The Regulatory Dilemma

The Regulatory Dilemma Created by Emerging Revenue Streams of Independent Telephone Companies

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by

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I would like to thank the National Association of Regulatory Utility's Commissioners for inviting me here today. The subject of today's discussion is the "Emerging Revenue Streams of Independent Telephone Companies" I would like to discuss the dilemma that I believe these emerging revenue streams create for regulators. Simply stated, the dilemma is that these streams for revenues can result in what appears to be a good economic decision from the companies' standpoint, but a poor economic decision from the current ratepayers' standpoint.

Recently, regulators have been faced with requests to increase telephone company depreciation expense as a result of accelerated plans for retirement of switch, circuitry, and copper cable. Under rate base, rate of return regulation, the higher depreciation expense may require an increase in rates to ratepayers or alternatively, may offset rate reductions which otherwise might be warranted.

The accelerated retirement plans, particularly those for switch replacements, are usually supported by discounted cash flow studies. These studies compare the incremental cash flow of alternative investment decisions. Since the consequence of these replacement plans may be higher depreciation expense today, regulators are obliged to consider the reasonableness of the plans. This necessarily requires an evaluation of the underlying cash flow studies.

A typical example is a telephone company's decision to replace an existing electromechanical or electric analog switch with a digital switch. Usually, the underlying cash flow studies support the replacement decision. Of course, these studies, like all economic studies, are based upon several assumptions that are subject to challenge and change. Alternative assumptions may alter the results and change the overall conclusion. With one exception, however, my discussion does not address underlying assumptions. The dilemma I will address occurs even if all input assumptions are 100 percent correct.

Studies

The three primary cash flow streams in telephone company analysis are:

(a) first cost,
(b) incremental expenses, and
(c) incremental revenues.

First cost is essentially the incremental capital investment of each of the alternatives being studies relative to the "base case," usually the status quo. Incremental expenses are the change in expense associated with each of the alternatives. Incremental revenues are the additional revenues anticipated under each alternative. The

incremental revenues are the "emerging revenues streams" that are the subject of today's revenue streams as the anticipated additional future revenues that can only provided by a digital switch. In other words, the emerging revenue streams cannot be provided by existing electromechanical or electronic analog switches.

In order to measure the net costs in terms of present dollars, the net cash flow streams under each of the alternatives are discounted at an interest rate reflective of the telephone companies' anticipated cost of capital. The alternative which provides the highest positive net present value is determined to be the economic choice.

If the difference between the net present value of the digital replacement and the base case is a positive number, the replacement will be deemed to be economically justified. As I indicated earlier, I have defined the emerging revenue streams as the anticipated additional future revenues which can only be provided by a digital switch. Therefore, the future revenue streams almost always favor digital replacement since only the digital switch provide the emerging revenue streams. Offsetting the revenue streams is the first cost of the digital switch, which is like to be greater than any investment associated with retaining the existing switch, particularly, if it is replacing an electromechanical switch. Typically, the deciding factor is the impact of the emerging digital revenue streams.

I have three handouts today. Table 1 is a "Simulated Cash Flow Analysis Relating to a Complete Digital Replacement of Existing Switch Investment." This table is based upon an actual cash flow analysis prepare by an independent telephone company. That study addressed the complete replacement of the company's several existing non-digital and first generation digital switches. Table 1 was drawn from the results of that study. I have changed the numbers in order to avoid disclosure of the particular company involved. However, the numbers in my table bear the same percentage relationships to each other as the actual figures in the telephone company's cash flow study. The figures in Column B reflect discounted net present values of cash flow streams. Line 1 shows the higher capital costs associated with the digital switches. The second line shows the expense saving associated with digital switches. The third line reflects the net salvage value of the retired switches, and the fourth line shows the additional income taxes associated with higher revenues, expenses and investment. The fifth line shows the emerging digital revenue streams. As one can see, it is a positive value. Line six (which is the sum of line 1 to 5) is the net present value of the entire digital replacement plan. This is a positive value. Therefore, the Company would conclude that the replacement of all existing non-digital and first generation digital switches is economically justified on the basis of the $1,000 positive value of the discounted cash flow streams.

The question posed by this exhibit is "What impact do the emerging revenue streams have on the economical justification for the digital replacement program." To answer, I would like to refer you to Table 2. Table 2 demonstrates the impact for the emerging revenue streams on the study results from Table 1. As you can see, the first line shows the $1,000 economic justification for the digital replacement plan from Table 1. On line 2, I have subtracted the emerging revenue streams, net of their associated income taxes, from the economic justification. Line 3 demonstrated that without the emerging revenue streams, the positive $1,000 economic justification turns into a negative $842 economic penalty. The obvious conclusion is that the emerging revenue streams overwhelmingly control the results of this study. If it were not for these revenue streams, the replacement plan would not be economically justified. Consequently, the emerging revenue streams drove the replacement decision.

Accepting the company's study as performed, the regulator may conclude that the company's decision to replace the existing switches is economically justified, based primarily upon the anticipation of future revenues. If the forecast of those revenues appears to be reasonable then the regulatory would probably not object to the telephone company's replacement plan.

The regulators role, however, is not to support the company's profit maximization, but to represent the

company's ratepayers. For their standpoint, the replacement has a very different perspective. What is a good economic decision for the company is not necessarily a good economic decision for the company's current ratepayers.

One of the consequences of the cash flow study underlying my Tables 1 and 2 was a request by the telephone company for higher depreciation expense relating to the existing switches. The basis of the request was that these switches have not and will not be fully depreciated, using the existing depreciation rates, by the time the replacements are made. Therefore, the telephone company requested that the depreciation expense be increased to a level which would fully depreciate each switch by its anticipated retirement date. If approved, this could result in one of two situations. In situation 1, the telephone company may need to increase its rate for service to cover the higher depreciation expense. In situation 2, the telephone company may be able to absorb the increase expense without increasing its rates for service because its earning are sufficiently high. In other words, without the increased expense a rate reduction may have been warranted. In either case, ratepayers would pay the higher depreciation expense associated with the retirement of existing switches through rates for monopoly services.

Table 3 is titles "Amortization of Existing Investment Resulting from Digital Replacement Plan." This table provides a simulation of the incremental revenue requirements associated with the higher depreciation expense relating to the existing switches. In other words, this table provides the current ratepayers's viewpoint of the replacement plan. Line 1 shows the original cost of existing switches. Line 2 shows the accumulated depreciation and Line 3 shows their net book value of $5,000. Line 4 shows the current depreciation expense at a 7 percent depreciation rate. Line 5 shows the additional depreciation expense if the existing investment is amortized in one year. Line 6 shows an adjustment for estimated rate base impacts and finally, line 7 shows the incremental revenue requirements associated with one year amortization of the existing switches.

This revenue requirement effect may be exaggerated because it assumes a one year amortization of the existing switches. However, it is not unreasonable. I have observed cash flow studies relating to individual switches which in fact, result in requests for one year amortization of the switches anticipated to be replaced. The primary purpose of Table 3 is to demonstrate the significant impact upon current ratepayers resulting from the early retirement of existing switches. In this case, it happened to be $3,654.

I have reviewed several telephone company's cash flow studies relating to the replacement of investments. I can tell you that the ratepayer impact, that is, higher depreciation charges for the retiring switch is never included in these studies. It is not include because the investment dollars to which the higher depreciation expense relates are deemed to be "sunk" that is, they are already spent and not recoverable. In an unregulated environment, this would be a valid assumption because once a dollar is spent, it is spent – it cannot be recovered in any future cash flow. In a regulated environment, however, sunk capital costs can in fact produce future cash flows. This is demonstrated in Table No 3. The incremental revenue requirement in Table 3 pure cash flow to the utility either in the form of higher rates or as foregone rate reductions.

This then, is the dilemma faced by regulators. On the one hand, the company has economically justified its decision to replace the switch, but on the other hand, that decision is flatly uneconomic from the standpoint of current ratepayers. A good economic choice from Company's standpoint and a poor economic choice from the ratepayer's standpoint resulting from the same decision are not mutually exclusive. Recognizing this possibility, regulators are faced with the dilemma of how to make the decision economical for both the Company and its ratepayers.

There are probably several ways to accomplish this goal, but it would seem to be that the fairest and the most economically justified approach for all parties would be to match the higher deprecation cost associated with the early retirement of the existing investment with emerging revenue streams that caused the replacement

decision in the first place. Obviously, such a matching may require deferrals of cost recognition until the creation of the revenue streams. These deferrals may not necessarily adhere to a strict definition of depreciation expense as spelled-out in the Uniform System of Accounts. Nevertheless, if properly implemented such deferred cost recognition would be consistent with the ratemaking concepts of matching, intergenerational equity, cost causation and incremental costing. Using these principles, regulators have the tools to eliminate the dilemma with which they are faced.

I would like to take this opportunity to thank NARUC for inviting here today and thank all of you for listening.

Biographical Sketch Of Michael J. Majoros, Jr.

Mr. Majoros is Vice President and Treasurer of the economic consulting firm Snavely King & Associates, Inc., with offices at 1111 14th St. NW, Washington, DC 20005. He has been with the firm since 1981. He provides consultation on accounting, financial, management and regulatory issues and has testified as an expert witness in more than forty regulatory proceedings involving telephone, electric, gas, water, sewage, and waste removal companies. His testimony has addressed issues such as taxation, divestiture accounting, revenue requirements, rate base nuclear decommissioning, depreciation and capital recovery. Mr. Majoros has been responsible for developing his firm's consulting services on depreciation and capital recovery matters. Prior to his current position, he directed various management and regulatory consulting projects in the public utility field for Van Scoyoc & Wiskup. Other previous positions included Treasurer of a heavy equipment sales firm and Auditor for Ernst & Ernst. Mr. Majoros holds a B.S. in Accounting from the University of Baltimore. Mr. Majoros has passed the CPA exam and is a member of the American Institute of Certified Public Accountants, Maryland Association of C.P.A.'s, and the Society of Depreciation Professionals. Among Mr. Majoros' publications are: "Telephone Company Deferred Taxes and Investment Tax Credits – A Capital Loss for Ratepayers," Public Utility Fortnightly, September 27, 184. "The Use of Customer Discount Rates in Revenue Requirement Comparison," Proceedings of the 25th Annual Iowa State Regulatory Conference, 1986.

Table 1

Snavely, King & Associates, Inc.

Simulated Cash Flow Analysis Complete Digital Replacement Of Existing Switch Investment		
Study Results (Company's Viewpoint)		
Description (a)		Discounted Net Present Value (b)
1. Higher Capital Cost of Digital Switches		($1,752)
2. Expense Saving Associated with Digital Switches		998

3. Net Salvage Value of Retired Switches		162
4. Additional Taxes		(377)
5. Emerging Digital Revenue Streams		1,969
6. Net Present Value of Digital Replacement Plan		$1,000

CONCLUSION: The replacement of all existing switches with digital switches justified on the basis of the $1,000 positive present value of the discounted flow streams.

Table 2

Snavely, King & Associates, Inc. Simulated Cash Flow Analysis Complete Digital Replacement Of Existing Switch Investment			
Impact of Emerging Digital Revenue Streams (Company's Viewpoint)			
Description (a)		Discounted Net Present Value (b)	
1. Economic Justification for Digital Replacement Plan[1]		$1,000	
2. Less: Impact of Emerging Digital Revenue Streams			
a. Revenue		(1,969)	
b. Taxes		127	
c. Net		(1,842)	(1,842)
3. Adjusted Economic Justification			($842)

CONCLUSION: The emerging digital revenue streams overwhelmingly control the results of the study. If I were not for these emerging revenue streams, the replacement plant would not be economically justifies. Therefore, the revenue streams drove the replacement decision.

Table 3

Snavely, King & Associates, Inc. Amortization of Existing Investment Resulting From Digital Replacement Plan		
Revenue Requirement (Ratepayer's Viewpoint)		
Description (a)		Discounted Net Present Value (b)
1. Original Cost of Existing Switches		$15,000
2. Accumulated Depreciation		(10,000)
3. Net Book Value of Existing Switches		5,000
4. Current Depreciation Expense At 7% (L1 x .07)		1,050
5. Additional Depreciation Expense If Existing Investment Is Amortized In One Year (L3 - L4)		3,950
6. Less Ratebase Impacts At a 15% Before Tax Rate of Return		(296)
7. Incremental Revenue Requirement		$3,654