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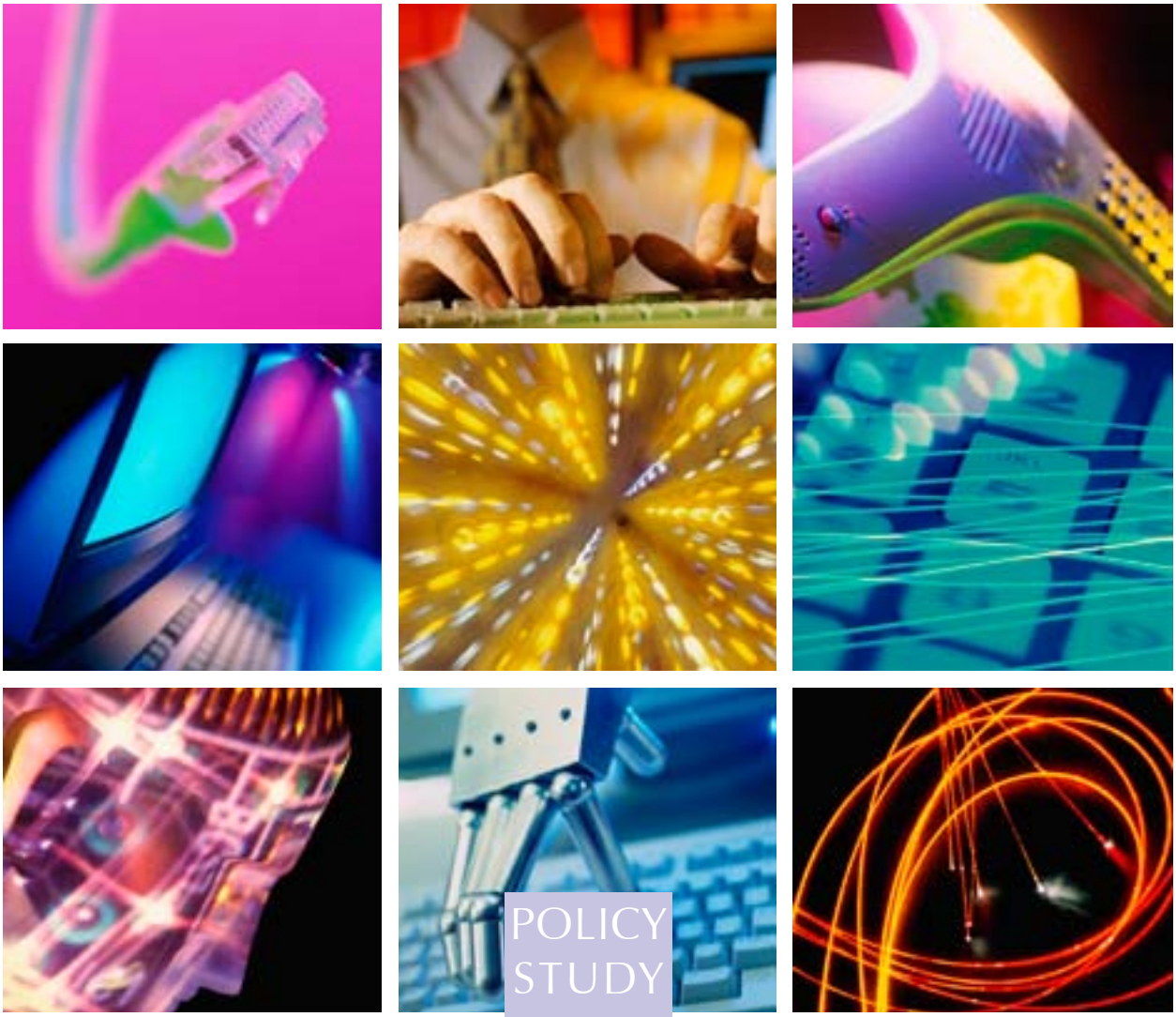
Spinning its Wheels:
An Analysis of Lessons Learned from iProvo's First 18 Months of Municipal Broadband

By Steven Titch



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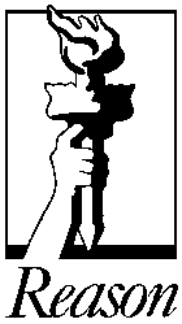

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Executive Summary

After only two years, the municipal broadband system in Provo, Utah has begun to show the pattern seen in other cities that have mounted expensive fiber optic networking projects. With less than half the subscribers expected by this date, iProvo, the $39.5 million system launched in July 2004, has had to request $1 million in additional funds from the Provo's electric utility to meet its costs.

The request for additional funding comes after a troubled first eighteen months of operation marked by slow growth and a rocky relationship with a retail partner that came to an abrupt end during a heated mayoral campaign. The sole bright spot is that iProvo construction has stayed on schedule. The iProvo web site reports that all eight construction phases were completed by the initial July 2006 deadline.

iProvo is set up as a city-owned fiber optic network that wholesales capacity to retail service providers. The unit operates under the administration of the Telecommunications Division of Provo City's Energy Department. Construction on the iProvo network began in July 2004. As of December 1, 2005, fiber optic connections were available to more than half of Provo's approximately 27,000 residences and 4,100 small businesses, making it the largest municipal broadband system in the United States to date, according to Broadband Business Forecast, an industry newsletter.[1] Local newspaper reports place the subscriber total at 7,700 as of October 2006. iProvo also owns and operates a cable television distribution facility.

iProvo began with high hopes. But for all the optimism that the city had found a better formula in wholesaling, the experience remains a warning to other cities that municipalities, even when they

take a wholesale role, cannot compete with the private market. Despite the advantages it had at the outset, just two years into the project, iProvo is dealing with the same struggles other municipalities have had in the past.

iProvo is behind on its business plan and being forced to borrow more money. In February 2006, Mayor Billings and iProvo officials have asked the Provo City Council to approve a transfer of $1 million from Provo's electric utility reserve to cover fiscal 2006 costs.[2] In June, iProvo requested an received a line of credit for an additional $2 million to cover costs in fiscal 2007 and 2008. iProvo officials also said in October that the operation will need 12,000 to 15,000 customers to break even, an increase the original break-even target of 10,000 customers.[3] The original plan had anticipated iProvo achieving 10,000 customers by December 2005.[4] With revenues and customer uptake short of goals, there is mounting pressure on asset value and cash flow. iProvo's "burn rate" (the rate at which expenditures exceed income) in fiscal year 2005 was $325,000 a week.

iProvo's wholesale plan attracted only one retail partner, HomeNet Communications, in its first year of operation. That relationship proved a disaster that ended with HomeNet pulling out of the market in July 2005 and declaring bankruptcy. Of the some 2,400 customers HomeNet and iProvo started with, as few as 1,600 were left by the time HomeNet closed up shop. This occurred as Mayor Billings was in the middle of a heated re-election campaign in which iProvo performance was an issue. This put pressure on Billings to find replacements for HomeNet quickly, giving more leverage to would-be partners to extract favorable concessions from the city.

Cable and Internet prices charged by iProvo partners are not significantly lower than pricing from Comcast or Qwest. An original goal of iProvo had been to offer broadband services at "affordable" rates,[5] implying the rates charged by private service providers are too high. Yet, when compared with similar service packages from the incumbent cable and telephone companies, iProvo's two current retail partners (Veracity Communications and MStar Metro) do not offer sizable discounts.

There is little evidence to suggest iProvo has generated any significant growth in broadband usage or penetration in Provo. All reports suggest that the great majority of iProvo's 5,000 customers had broadband service prior to iProvo, either as customers of bankrupt Provo Cable or as customers of Veracity and MStar.

iProvo's current retail partners, Veracity and MStar, are two local Internet service providers (ISPs). They replaced HomeNet in August 2005. While the city of Provo funds construction and maintenance of the fiber optic backbone and cable head-ends, fiber-to-the-premises (FTTP) connections to each home and business are the responsibility of Veracity and MStar, which are principal points of contact for consumers. The two iProvo retailers compete with other broadband and cable TV providers, including Qwest Communications International and Comcast Corp., as well as direct broadcast satellite (DBS) companies and other ISPs. Large users, such as Brigham Young University, do business directly with iProvo. The city of Provo is also a customer of iProvo.

Yet just two years into operation, iProvo has had to call on the city's power of the purse. In the free market, failing companies close shop, and that is the end of the financial loss. In requesting an allocation from the city's electricity reserve, iProvo can do what no private company can: cross-subsidize broadband operations from other utility funds. The electricity reserve fund was created as a hedge against price increases in the cost of electricity, a volatile market as it is. Provo's electricity customers, not its broadband users, pay into it. Although iProvo seeks only $980,000 of the $17 million in the reserve, it establishes a precedent and leaves the electric utility, and its customers, that much more vulnerable.

In addition to engaging in overt cross-subsidization, iProvo demonstrates more subtle problems municipal broadband systems create for taxpayers and the local economy when they attempt to compete with the private sector. For example, when the city of Provo sold Provo Cable's customers to HomeNet at 40 percent of true market price, it indirectly subsidized HomeNet's market entry. In selling a key asset for less than what it was worth, Provo cheated both local commercial service providers and Provo taxpayers.

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Set up under a wholesale model, iProvo also was touted to be immune from the problems municipalities have had with retail FTTP systems. That has turned out to be a false hope. Indeed, while financial reports looked good in the first year of operation, much of iProvo's revenues were generated from interest accruing on bond funding that had been banked. Although the warning signs were there, namely in the form of poor customer growth, iProvo officials chose to play them down. It was only in its second year, when cash from the bond issue began to deplete, that iProvo's revenue shortfalls and cash flow problems came into high relief.

For a project that began as an example of innovative urban planning and pro-active technology policy, iProvo has had an inauspicious 18 months. In its first year, certain aspects of its balance sheet and revenues appeared sound, but they do not stand up on closer examination. Because it calls for a smaller investment, the wholesale model appears more attractive. The wholesale model is getting more consideration as more cities contemplate municipal wireless networks. Yet the cautionary tale of Provo is that operating as a wholesaler is not enough of a hedge against the financial and logistical problems that occur when a city seeks to compete with commercial service providers in a competitive business sector.

This report will look closer at iProvo's history and performance, both from a financial perspective and in terms of its goals for creating an effective, competitive broadband alternative for the people of Utah and show why its current woes, like so many other municipal systems before it, should come as no surprise.

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Part 1

Background and History of the iProvo System

A. The Wholesale Model

iProvo's wholesale business model differed from past municipal broadband projects. As a wholesaler, iProvo would provide the fiber optic backbone of the system, with retailers making the terminal connections with users. By opting for wholesale only, iProvo relieved itself from the high costs of marketing, retail billing, customer service and, at the back end, cable programming acquisition.

Another advantage was that Provo City Power had already built a fiber network for internal operations. In fact, so much of the Provo infrastructure was in place, adding the extra capacity "was pennies on the dollar," Mary DeLaMare-Schaefer, director of marketing and customer relations for Provo City Power, told Broadband Business Forecast.[6]

By steering clear of retail activities and leveraging existing network assets, Provo's municipal broadband bond issue was a relatively low $39.5 million, less than a third of the $125 million bond issue proposed in Lafayette, Louisiana, a city of roughly the same population as Provo. Lafayette Utilities System, however, proposes to own, operate and manage and market an end-to-end broadband service in direct competition with local cable and telephone companies.

The Lafayette approach has generally been the rule in municipal broadband. Indeed, municipal broadband is an outgrowth of earlier efforts by municipalities to build their own cable TV systems.

The pattern of poor financial performance of municipal systems has been documented in numerous reports.[7] In general, most fail to reach their revenue goals while incurring higher-than-expected costs for marketing, programming and capital equipment. While there have been a few examples where towns have either halted projects or sold off assets (Trion and Marietta, Georgia; Grant County, Washington; and Ashland, Oregon), most systems limp along as their ongoing shortfalls chip away at utility reserves and municipal borrowing power.

While Provo put less at risk, it has not proved itself immune from the same problems that have plagued other municipal systems. It has not met subscriber or revenue goals and it finds itself having to borrow more money to cover shortfalls. It is not as competitive as it had hoped to be.

iProvo began with high hopes. The American Power Association, the trade group for municipal utilities, without criticizing past efforts, made Provo Mayor Lewis Billings a spokesman for sound municipal broadband planning. Billings spoke at the APA's Community Broadband Conference in October 2004 on the need for cities to be involved in broadband projects. He addressed congressional committees and traveled to Lafayette to endorse the municipal proposal during a referendum there.

But for all the optimism that Provo had found a better formula, the experience remains a warning to other cities that municipalities, even when they take a wholesale role, cannot compete with the private market. iProvo went in with many advantages that other cities didn't have. Yet just two years into the project, it's dealing with the same struggles.

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B. Development and Launch

Although the project only received final approval from the Provo City Council in June 2004, the municipal broadband proposal dates from 2000, and its network roots go further back. iProvo extends a fiber optic backbone Provo City Power built in the late 1990s for its internal operations, administration and control. Mayor Billings, first elected in 1997, spurred expansion of the City Power backbone to support citywide agencies and operations, driving IT costs down and integrating applications between and across municipal departments.

Impatient with the pace at which Qwest and Comcast were modernizing their infrastructure, Billings in 2000 proposed leveraging the municipal system to expand high-bandwidth services to all residences and businesses in Provo—the project that would become iProvo.

The management of iProvo falls under the Telecommunications Division of the City of Provo's Energy Department. Although iProvo as a "brand" did not come into being until 2004, the city of Provo has broken out income and expenses for its telecommunications division activities since 2001, allowing these operations to be tracked from year to year.

Initially, Billings's plan called for iProvo to be a retail provider of consumer cable TV, Internet and telephone services. The plan brought stiff resistance from the incumbent providers, Qwest and Comcast, who first engaged Provo at the municipal level, then sought assistance in blocking the plan from the Utah state legislature.[8]

In the end, Provo shifted the project concept to the current wholesale model. Billings has attributed the change to incumbent influence in the statehouse.[9] Although the model has changed significantly, Billings and Provo City Power have remained positive about the prospects for the system and have expressed no disappointment publicly with the shift in approach.

In 2002, the city launched a pilot program, delivering voice, video and Internet to 300 single-family homes and 30 apartment complexes. Local legislative action began to pick up early in 2004. On January 21st, the Provo Municipal Council approved the $39.5 million bond issue for the project. In June, the Provo City Council gave its final approval. The same month, iProvo signed its first retail partner, Video Internet Broadcasting (VIB). As part of the deal, VIB took over the assets of Provo Cable TV, an ailing local cable company that the city of Provo had acquired the previous year and that controlled 2,400 subscriber accounts. VIB changed its name to HomeNet Communications, and agreed to move its corporate headquarters to Provo from Ephrata, Washington.

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iProvo began to extend the city's fiber optic backbone to every neighborhood. HomeNet's role was to market phone, cable TV and high-speed Internet service to Provo households and small businesses. Construction began in July 2004 and is scheduled to continue in phases until July 2006 and is on schedule. Commercial service became available in parts of the city beginning early in 2005. Total cost of the project is set at $39.5 million. The original plan called for iProvo to reach positive cash flow by 2008.[10]

iProvo's point of differentiation would be a fiber-to-the-premises (FTTP) platform, which can accommodate a data connection of up to 100 megabits per second (Mb/s). Both Qwest, Comcast and other local broadband wholesalers extend fiber as far as neighborhood nodes and then cover the "last mile" with either digital subscriber line (DSL) copper or coaxial cable. DSL speeds top out at about 4 Mb/s. Cable modem service reaches 6 Mb/s.

FTTP's superiority is often touted because it can deliver the greatest amount of bandwidth to the user. Even so, it doesn't always mean that service providers will provide that much bandwidth to users. Much depends on the way the network is managed and bandwidth is partitioned. The cost of network equipment is part of the equation, but so are quality-of-service factors. By allocating less

raw bandwidth per customer, a network operator can support more customers from a single node as well as boost the transmission quality of bandwidth-incentive services like video. So despite the 100 Mb/s capacity of FTTP, iProvo only intends to deliver 45 Mb/s over its last-mile fiber connections for the foreseeable future, according to a report by Broadband Business Forecast.[11] Further, the same report noted that HomeNet, the first integrated service provider to be used by iProvo, planned to deliver speeds of only 10 to 15 Mb/s for video and a maximum of 3 Mb/s for Internet data access—symmetrical connections of 1.5 Mb/s upstream and downstream.[12] At the time, this amount of bandwidth is roughly on par with cable modems as well as the latest generation of DSL. As of January 2006, Veracity and MStar were marketing 10 Mb/s Internet.

C. The Collapse of HomeNet

But technical issues would turn out to be small compared to iProvo's business relationship with HomeNet, which illustrates the risks cities take, the liabilities they incur, and the value they forfeit when they take an active financial interest in competing with the private sector. In hindsight, in its choice of HomeNet, Provo also could have done its due diligence better.

HomeNet itself has something of a checkered history. Provo was not its first municipal relationship. As Video Internet Broadcasting (VIB), the company initially established itself in Ephrata, Washington as a retail partner for the Grant County Public Utility District, a municipal network set up much like Provo's—a fiber optic backbone run by local government with retail cable, Internet and phone sales handled by VIB. As Grant County was dealing with its own revenue shortfalls in October 2004, VIB signed its deal with iProvo, moved its headquarters to Provo and changed its name. In April 2005, Grant County suspended construction, electing to "stand pat" with a partial system. HomeNet, still doing business as VIB-TV in Ephrata, at that point announced it would be pulling out of the Grant County operation.

There is evidence that VIB/HomeNet's relationship with Grant County was rocky. Minutes from PUD meetings in April 2005 note customer complaints about VIB service and suggest heated discussion about the future of the retail arrangement with the service provider.[13]

In attracting HomeNet as its first service provider partner, the city of Provo was able to offer a deal sweetener—the assets of Provo Cable TV, the ailing cable TV provider that the city had purchased in 2003. The city contracted with VIB to manage Provo Cable in February 2004. Concurrent with HomeNet's agreement to become an iProvo customer, HomeNet took possession of Provo Cable's pool of 2,400 customer accounts. This represents about one-quarter of the total number of subscribers that would be needed for iProvo to be a success, says Broadband Business Forecast.[14]

No value for the sale of Provo Cable was reported, but a copy of the sales agreement between Provo and HomeNet, filed as part of HomeNet's Form 10QSB December 21, 2004, reveals details about the how Provo Cable's accounts were valued.[15] The arrangement shows how taxpayers can get short-changed when municipalities try to tilt the competitive field to their advantage. Given

cable TV ranges from $100 to $300 per account, Provo Cable's customer base was quite valuable. Indeed the agreement valued Provo Cable's customers at $275 each. The agreement, however, stipulated that HomeNet pay only 40 percent of this cost, $110 per single family residence, for the great majority of accounts. The city asked for more attractive terms for multi-dwelling unit customers, receiving 90 percent of the cost, $247, and for business customers, receiving full cost.[16]

It is reasonable to assume that the city's considerable discounts were aimed at giving HomeNet a "leg up" against incumbent competitors. Yet because these assets were sold at a below-market price, HomeNet's leg up came at the expense of Provo's taxpayers who were denied full value for city-owned assets. It is an example of one of the indirect ways that municipal systems can indirectly subsidize competition against commercial service providers.

It is reasonable to assume that the city's considerable discounts were aimed at giving HomeNet a "leg up" against incumbent competitors. Yet because these assets were sold at a below-market price, HomeNet's leg up came at the expense of Provo's taxpayers who were denied full value for city-owned assets.

The consequences to Provo taxpayers became more relevant once HomeNet pulled out in order to "concentrate on other business ventures."[17] Provo did not get much back for the discounts it gave HomeNet. Within a year, HomeNet's customer numbers dropped from 2,400 to as low as 1,600 by some reports[18]. Revenue and subscriber goals that iProvo had forecast had not been met. Moreover, for Mayor Billings and the Provo city administrators, the timing could not have been worse. In the summer of 2005 Billings was enmeshed in a campaign for re-election against an opponent who had made the cost of iProvo and its lagging sales a central campaign issue.

Under pressure to show progress, iProvo signed retail agreements with Veracity and MStar in August, just a month after the HomeNet pullout. The two ISPs split the HomeNet accounts and migrated approximately 2,000 to 2,500 of their own customers to the iProvo network, enabling Billings to meet his revised goal of 4,500 iProvo users by year-end 2005. Terms of the deals, however, were not disclosed, but given that Billings was politically vulnerable at the time, Veracity and MStar were negotiating from strength.

D. Shortfalls Catch Up

Revenue and customer shortfalls finally caught up with iProvo in February 2006. iProvo asked the City Council to approve the transfer of $1 million from the city's electricity reserve fund to cover the municipal networks costs for fiscal 2006. Provo's electricity ratepayers will now be propping up the city's competitive broadband enterprise.

For a project that began as an example of innovative urban planning and pro-active technology policy, iProvo has had an inauspicious first 18 months. About the only positive is that its buildout continues on schedule. In its first year, certain aspects of its balance sheet and revenues appeared sound, but they do not stand up on closer examination. The balance of this report will look more closely at iProvo's performance, both from a financial perspective and in terms of its goals for creating an effective, competitive broadband alternative for the people of Utah and illustrate that its current financial problems were inevitable and will likely get worse.

Part 2

An Analysis of iProvo's Financial Performance

iProvo has had a shaky start and overall performance has not been impressive. Despite that it is on schedule in terms of construction, failure to meet subscriber goals for the first year has forced it to borrow $980,000 from the utility's energy reserve fund. It may have to borrow as much as $2 million more in the next two years. iProvo is already playing catch-up. All indicators point to a challenging second and third year for iProvo and ongoing pressure on the city and its partners to meet overall performance goals.

iProvo's plan called for debt to be paid with revenues. That made subscriber and revenue growth imperative from the launch. But HomeNet squandered iProvo's competitive advantage of 2,400 captive retail customers. When it ended its relationship, city officials placed the number as low as 1,600.

HomeNet's poor performance contributed to an overall drop in revenues to $853,204 in 2005 from $903,556 in 2004, as reported in the city of Provo's 2005 Annual Statement of Revenues, Expenses and Net Assets (see Table 1). A breakdown of operating revenues shows a substantial increase in "Charges for Service"—$661,406 from $111,509, but much of these revenues may represent receipts from Provo city departments. Moreover, the decrease in income from "Miscellaneous"—to $42,423 from $792,047—more than offsets the gains from Charges for Service. Provo does not explain what Miscellaneous operating income accounts for, or why they balloon in 2004 compared to other years, but it is possible that revenues listed as miscellaneous in 2004 were listed as outright Charges for Service in 2005.

However, based on additional information acquired by the *Deseret Morning News*, by the end of its June 30, 2005 fiscal year, iProvo's subscriber revenues were short by more than $264,000.

In September 2005, The *Deseret News* was able to acquire a breakdown of iProvo revenue sources more detailed than provided in the city's annual report.

iProvo's direct revenues from customers were projected to be $562,594 during fiscal year 2004-05, which ended June 30. The actual income was $298,017—or 53 percent of projections, according to documents obtained from the city through the Government Records and Access Management Act.

The city maintained a healthy overall revenue picture for iProvo despite the shortfall because of several serendipitous windfalls unrelated to consumer demand, including nearly $335,000 more than anticipated in interest income from iProvo bonds.[19]

Table 1:- City of Provo Telecommunications : Annual Statements of Revenues, Expenses and Net Assets

	Fiscal Year Ending June 30				
	2001	**2002**	**2003**	**2004**	**2005**
Charges for Service	384,000	541,632	2,662	111,509	661,046
Lease Income		19,365	76,588	0	109,735
Miscellaneous		72,160	155,893	792,047	82,423
Total Operating Revenues	384,000	633,157	235,143	903,556	853,204
Salaries and Wages	0	242,389	446,534	562,215	555,911
Employee Benefits	0	79,372	147,762	162,263	218,341
Operating Expenses	384,000	623,732	747,099	977,266	967,468
Depreciation	41,000	82,353	208,461	584,553	696,885
Amortization of Goodwill	39,000	78,406	78,406	78,406	78,406
Total Operating Expenses	464,000	1,106,252	1,628,262	2,364,703	2,517,011
Interest Income	2,000	28,123	32,381	204,442	771,334
Interest on Debt	0	0	0	(163,178)	(776,239)
Total Non-Operating Revenues (Expenses)	2,000	28,123	32,381	41,264	(4,905)
Income (Loss) before Contributions and Transfers	(78,000)	(444,972)	(1,360,738)	(1,419,883)	(1,668,712)
Transfers In	2,320,000	4,426,203	1,866,081	670,196	34,082
Transfers Out		0	(390,690)	(450,374)	(26,970)
Change in Net Assets	2,242,000	3,981,231	114,653	(1,200,061)	(1,661,600)
Net Assets as Originally Stated	0	2,241,748	6,222,979	6,337,632	5,137,571
Prior Period Adjustment	0	0	0	0	0
Net Assets at Beginning of Year	0	2,241,748	6,222,979	6,337,632	5,137,571
Net Assets at End of Year	2,242,000	6,222,979	6,337,632	5,137,571	3,475,971

Source: City of Provo, Comprehensive Annual Financial Reports, 2001-2005; 2001 amounts rounded.

Further on, the article details iProvo's other revenue sources not related to retail sales, including funds from Utah Telecommunication Open Infrastructure Agency (UTOPIA), which is heading up a statewide fiber optic network project linking 18 cities.

> *Provo benefited from more than half a million dollars in unexpected revenue, more than making up for the customer revenue shortfall. Most came in the form of the extra interest income. That money was generated by rising interest rates and slower-than-anticipated spending of bond proceeds, Provo budget director John Borget said.UTOPIA provided $48,000 of the unexpected revenue. UTOPIA, another government-owned telecommunications provider, is leasing its cable feed from iProvo.*[20]

The revenues from interest income and UTOPIA disguise the depth of iProvo's problem with its subscriber shortfall. If we look at the city's annual report and the *Deseret News* articles together, we see that of the $853,204 in operating revenues iProvo reported for fiscal 2005, only $298,000—just 35 percent of total revenues—came from consumer phone, cable and Internet service. The rest came from government sources: from telecommunications fees paid by other Provo departments for use of the network, from UTOPIA and from other such agencies. For every dollar in operating that iProvo took in fiscal 2005, just 35 cents came from the consumer broadband marketplace—the segment iProvo is spending $39.5 million to serve. The rest came from taxpayers, one way or another.

While the stated reason for HomeNet's departure was the retailer's decision to pursue other businesses, the city of Provo could not have been happy with HomeNet's performance, nor can iProvo sustain such a low level of retail revenues for the current fiscal year.

For starters, iProvo cannot count on another "serendipitous windfall" of $335,000 in interest income. If we look at the Provo report, that extra income raised overall interest income enough to offset that $776,000 in debt interest Provo paid in 2005. The funds that generated that interest are being spent. So while interest on debt may be stable, interest income in 2006 will be at least half of this past year's.

Neither can iProvo count on much more revenue from government clients. City budgets are largely fixed and UTOPIA offers no guarantees. iProvo will not succeed unless it drastically increases consumer subscribership to cable and Internet services.

The outlook improved when Veracity and MStar replaced HomeNet. Still, toward the end of last year, Provo officials were downgrading expectations. In February 2005, iProvo executives predicted 6,000 subscribers by year-end.[21] By July, Mayor Billings was predicting between 4,000 and 5,000. By September, Billings said 4,000 would not be reached until Thanksgiving, and 5,000 would not be reached until March 2006.[22] The current target is 10,000 subscribers by August 2007.

Even if these predictions hold true, it still means another increase in net loss for iProvo. Looking at the bottom line, we see growing losses year to year.

iProvo lost $1.36 million in fiscal 2003, $1.42 million in 2004 and $1.67 million in 2005. With the loss of last year's interest income and the lagging subscriber growth, it is not unreasonable to expect iProvo to lose at least $2 million in fiscal 2006. In addition to contributing to year-to-year losses, the revenue shortfalls also affect the net worth of the Provo telecom operation and put a strain on cash flow.

Unlike profit and loss statements, which look at year-to-year performance, cash flow statements put the profit and loss in the context of day-to-day business, and take into account certain assets and liabilities, including loans, transfers and available cash on hand.

Table 2: City of Provo Telecommunications
Statement of Cash Flows Fiscal Year Ending June 30

	2001	2002	2003	2004	2005
Receipts from customers and users	368,000	617,537	237,379	834,092	573,750
Payments to suppliers	(187,000)	(744,930)	(639,044)	(1,016,269)	746,240
Payments to employees	0	(309,456)	(594,296)	(724,478)	(722,497)
Net Cash provided (used) by operating activities	181,000	(436,849)	(995,961)	(906,655)	597,493
Loans due from other funds	(5,000)	4,979	0	0	0
Loans due to other funds	24,000	(23,806)	0	827,585	1,263,879
Transfers from other funds	2,320,000	4,426,203	1,866,081	670,196	34,082
Transfers to other funds		0	(390,690)	(450,374)	(26,970)
Net cash provided (used) by non-capital financing activities	2,339,000	4,407,376	1,475,391	1,047,407	1,270,991
Payments for capital acquisitions	(2,319,000)	(1,911,805)	(2,032,969)	(963,159)	(17,755,348)
Proceeds from bond issue	0	0	0	38,968,315	0
Interest paid on bonds payable	0	0	0	0	(1,870,714)
Net cash provided (used) by capital and related financing activities	(2,319,000)	(1,911,805)	(2,032,969)	38,005,156	(19,626,062)
Receipts of Interest	2,000	28,123	32,381	204,442	771,334
Net cash provided (used) by investing activities	2,000	28,123	32,381	204,442	771,334
Net increase (decrease) in cash	203,000	2,086,845	(1,521,158)	38,350,350	(16,986,244)
Cash at beginning of year	0	202,518	2,289,363	768,205	39,118,555
Cash at end of year	203,000	2,289,363	768,205	39,118,555	22,132,311

Source: City of Provo, Comprehensive Annual Financial Reports, 2001-2005; 2001 amounts rounded.

When we look at the history of Provo's telecom operation we see that before iProvo, the operation never had to support itself with end-user sales (as the revenue figures in the top half of Table 2 show). Much of the net cash provided in 2001, 2002 and 2003 came from transfers from other funds, primarily the city of Provo's Energy Fund, within which telecom operated as a division. Spending for the most part matched inflows. Although the Provo telecom unit ended fiscal 2002 with a $2.3 million surplus, much of that was rolled into the fiber optic backbone the city built in 2003. At the end of that fiscal year, Provo's cash was down to $768,000. In fiscal 2004, as iProvo, the telecom operation saw the bulk of its inflows from the $39.5 million bond issue. iProvo had already begun to spend in fiscal 2004, paying slightly more than $1 million to suppliers.[23] iProvo began spending the cash from the bond issue in fiscal 2005.

While the expenditure of $19.6 million last year may have been planned, the $597,000 in inflows from operating activities was much lower than expected. Even counting an additional $1.2 million loan from other city of Provo funds, iProvo's net decrease in cash for fiscal 2005 was nearly $17 million. This translates to a "burn rate"—the net spending against receipts—of $325,000 a week. Judging from recent accounts, iProvo's cash depletion has become enough of a problem to require a transfer of nearly $1 million from the electricity fund to cover cost in fiscal 2006.

iProvo's value, like an individual's net worth, can be measured in terms of liabilities subtracted from assets. Liabilities in the form of loans exact a huge cost on net worth. If we look at iProvo's financial statements from 2001, pre-iProvo, although the operation lost $78,000, its net assets, or net worth, was some $2.24 million (See Table 3). This is because the operation's assets of $1.5 million outweighed its $214,000 in liabilities.

When it completed its initial fiber optic network, in 2002, that infrastructure became an asset. By 2003, still pre-iProvo, Provo's telecommunications operations had total assets of $6.5 million, liabilities of $188,000 for net assets of $6.3 million. This represented a peak.

While the $39.5 million bond issue increased assets by infusing iProvo with cash, it also placed a new debt load on the liability side of the ledger. Hence in 2004 and 2005, total assets increased to $45.7 million and $48 million respectively, liabilities increased to $40.6 million and $44.5 million for the same periods. Net assets began a commensurate decline, from the high of $6.5 million in 2003 to $5.1 million in 2004 to $3.5 million in 2005. Another net loss of $1.5 million to $2 million in 2006, which shows every possibility of occurring, will drive iProvo's net assets below $2 million—less than what the operation was worth when it was formed in 2001 as a city telecom department.

More telling is the way net capital assets track with total liabilities. With this measure, we can see that iProvo's debt is increasing faster than it is building equity. In the two years from 2003 to 2005, iProvo's net capital assets grew from $4.3 million to $23.5 million, an increase of $19.2 million.

Long-term liabilities, however, ballooned from a mere $189,000 to $44.4 million over the same period, largely representing the bond issue. To account for this properly, we need to figure in the $22 million in unspent funds derived from the bond issue (restricted cash) that iProvo had at the end of fiscal 2005.

Table 3: City of Provo City Telecommunications Combining Statement of Assets

	Fiscal Year Ending June 30				
	2001	2002	2003	2004	2005
Cash	100,000	2,289,363	768,205	0	104,570
Restricted Cash	103,000	0	0	39,118,555	22,027,741
Accounts Receivable	9,000	24,580	22,344	91,808	371,262
Inventory	0	0	0	0	795,796
Due from Other Funds	5,000	0	0	0	0
Total Current Assets	217,000	2,313,943	790,549	39,210,363	23,299,369
Equipment	751,000	750,950	2,783,919	3,255,132	7,113,711
Buildings	0	0	0	0	6,124,381
Infrastructure (Fiber Optic System)	0	1,911,804	1,911,804	1,911,804	1,911,804
Software	0	0	0	566,390	646,933
Construction in Progress	0	0	0	424,567	9,268,328
Accumulated Depreciation	(41,000)	(123,530)	(331,991)	(916,544)	(1,613,429)
Net Capital Assets	710,000	2,539,224	4,363,732	5,241,349	23,451,728
Goodwill	1,529,000	1,450,505	1,372,099	1,293,693	1,215,287
Total Other Assets	1,529,000	1,450,505	1,372,099	1,293,693	1,215,287
Total Assets	2,456,000	6,303,672	6,526,380	45,745,405	47,966,384
Accounts Payable	87,000	68,586	175,014	103,979	2,613,483
Accrued Liabilities	103,000	12,107	13,734	45,765	36,631
Due to Other Funds	24,000	0	0	827,585	2,091,464
Accrued Interest Payable	0	0	0	662,190	719,631
Accrued Compensated Absences	0	0	0	0	3,044
Total Current Liabilities	214,000	80,693	188,748	1,639,519	5,464,253
Accrued Compensated Absences	0	0	0	0	57,844
Bonds Payable	0	0	0	38,968,315	38,968,315
Total Long Term Liabilities	0	0	0	38,968,315	39,026,159
Total Liabilities	214,000	80,693	188,748	40,607,834	44,490,412

Table 3: City of Provo City Telecommunications Combining Statement of Assets					
	Fiscal Year Ending June 30				
	2001	2002	2003	2004	2005
Invested in capital assets, net of related debt	710,000	2,539,224	4,363,732	1,641,385	(39,471,578)
Restricted for Debt Service	0	0	0	3,750,204	1,927,250
Unrestricted	1,532,000	3,683,755	1,973,900	(254,018)	41,020,300
Total Net Assets	2,242,000	6,222,979	6,337,632	5,137,571	3,475,972
Total Liabilities and Net Assets	2,456,000	6,303,672	6,526,380	45,745,405	47,966,384

Source: City of Provo, Comprehensive Annual Financial Reports, 2001-2005; 2001 amounts rounded

If iProvo last June had given up on its system and decided to sell it (as have Ashland, Oregon; Lebanon, Ohio; and Marietta, Georgia, to name three municipal broadband failures), it could have expected $19.2 million back for its infrastructure ["net capital assets" ($23.452 million) plus "other assets" ($1.215 million) less "current liabilities" ($5.464 million)]. That and the $22 million in cash on hand would have yielded $41.2 million, $2.8 million short of total liabilities. In short, iProvo is "upside-down" financially. While it still has positive net assets, it owes more than the system is worth. Overall, assets grew by $2.2 million in 2005, but liabilities grew by $3.9 million. This gap shows every sign of increasing and will slowly eat away at iProvo's value and prevent the city from ever getting out from under the debt. This problem is endemic to municipal broadband systems.

In short, iProvo is "upside-down" financially. While it still has positive net assets, it owes more than the system is worth.

For example, in a study of three municipal broadband systems in Iowa, Dr. Ron Rizzuto, professor of finance at the University of Denver pointed to the way that municipal systems slowly drain resources from communities.

> *None of these operations has made any significant reduction in total debt levels during its existence. Between 1997 and 2004, Cedar Falls reduced its total debt from $10.98 million to $9.67 million. Spencer reduced its debt from $9.05 million in 2001 to $8.22 million in 2004. Muscatine's debt is $33.14 million. None of these municipal systems has achieved a payback of its original investment for the municipal utility, let alone a positive return on investment.*[24]

In the most notorious example, Marietta, Georgia, invested $35 million in its municipal broadband, but was able to recoup only $11 million from its sale.

The same fate awaits iProvo if it cannot increase revenues to adequately cover day-to-day costs and long-term debt. As of June 2005, iProvo's finances appeared fairly sound. Shortfalls in consumer revenues were disguised by the unexpected interest income. However, as iProvo draws down its cash reserves, its financial weaknesses will become more apparent. When we look at other external events that have surrounded the introduction of iProvo, including its poor choice of HomeNet as a partner, the outlook is not optimistic.

Part 3

Rates and Service Packages

"Lower prices" is a consistent mantra of municipal broadband proposals. Lafayette Utilities System in Lafayette, Louisiana, which is moving forward with a $125-million FTTP project, is promising rates 20 percent lower than commercial cable. Provo, perhaps wisely, never stated how much less expensive its services would be, but did use the term "affordable" in community meetings notices to build momentum for the project. On other occasions, Mayor Billings implied that commercial service providers were only interested in serving the well-to-do.

> *…(F)ive private sector companies had franchise agreements in place to provide fiber connectivity, but none could or would provide what we needed. It seemed that the franchisees were mostly interested in simply creaming off the biggest and best customers for fiber connectivity.*[25]

In the same speech, Billings stated that universal broadband was the job of government because it was financially unfeasible for the private sector.

> *Local governments have always been facilitators and partners with private businesses and free enterprise. We have always had the role of providing infrastructure that would be too difficult or too expensive for a private firm to provide alone.*[26]

Yet iProvo's retail partners, Veracity and MStar, charge rates roughly equivalent to Comcast and Qwest for similar packages of service. Charts showing prices, with notes on features, appear in the appendix.

In terms of top-of-the-line "Triple Play," the bundling of phone, Internet and cable, Qwest, the local telephone company, offers the cheapest package at $89.97 a month. This includes 225 channels from its video partner, DirecTV. Its DSL download speed is 5 Mb/s.

MStar Metro's Triple Play bundle, on the other hand, is $124.95, $35 more a month. MStar's phone service, however, offers unlimited long distance, which would cost the Qwest customer an additional $20 a month. This closes the price gap by little more than half. MStar also promises 10 Mb/s Internet. The trade-off is that it offers only 122 cable channels, and as of late January the popular HBO suite was not available.

Veracity falls in the middle, at $115.94. Its video line-up is comparable to MStar's, but still almost 100 channels short of Qwest. By policy, Veracity does not offer adult pay per view programming nor shows NC-17 rated films.

Comcast does not have a triple play package. A Comcast user would pay $58.55 for a package of more than 200 channels. A cable modem, offering download speeds of 4 Mb/s, would be available for $42.95. Although VoIP is not available from Comcast in Provo, it is available from other service providers, such as Vonage, for $24.95. That brings a customer-rigged triple play package using Comcast to $126.45, just $2 more than MStar—for twice the number of channels. Once Comcast introduces its own VoIP, this package price likely will drop below MStar's.

The iProvo resellers do not demonstrate much difference when it comes to "a la carte" pricing, either. Neither Comcast nor Veracity offers consumers a la carte broadband Internet. Qwest offers 5 Mb/s "naked" DSL (customer is not required to purchase basic phone service) for $31.99 a month. MStar Metro offers 10 Mb/s access for $39.95.

Veracity and MStar offer combinations of Internet and unlimited VoIP for $69.99 and $78.95 a month, respectively. Qwest offers VoIP for $29.99 a month, plus a 5-cent per minute charge for domestic calls up to a maximum of $19.99. For a Qwest user, that would add up to a maximum out-of-pocket cost of $81.97. Instead of Qwest VoIP, however, a Qwest DSL customer could purchase an unlimited Vonage package for $24.95 and create the same bundle for $56.94, substantially beating both municipal partners.

Again, when municipal systems are proposed, officials often say such projects are the only way communities can bridge the "digital divide" and bring broadband to those who are unable to afford prices charged by incumbents. That Qwest—not the iProvo partners—offers the most economical package for phone and basic broadband is extremely telling. It negates Billings's earlier assertion that incumbents are only interested in serving high-income households and have business models that make them incapable of meeting the needs of budget-minded consumers.

Part 4

Summary and Conclusions

iProvo is spinning its wheels. While in the first year, it appeared to be sound financially, problems began to appear as it depleted its reserves and it failed to gain enough traction in a competitive market.

A. Revenue Shortfalls

Current trends are not favorable. iProvo is facing a cash-flow crisis and requires strong and immediate revenue growth to keep up with debt. It faces strong competition from commercial service providers Qwest and Comcast, while struggling with its own retail partners. Yet so far it has had trouble in building the necessary revenues from consumer broadband services it needs to be successful. In 2005, just 35 percent of revenues came from consumer services. It is relying too much on revenues from government sources.

As a result, iProvo will continue to lose money in 2006, and more critically, its net assets will continue to decline as its debt and interest load grow. Currently, liabilities outstrip assets by $2 million. This gap will widen and it will become increasingly difficult for iProvo to ever pay off the debt on its system or realize full value of its investment.

The year-to-year losses, rising debt and depleting cash repeat a pattern for municipal systems that's been well documented in numerous other studies, including a recent major report from Balhoff & Rowe, a private financial consulting firm.[27]

The financial issues are related to market and economic realities that cities tend to ignore when embarking on municipal systems.

B. Broadband Economic Realities

City officials have kicked off municipal projects in Philadelphia, San Francisco, and Minneapolis all with the stated objective to make the Internet affordable to low-income households. The

Philadelphia contract with EarthLink calls for Internet access at $10 a month for economically disadvantaged residents. San Francisco has demanded free service for the poor.

The Consumer Federation of America, Media Access Project, and Free Press reiterated this point in a joint report released in April 2005: "Municipal broadband plays a critical role in making the goal of universal deployment a reality."[28]

But in Provo, it's still the phone company that offers the cheapest deal in raw broadband. iProvo's partners, while competitive at the high-end, have no low-end package.

For those tracking municipal broadband, the failure of such systems to address the low end of the market, despite promises to do so, is not surprising. FTTP remains capital-intensive, and "average revenue per user," or ARPU, is a critical part of the business plan. While the cost of infrastructure is dropping steadily, revenues of $20 a month do not justify a build-out to a home. Hence, Qwest, which can run DSL over existing copper, has the most economical play.

The ARPU problem in Provo has turned up elsewhere. Bristol Virginia Utilities (BVU) OptiNet began offering triple play services from a municipal FTTP system in 2002. After confronting a series of revenue shortfalls, OptiNet now requires customers to spend at least $44.95 a month on services. So while OptiNet offers 1 Mb/s Internet access at an attractive $26.36 a month, Bristol residents cannot buy that service alone. They must purchase a phone or cable TV package that raises the monthly bill to the $44.95 threshold.[29]

C. Limits of the Wholesale Model

The collapse of the iProvo-HomeNet partnership illustrates the biggest risk for such municipal wholesale ventures—their success depends on the commitment of their retail partners to be aggressive players in a competitive market. Yet any private partner will know that since the municipality will not go bankrupt but will continue to funnel funds from other taxpayer resources, there is no inherent incentive to succeed.

Despite the city's attempts to dismiss HomeNet as a simple misstep that has been remedied by the agreements with Veracity and MStar, the selection of HomeNet, and its subsequent loss of some 800 customers, was a disaster for iProvo.

Meanwhile, iProvo's competitors, Comcast and Qwest, cut prices and introduced new services. Although iProvo had hoped to have other retailers, HomeNet was its sole partner for the crucial first year of operation.

How iProvo conducts business with its retail partners in the future needs to be watched closely. Indeed, Provo still can't escape the conflict-of-interest problems that arise from participating in a market that it is also charged with taxing, franchising and licensing. For evidence, all one needs to

do is look at the initial HomeNet deal, where Provo discounted the valuable cable customer assets by 60 percent to land the contract.

While iProvo's plan is far less expensive and hopes to spread the risk among retail service providers, there remains the concern that if business does not go smoothly, it will attempt to use government mechanisms to hamper commercial competitors, such as by charging higher franchise fees, assessing special taxes and construction levies or placing restrictions on right of way. It has every incentive to do so. HomeNet still owes Provo money from its retail deal, although the *Deseret News* did not report the sum. The city of Provo's 2006 budget, however, lists $180,000 due from the Provo Cable sale as expected revenue.[30] This likely represents unpaid HomeNet obligations. Most municipalities don't start out with measures such as these in mind, but there have been examples of municipal systems, after failing to compete effectively, looking to use local government power to skew the market to its advantage.

D. No Contribution to Market Growth

Again, the case for municipal broadband has always been the argument that it expands the availability and reach of Internet access to the entire community. As of November 2005, iProvo, by its own admission, had only 4,000 customers, and did not expect to reach 5,000 until spring 2006. Moreover, when we look at the numbers, it becomes obvious that iProvo, as an operation, has done little to increase overall broadband network penetration in Provo.

When they succeeded HomeNet as iProvo partners, Veracity and MStar together had 2,000 customers in Provo.[31] Veracity had an additional 2,000 in surrounding Utah County.

Billings, in a prediction that the *Deseret News* called "bold," boasted that the deal would mean a dramatic increase in subscribers for iProvo. "We'll go from under 2,000 subscribers to iProvo to 4,000 in 60 days. We'll be halfway to where we need to be," Billings said.[32]

Indeed, while the additional subscribers were a plus for iProvo's bottom line, there was little net benefit for Provo in terms of Internet availability. The sudden boost in subscribership may look impressive, but in truth Veracity and MStar simply migrated existing customers to the iProvo backbone.

So in its first 12 months of operation, it's hard to make the case that iProvo was responsible for any net growth in Internet or cable TV connections in Provo—or any real bridging of the digital divide, despite an investment of some $19 million. Most retail customers whose traffic today rides iProvo were already broadband users. The city will spend another $20 million by June, yet anticipates adding just 1,000 more customers in that timeframe. Some of them will be more Veracity users in outlying parts of Provo and Utah County.

Although “buying market share” is a legitimate business tactic in the private sector, there is a limit to how much iProvo can accomplish this way. Sooner or later, for the sake of pure revenue growth, it must attract new cable and Internet customers, as well as win customers away from Comcast and Qwest.

This is not happening. If indeed the case for iProvo was it could provide better service at lower prices than commercial competitors, it has failed. The best that can be said is that iProvo offers an alternative to Qwest, Comcast and other local ISPs. Yet the choice is not so compelling that customers are embracing it in significant numbers.

The hard reality is that municipal systems must compete with the private sector. Qwest and Comcast may have been politically unpopular, but at the end of the day, they proved better at providing local broadband service than the Provo city government, if iProvo’s low number of subscriber accounts is any gauge.

iProvo is another municipal broadband system that has fallen woefully short of expectations. It is an expensive endeavor that shows every sign of costing the city and its taxpayers much more over the years than they will ever see in benefits.

Appendix

Rates for Cable TV, Internet and Phone Service in Provo, as of January 2006

Comcast		
Service	**Price/Month**	**Features**
Digital Platinum	98.49	200+ Channels, music, On Demand, 5 premium channels;
Digital Silver	72.49	200+ Channels, music, On Demand, 1 premium channel,
Digital Plus	58.55	200+ Channels, music, On Demand
Standard Cable	43.60	
Cable modem	42.95	4 Mb/s download, 7 e-mail accounts, shared server space, cable subscription required
VoIP Phone	Service Not Available	

Source: www.comcast.com; rates and service information for Provo, UT zip codes

Qwest		
Service	**Price/Month**	**Features**
Phone, 5 Mb/s DSL, DirecTV, Wireless Service	122.96	225 channels, 11 email accounts, MSN software and applications
Phone, 5 Mb/s DSL, DirecTV,	89.97	225 channels, 11 email accounts, MSN software and applications
DirecTV "a la carte"	41.99	
5 Mb/s DSL	26.99	11 email accounts, MSN software and applications
5 Mb/s "naked" DSL	31.99	11 email accounts, MSN software and applications; no basic phone line required
1.5 Mb/s DSL	21.99	11 email accounts, MSN software and applications
VoIP	29.99	5 cents a minute for domestic long distance up to $19.99 max. charge
Phone service	32.99	Includes 10 calling features, including voicemail, caller ID, Call forwarding, call waiting
Phone service	25.99	Includes choice of 3 calling features
Long Distance	20	Unlimited domestic long distance; $5 discount when bundled with phone service
Long Distance	9	300 minutes per month, 7 cents per minute above.

Source: www.qwest.com

Veracity		
Service	**Price/Month**	**Features**
Triple Play Digital Premium (VoIP Phone, Internet, Cable)	115.94	133 Channels; premium channels from $1 to $12 additional
Triple Play Digital Classic	104.94	65 Channels; premium channels from $1 to $12 additional
Triple Play Digital Lifeline	86.94	32 Channels; premium channels from $1 to $12 additional
Double Play VoIP Phone and Internet	69.99	10 Mb/s downstream, unlimited local and long distance calling (lower 48 states)
Extra phone line	16.99	
Extra voice mail	4.99	
Extra Computer connected to Internet	58.00	

Source: www.veracitycom.net

MStar Metro		
Service	**Price/Month**	**Features**
InfiniteChoice Digital Premiere with Internet and VoIP	124.95	122 Channels; premium channels $1.95-$13.95, HBO availability pending; 10 Mb/s Internet, unlimited local and long distance calling
InfiniteChoice Digital Premiere with Internet only	89.95	
InfiniteChoice Digital Select with Internet and VoIP	112.95	84 channels; premium channels $1.95-$13.95, HBO availability pending; 10 Mb/s Internet, unlimited local and long distance calling
InfiniteChoice Digital Select with Internet only	79.95	
InfiniteChoice Utah Local with Internet and VoIP	92.95	24 channels; premium channels $1.95-$13.95, HBO availability pending 10 Mb/s Internet, unlimited local and long distance calling
InfiniteChoice Utah Local with Internet Only	57.95	
Internet and VoIP	78.95	10 Mb/s Internet, unlimited local and long distance calling
Internet	39.95	10 Mb/s Internet

Source: www.mstarmetro.net

About the Author

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Previously, Mr. Titch was director of editorial projects for *Data Communications* magazine, where he directed content development for supplemental publications and special projects. He also has held the positions of editorial director of *Telephony*, editor of *Global Telephony* magazine, Midwest bureau chief of *CommunicationsWeek*, associate editor-communications at *Electronic News*, and founding editor of *Cellular Business* (now *Wireless Review*).

Titch graduated cum laude from Syracuse University with a dual degree in journalism and English.

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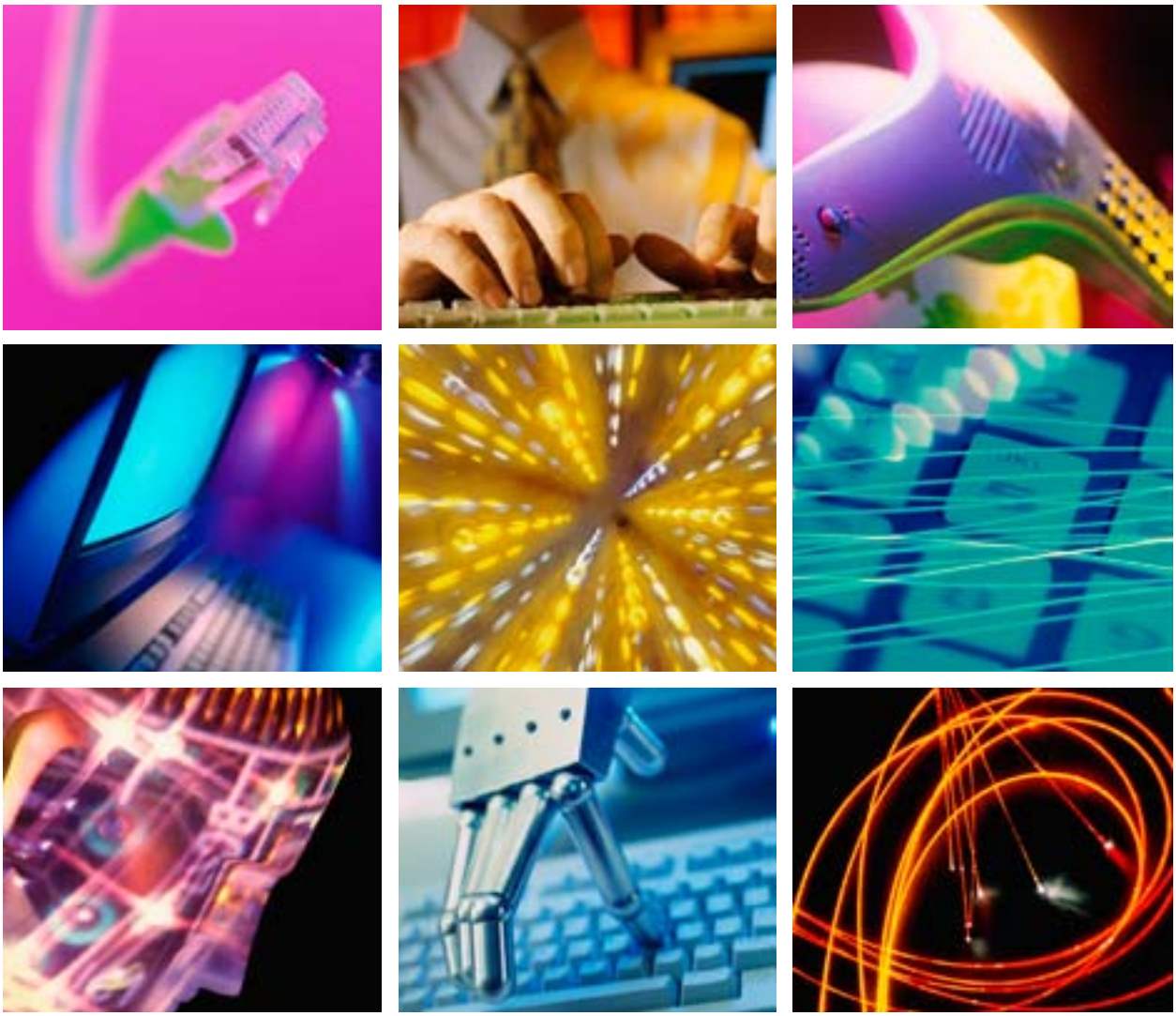

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