2001.

22-Feb-01 New Edge Networks Cuts 55 workers and scales back operations. Company plans to take the money it saves from planned future DSL expansion and invest it in its nationwide asynchronous transfer mode (ATM) network.

16-Feb-01 CoreComm Ltd. (Ohio) Will cut 175 jobs as part of cost-cutting maneuver. Has made the decision as part of review of company after acquisition of ATX Communications and voyager.net. Most of cuts are in operations information services and administrative roles.

29-Jan-01 Convergent Has completed sale of its voice integration operations to Inter-Tel. Convergent currently estimates that selling the voice intergration operations will allow it to reduce its monthly

recurring cash burn by approximately \$3 million.

19-Jan-01 Net2000 Announced that it has initiated several activities to extend its existing funding into the third quarter of 2002. Activities are expected to result in 2001 cash savings of at least \$80 million resulting from reductions in capital expenditures, operating costs, and interest expense.

15-Jan-01 BTI Telecom (BTI) Received \$20 million capital infusion from chairman, Loftin, and WCAS (investment fund managed by NY-based firm). Announced that it has cut 70 workers as part of restructuring. BTI will use money for general working capital and capital expenditures.

11-Jan-01 Adelphia Reduced national staff by 8%. It acted as a result of company's revised network expansion plan.

09-Jan-01 ICG Announces layoff of 500 of 2,262 employees.

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Table A: CLEC/ISP Events (cont)

Date Company Event

29-Dec-00 Covad To reduce operating costs in 2001 by 20-30%. Staff reduced to 400.

22-Dec-00 2nd Century

Communications

Slashes staff and expansion plans. Cut to just five markets.

21-Dec-00 DSL.net Cost containment and workforce cuts announced.

Ceo says "we'll look at opportunities to acquire lines from companies leaving the business. Focus is on growth, while conserving capital resources."

End of the year 2001 forecast: capital expenditures expected to be approximately \$10-12 million.

18-Dec-00 Adelphia Plans to sell almost 1 million subscribers in nonstrategic market.

15-Dec-00 RCN Corp. Will focus on building networks where it already does business and shelve plans to develop new broadband markets.

14-Dec-00 Adelphia Announced changes in its network-expansion plan, capital-spending plan and projected operation results for 2001. Reduced its expansion plan from target of entering 175-200 markets to 75-80. As result, Company reduced its estimated capitalspending plan from \$675 million in 2001 to between \$450-\$500 mill.

13-Dec-00 Covad Slashed goal for DSL installation by one-third to break even faster and conserve cash.

07-Dec-00 HarvardNet Will stop DSL service and fire more than 50% of

staff. Dumping DSL was aimed at conserving cash and continuing growth of the business. Focus of operations is now Web-hosting and managed services business.

04-Dec-00 DSL.net Will cut nearly one-third of workforce to cut costs and give more time to raise additional capital.

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Table A: CLEC/ISP Events (cont)

Date Company Event

28-Nov-00 Covad Will reduce operational spending and cut 13 percent of work force.

14-Nov-00 ICG Chapter 11. Files for bankruptcy.

07-Oct-00 ICG Cut expected revenues for second half by one-fourth and for 2001 by one-half. Cuts came amid problems such as network outages and other technical failures.

03-Oct-00 McLeod USA To acquire Caprock Communications. Companies reached agreement on \$100 million commercial loans to facilitate company operations.

04-Aug-00 Advanced Telecom Group Withdrew IPO. Had planned to use the net proceeds from the IPO for market expansion, including switch-related equipment, fiber networks, information systems and fixtures.

06-Jul-00 FirstWorld Announces it'll miss analysts' expectations. Expectations are blamed on slower-than-expected ramp up of sales and greater expense for the company's Internet data center and increased competition for DSL service.

27-Apr-00 Birch Telecom To hold off IPO.

10-Mar-00 GST Telecommunications To cut 100 positions to reduce costs.

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Table B

DSL Reports ISP/CLEC Company Deathwatch

(see: <http://www.dslreports.com/shownews/820>, May 16, 2001)

DSL Specialist ISPs/CLECs in Chapter 11 or closing

Reflex communications End of March - suddenly closed and shutdown. Building managers forced to seek alternatives, leaving customers stuck without many options.

IBS Networks Filed for Chapter 11. Posted notice on their site.

connectsouth Funding has run out, closing over the last week of Feb. 3000 customers many lose their lines.

Savvis 46% Owned by Bridge Information systems, and Bridge is its biggest customer. Bridge is in bankruptcy proceedings. (Feb 7th)

Darwin Networks After getting \$91 million in funding last year, backed by Cisco as well, it went Chapter 11 in January 2001 after a

drastic staff cutback in December 2000.

Vitts Ran out of funding, now in Chapter 11, causing another loss of SDSL options in the north east.

JATO After a re-focus to south-west and south central area, is now shutdown entirely, leaving its customers to find another provider.

Maverix.net Closing down, due to lack of funding.

Picus communications In Chapter 11

Relaypoint Now in Chapter 11

ICQ Communications Now in Chapter 11, delisted from NASDAQ.

Zyan In Chapter 11.

Flashcom In Chapter 11. Rhythms residential lines go to Earthlink.

Northpoint residential lines go to Telocity. Business lines beng moved to XO communications.

Fastpointcom.com In Chapter 11 (although its website gives no hint of this).

Covad obtained control of Covad lines to switch to other ISPs.

Digital Broadband

Communications

Lays off 85 percent of its staff. Now in chapter 11.

Bazillion Bazillion is no longer selling DSL, and has redirected customers to Speakeasy. (12.22). No published plans yet for existing customers (12.26). Bazillion subscribers told game over. Bazillion closes (01.12).

PSN Lost its relationship with CLECs and customers are being told to switch. Afterwards, PSN died completely.

Vectris Update: Shutting down and shedding most staff in Austin by Dec 15, 2000, as the search for funding fails. Filed chapter 11 in January.

DSL specialist ISPs closing with limited fuss, or changing business focus

Onvoy Handing all DSL customers to Earthlink. (by March 10, 2001).

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Exario Has sold its DSL lines and customers to DSL.net, to concentrate on the business VPN market (like internetconnect). (03/01). Recently received new funding for its new focus.

Phoenix Business lines acquired by Megapath. Residential lines shifting to Telocity.

DSL Specialist ISPs in trouble or cutting back

CapuNet Layoffs to reduce costs in the face of investors going cold on the whole sector. (03/01)

SpeedDSL LMKI tried to pull the plug on what they claimed is a "nonpaying reseller," however SpeedDSLgot a restraining order against LMKI to force them to continue service at least for the interim.

InternetConnect Laid off 19% of staff. To concentrate on the business vpn

market. The top management of internetconnect are ex-Nextel, (a company embroiled in a huge race discrimination suit), the rest are ex isp channel, which has basically collapsed recently.(12/19/00)

Internet Express Covad Safety net is offering to electronically switch Covad Internet Express customers to "Covad Direct" at the customers request as long as the customer agrees that they may be breaking contract with the ISP if they do so. Covad/northpoint have evidently cut their relationship with this ISP. Frustration for customers as Covad.net provides little details on new prices (they are not going to be the same) or contract details.

(12/26/00)

BigNet In the same boat as Internet Express. Covad Safety Net is quite willing to switch any customers to Covad Direct if they absolve Covad of any legal tangle.

DSL Networks DSL Networks has laid off 50% of staff and closed down all offices except for San Fran head office. Lost ability to provide or sell Covad and Northpoint lines, Covad shut them off in Febuary, stranding customers. Northpoint shutting them off repeatedly (March news).

winfire/freedsl Split into three groups now. Uncertainty over whether they can continue.

Facilities based (CLEC) ISPs in trouble

PathNet Filed for Chapter 11, April 2, 2001.

HarvardNet In a surprise move, giving up DSL entirely.

Red (aka Red Connect) Closed down a while ago, but now is the time the customer lines get turned off. And turn off they did.

NorthPoint Now in Chapter 11. Network broken up and closed down completely at end of March.

Covad Shares recovered slightly to just below \$2, staff reductions across the board. Will need to pull good news out of the hat

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soon or face a fate similar to Northpoint. Has setup very public project "Safety Net" to shift lines from failing ISPs to stronger ones.

Rhythms Cost reductions info here. More news: April 2nd sees NASDAQ delisting threat and outside help to explore strategic options.

Network Access

Solutions

Stock in same bog as Rhythms and Northpoint, below \$1, on funding concerns.

MPOWER

Communications

A dark horse selling a fairly unique VODSL product. Despite the inevitable quarterly losses, their cash burn rate appears to

be considerably lower than other CLECs, with a good amount of money in the bank as well.

Surviving DSL Specialist ISPs

SPEAKEASY Claim to be comfortable with their cash burn and cash reserves for 2001, hope to expand faster.

Megapath Claim to be comfortable with their cash burn and cash reserves, hope to expand (business lines) faster. Northpoint lines redirected to Rhythms. Now has relationship with Telocity to pass pure residential customers.

National ISPs not depending only on broadband

XO Communications Also putting temporary stop to Northpoint orders and redirecting them to others.

Earthlink Lost \$80m last quarter, but with considerable cash reserves, supported by their narrowband and webhosting business.

Broadband still a small fraction of their overall revenue, but growing.

Sprint Its products even compete with one another, but it will continue tweaking its ION and wireless products for the foreseeable future.

AT&T Broadband Despite difficulties at AT&T, they well positioned to advertise their DSL options as "reliable".

uu.net Offering an incredible 6 months free on business DSL lines with long contracts.

Prodigy Undergoing management turmoil under the uncertain hand of SBC. Needs constant cash from them to keep operating.

Telocity Update: Telocity made it. Bought by Hughes (DirecTV). With 23-30 thousand subscribers now, picking up more from distressed isps, lost a stunning \$38m last quarter on operations, and have \$70m or so in cash reserves.

Publicly listed DSL specialist ISPs with low stock prices

LMKI Changed its name and was effectively bought out by a new management team. Now known as Myrient Inc.

DSL.net Just announced a cut of 28% of its workforce. Another announcement (12/19) of a \$5m restructuring charge. Another company in cash preservation mode. April 2nd saw them also saw doubts raised by PWC over their ability to continue as a
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going concern.

CAIS Lost a pile of money last quarter, but got a lifeline from its preferred hardware supplier CISCO who made a timely purchase of ISP related software from them. April 3rd - staff layoffs of 17%.

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Table C: CLEC Market Prices and Regulatory Events

Method 1:

Major

Movement

**(high
frequency) of
CLEC Firms
Method 2:
Major
Movement of
CLEC Index
Frequency of
Negative Move
(Method 1)
Event Description**

March 15, 2000 Yes Yes 5

In a House Telecomm subcommittee meeting the previous day, Reps. Tauzin and Dingell push for reform of

the FCC by sponsoring Rep. Pickering's proposed bill to reform FCC merger authority. Pickering's suggestions would streamline the merger process while simultaneously forcing the FCC to treat firms equally. The bill introduces the possibility that large consolidations will reduce competition and threaten CLECs. News coverage is heavy the next morning.

March 20, 2000 Yes Yes 6

Rep. Dingell, in an article for Roll Call describes how the Telecommunications Act of 1996, "did little to create the proper environment for the deployment of broadband, or high-speed, Internet services." He then purports that this "monopoly doesn't have to happen" and outlines an earlier incarnation of the Tauzin-Dingell bill. Tauzin publishes similar piece.

March 30, 2000 Yes Yes 5

A day earlier, Rep. Tauzin testifies before the Senate Commerce Committee, promoting the high-speed Internet legislation. News coverage focuses on the urgency with which Tauzin plans to pursue the bill.

April 10, 2000 Yes Yes 10

One day before key House Telecommunications, Trade and Consumer Protection Committee hearing. Former White House Press Secretary Mike McCurry and former Rep. Susan Molinari discuss results of iAdvance study that finds a large digital divide. An article published on April 10, titled, "iAdvance Pumps Up Dingell-Tauzin Broadband Bill," describes strides in the fight to allow Baby Bells and ILECs into the long distance high-speed data market, with several strongly worded Tauzin quotations.

April 11, 2000 No Yes 2

Day of hearing.

April 12, 2000 Yes Yes 16

The Day after the hearing. News coverage reports that Reps. Tauzin and Dingell made firm comments about

their plans for broadband legislation. Tauzin was quoted as commenting that "the lack of access to highspeed

Internet may kill, destroy [opportunities]."

April 14, 2000 Yes Yes 17

Reverberations of hearing still being felt. The United States Telecom Association (USTA), an advocate for ILECs, announces support for H.R. 2420, the Internet Freedom and Broadband Deployment Act. The group's president, Roy M. Neel, noted that "we're approaching 200 co-sponsors on this bill, which has more support than any telecom initiative we've seen in years" and that he "would like to think" that when the 200 mark is reached, "Chairman Bliley would give it a fair shot and mark up the bill."

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Table C: CLEC Market Prices and Regulatory Events (cont)

Method 1:

Major

Movement

(high

frequency) of

CLEC Firms

Method 2:

Major
Movement of
CLEC Index
Frequency of
Negative Move
(Method 1)

Event Description

April 3, 2001 Yes Yes 14

FCC chairman Powell called on Congress to bolster his agency's enforcement powers, before the House Commerce Telecommunications Subcommittee the previous day. Rep. Tauzin praised Powell and stated that under the new chairman, he expects the FCC to "become an agency that fosters innovation and investment rather than one that inhibits the deployment of new services," and that he is tired of watching the

"disparate treatment of broadband services [which] stems from the different way we treat ILECs, CLECs, cable companies, satellite companies, and wireless carriers in the law." News coverage picks up that quote specifically.

April 4, 2001 Yes No 6

The market learns that the bill will be introduced. Articles report that Dingell "touted the broadband legislation he and House Energy and Commerce Committee Chairman W.J. (Billy) Tauzin, R-La., plan to introduce after the Easter recess as one mechanism that could aid Powell in reforming the highly criticized agency [FCC]."

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Appendix A

A Brief History of the Tauzin-Dingell Bill

On June 24, 1999, the House Commerce Committee's Telecommunications, Trade and Consumer Protection Subcommittee held a hearing on the deployment of data services. One week later, the *Internet Freedom and Broadband Deployment Act of 1999*, H.R. 2420, was introduced by co-authors subcommittee chairman Billy Tauzin (R-La.) and John Dingell (D-Mich.), ranking member of the Commerce Committee. Its stated purpose was to deregulate Internet and high-speed data services by allowing BOCs direct entry into such services. Over the next year, the bill gained support within the House, and by June 29, 2000, H.R. 2420 had gained 218 co-sponsors, a majority of members. In the meantime, several mergers had been approved, the largest ones being SBC-Ameritech (October 8, 1999), US West-Qwest (March 10, 2000), and Bell Atlantic-GTE (June 17, 2000). By late July, the House Telecommunications Subcommittee held a hearing on H.R. 2420, where members of the Association for Local Telecommunications Services (ALTS) argued that the bill would put competitive businesses at risk and would be unlikely to result in widespread deployment of broadband services.

With the elections approaching in early November 2000, the discussion of deployment of data services diminished, although speculation about appropriations riders kept the issue from disappearing altogether. On January 5, 2001, Rep. Tauzin was selected to chair the full House Energy and Commerce Committee, replacing Rep. Tom Bliley, an opponent of H.R. 2420, with Rep. Dingell remaining as ranking member. Two weeks following, Michael Powell, an incumbent commissioner, was selected as the new FCC chairman. On April 4, 2001, Rep. Tauzin expressed his confidence in Chairman

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Powell and linked him and the FCC to Rep. Tauzin's broadband legislation. On April 24, 2001, the Internet Freedom and Broadband Deployment Act of 2001, or H.R. 1542, was introduced.

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