Criteria for Measuring the Financial and Economic Performance of Municipally Owned Broadband Enterprises[1]

Presentation by

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I. Introduction

Almost forty years ago economist James Buchanan posed the question: "Under what circumstances will collective-government supply be more efficient than private or noncollective supply?"[2] He said economists must compare "all institutional alternatives in terms of expected benefits and costs, both defined in present values, and both embodying major uncertainties."[3] Consequently, meaningful estimates of the benefits and costs of collective, government supply are essential for determining whether it is more or less efficient than private or noncollective supply. Such estimates are the starting points of comparative analyses. Today, such estimates are the starting point for resolving the current public policy controversy over the role, efficacy, and legitimacy of local, public enterprises that provide retail broadband services.

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1 The views expressed in this paper are those of the author and do not necessarily represent those of the American Public Power Association or its members.

2 James M. Buchanan, *The Demand and Supply of Public Goods* (Chicago: Rand McNally, 1968), p. 172.

3 *Ibid.,* p. 173.

At the end of 2004 there were about 619 local, public enterprises that provided some type of broadband service such as cable television or Internet connections in their communities. More specifically, these are enterprises that are owned and operated by municipal governments. The broadband operations are typically part of a larger, municipally run utility that also provides electric service, and oftentimes water and gas services as well.

Many of these municipal broadband enterprises (as they will be referred to here) started offering services two decades or longer ago. In recent years the provision of such services has been increasingly controversial, to the point that 15 states have passed legislation that to varying degrees restricts municipalities from offering broadband services. Similar legislation is currently pending in seven states. However, in six states legislative efforts to restrict local communities failed, and a coalition of trade associations that includes the National Association of Manufacturers said it would oppose any legislative barriers to municipal participation in broadband networks. The High Tech Broadband Coalition said "no statewide statutory barriers … whether explicit or de facto, should be erected."

At the federal level, last year the U.S. Supreme Court ruled that the 1996 Telecommunications Act allows states to block cities and other local governments from providing telecommunications services to their residents. Earlier this year Rep. Edward Markey (D-MA) said that the provision of the act that said states may not prohibit "any entity" from providing telecommunications services included cities, and he will introduce legislation to make that clear.

So, it is quite clear that the political and economic legitimacy of local public enterprises entering broadband businesses is timely, important, and contentious. The controversial aspect is not surprising, however. Public policy debates over the legitimacy and economic effectiveness of public enterprises have been contentious ones in the United States for decades, and for over a century in regard to municipally owned and operated electric utilities (commonly referred to as "public power"). Many of the issues that have surfaced about municipal broadband enterprises are reruns of ones that have been debated for decades about public power. There was not, and still is not, a clear consensus on the political and economic roles of public power enterprises, so it is not surprising that there is not a consensus about municipal broadband enterprises or that the issue is quite contentious.

This paper will not address the broad theoretical issues or empirical facts about private enterprise versus "local" public enterprise. As an aside, though, these are timely and important issues that should be on the agenda at future CRRI meetings. They are appropriate because public ownership is an alternative form of government intervention into the economy when it is believed that markets left alone are unlikely to produce less efficient results.

Its focus is more modest for several reasons. First, sufficient, comparable data for analysis of private and local municipal providers is not readily available. Second, performing such an investigation would be a major task beyond the scope of a paper for this conference. Finally, and most importantly, there are at least two important measurement issues dealing with the proper metrics for measuring the financial viability and economic success of municipal broadband enterprises that seem to be open to question and need to be resolved. This paper addresses this third issue.

Most substantive disagreements over public enterprises deal with the economic issues of efficiency, service, innovation, and accountability. This paper deals with one aspect of one of these issues, the appropriate indicators of the efficiency of municipally owned and operated broadband networks. It may seem that the appropriate indicators would be a relatively easy matter to deal with, in contrast to issues such as tax advantages, cross subsidies, predatory pricing, economies of scope, etc. But this does not appear to be so, at least at this time. Measures of the financial viability and economic success of municipal broadband enterprises used by two widely quoted researchers will be contrasted with more conventional and intuitive measures of viability and success. It will be shown that the differences are dramatically different, so it is important to resolve issues of proper metrics for measurement before data is offered in broader public policy debates.

Basic choices about the type of indicator to use to measure financial viability and how to define it alter the direction and magnitude of the results. Similarly, assumptions about the economic purpose will determine what indicators should be used to measure economic success. Different assumptions about purpose and objects will change the direction and magnitude of results.

To put the measurement issues in a meaningful context, the paper begins with a brief description of municipal broadband enterprises and the services they provide, along with a brief discussion of the motivations for municipalities to enter the broadband business. The next section briefly reviews general notions of financial viability and economic success, and discusses whether the measures for private, for-profit enterprises also apply to public, non-profit enterprises. Then, the conclusions from this review and discussion are contrasted with different measures that have been used in popular analyses of the financial viability and economic success of municipal cable television enterprises. The concluding section then follows.

II. Municipally Owned and Operated Broadband Operations: What They Are and Why They Were Established

Broadband is generally defined as an advanced communications system in which a wide band of frequencies is available to transmit information through a single portal, such as fiber-optic cable. It includes voice, high-speed data, video, and other interactive text delivery services. The term is also used to define a particular type of service offered by utilities. A communication link *only* is offered—without content such as cable TV or Internet service—to customers at speeds greater than 200 kilobytes per second at particular business sites, for example, business-to-business connections.

The 619 public power systems that employed some type of broadband service in 2004 provided "internal" services for utility and city operations or "external" services to local citizens. Two hundred eighty-seven (287) provided at least one external service such as cable television or Internet service. The majority of external services that use distribution facilities might be described as "add-ons"—services that are physically distinct from electric distribution services except for the use of some common facilities. The following table shows the ways municipal systems were using broadband in 2004 compared to 2001.

TABLE 1: Number of Public Power Systems Providing Service

Services	2004	2001
Internal		
SCADA*	414	275
Municipal data network	247	163
AMR**	260	89
Voice	107	75
External		
Fiber leasing	167	122
Fiber to the Home	13	NA
Internet Service Provider***	128	107
Broadband Transport	130	84
Cable TV	101	91
Cable modem, DSL****	81	60
Wireless network	56	16
Local telephone (CLEC)	52	29
Long distance telephone resale	42	25
Video on demand	10	4

* Supervisory Control and Data Acquisition
** Automated Meter Reading
*** Service provided by utility or through third-party contracts
**** Digital Subscriber Line

The most common use is for SCADA (Supervisory Control and Data Acquisition) systems in order to enhance the operation of the electricity distribution system. When broadband technologies are being planned, or are already in place, a logical extension of their use is for municipal data services to improve communication within and between city departments (police, fire, schools, libraries, etc.). Also, the technology can be used to enhance community services such as hospital and related care. Though these are the most extensive uses of broadband by municipal electric utilities, the ones that usually receive the most popular attention are for cable TV and Internet service provision. In 2004 there were 128 utilities that provided Internet service, 101 that provided cable TV service, and 52 that provided local telephone service.

The Electric Plant Board in Glasgow, Kentucky, provides a good example of the types of broadband service municipal electric utilities are offering. The city is a rural community, and its utility serves about 7,000 retail electric customers. Glasgow is especially significant because it was among the first municipal electric systems in the nation to offer external broadband service. In June 1989, the utility began offering cable TV and since has gone on to offer services such as cable modem, Internet services, fiber leasing, and local telephone service. The city's broadband network reaches every home in the community and provides a city-wide computer network that connects city departments, elementary schools and high schools, and local businesses and residences. It is also used to synchronize traffic signals. In addition, Glasgow uses its broadband system for the various internal utility and city functions listed in Table 1.

The reasons why municipalities are offering broadband services are quite similar to ones that led them into the electric power business. The impetus comes from local community concerns about: (1) economic development; (2) the pace at which broadband technologies are being introduced; (3) the quality of service of the incumbent provider; and (4) prices charged by the incumbent provider. These concerns usually dovetail with community views about: (5) the role of their local governments; and (6) the potential for leveraging current utility operations (or "economies of scope" in economic jargon). Consequently, there is rarely a single reason for a municipality getting into the business. All factors are more or less present. The one or ones that provide the major impetus seem to depend on issues a local community happens to be most sensitive to at a particular time. A community may start out with a single motivation, but once it starts exploring the feasibility of providing broadband services, the range of potential benefits broadens and one motivation usually leads to another.

A good starting point for understanding the reasons why public power communities decide to provide broadband services is to look at the size distribution of these municipal utilities. Public systems are typically very small; their median size, in terms of customers served, is about 1,700 customers. Table 2 provides a breakdown of these utilities and illustrates this fact.

TABLE 2: Size Distribution of Public Power Systems by Customers Served, 2003

Customers	Number
0 to 10	68
11 to 1,000	609
1,001 to 2,000	380
2,001 to 4,000	331
4,001 to 10,000	325
10,001 to 20,000	149
20,001 to 40,000	83
40,001 to 100,000	39
More than 100,000	25
Total	**2,009**

As a consequence of their relatively small size, many public power communities do not have modern broadband services, or competitively priced ones, that are available in larger cities. In the worst case, small towns may have limited or no services at all. Such communities usually do not want to wait for private providers to enter their markets or to upgrade existing services at some future, uncertain date.

A study by University of Iowa Professor Montgomery Van Wart and his colleagues found that the reasons Iowa cities decided to start offering broadband services were familiar ones: lower prices and improved quality of service.[4] The study covered 265 of Iowa's approximately 950 cities, and "more than twenty-five in-depth interviews with local and telecommunications industry experts." In the cable TV sector, deregulation had "not brought significant competition" and "competition in the local telephone market

[4] Montgomery Van Wart, "Economic Development and Public Enterprise: The Case of Iowa's Telecommunications Utilities," *Economic Development Quarterly,* May 2000.

[was] minimal." Annual increases for cable TV service were about seven percent, and "some regional telephone providers … [withdrew] their local experts to service hubs to cut costs."

The city of Hawarden illustrates the problems faced by Iowa cities. It is a town with a population of about 2,500, and its citizens were dissatisfied with the quality of broadband services and concerned about their community's future. In 1994, 96 percent of the 63 percent of the electorate that voted favored an "all-purpose city communication utility." Following this directive, the city utility—which first started providing electric service in 1894—constructed a fiber optic system, "completely bypassing the outdated copper wire system" of the private, incumbent provider. City officials expressed their concern that they did not want to be left as a "back water town."

Concerns about the availability of broadband services are not limited to small towns in Iowa or to other small public power communities; they are being expressed in small or rural communities across the country and are increasingly being reported on in the media. A *New York Times* reporter writes that the "geography of the Internet service in the land of the last 'last miles' could not be stranger or more discontinuous." He lives only 30 miles from Albany, New York, yet does not have high-speed Internet service available to him when he works at home.[5] A recent *Washington Post* story titled "Broadband Crawling Its Way to Exurbs" discussed the problems of obtaining high-speed Internet services in rural southern Maryland.[6]

Tacoma Public Utilities in Washington is a good example of a public power system leveraging its utility infrastructure, *i.e.,* taking advantage of economies of scope. In the early 1990s the utility was looking for ways to improve the efficiency and reliability of its electric distribution system. In assessing alternatives for an improved communication system for the task, the utility realized that non-electric services such as

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5 Verlyn Klinkenborg, "Taking Broadband Internet Access to the Last 'Last Mile': to Rural America," *The New York Times,* March 24, 2004, p. 20.

6 Amit R. Paley, "Broadband Crawling Its Way to Exurbs: Communities Create Long-Sought Access," *Washington Post,* May 23, 2005, p. B-1.

cable TV could be provided with relatively little incremental cost. At about the same time, a significant number of customers of the incumbent cable TV provider was dissatisfied with the quality of service they were receiving. The city decided to have the municipal utility build a broadband network that could be used to provide cable TV services as well as provide for increased efficiency and reliability of its distribution system.

Glasgow, Kentucky, is another example of economies of scope being the initial impetus for its municipal utility to enter the broadband business. The initial motivation for Glasgow's Electric Plant Board (EPB) to build its 120-mile, bidirectional, broadband cable network was to improve the monitoring and control of its electricity transmission and distribution systems. In the early and mid-1980s the Tennessee Valley Authority, which sold wholesale power to EPB, was encouraging its customers to find ways to shift some of their loads to off-peak periods. The EPB was also concerned about responding to competitive pressures. It decided that a new broadband network for improved load management would be a useful way to respond and to prepare for the future. In the course of meetings about the new communications system, the city and utility realized that the system could probably be used to provide cable TV service for significantly less than the incumbent supplier was charging. In addition, the broadband communications system could be used to provide high-speed Internet service, competitive local telephone service, and other local economic development needs as well.

For many public power communities expansion into broadband was simply part of what local government does anyway: it provides basic infrastructure services for modern, daily living and to promote economic development. As shown in Table 3, a large proportion of public power systems provide water, sewage, wastewater, and gas service as well as electric service. In a 2001 survey, 767 municipal electric utilities reported that they provided at least one of these other services.[7]

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[7] "Governance Survey," American Public Power Association (Washington, D.C., 2001).

TABLE 3: Other Services Provided By Public Power Systems

Other Service	Number Providing	Percent of Respondents
Water	725	95%
Sewer	682	89%
Wastewater	544	71%
Gas	139	18%

For example, Cedar Falls (Iowa) Utilities began providing broadband services in 1996 and today offers its citizens cable TV, Internet service, cable modem/DSL service, and other services. The utility—which was established in 1913 and which also provides gas, water, and wastewater services—views the provision of broadband services as a "logical part of [its] role, which has always been to provide the infrastructure needed to support economic development and the quality of life in Cedar Falls." From an economic development perspective, it views broadband infrastructure and related services as "vital to [its] ability to draw high-tech businesses and jobs." The services allow the community to be competitive as a business center both nationally and globally.

III. Cash Flow as an Indicator of Financial Viability: Concepts and Definitions

In their 1998 book, *Costs, Benefits, and Long-Term Sustainability of Municipal Cable Television Overbuilds,* Ronald J. Rizzuto and Michael O. Wirth claim that municipal cable enterprises are likely to be poor investments for cities. In regard to financial viability, they contend that the "cash outflows of the four cable systems [they reviewed] exceed their cash inflows." "These investments have been unsuccessful from a pure business viewpoint" because they "have not generated sufficient cash flow to cover their out-of-pocket cash needs."[8] The authors note that any business has to pay its bills, and conclude that the four municipal systems have not been able to pay their bills. But their analyses of the cable investments of the four municipalities rest on a rather unconventional as well as counter-intuitive definition of the financial concept of "cash flow."

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[8] Ronald J. Rizzuto and Michael O. Wirth, *Costs, Benefits, and Long-Term Sustainability of Municipal Cable Television Overbuilds* (Denver, Colorado: GSA Press, 1998), p. 3.

Although Rizzuto and Wirth's book was published seven years ago, its discussion of the financial viability and economic success of municipal enterprises is timely and important because it is often cited today by those who oppose municipal entry into broadband.[9] Although their book deals with municipally owned cable TV networks, the financial and economic methods they employ would also apply to other municipal broadband services. It is not the purpose here to judge whether their general conclusions about the financial viability and economic success of the municipal enterprises they review are ultimately correct. It is more general, more fundamental. It is to assess the appropriateness of their measure of financial viability, and to highlight the importance of correctly identifying what to measure. This section deals with the question of financial viability, and the next deals with economic success.

The general financial concept of cash flow provides a meaningful indicator of the financial viability of both private and public enterprises. Indeed, businesses do have to pay their bills. But Rizzuto and Wirth use a questionable measure of cash flow to apply to public enterprises and then define it in an unconventional and counterintuitive way. As a consequence, their calculations show the four municipal broadband systems they review having negative cash flows. The systems are: Glasgow (Kentucky) Electric Plant Board, Paragould (Arkansas) City and Light, Cedar Falls (Iowa) Utility, and Negaunee (Michigan) Electric Department.

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9 *See, e.g.,* Jeffrey A. Eisenach, *Does Government Belong in the Telecom Business?* (Washington: Progress & Freedom Foundation, January 2001); Paul Guppy, *When Government Enters the Telecom Market: An Assessment of Tacoma's Click! Network* (Washington: Progress & Freedom Foundation, February 2002); Thomas Lenard, *Government Entry Into the Telecom Business: Are the Benefits Commensurate with the Costs?* (Washington: Progress & Freedom Foundation, February 2004); Beacon Hill Institute, *Cashing in on Cable: Warning Flags for Local Government* (Boston: Beacon Hill Institute at Suffolk University, 2001); Joseph L. Bast, *Municipally Owned Broadband Networks: A Critical Evaluation,* Revised Edition (Chicago: Heartland Institute, 2004); David G. Tuerck and John Barrett, *Municipal Broadband in Concord: An In-Depth Analysis* (Boston: Beacon Hill Institute at Suffolk University, 2004); and David P. McClure, Steven Titch, and Braden Cox, *et al., 'Not In The Public Interest—The Myth of Municipal Wi-Fi Networks;' Why Municipal Schemes to Provide Wi-Fi Broadband Services With Public Funds Are Ill-Advised* (Washington: New Millennium Research Council, 2005).

There are numerous definitions of cash flow. Generally defined, it is the "amount of cash generated by operations or a specific project. The term sometimes refers to gross or total cash to be received, sometimes to net cash after payment of expenses," and "the specific meaning must be determined from context" in which the term is used.[10] For example, there are different measures of cash flow, such as "net cash flow," "operating cash flow," "free cash flow," "discounted cash flow," and others. Professor Robert Higgins notes that "[s]o many definitions of cash flow exist today that the term has almost lost meaning."[11] For example, one financial analysis text uses the term "net cash flow" to refer to the sum of net income and non-cash expenses while another uses the term "operating cash flow" to refer to the same sum. Determining which cash flow measure relates to the question at hand demands, Higgins warns, "judgment and perspective."[12] The measure of cash flow chosen must match up with the question asked.

Rizzuto and Wirth settle on a measure of cash flow called "free cash flow" (FCF). Free cash flow, properly defined, "is the cash flow actually available for distribution to investors, after [a] company has made all investments in fixed assets and working capital necessary to sustain ongoing operations."[13] It is important to recognize that though this measure is a good indicator of the *value* of private, for-profit enterprises, it is not a reliable indicator of the *financial viability* of either private or public enterprises. Putting this question aside for the moment, while there are various ways to calculate FCF, there are core elements that must be included. The conventional definition starts with the after-tax income of an enterprise, adds depreciation expense, and then subtracts capital expenditures and adjusts for changes in working capital.

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[10] Ralph Estes, *Dictionary of Accounting* (Cambridge, Massachusetts: The MIT Press, 1981), p. 23.

[11] Robert C. Higgins, *Analysis for Financial Management,* Seventh Edition (New York: McGraw-Hill/Irwin, 2004), p. 18.

[12] *Ibid.,* p. 249.

[13] Eugene F. Brigham and Michael C. Ehrhardt, *Financial Management: Theory and Practice,* 11th Edition (Mason, Ohio: Thomson/South-Western, 2005), p. 106.

Rizzuto and Wirth's definition, however, does not agree with conventional ones. They define FCF as cash inflows from cable operations minus operating expenses, interest and principal payments, and capital expenditures.[14] One problem is that their definition fails to include changes in working capital, but this omission is unlikely to materially affect their results, and to simplify discussion it is ignored here. In contrast, their omission of non-cash depreciation charges is a gross deviation from current practice. Depreciation charges are routinely included in calculations of cash flow and excluding it significantly affects resulting estimates, as a cursory examination of financial analysis texts will show.[15]

The simple inclusion of the non-cash charges for depreciation significantly changes the directions and magnitudes of Rizzuto and Wirth's results for the four municipal cable enterprises they examine. For example, Rizzuto and Wirth calculated a negative FCF of $272 thousand for Paragould for 1995, but the number becomes a positive $73 thousand when $345 thousand in depreciation charges are included.

The omission of depreciation charges in the calculation of FCF clearly produces significant differences in the direction and magnitudes of cash flows. But also important is the question of whether free cash flow is the appropriate measure by which to judge the financial viability of an enterprise in the short run since it reflects the lumpiness of investments. Such unevenness requires looking at cash flows over a considerable period of time, perhaps ten years or more for a new, capital intensive firm, in order to properly assess financial viability. For relatively shorter periods negative FCFs are not necessarily bad. Eugene Brigham and Michael Ehrhardt note in their widely used financial management text that "[i]t all depends on *why* the free cash flow was negative [emphasis added]."[16] They

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14 Rizzuto and Wirth, p. 12.

15 *See, e.g.,* Brigham and Ehrhardt, *Financial Management: Theory and Practice;* Higgins, *Analysis for Financial Management;* Ezra Solomon and John J. Pringle, *An Introduction to Financial Management,* Second Edition (Glenview, Illinois: Scott, Foresman and Company, 1980); and Joseph Tham and Ignacio Vélez-Pareja, *Principles of Cash Flow Valuation, An Integrated Market-Based Approach* (London: Elsevier Academic Press, 2004).

16 Brigham and Ehrhardt, p. 108.

observe that many high-powered companies have negative FCF because they are making large investments in operating assets. They point to Home Depot as an example of a successful private enterprise that has sometimes experienced negative FCF due to its rapid growth. Since rapid growth in capital expenditures is a natural part of any start-up enterprise, especially ones that are relatively capital intensive such as cable television, negative FCF numbers during the early years of operations are not surprising.

A more transparent measure of financial viability that requires less interpretation to assess the short-run financial viability of a private or public enterprise is "net cash flow." It is the sum of net income after taxes plus non-cash depreciation charges. A more refined measure would account for changes in working capital, but these changes are not likely to materially affect the results and are not included here. Net cash flow estimates demonstrate that the four municipal cable systems produced revenues sufficient to cover all operating expenses in 21 of the 27 years of full operation reviewed by Rizzuto and Wirth. The six years they did not were mostly during the early years of operation. Paragould and Negaunee had positive net cash flows of $943 thousand and $182 thousand, respectively. For the first five years of its actual operations, starting in 1990, Glasgow had negative cash flows, but during the next four years net cash flows were positive each year and totaled about $103 thousand.[17]

Rizzuto and Wirth's FCF estimates are juxtaposed in Table 4 below with net cash flow estimates and their components.

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[17] Although Rizzuto and Wirth say that Glasgow signed up its first cable customer in May 1989 and include that year in their analysis, they do not list any cable operating revenue for that year. So, as a practical matter, cable operations did not effectively start until 1990.

TABLE 4: Rizzuto and Wirth Cash Flow Estimates and Appropriate Adjustments
(dollars in thousands)

Municipal Cable TV Enterprise (period covered)	Rizzuto and Wirth Free-Cash Flow Estimates*	Non-Cash Depreciation Expenses	Net Income	Net Cash Flow, Net Income plus Non-Cash Depreciation Expense
Negaunee (1984–1996)	–$239	$315	–$133	$182
Paragould (1990–1996)	–4,257	1,701	–758	943
Glasgow (1989–1997)	–2,097	572	–1,029	–457
Glasgow (1994–1997)	–800	334	–231	103
Cedar Falls (1996–1997)	–5,188 **	501 **	–290 **	211 **

* Rizzuto and Wirth, page 8. Although the authors provided financial estimates for Cedar Falls' cable operations for 1995, actual operations did not start (first customer was not signed up) until the following year. Consequently, financial estimates for 1995 essentially reflect expenditures for construction and, therefore, are not included in the table.

** Estimated from partial year data.

Adjusting Rizzuto and Wirth's cash flow estimates to reflect standard practice dramatically changes the estimates. The cash flow for the four utilities goes from a *negative* amount of almost $12 million to a *positive* net cash flow of $879 thousand (net income plus depreciation).

The relevant cash flows for all utilities change from negative to positive, except for Glasgow where the negative amount falls almost three-fourths. Though Glasgow experienced a negative net cash flow for the period 1989–1997, a more thorough analysis reveals that the negative flows occurred during the first five years of actual operations. Then, for the 1994–1997 period net cash flow was positive in each year and totaled more than $103 thousand, an indication that the municipal cable system had become financially viable once it was up and running.

Net cash flow is not only a meaningful indicator of short-term financial viability; it also provides useful information about the long term since it captures the interest-expense of any debt financing for capital replacements, upgrades, and expansions. And a simple review of net cash flows over a longer period, ten years or so, provides telling evidence about an enterprise's long-term financial viability. If the enterprise has a history of net positive amounts, it is reasonable to assume that its cash flows have been sufficient to make equity contributions to replace, upgrade, and expand its capital stock.

IV. Economic Purpose and Measures of Economic Success

Unlike measures of financial viability, measures used to gauge the economic success of private enterprises are not appropriate for measuring the economic success of public enterprises. The economic success of a private, for-profit business is measured by the extent it maximizes net income, free cash flow, or rate of return compared to other private businesses. But such measures are not valid indicators of the economic successes of public enterprises because the purpose of these enterprises is not to make profits and, consequently, not to maximize them. Rather, these enterprises are "non-profit" entities whose primary purpose is to produce services efficiently and sell them at prices that reflect costs. The measure of their economic success is the rate savings they provide consumers. The savings are the differences between the prices consumers would have paid absent their local public enterprises and the rates charged by such enterprises. The extent of this difference is the proper indicator of the success of local public enterprises because it reflects the economic purpose or objective of the enterprises, similar to the way profit maximization reflects the main purpose or objective of private, for-profit enterprises.

The Rizzuto and Wirth analysis, however, assumes that public enterprises are for-profit entities. The authors contend that municipal cable investments have been poor ones "because the majority of the benefits have … accrued to cable customers rather than [gone to increase] cash flow."[18] But this is exactly what municipal cable TV enterprises are intended to do, and the authors' view betrays a basic lack of understanding of the

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[18] Rizzuto and Wirth, p. 30.

nature of public enterprise and its economic purpose. Rizzuto and Wirth say "it is *possible* to argue that to fully measure" the cost and benefits of municipal cable systems, "*public* costs and benefits," *i.e.,* rate savings, have to be considered [emphases added]. But public benefits in the form of rate savings would not seem to be an open question but a given and an essential part of any analysis of the benefits of public enterprises.

In any event, Rizzuto and Wirth collected and presented useful information on the cumulative rate savings in the four communities they reviewed. The information is presented in Table 5, with and without selected adjustments by the authors.

TABLE 5: Estimates of Cumulative Community Cable Rate Savings
(thousands of dollars)

Municipal Cable System	Without Rizzuto and Wirth Adjustments	With Rizzuto and Wirth Adjustments *
Glasgow (1989–1997)	$1,938	$1,794
Paragould (1991–1996)	5,603	3,678
Negaunee (1985–1996)	2,438	1,887
Cedar Falls (1996–1997)	2,938	2,504

* Include deductions Rizzuto and Wirth made for revenue loss from franchise taxes, capitalized interest, tax assessments, and imputed interest. Estimates taken and calculated from pp. 48–56 of Rizzuto and Wirth.

Rizzuto and Wirth calculated the savings by subtracting the average revenue per customer for each municipal system from the average cable revenue per customer in the region in which each municipal broadband system operated. They then multiplied the difference by the average number of cable customers served in the respective communities. The community savings ranged from $1.9 million to $5.6 million without the authors' adjustments, and from $1.8 million to $3.7 million with adjustments. Total savings were about $13 million without adjustments and almost $10 million with them. Even assuming that all of Rizzuto and Wirth's adjustments that lowered savings were reasonable ones, their savings estimates are significant.

The relative significance is illustrated by the percent savings for Glasgow for the years 1989–97. The averages for Glasgow and for the region in which it operated are presented in Table 6 along with dollar and percent estimates of rate savings.

TABLE 6: Estimated Dollar and Percent Differences in Average Rates— Glasgow Averages v. Regional Averages[19]

Year	Regional Average Annual Basic + Pay + Install Revenue Per Average Subscriber	Glasgow Average Annual Revenue Per Average Subscriber	Dollar Difference Between Regional Average and Glasgow Average Per Subscriber	Percent Regional Average Above Glasgow Average Savings
1989	$225.84	$179.93	$45.91	26%
1990	241.37	210.07	31.30	15
1991	256.94	238.45	18.49	8
1992	268.54	234.64	33.90	15
1993	275.30	244.26	31.04	13
1994	286.86	258.21	28.65	11
1995	302.51	256.58	45.93	18
1996	323.28	250.33	72.95	29
1997	347.65	250.33	97.32	39

Initially, in 1989, the average rate charged by private cable TV providers in Glasgow's region of the country was 26 percent above the municipal utility's and then fell to 8 percent more in 1991. The difference hovered around 13 percent for the next three years until in 1995 it increased significantly to 18 percent, in 1996 to 29 percent, and in 1997 to 39 percent, or almost a hundred dollars a year more.

Such rate savings do not stand alone as the only indicator of economic success of a municipal government enterprise. They must be combined with the financial operating results, and this is why the correct concept and definition of cash flow are so important.

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19 *Ibid.,* p. 46. All data, except calculated percent differences, are taken from Rizzuto and Wirth.

V. Conclusions

Financial measures used to gauge the viability of private enterprises also apply to public enterprises, but it is important that the correct financial indicators are chosen and properly defined. However, measures used to gauge the economic success of private, for-profit enterprises cannot be used for public, non-profit enterprises. The choice of financial and economic measures can dramatically affect conclusions about the financial viability and economic success of public enterprises.

The proper criteria for measuring financial viability would seem to be a straightforward matter given the widespread consensus on the use and definitions of such indicators. And the non-profit nature of public enterprise would seem to naturally preclude measures used to gauge the economic success of private, for-profit enterprises. But this is not the case. Several widely circulated analyses use unconventional measures and incorrect definitions to assess the financial viability of municipally owned broadband enterprises, and ignore the non-profit nature of public enterprises when evaluating their economic success. Consequently, questions regarding the proper criteria of financial viability and economic success remain. These questions have to be resolved before serious empirical research can proceed and be used in public policy discussions about the role and effectiveness of local public enterprises in the broadband industry.