

# CREATING CAPACITY AND COMPETITION IN BROADBAND TELECOMMUNICATIONS: THE CITY OF TACOMA'S INITIATIVE

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## ABSTRACT

This paper describes the process by which the City of Tacoma, Washington came to build an open access, broadband telecommunications system designed to promote effective competition in the provision of Internet and other telecommunications services. The decision by the City's electric utility to build a state-of-the-art communications system as a strategic response to deregulation in the electric utility industry is detailed. And, the decision to provide open access to the telecommunications system to promote competition in the broadband Internet services market is considered in light of telecommunications deregulation. Tacoma's open access cable system is analyzed in the context of contestable market theory. The state of broadband Internet competition is described, as is the current regulatory framework monopoly.

## INTRODUCTION

*I don't think society has figured out how to come up with a business model that is conducive for companies to make the size of investments that are necessary to solve that problem {a shortage of bandwidth in the 21<sup>st</sup> century} with a reasonable expectation of profit but without ending up with a monopoly position. [4]*

*Andy Grove, Chairman of Intel Corp.  
Live Internet E\*Trade Interview  
Nov. 14, 1998*

In this paper the authors place the Tacoma initiative within the context of existing regulations and current competitive conditions within the telecommunications and electric utility industries. The paper begins with a brief case study narrative of the events that transpired in Tacoma. The reader is given insight into the strategic decision-making and political considerations that led to the City's policy makers' decision to approve the telecommunications overbuild—the largest even undertaken by a municipally owned utility.[8] The paper will continue with a broader perspective. Four different broadband, Internet access technologies including cable, telephony (DSL), wireless, and satellite, are described. The rationale for the FCC's refusal to regulate Internet cable access is considered. And the current legal

challenges to the main cable Internet access provider (ATT/TCI) undertaken by the City of Portland and by a coalition of telephony-based DSL Internet access providers are described.

The authors' thesis that Tacoma has developed a viable business model for building broadband capacity without creating monopoly is introduced.

## **TACOMA'S BUSINESS STRATEGY DECISION: A RESPONSE TO DEREGULATION**

### **Background and context**

When President George Bush stood on an oil platform in the Gulf of Mexico to sign the 1992 National Energy Policy Act, Tacoma Power's management team knew that they had to plan for more than the electric utility's centennial celebration scheduled for the following year.[6] The century old municipally owned utility would now have to provide open access transmission service to wholesale or bulk rate providers and customers on an "unbundled" basis. And although "retail wheeling" was excluded from the federal statute, state policy makers were authorized to require the same open access for those providers and potential customers as well.[9] The days of a stable, regulated and monopolized marketplace would soon be ending for Tacoma Power.

Tacoma Power's management team faced this challenge by going to the private sector for advice. They queried a number of managers from other deregulated industries—airlines and banking—in a search for new models to deal with restructuring during uncertainty. What they learned was that the successful enterprises were led by managers who could think strategically. They were also told to know computers and follow technology, invest in process automation, learn to be more efficient and, most importantly, know your customer. The last point—know your customer—led to some disquieting findings from their own market research. While Tacoma Power's customers were satisfied, they were not loyal—in fact only ten percent of their customer based expressed loyalty.[6] The management team concluded that they were facing a true paradigm crisis where "all of the traditional rules blurred, experimentation was spreading rapidly, and practices once so accepted that they were simply a part of the woodwork were (now) being called into question." [3 p. 323]

### **A new strategy evolves**

The utility's managers chose to respond strategically by recognizing that their core business really was the reliant and efficient delivery of electrons. Thus, they sought a new paradigm—one that would steer the business, make it more reliable and customer friendly and, importantly, follow the technology. The technology in this case was fiber optics and the construction of a state-of-the art communication system for the purpose of automating the utility's distribution infrastructure.

Tacoma Power's managers realized that such a system would add considerable value for the customer: instant information on the time and location of power outages, remote connection and disconnection of services, information about electricity consumption patterns, real time pricing and appliance control systems.[2] As the utility's superintendent described it: "So what do we accomplish? We will keep the revenues going, the customers happy and we will be dispatching the crews where the problems are at." [6] In sum, the value-added services would truly put customers in the driver's seat and allow them "to control the resources" (real time pricing and appliance control) as well as to "choose the destination and route." [3 p. 181] The end result would be greater customer loyalty.

### **Building the system**

The question now was how to build such a system. An obvious option was a strategic alliance with the private sector. But those partnerships were not available. The local phone company, cable provider and a number of competitive access providers turned down overtures from Tacoma Power's management team.[6] And so the utility decided to move forward on its own—to build the infrastructure itself. But before making the multi-million dollar investment, the utility's director requested that Tacoma Power's citizen oversight body, the Utility Board, authorize an outside review by a consultant group—the Stanford Research Institute.

The Board approved and soon SRI's consultants came back with an interesting idea: Why not invest more dollars to expand the fiber optic pipe?[6] Then Tacoma Power could offer its customers an array of services—cable television, competitive Internet access, telephony and data transport. The Telecommunications Act signed into law by President Bill Clinton in 1996 had, in fact, given Tacoma Power this option by eliminating barriers to entry into the telecommunications market. This led Tacoma Power's superintendent to proclaim: "The new law afforded us the opportunity to embark on a broader strategy—one that would allow us to add smart electrons to the worker bee electrons the utility was providing for over 100 years." [6]

### **Testing the market**

The next step was to conduct a marketing survey. The findings were more than promising. Tacoma Power far outdistanced the competition as the preferred provider for cable television service.[10] And a financial analysis of the current market showed that a 25 percent penetration of the current customer base for cable service alone would lead to an operating profit within three years.[11] The pro forma income statement forecast over 33,000 cable customers in three years of operation. Within ten years time, the entire investment of \$100 million would be paid off and Tacoma Power would have enough revenue left over to plow into system upgrades.[11] But before embarking on this major undertaking, Tacoma Power borrowed once again from the private sector. The utility pulled together a panel of fourteen experts from an array of disciplines to review and pass on a final business plan. That plan, which was given the stamp of approval by the panel, called for retail and wholesale applications. On the retail side, the planned offerings included more reliable distribution of electricity, cable television, digital audio broadcasts, Internet over television and broadband services with customized point-to-point connectivity. On the wholesale side, Tacoma Power would offer a first-of-its-kind open platform highway for Internet Service Providers and their high speed modems.

### **Political currents**

The political dynamics revolving around Tacoma Power's plans to build a fiber optic system soon changed once the management team broadened their strategy to include an array of telecommunications services. The manager of the incumbent cable provider (TCI) sent a scathing critique of the utilities' business plan to the Tacoma City Manager. The twenty-one page letter ended with the warning: "(Tacoma's policy makers should)...pause and let the euphoria of the benefits you may now expect be replaced by a realistic appreciation of the pitfalls and risks associated with municipal ownership of what is traditionally an entertainment service provided by private enterprise." [5] After numerous public hearings, two declaratory judgements from the state superior court, a plea from the cable provider's national president and an additional due diligence review by three outside consultants, the city policy makers moved forward with the \$100 million overbuild.

The following section will discuss how contestable market theory applies to the Tacoma case and will bring the reader up-to-date on current and national developments.

## **THE ECONOMIC RATIONALE: CREATING CONTESTABILITY IN BROADBAND TELECOMMUNICATIONS AND ENHANCING COMPETITION IN THE CABLE TV MARKET**

### **Creating a Contestable Market in Broadband Telecommunications**

There are often strong parallels between the deregulation experiences of very diverse industries. In the early years of airline deregulation, Elizabeth Bailey, then a member of Civil Aeronautics Board, called for municipalities to bear the sunk costs associated with developing new airports in an effort to make the airline industry more contestable.[1] Entry by new airlines would be much more likely, she reasoned, if they did not have to bear the risk associated with investing in their own airports - investments which presumably could not be recovered if a new airline failed.

Similarly, entry into various branches of the telecommunications industry would be more likely if municipalities bore the sunk costs associated with broadband capacity. New telecom entrants could (for an appropriate charge) simply ride the municipal system much like new airlines contract for terminal space at the municipal airport. Moreover, as the telecom market becomes more contestable (as barriers to entry are reduced through public ownership of broadband capacity), the mere threat of potential competition becomes a more viable disciplinary force within the market. Existing providers of telecom services will be less likely to charge excessive prices or permit X-inefficient practices and less

likely to become technologically lethargic because of the constant threat of potential competition. A truly contestable telecommunications market, then, will provide consumers with an increasing variety of services produced in an efficient manner and offered at competitive prices.

The City of Tacoma has designed and built a broadband telecommunications system with the express purpose of providing *competitive* telecommunications services to businesses and residents within the City. By creating an open-access architecture (a feat which, until recently, AT&T contended was economically impossible), the City has made it possible for many competing Internet service providers to gain access to the system. It would appear that Tacoma's initiative provides one possible answer to Andy Grove's lament (as expressed earlier) that there appears to be no viable model for building much needed broadband capacity without creating a monopoly position.

### **Creating Competition in the Cable TV Market**

As noted above, the telecommunications system developed by the City also created the capacity to compete with TCI, the local cable TV provider. Though this was not the primary rationale for constructing the system, the possibility of injecting competition into the cable TV market was very attractive to local policy makers because of the poor quality of service then offered by the existing cable TV provider.[13]

The advent of competition did have its intended effect in Tacoma as the incumbent provider (now AT&T/TCI) responded to the City's entry into the market by upgrading its service. By adding fiber to its delivery system and moving to a digital format, the incumbent was able to match (or exceed) the various channel offerings the City's new system delivered. No such upgrades were provided by TCI in nearby Seattle, leaving that city at odds with its only cable TV provider.[13]

### **RECENT DEVELOPMENTS**

Presumably in response to legal challenges from the City of Portland, GTE and the Open NET Coalition, AT&T recently announced that it will open its broadband cable Internet system to ISP providers by 2002 when its contract with @Home, the sole provider currently riding its system, expires.[14] AT&T's general counsel had previously argued, "Regulation [a requirement to provide open access] would undercut the investment needed to expand cable's broadband services. It also would deter the private investment necessary to fund the construction of new broadband facilities, which will damage competition, not spur it." [7] According to AT&T, then, monopoly control of its broadband system was technologically determined. This, in effect, constitutes a natural monopoly argument, which would appear a dangerous position for AT&T to take.

However, the FCC, under William Kennard's leadership, has supported AT&T's position, arguing "At this nascent stage in the development [of broadband], one should not presume to have a regulatory cure for every anticipated marketplace ailment. It would be imprudent to act now. We must allow the marketplace to evolve." [7] The FCC recognizes at least four developing broadband technologies – cable access, DSL access provided by telephone companies, satellite access and wireless access.

Although AT&T's promise to open its system includes a pledge to not penalize customers for choosing a provider not affiliated with AT&T, the question lingers as to whether or not those independent providers of broadband services may be at some competitive disadvantage to AT&T's affiliates. The public ownership model developed by Tacoma represents a viable alternative – an alternative which should provide a more level playing field for ISP competition.

By the end of 1999, with substantial technical assistance from Cisco Systems, Tacoma's public utility had completed the construction of an open architecture, broadband telecommunications system. It was serving over 11,000 homes with cable TV services (exceeding the 25 percent penetration goal) and had contracted with one ISP to begin the provision of residential high-speed Internet services with other ISP providers in the wings. The utility also provides high-speed data transmission services to several major companies in the Tacoma area in competition with the regional Bell telephone company. As one of only three U.S. cities wired with a fiber-optic telecommunications system, Tacoma is attracting a variety of new high-tech businesses.[12] The economic development benefits of a truly competitive, broadband telecommunications system are clear and the public ownership model Tacoma has developed appears viable.

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- [5] Letter from Barbara S. Wyatt, General Manager, TCI Tacoma to Ray Corpuz Jr., July 23, 1996 p. 21.
- [6] Personal interview with Steve Klein, Superintendent of Tacoma Power, September 22, 1999.
- [7] Puget Sound Computer User, Sep. 1999, p. 29.
- [8] Tacoma's citizens voted to purchase Tacoma Water and Light in 1893. By 1912, the power utility had brought its first hydroelectric dam on line. Currently, Tacoma Power owns seven hydroelectric dams on four rivers with a customer base of approximately 250,000 households.
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# Tacoma Decides To Build Its Own Fiber-Optics Network

Mar 17, 1997

Robert T. Nelson

*Seattle Times Staff Reporter*

TACOMA - When Congress and President Clinton deregulated the telecommunications industry a year ago, promising it would open the door to competition, they could not have imagined how the new rules would play out here.

In an era of smaller government, Tacoma has decided to spend \$55 million building a fiber-optics network that would compete head-to-head with the city's cable franchise and the local phone company.

It's a risky venture motivated by public dissatisfaction with cable giant Tele-Communications Inc. (TCI) and fear that Tacoma has fallen behind other cities in building the high-speed communications network modern business demands.

In the 1870s, Seattle and Tacoma competed for Northern Pacific railroad tracks. This time, the competition is for the technology that links businesses to computers and telephone systems throughout the world.

Thanks in large part to private investment, Seattle's downtown already has more fiber-optic cable than it can use. City Light and government agencies met their needs by simply expanding the private cable system as it went in.

Tacoma's system never got built.

About the time Tacoma officials were worrying that communications deregulation would impair the city's ability to compete for new employers, officials at the city-

owned Tacoma Public Utilities were concerned about how future deregulation of the electric industry would affect them. They concluded TPU needed a way to communicate directly with the 140,000 households and businesses it serves.

"As we approach deregulation, our ability to provide ever better service is going to be critical to our success," said Jon Athow, manager of TPU's telecommunications project. "Right now, if a customer loses power, we don't know it until they pick up a phone and tell us their lights are out. We think it would be nice to know when that happens without their having to call."

Nice, yes, but expensive.

The utility estimates it will cost \$55 million to run fiber optics to every neighborhood - and coaxial cable into every household and business - in its 180-square-mile service area, which includes Tacoma and the more populated areas of Pierce County. Recovering that cost through higher electric bills would drive up rates when other utilities will be trying to lure customers away with lower prices.

The investment only pays off, say Tacoma officials, if the cost is spread among customers who use the cable to make Internet connections, transmit computer data, talk on the telephone and receive cable-TV signals.

The new communications utility still needs the approval of the TPU board and the City Council, which has scheduled a vote for April.

But the fact the proposal has gotten this far is a commentary on TCI's standing in the community, Tacoma's moribund downtown and the uncertainties that surround deregulation.

### Dissatisfaction with TCI

TCI's spotty reputation with its customers helped establish a high level of popular support for the project. Tacoma Public Utilities broadened that support by promising to extend the network and provide the necessary electronics - free of charge - to every hospital, school, university, library, firehouse and police station in its service area.

The proposal has enraged officials at TCI, who have spent years trying to get the city to renew the franchise that permits it to route cable over city-owned power poles and public right of way.

"We approached the city in 1992 with a plan to begin rebuilding our facilities," said Barbara J. Wyatt, general manager of TCI of Washington. "Unfortunately, the city has elected to cancel meetings and delay the process. Customers want more channels and it's in our best interest to provide them. Our plan is to provide the best service we possibly can. We need a business license to do that. Unfortunately, to get it, we're having to negotiate with the very people we're competing with. It's a struggle."

Tacoma's response reflects just how strained relations are between the city and its cable franchise.

"TCI is always making claims about what it wants to do in the future," Athow said. "But it's always four or five years away. We've looked at their financials and know they're going to have a hard time doing what they have promised. We didn't create their \$15 million debt. The fact is they treat subscribers as real estate. They've loaded themselves up with so much debt (buying other companies) they can't rebuild."

This is a critical time for both TCI and Tacoma.

Like most of the rest of the cable industry, TCI is heavily in debt from acquiring other systems, many of which are old and under pressure to expand the number of channels they offer. The company faces the dilemma of giving customers the programs they demand, without investing tens of millions of dollars in a fiber-optics system that soon could be obsolete. TCI officials believe the cheapest solution is to expand the system by running digital signals over their existing coaxial cable lines.

Tacoma officials don't believe that is in their city's best interest. And because the city owns the poles along which TCI's cable is strung, it's using the renewal of TCI's contract to try to coerce somebody into building a high-speed, interactive communications system.

The struggle is occurring in a lot of communities afraid of being bypassed by companies suddenly free to service only the most lucrative customers. Electric Lightwave, headquartered in Vancouver, Wash., has a strategy typical in the industry.



"Our focus is on the business market," said Jack Hardy, the company's public-relations manager for Electric Lightwave. "We're not going after the residential side at all. It's quite an investment to go in and put fiber-optic cable into every home. There's just not enough activity in a house to recover that cost."

Tacoma officials contend companies are only interested in providing service to customers who make a lot of long-distance calls and have a need for high-speed data transmission.

"We have five to seven companies that have contacted us, champing at the bit to put fiber in," said Dan Voelpel, head of Tacoma's community-relations division. "The trouble is, they just want to come into town and put fiber in where they can make the most money. None of them are offering anything that's comprehensive."

George Chappell, area manager of communications for US West, agrees.

"That's exactly right," he said. "It comes down to dollars and cents. You will not see people building in Tacoma until there's a lucrative market for it."

### Solution has risks

Tacoma's solution to the problem is a bold business venture with elements of risk it cannot control. If and when TCI renews its business license, it could cut its rates and get into a protracted price war with the city. There also are legal questions about the city competing in an industry it regulates.

A greater risk is that by the time Tacoma completes its cable system, the technology may have been surpassed by the type of wireless communication system AT&T recently unveiled.

"Down the road they could be sitting on a technology that goes out of date real fast," said Seattle's telecommunications expert, Matt Lampe, who two years ago studied and rejected the idea of building a similar communications utility at City Light.

If Tacoma succeeds, it will have a data transmission network more extensive than Seattle's, stretching beyond downtown and opening the entire region to new development and more competition within the communications industry.

If it fails, Tacoma jeopardizes not only its investment but also the financial well-being of a public electric utility with an established reputation for sound fiscal

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It's a risk Tacoma officials, for now, seem willing to take.

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"TCI is always making claims about what it wants to do in the future," Athow said. "But it's always four or five years away. We've looked at their financials and know they're going to have a hard time doing what they have promised. We didn't create their \$15 million debt. The fact is they treat subscribers as real estate. They've loaded themselves up with so much debt (buying other companies) they can't rebuild."

This is a critical time for both TCI and Tacoma.

Like most of the rest of the cable industry, TCI is heavily in debt from acquiring other systems, many of which are old and under pressure to expand the number of channels they offer. The company faces the dilemma of giving customers the programs they demand, without investing tens of millions of dollars in a fiber-optics system that soon could be obsolete. TCI officials believe the cheapest solution is to expand the system by running digital signals over their existing coaxial cable lines.

Tacoma officials don't believe that is in their city's best interest. And because the city owns the poles along which TCI's cable is strung, it's using the renewal of TCI's contract to try to coerce *somebody* into building a high-speed, interactive communications system.

The struggle is occurring in a lot of communities afraid of being bypassed by companies suddenly free to service only the most lucrative customers. Electric Lightwave, headquartered in Vancouver, Wash., has a strategy typical in the industry.

"Our focus is on the business market," said Jack Hardy, the company's public-relations manager for Electric Lightwave. "We're not going after the residential side at all. It's quite an investment to go in and put fiber-optic cable into every home. There's just not enough activity in a house to recover that cost."

Tacoma officials contend companies are only interested in providing service to custom-

ers who make a lot of long-distance calls and have a need for high-speed data transmission.

"We have five to seven companies that have contacted us, champing at the bit to put fiber in," said Dan Voelpel, head of Tacoma's community-relations division. "The trouble is, they just want to come into town and put fiber in where they can make the most money. None of them are offering anything that's comprehensive."

George Chappell, area manager of communications for US West, agrees.

"That's exactly right," he said. "It comes down to dollars and cents. You will not see people building in Tacoma until there's a lucrative market for it."

### **Solution has risks**

Tacoma's solution to the problem is a bold business venture with elements of risk it cannot control. If and when TCI renews its business license, it could cut its rates and get into a protracted price war with the city. There also are legal questions about the city competing in an industry it regulates.

A greater risk is that by the time Tacoma completes its cable system, the technology may have been surpassed by the type of wireless communication system AT&T recently unveiled.

"Down the road they could be sitting on a technology that goes out of date real fast," said Seattle's telecommunications expert, Matt Lampe, who two years ago studied and rejected the idea of building a similar communications utility at City Light.

If Tacoma succeeds, it will have a data transmission network more extensive than Seattle's, stretching beyond downtown and opening the entire region to new development and more competition within the communications industry.

If it fails, Tacoma jeopardizes not only its investment but also the financial well-being of a public electric utility with an established reputation for sound fiscal management.

It's a risk Tacoma officials, for now, seem willing to take.