10 REASONS WHY BROADBAND SHOULD BE A MUNICIPAL UTILITY

Communication is not just a sector of the economy.
Communication is the economy.

Kevin Kelly, New Rules for the New Economy

In 1998, Wired Magazine's founder Kevin Kelly wrote a brief treatise called *New Rules for the New Economy*. Kelly's e-book turned out to be about more than the new economy. It isn't surprising, even in 1998, that Kelly could see an economy that would become increasingly dependent on communication networks. What is surprising is that Kelly could forecast the depth to which networks would penetrate our lives:

> Communication is the foundation of society, of our culture, of our humanity, of our own individual identity, and of all economic systems. This is why networks are such a big deal. Communication is so close to culture and society itself that the effects of technologizing it are beyond the scale of a mere industrial-sector cycle. Communication, and its ally computers, is a special case in economic history. Not because it happens to be the fashionable leading business sector of our day, but because it's cultural, technological, and conceptual impacts reverberate at the root of our lives.[1]
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> *Kevin Kelly, New Rules for the New Economy*

Kelly's premise wasn't obvious in 1998 but it is obvious now. Broadband networks are essential not just because the economy runs on them. These networks now influence our ability to understand and participate in nearly every aspect of modern life.

One metaphor Kelly invokes in New Rules is *The Tragedy of the Commons*. In 1833, economist William Forster Lloyd used the example of unmanaged grazing on common land ("the commons") in the British Isles. To preserve the livelihood of the entire community, it was essential for the community to organize around maintaining the communal pastures. As a metaphor, the commons can represent any shared resource that is vital for a community.

Toward More Robust Networks

Broadband infrastructure is analogous to the community pastures of the 1800's. If we accept Kelly's premise that modern communication networks now shape our culture, our humanity, our individual identity, and all of our economic systems, then we argue that broadband infrastructure should be universally managed as a utility because it is essential in the same way that water, sewer, and electricity are essential for the sustainability and flourishing of any modern community.

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Here are 10 reasons why broadband infrastructure should be managed as a utility by municipalities:

1) **Cities will build One Robust Network and Open it to all Users.**
   The businesses and residents in every urban area are paying too much for broadband because every Internet Service Provider (ISP) builds their own infrastructure when only one robust network is needed. Fiber Optic cable provides nearly unlimited capacity. It doesn't make sense to build multiple water, sewer, or road systems and it doesn't make sense to build multiple broadband systems simply to give a private company control over the network. Cities should build robust digital roads and make them open to all non-malicious users.

2) **Cities will Separate Infrastructure and Services to Serve Subscribers Interests.**
   Nearly all incumbent U.S. broadband providers currently co-mingle their network infrastructure and broadband services. When one company controls the infrastructure and the services, the result is that the controlling entity is in a position to serve its own interests at the expense of subscribers' interests. Subscribers become a means to an end for the incumbent operator. The necessary beginning for building a Smart City is to recognize the strategic value of smart infrastructure in today's world. The base infrastructure for fueling the future of any community is fiber optics because of its enormous capacity. Municipalities should own and control the infrastructure. The private sector should deliver broadband services from a cloud environment on top of shared infrastructure.

3) **Cities will Promote Competition in Broadband Services by Deploying Open Networks.**
   When cities control broadband infrastructure, services can be offered in a cloud environment to fuel the competition which is shockingly absent in most broadband networks. The primary driver of the internet's success has been the fact that it is an open platform – available to anyone who wants to compete or innovate. The irony of today's internet is that the onramp to the internet, Internet Service Providers, pushes subscribers through a closed system. By closed we mean that ISP's don't allow any competition or outside innovation on their infrastructure.

4) **Cities will Enable Innovation in Broadband Services by Deploying Open Networks.**
   Thomas Friedman says, "my favorite renewable fuel is an ecosystem for innovation." It is in any city's interest to encourage incubators for innovation to increase the range of possibilities for their residents. Controlling broadband infrastructure is one of the most powerful ways cities can enable a platform of possibilities. For innovation to flourish, systems need to be open and can't be stifled by a gatekeeper which blocks out would be innovators.

5) **Citizens are already paying for this Infrastructure.**
   The businesses and residents in every city already pay for the broadband infrastructure they use – whether wired or wireless. When infrastructure is treated as a utility, the infrastructure can be financed the same way we finance water and sewer systems – but on a voluntary "opt-in" basis. This approach makes citizens owners rather than renters of the infrastructure. A significant advantage cities have is that they can spread the financing of this infrastructure over a 20 or 25-year period where private companies seek a Return on Investment in less than 5 years. By

treating infrastructure as a utility and spreading the financing over 20+ years, the net monthly cost to subscribers will go down and subscribers will get cost transparency for infrastructure, operations, and services.

6) **Cities will Leverage Advances in Networking Technologies for the Good of All Stakeholders.**
The current telecommunications model is an evolution from the world of the Plain Old Telephone - a model that is antiquated and broken. A single service provider controlling everything doesn't make sense in a cloud world. Municipal networks can deliver new value by abandoning the old telecom model and leveraging the technologies that have revolutionized data centers and enabled cloud technology. These advanced networking tools include network virtualization, software defined networking, and network automation. Cities are the preferred owners of broadband infrastructure because it is in the city's interest to optimize the interest of all stakeholders.

7) **Cities will make the Network an Enabler for the Broader Interests of the Community and Provide Network Resources which are Capable of Delivering More than Fast Internet.**
The interests and incentives of big telecom and big cable are primarily motivated by return on network investments. Municipalities have a much broader set of incentives which include economic development, livability, public safety, education, healthcare, emergency communications, smart grid, efficient government services, environmental stewardship, and smart city applications. Broadband connectivity is now a central consideration for each of these interests and cities are starting to realize that broadband is strategically important and should be controlled by the city for the good of all stakeholders.

8) **Cities will Promote Bandwidth Abundance.**
Bandwidth is treated as a scarce resource by incumbent operators as part of their strategy for monetizing their investment. Once a fiber network has been deployed to a premise, the cost to change from 3 Mbps to 1,000 Mbps connection is close to zero. When a system is based on scarcity rather than abundance, the quality and frequency of communication is diminished because of the cost of communications. Cities which focus on deploying and managing infrastructure are more likely to promote abundant bandwidth to enable their ultimate goal of making broadband a powerful enabler for municipal interests.

9) **Cities can use the Same Infrastructure to Run Smart City and Fiber to the Home Applications.**
By designing the municipal network for a cloud world, the same infrastructure can be used to deploy Smart City applications and Fiber to the Premise applications. Network virtualization makes it possible to dynamically allocate private and secure virtual channels for services, regardless of the service type.

10) **Cities have the Ability to Drive Network Success through Customer Engagement**
The path to building and maintaining a successful network is through focusing on subscribers and giving them the value they want at pricing that comes from a competitive marketplace. Subscribers want choice, compelling services, security, privacy, competitive pricing and many would welcome the opportunity to buy locally. Not only can cities build very robust networks,

they can leverage the network to enhance many of the things which are important to the community. Big telecom and big cable create customer disengagement through poor customer service and by boxing subscribers into a corner and restricting their ability to choose. Cities have the opportunity to reverse these practices and build networks which give subscribers the user experiences they desire.

If Kevin Kelly is right that modern communications networks drive the economy and nearly every aspect of modern life, it is in everyone's interest to imagine the best form for designing and building communication networks and work toward realizing that form for the good of all.

Reference

[1] *New Rules for the New Economy*, Kevin Kelly, page 5

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