SmartSource CONSULTING

COMMUNITY BROADBAND ENGAGEMENT AND EDUCATION PROJECT

City of Charles City

Proposal

SmartSource Consulting
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SUMMARY

Background

Between 1994 and 2005, over two dozen communities in Iowa established municipal telecommunications utilities and constructed networks to serve those citizens. These utilities have a proven track record of providing reliable and affordable voice, video, and data services to their residents and putting those communities in charge of their own technological futures.

In 2005, citizens of Charles City approved a referendum to establish a municipal telecommunications utility by an 62% majority. Like many other communities that took that initial step, the concept was not immediately explored further, in large part because incumbent providers promised better service in the future. And although some improvements were made, over time community leaders have come to feel that Charles City is in danger of being left behind as other communities get access to state-of-the-art fiber to the home (FTTH) networks.

In 2010, the city conducted a survey to measure community interest in a municipal broadband utility and found strong interest. However, a lot has changed in the world of broadband in the past six years.

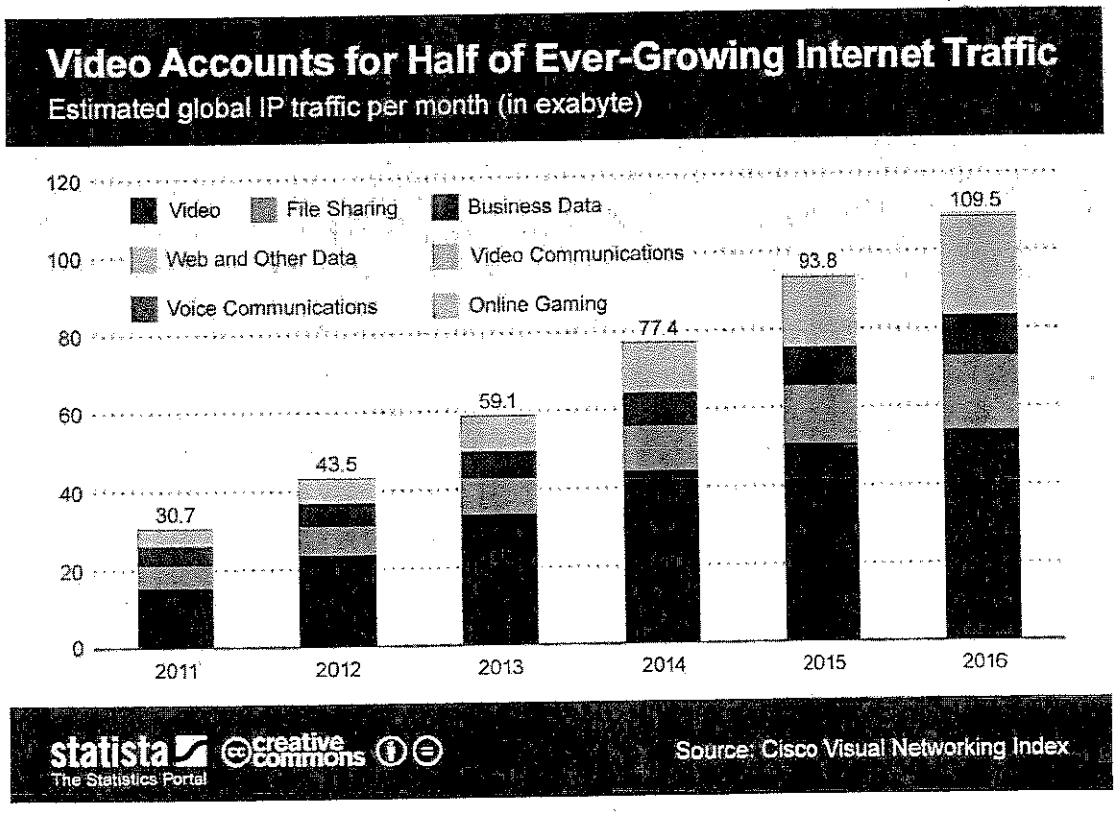

Figure 1. Internet traffic has grown rapidly since 2010, driven largely by an explosion of video streaming by consumers.

As the chart above shows, internet traffic continues to grow at a rapid pace. The rapid adoption of streaming video, also known as over-the-top video (OTT) has dominated this growth, and is expected to continue to grow rapidly as new OTT video service options become available to consumers. Also, more and more users are relying on cloud-based computing and storage for doing business and managing their households. New data-reliant services such as smart home, smart grid, remote health care, and remote education will also push the "need for speed" ever higher.

Also during the six years since the initial study, internet users have become more sensitive to service reliability. In 2010, an internet outage was seen as a nuisance for many users. Today it's seen as a major interruption in normal daily living comparable to a power outage. While incumbent providers have generally increased internet speeds on a regular basis, reliability problems continue to affect their aging copper-based networks.

As a result of continued concerns about the long-term health and viability of the community, the City of Charles City joined with ten other Iowa communities to study the feasibility of a fiber network to interconnect the communities. This network, the Iowa Fiber Alliance, is now moving from concept to reality, and its existence will greatly enhance the viability of new local fiber networks in communities like Charles City.

The Problem

Typically, a community at this stage of exploring a municipal broadband project would conduct what is traditionally called a "feasibility study". A full feasibility study includes a number of elements designed to help leaders make an informed decision about whether to build a local network. Elements include some measurement of public interest in such a project; a preliminary system design and cost estimate; and a financial plan.

However, a full feasibility study is a complex, time consuming, and costly effort that may be more than some communities need.

The Solution

SmartSource Consulting and its network of partners has developed a new approach to exploring a municipal broadband project. Before moving into a full feasibility study, we propose to first determine whether community stakeholders – including citizens – genuinely want to take that next step.

The overall goal of the **Community Broadband Engagement and Education Project** is to determine whether there is sufficient community interest in municipal broadband project to justify investing in a detailed feasibility study. We intend to engage Charles City in a dialogue about the current state of broadband services in the community; educate the community about the lasting benefits of fast, affordable, reliable, and ubiquitous broadband; measure community interest in a municipal broadband project; and provide leaders with information needed to determine next steps.

PROJECT OUTLINE

There are four key elements of the Community Broadband Engagement and Education Project. The exact order of the various tasks within each element will be determined when the project is launched. Those elements are engagement, education, measurement, and evaluation.

ENGAGEMENT

It is likely that the Charles City community has little or no awareness that a municipally owned and operated fiber optic broadband network is even an option. So an important step is to begin a dialogue within the community about the potential for such a project.

① Identify what telecommunications services are currently offered in Charles City by existing providers.

② Identify potential barriers to a municipal fiber optic project, including internal and external adversaries.

③ Interview key community leaders to Identify specific community needs.

④ Hold meetings with specific stakeholder groups to further explore specific broadband needs and seek feedback on local solutions. We recommend five small-group meetings with the following specific groups:

1. Education.
2. Government (City, county, state, federal if applicable).
3. Economic Development.
4. Health Care.
5. Businesses (Chamber of Commerce, etc.).

EDUCATION

It is important to help the community understand the importance and impact of broadband services, especially for future growth and success. In order to do so, a foundation of knowledge must be created to educate citizens about broadband in general and why a fiber optic network is the best way to meet future needs.

① Define 21st Century broadband services.

1. It should be **FAST**. The FCC has established that broadband is defined by 25 Mbps download, 4 Mbps upload speeds. This is considered the minimum for effective use in today's connected world. In reality, much faster speeds are quickly becoming the norm, with Gigabit internet (1,000 Mbps) becoming the standard in most urban communities.
2. It should be **AFFORDABLE**. Having world-class broadband speeds accomplish little if few people can afford it.

3. It should be **RELIABLE**. Internet is no longer a convenience or luxury; it is a necessity of everyday life. Just as electric customers would not tolerate extended and frequent service outages, neither should internet customers.
4. It should be **UBIQUITOUS**, in other words, available everywhere in a community. Some internet delivery technologies provided limited geographic coverage. Some providers choose to extend service only to certain areas. Neither reason is acceptable in today's connected world. And like roads and education, it should be available to all citizens.

② Promote understanding and awareness of why 21st Century broadband is important for the community's future.

1. **Quality of Life**. Communities spend a great deal of time, effort, and money trying to make their town a great place to live, work, and play. A number of efforts fall into this "quality of life" category, including public safety, education, and recreation. Just like safe streets and things to do are attractions for persons looking to put down roots, so are 21st century broadband services.
2. **Business and economic development**. More and more traditional businesses rely on the internet for key elements of operations, including sales. In addition to these traditional "brick and mortar" businesses, a growing number of small business are based in the home. All businesses require access to the world whether selling products or acquiring supplies. In either case, reliability and affordability are two key elements of driving economic activity in your community.
3. **Education**. The educational sector has adopted technology at a rapid pace because it enhances learning. And since learning does not end at the final bell of the school day, students need access to internet when they come home. Slow internet, or an extended outage, may make the difference between a completed homework assignment and a failing grade.
4. **Health care**. Health care facilities are already highly dependent on the internet for what has been traditionally called "remote health care". Now most health care organizations are moving beyond sharing information among their facilities into actually delivering health care services via the internet to patients in their homes. E-health will allow us to deliver better care faster and at lower cost, and will help our aging population remain independent and healthy.
5. **Municipal networks and local needs.** Communities require more than Internet and entertainment. New sensor systems will monitor water and air quality. Smart agriculture will collect soil conditions. Smart grids will make energy delivery and use more efficient. Public safety and disaster preparedness require special needs at special times. Many new applications will have local communication needs.

③ Outline what a municipal fiber utility would look like in their community.

1. How would a fiber utility be governed? Options include a separate telecommunications board, placement under the existing electric utility board, or direct City Council governance.
2. How would a fiber utility be financed? Outline available financing options, including revenue bonds, general obligation bonds, bank financing, etc.
3. How would a fiber utility be operated? Options include self-operation, public/private partnership, or open access.

④ Share what other communities have experienced with municipal broadband.

1. Success stories.
2. Cautionary tales.

⑤ Hold a community-wide "Fiber Town Meeting" to present the concept of a municipal fiber utility to the general public, answer questions, and address concerns.

MEASUREMENT

After engaging the community in a dialogue about its broadband needs, and educating citizens about what a municipal fiber optic utility would mean, we need to measure whether citizens want city leaders to move forward with next steps.

① Identify local business uses, or lack of use, for communication services: reliability, capacity, extent of using current technologies, etc.

② Determine if there is community consensus to invest money in a full feasibility study.

1. Conduct a community survey to measure:
    a. Breadth and depth of the general population's interest in a municipal fiber project.
    b. Breadth and depth of the business community's interest in a municipal fiber project.
    c. Breadth and depth of community leadership interest in a municipal fiber project.
2. Using the results of the survey, determine a reasonable range of possible take rates for various services.
    a. Apply national experiential data.
    b. Apply Iowa experiential data.
3. Identify possible barriers to success
    a. Unrealistic desire for the new utility to be a "profit center" for the city.
    b. Do community leadership support for the project? Does the community trust and value its leaders?

EVALUATION AND DISCUSSION

A final report would be prepared and presented to community leaders outlining what we learned and providing guidance for "what's next".

① Share results of the Pre-Feasibility Study with community leaders, stakeholder groups, and general public.

② Provide interpretation of study results.

③ Discuss possible solutions to meet community needs.

④ Encourage feedback between citizens and decision makers.

⑤ Decide whether to move forward with business case feasibility.

PROJECT TEAM

Curtis Dean, SmartSource Consulting (Team Leader)

Curtis Dean has been involved in community broadband for 19 years. At Spencer Municipal Utilities, Curtis was closely involved in the planning and implementation of a new municipal broadband utility, approved by Spencer voters in 1997. As part of the leadership team for that project, Curtis developed the business plans for the cable TV, telephone, and high-speed data services that the new utility would offer. In 2011, Curtis joined the Iowa Association of Municipal Utilities as Broadband Services Coordinator, providing support for Iowa's telecommunications utilities. In 2015 he established SmartSource Consulting to provide services to small telecommunications services, including project management, marketing, and strategic planning. Since early 2015 he's also served as project leader for the Iowa Fiber Alliance, a proposed municipally-owned fiber optic transport network in eastern Iowa.

Curtis holds a Bachelor of Arts from Buena Vista University and an Executive Masters of Public Administration from the University of South Dakota.

Todd Kielkopf, Kielkopf Advisory Services

Todd Kielkopf is an experienced utility executive with demonstrated results driving change in communities, businesses, and organizations. Roles over his 20+ year career span being a management consultant, General Manager of a municipal utility that included broadband deployment, public-sector chief financial officer and economic development liaison, and active board member within the utility industry. Experiences include forming public/private partnerships to provide broadband services over a fiber network, launching an entrepreneurial development program with Simpson College, and leadership roles within NMPP Energy and the Iowa Energy Center. Todd also advises organizations and startups in the Des Moines metro region on business formation, strategic development, and financial matters.

Ken Demlow, NewCom Technologies

Ken Demlow has worked in the fiber industry for many years, starting with fiber construction. He serves as the National Business Development Manager for NewCom Technologies, an engineering company that focuses on telecom design, engineering and plant documentation and electric infrastructure design and planning. NewCom is based in Des Moines, IA.

In this role with NewCom, Ken has been very involved in working through the details of fiber projects, aggregation and economic development. And, he has worked on several smart grid and electric utility projects. Ken has spoken at several industry conferences, has authored several industry articles (including a white paper on how to mitigate one of the key problems in AMI meter installations) and recently served a state level economic development fellowship.

Eric Lampland, Lookout Point Communications

Eric Lampland founded Lookout Point Communications, an independent consultancy, in 1997. A network architect for over thirty-five years, Lookout Point focused initially on large scale, mostly global, networks and their unique technical issues. In 2003 Lookout Point redirected its efforts toward aiding municipalities and public utilities. Today Lookout Point has developed the most experienced national team concentrating on the deployment of fiber optic and wireless networks for this segment. Mr. Lampland has served on standards forums, various boards and in multiple companies advising and birthing new technologies. He advises, and learns from, the financial and vendor communities concerning technical and business trends. Currently, his focus has moved to Software Defined Networks using Network Function Virtualization as a means to lay the foundation for the next stage of Internet architectures. He is frequently called upon to share insights at various technical and regional conferences.

PROJECT TIMELINE

Upon approval of this proposal and execution of a Letter of Engagement, work will begin as soon as directed by Charles City. It is anticipated that the project will take approximately 6-8 weeks to complete.

PROJECT COST

The total cost of the Community Broadband Engagement and Education Project is $18,500. 50% of the total is due upon execution of the Letter of Engagement. The balance is due upon completion of the project and presentation of the final report.

SmartSource CONSULTING

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City of Charles City
Letter of Engagement

This Letter of Engagement serves as the written agreement between the City of Charles City and Curtis Dean, dba SmartSource Consulting, for the Scope of Services below.

Project Title

Community Broadband Engagement and Education Project (Project).

Scope of Services

SmartSource Consulting and its partners will perform tasks necessary to engage the community in a dialogue about the value of fiber broadband, educate citizens about its impact, measure community support for moving forward with next steps in development of a municipal fiber project, and assist community leaders as they discuss and evaluate the information gathered during the project.

A complete list of Project elements is provided in the Project Proposal.

Cost

1. The total cost of the Project is $18,500.
2. 50% of the Project cost, or $9,250, is due upon execution of this Letter of Engagement.
3. 50% of the Project cost, or $9,250, is due upon completion of the Project and presentation of the Project report

By our signatures below, we agree to the terms of this Letter of Engagement.

(signature)

(Print Name of Authorized Representative)

City of Charles City
105 Milwaukee Mall
Charles City, IA 50616

(signature)
Curtis Dean

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