

Taxing Telecommunication Service Inputs: Policy and Fiscal Implications

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Introduction

The telecommunications industry has experienced a major transformation over the past two decades. Beyond the breakup of AT&T, traditional telecommunication companies have experienced encroachment on their markets from new technology based enterprises, i.e., microwave, cable television, cellular phone, and voice-over-Internet (VoIP) companies. In addition, new switching and transmission technologies have changed the cost structure for the industry. Differences in how state and local governments tax the different types of telecommunication service providers has additional cost implications for the industry.

This paper focuses primarily on one aspect of the taxation of telecommunication companies by state and local governments, which is the subjecting of equipment purchases to state and local taxes. First, the paper addresses the policy considerations associated with subjecting telecommunication equipment purchases to these taxes. Second, the paper discusses issues associated with attempting to estimate the significance of revenues raised from these taxes for state and local government. Finally, the paper presents an estimate of the fiscal impact of exempting telecommunication equipment purchases from state and local sales and use taxes using Iowa as a case study.

Telecommunication Taxation Policy Issues

Recently, most of the attention on the taxation of the telecommunication industry has been focused on the services provided by telecommunications companies and other closely related enterprises, such as cable television companies. Included among these issues are:

- Federal excise taxes on communication services,
- The taxation of Internet access charges,
- The taxation of voice telecommunication services (VoIP) over the Internet,
- The taxation of digitally delivered products, and
- The taxation of bundled telecommunication and other Internet services.

The taxation of industry real property and equipment has not received as much attention either in the media or by legislatures. Nevertheless, according to a recent study completed by Ernst & Young for AT&T, of the \$16.5 billion paid in state and local taxes during fiscal year 2004 property taxes accounted for \$4.7 billion (28%) and sales and use taxes on inputs accounted for \$3.8 billion (23%) of the total.¹ Given that taxes on property and equipment purchases account for over half the industry's state and local tax burden, there are a number of other policy issues related to these taxes that also deserve consideration.

The most fundamental of these issues is whether tax policy has evolved adequately to reflect the transformation of the industry from when it was largely dominated by a regulated monopoly to the highly competitive industry it is today. Following is a list and discussion of related issues that more precisely frame policy considerations related to the taxation of telecommunication industry inputs.

Equity among Telecommunication Service Providers

The change in the competitive environment has largely been driven by new technology, i.e., fiber optics, wireless, and the Internet. The offering of similar

services via different technologies has resulted in different cost structures for different service providers. Property taxes and taxes on equipment purchases accentuate these cost structure differences. For example, in Iowa cable television and cellular telephone companies have their property assessed for property tax at the local level while traditional land-line companies have their property assessed centrally by the state. And although not yet an issue in Iowa, this could have implications for sales and use taxes on equipment purchases because centrally assessed property is not eligible of the sales and use tax exemptions allowed for industrial machinery, equipment, and computers.

Equity between Telecommunication Companies and Other Types of Businesses

Both nationally and within Iowa telecommunication companies take the position that they should be eligible for the same exemptions and other preferences as manufacturers. The 2004 Council on State Taxation (COST) study on telecommunication industry taxation found that while 37 states provide either exemptions or reduced sales tax rates for equipment purchases by manufacturers similar preferences are provided to telecommunication companies by only 17 states.² Furthermore, across the full spectrum of taxes, the Ernst & Young/AT&T study found that the effective tax rate for telecommunication companies during fiscal year 2004 equaled 11.79 percent, second only to utilities (17.97 percent), and over double that of finance and real estate companies (5.02 percent), manufacturers (4.89 percent), and retailers (4.06 percent).³

Manufacturer or Retailer

In order to promote manufacturing activity a number of states have enacted legislation eliminating or reducing taxes on personal property, which includes industrial machinery and equipment. With the same intent, some states have enacted exemptions from state sales and use taxes on purchases of industrial machinery, equipment, and computers. Iowa enacted legislation in 1994 that eliminated both property tax and sales and use taxes on these types of manufacturing inputs. The impetus for this legislation was an effort to attract a large Canadian steel manufacturer to the state. Furthermore, because of the importance of the insurance industry to Iowa the sales and use tax exemption for computer and related purchases was extended to home office operations of that industry as well. On the other hand, machinery, equipment, and computer purchases by companies largely engaged in retailing or providing services to non-business consumers are not eligible for the sales and use tax exemption in Iowa.

In this regard, Iowa telecommunication companies are treated the same as retailers. Based on the COST Telecommunications Taxation study, Table 1 summarizes how other states tax telecommunication company machinery, equipment and computers.

In several instances telecommunications companies have taken states to court in an attempt to be afforded the same sales and use tax exemptions as manufacturers. However, the courts have delivered a split decision as to whether telecommunication companies are manufacturers or retailers. In 2004 the Minnesota Supreme Court found that Sprint was entitled to the same exemption from sales tax on equipment purchases as applied to manufacturers. On the other hand, Sprint lost a similar case

in 2004 before the Kansas Supreme Court. Also, in 2002, the Tennessee Court of Appeals upheld a decision by the state's Commissioner of Revenue to assess sales and use taxes on central office equipment purchased by AT&T.⁴

Market Efficiency Implications

As with manufacturers, the case has been made that taxing the purchase of telecommunication inputs, particularly central office equipment and transmission equipment results in tax pyramiding. The argument against such taxation rests on the contention that since the services telecommunication companies provide to their customers are subject to sales and use taxes the inputs used to produce those services should be exempt from those taxes. This also remains a grey area because some states exempt tangible personal property for resale and intermediate inputs that get incorporated into a final product that is subsequently sold to others from sales and use taxes, but do not exempt machinery and equipment used in the production process. Iowa takes sort of a middle ground relative to telecommunications companies. Central office and transmission equipment are subject to the state's sales and use taxes, but telephone service purchased for resale is exempt.

Economic Development Implications

Another argument against subjecting telecommunication equipment purchases to sales and use tax is that this discourages investment in broadband technology, particularly outside metropolitan areas. In Iowa where much of the state is rural this argument has gained a certain amount of political support. Also, the significance of telecommunications services as an input to the financial services industry, has added support for treating purchases of telecommunications equipment the same as purchases of machinery and equipment by manufacturers.

Use of Public Services and Revenue Considerations

The flip side of the tax pyramiding and the economic development arguments for relieving the telecommunications industry of a portion of their state and local tax burdens is the argument these industries consume public services, and therefore should be expected to pay some of the cost of these services. There is strong justification for continuing to subject telecommunications assets to property taxes because whether telecommunications services are provide via land lines or using wireless technology they do make use of public lands and rights-of-way. Not including the cost of using these public assets in the cost structure of telecommunication companies would distort the marketplace.

The justification for continuation of sales and use taxes on equipment purchases rests largely on the argument that the industry and its employees consume a broad range of public services, most notably education services, and thus have a responsibility to pay some of the cost associated with providing these services. In the past telecommunication companies met that obligation through corporate income taxes as well as sales and use taxes, but in recent years payments of corporate income taxes have decreased dramatically. A further argument in support of continuing sales and use taxes on equipment purchases is that telecommunications companies are more like retailers than manufacturers. The direct competitors for the services provided by

this industry are general merchandise stores, restaurants, and entertainment venues more so than manufacturers located in other states or countries.

Consequently, arguments favoring and opposing extending tax breaks to the telecommunications industry rests largely on three considerations. First, whether the industry imposes costs on the public sector for which payment is justified on market efficiency grounds. Second, whether the state grants tax preferences to manufacturers that are not granted to other types of businesses and whether the telecommunication industry can legitimately be considered as offering the same economic benefits to the state as do manufacturers in terms of high quality job creation. Third, whether imposing taxes on telecommunications equipment purchases results in a significant disincentive to the industry to upgrade its technology and to extend high speed digital services to rural areas.

Estimating Sales and Use Taxes on Telecommunication Purchases

It may seem obvious that an estimate of the amount of tax generated from telecommunication equipment purchases can be derived from state consumers use tax payments made by telecommunications companies and sales tax payments made by equipment suppliers. However, identifying equipment suppliers can be difficult and there is no guarantee that use taxes are being fully paid by telecommunication companies on their equipment purchases. This is because in states like Iowa that do offer sales and use tax exemptions to manufacturers for machinery, equipment, and computer purchases some telecommunication companies assert they are entitled to similar tax preferences. Furthermore, equipment purchases vary significantly from year to year because the introduction of new technology often occurs in discrete units within short time spans rather than continuously in equal increments each year.

An alternative approach is to use information compiled in making property tax assessments. However, this approach also presents a variety of complicating factors. Included among these factors are the following:

Changes in Technology

Older mechanical switches are being replaced by less expensive software based equipment. This is particularly true for VoIP services which rely on routers rather than switches and this equipment costs only about 25 percent of what switches costs. The same is true for fiber optic cable which is replacing copper cable. This technology is much lower cost on a unit of service basis.

Isolating Equipment Cost

Property tax assessment records typically report incremental increases in the value of property assets. Only the portion of the increases in value that are attributable to equipment purchases should be considered in the estimate. To isolate this amount labor costs, interest costs, engineering costs, and overhead costs should be excluded. These costs vary between central office equipment and outside plant (transmission equipment). Discussions with industry experts suggest equipment purchases account for from 36 to 63 percent of the installed cost for central office equipment and between 45 to 55 percent of the installed cost for outside plant.

Replacement Cycle Times

In Iowa industry experts suggest that the typical replacement cycle time for central office equipment is 10 years. For outside plant the suggested replacement cycle time is 15 to 18 years in urban areas and 20 years in rural areas.

Iowa Case Fiscal Impact Estimate

Over the past five years in Iowa both individual telecommunication companies and the state's main business tax lobby organization have sponsored legislation to exempt telecommunication equipment purchases from sales and use taxes.⁵ Based on a survey of other states this level of legislative activity appears to be unusual. Of the 26 states that responded to the survey only two other states indicated there has been substantive industry initiatives to gain sales and use tax exemptions for equipment purchases in recent years. Furthermore, only nine other states indicated such equipment purchases were already fully or partially exempt from tax, and in most cases these exemptions were enacted at least five years ago. (See Table 2.)

However, regardless of the recent low level of legislative activity in this area, this situation can be expected to change soon. Given the competitive pressures traditional telecommunication companies find themselves exposed to, particularly due to the spread of VoIP technology, one may reasonably expect these companies to look for ways to lower their capital investment costs. Seeking tax exemptions for equipment purchases is one logical way to accomplish this objective.

The Iowa legislative proposal introduced last year (Senate Study Bill 1060) was very broad in terms of both the types of companies that would benefit and in terms of the types of equipment purchases that would be exempted from tax. The proposed legislation would have exempted purchases of "central office equipment or transmission equipment primarily used by local exchange carriers and competitive local exchange service providers, franchised cable television operators, mutual companies, municipal utilities, cooperatives, and companies furnishing communications services not subject to rate regulation, long distance companies, and commercial mobile radio service companies." The exemption would have applied to equipment utilized in the initiating, processing, amplifying, switching, or monitoring of telecommunication services, or used in the process of sending information from one location to another location.

In order to develop reasonable estimates of the fiscal impact that would result from the proposed legislation meetings were held with industry representatives in order to develop an estimation methodology that Department of Revenue staff, legislative staff, and industry engineering and financial staff all felt was reasonable. In a few cases firm specific data on equipment purchases was obtained. However, since most companies did not provide this type of detailed information and since the data that was provided covered only one or two years' purchases, the Department resorted to using data from property tax assessment records as the basis for the fiscal impact estimate.

Table 3 illustrates the estimation methodology in a somewhat simplified form from what was actually done. The fiscal impact estimates for central office equipment and outside plant equipment purchases were made separately. In each case the estimation methodology consisted of seven steps.

Step 1: Compilation of Historical Data

Since equipment investments can vary significantly from year to year five years of historical data on the value of assets in place were compiled for the two types of equipment from property tax assessment records.

Step 2: Computation of Capital Replacement Factors

Actual purchases data and other information was obtained from selected telecommunication companies to derive actual and average annual replacement factors. These can be thought of as the inverses of equipment replacement cycle times in years.

Step 3: Computation of Capital Replacement Amounts

The annual amounts and five year averages were computed by multiplying the assets in place data from property tax assessment records by the capital replacement factors.

Step 4: Determination of Equipment Purchase Share Factors

Since the capitalized value of telecommunication system assets include more than just the purchase price of the equipment factors were developed to net out interest costs, installation costs, engineering costs, and overhead.

Step 5: Computation of the Value of Equipment Purchases

The annual amounts and five year averages were computed by multiplying the capital replacement values previously computed by the equipment cost factor.

Step 6: Annual Growth Adjustments

Since the average annual equipment purchase amounts reflect historic costs, industry publications were researched to determine expected price and investment growth trends. Also, since the historic cost data were averaged over the period from 2000 through 2004, the annual growth factors were raised to a power of three to obtain 2005 purchase cost estimates.

Step 7: Estimate State and Local Fiscal Impacts

The state tax impact was estimated by multiplying the estimated 2005 purchase cost estimates by the state tax rate, which is 5.0 percent. The local tax impact was estimated by multiplying the estimated 2005 purchase cost estimate by a weighted local option tax rate of 1.2 percent. The weighting was required for the local tax impact estimate because local tax rates can vary from 0.5 percent to 2.0 percent, and not all jurisdictions have imposed local option taxes.

There are some obvious problems with this approach to estimating the fiscal impact of exempting telecommunication equipment purchases from sales and use taxes. Historical asset value information compiled for property tax assessment purposes does not provide a very precise measure of annual equipment purchases. These values get adjusted for depreciation and they incorporate more than just the purchase price of the assets. But with input from industry experts adjustments can be made to the raw data to yield reasonably accurate annual purchase estimates.

The alternative is to try to compile actual consumers use, retailers use, and sales tax data from department information systems. But this also presents problems because it is very difficult to identify all of the companies that should be included in the analysis. Furthermore, even if it was possible to identify all relevant companies, some adjustment would have to be made to exclude purchases that would not be covered by the exemption.

Thus, as is almost always the case, fiscal estimates are imperfect. What is important is that the methodology is reasonable, the assumptions are clearly stated, and that the results can be replicated by others.

¹ Ernst & Young, "Total State and Local Taxes Paid by the Telecommunication Industry, Fiscal Year 2004, prepared for AT&T, July 18, 2005, p. 3.

² CCH Incorporated, 2004 State Study and Report on Telecommunication Taxation, prepared for the Council on State Taxation, March 2005, p. 6.

³ Ernst & Young (2005), p. 4.

⁴ Sprint Spectrum LP v Commissioner of Revenue, Minnesota Supreme Court, No A03-954, April 1, 2004; Sprint Communications Company, L.P. v Kansas Division of Taxation, Kansas Supreme Court, No 90,663-667, December 17, 2004; AT&T Corp v Ruth Johnson, Commissioner of Revenue, Tennessee Court of Appeals, No M2000-01407-COA-R3-CV, October 8, 2002.

⁵ Iowa Taxpayers Association, "2005 State of Policies and Legislative Initiatives," p. 11.

Table 1: Exempt from State Sales and Use Taxes

State	Towers	Poles, Wires & Conduits	Central Office Equipment	Manuf Equipment	Cell Site/ Switches	Broadband Equipment
Alabama	N	P	P	P	P	P
Alaska	N	N	N	N	N	N
Arizona	Y	Y	Y	Y	Y	Y
Arkansas	N	N	N	Y	N	N
California	N	N	N	N	N	N
Colorado	N	N	N	Y	N	N
Connecticut	N	N	N	Y	N	Y
Delaware	N/A	N/A	N/A	N/A	N/A	N/A
Florida	N	N	N	Y	N	N
Georgia	N	N	N	Y	N	N
Hawaii	Y	Y	Y	Y	Y	Y
Idaho	N	N	N	Y	N	N
Illinois	N	N	N	Y	N	N
Indiana	Y	Y	Y	Y	Y	Y
Iowa	N	N	N	Y	N	N
Kansas	N	N	N	Y	N	N
Kentucky	N	N	N	Y	N	N
Louisiana	N	N	N	Y	N	N
Maine	N	N	N	Y	N	N
Maryland	N	N	N	Y	N	N
Massachusetts	N/A	N	N	Y	N	N
Michigan	Y	N	Y	Y	Y	N
Minnesota	Y	Y	Y	Y	Y	Y
Mississippi	N	N	N	N	N	Y
Missouri	N	N	Y	Y	Y	Y
Montana	N/A	N/A	N/A	N/A	N/A	N/A
Nebraska	Y	Y	Y	Y	Y	Y
Nevada	N	N	N	N	N	N
New Jersey	Y	Y	Y	Y	Y	Y
New Hampshire	N/A	N/A	N/A	N/A	N/A	N/A
New Mexico	N	N	N	N	N	N
New York	Y	Y	Y	Y	Y	Y
North Carolina	Y	Y	Y	Y	Y	Y
North Dakota	N	N	N	Y	N	N
Ohio	Y	Y	Y	Y	Y	Y
Oklahoma	N	N	N	Y	N	N
Oregon	N/A	N/A	N/A	N/A	N/A	N/A
Pennsylvania	Y	Y	Y	Y	Y	Y
Rhode Island	N	N	N	Y	N	N
South Carolina	N	N	N	Y	N	N
South Dakota	N	N	N	N	N	N
Tennessee	N	Y	N	Y	N	N
Texas	N	N	N	Y	N	N
Utah	Y	Y	N	Y	N	N
Vermont	N/A	N	N	Y	N	N
Virginia	Y	Y	Y	Y	Y	Y
Washington	N	N	N	Y	N	N
West Virginia	Y	Y	Y	Y	Y	Y
Wisconsin	N	N	N	Y	N	N
Wyoming	N	N	N	N	N	N

Notes: Y = yes, N = no, N/A = not applicable-no state sales tax, P = partial

Table 2: FTA Survey Results

State	Telecomm Equipment Taxed	Legislation Introduced	Exemption Enacted	Notes
Alabama				
Alaska				
Arizona	N	N/A	1967	Deduction from transaction privilege tax
Arkansas	Y	N	N/A	
California				
Colorado	Y	N	N/A	
Connecticut				
Delaware				
Florida	Y	N	N/A	
Georgia				
Hawaii				
Idaho				
Illinois	Y	N	N/A	
Indiana				
Iowa	Y	Y	N/A	
Kansas				
Kentucky	Y	N	N/A	
Louisiana	Y	N	N/A	
Maine	Y	N	N/A	
Maryland				
Massachusetts	Y	N	N/A	
Michigan	N	N/A	1999	COE and wireless equipment 90% exempt
Minnesota	N	N/A		
Mississippi				
Missouri				
Montana				
Nebraska	Y	N	N/A	
Nevada				
New Jersey	N	N/A	1966	Limitation to service providers enacted 1989
New Hampshire				
New Mexico				
New York	N	N/A	2000	
North Carolina	N	N/A	2005	
North Dakota	Y	N	N/A	
Ohio	N	N/A	1987	
Oklahoma	Y	N	N/A	
Oregon				
Pennsylvania	N	N/A	?	Long standing, extended to cellular 2004
Rhode Island				
South Carolina				
South Dakota				
Tennessee				
Texas				
Utah	Y	Y	N/A	
Vermont	Y	N	N/A	
Virginia	Y			Exemption repealed effective Sep 1, 2004
Washington	Y	N	N/A	
West Virginia	N	N/A	1955	Direct use exemption enacted 1987
Wisconsin	Y	Y		Industry exemption proposal 2005
Wyoming				

Table 3: Telecommunication Equipment Sales/Use Tax Estimate

Central Office Equipment

Equipment Type	2000	2001	2002	2003	2004	Total	Average
COE Assets in Place	1,639.720	1,725.190	1,756.220	1,740.036	1,734.447	8,595.613	1,719.123
Capital Replacement Factor	0.198	0.196	0.082	0.080	0.082		0.1275
Capital Replacement	324.501	337.447	144.713	138.681	142.398	1,087.739	217.548
CO Equipment Factor	0.554	0.637	0.369	0.391	0.439		
CO Equipment Cost	179.838	214.785	53.384	54.169	62.484	564.661	112.932
Annual Growth Factor							1.274
Estimated Equipment Purchases							143.849
Estimated Fiscal Impact (\$ million)							
State @ 5.0%							7.192
Local @ 1.2%							1.726
Total							8.919

Outside Plant

Equipment Type	2000	2001	2002	2003	2004	Total	Average
Outside Plant Assets in Place	1,418.605	1,478.497	1,508.188	1,523.729	1,519.073	7,448.092	2,482.697
Capital Replacement Factor	0.056	0.056	0.056	0.056	0.056		0.056
Capital Replacement	78.811	82.139	83.788	84.652	84.393	413.783	82.757
Outside Plant Equipment Factor	0.500	0.500	0.500	0.500	0.500		
Outside Plant Equipment Cost	39.406	41.069	41.894	42.326	42.196	206.891	41.378
Annual Growth Factor							1.125
Estimated Equipment Purchases							46.545
Estimated Fiscal Impact (\$ million)							
State @ 5.0%							2.327
Local @ 1.2%							0.559
Total							2.886