History of Broadband in C-U

Chamber of Commerce projects - mid 1990s
- Time-Warner Cable - first cable modems
- Good security lessons learned
- Ameritech - ISDN pilot

University Off-Campus Housing RFP - 1999
- Multiple Dwelling Units
- Fraternities, Sororities & Apartment Buildings
- McLeodUSA fiber build in Champaign
- 10 and 100 Mbps symmetrical Ethernet
- McLeodUSA full rate ADSL in Urbana
- 7 Mbps downstream, 1 Mbps upstream
I am a one-trick pony

- First raised fiber concept in 1997 - C-Unet2000
  - Thought it would take 3 years - Oops

2008 Educause Big Broadband White Paper

- $200 Billion to connect to every home in USA with fiber

C-U Cable Commission

- Broadband Access Committee
  - Plan for better broadband in community
  - Advise both City Councils on broadband policy
  - Became focal point for proposal development
  - Sponsored 2 public broadband forums

GSLIS Broadband Forum
2009 Federal Stimulus Legislation
- Jump-started everything in January 2009
- Joanne Hovis presentation at iHotel in February 2009
- $7.2 Billion for broadband nationwide
- 20% local match required
- We competed with other broadband projects
  - Not with schools or roads

State of Illinois Broadband Program
- Funded in 2009 capital budget - dedicated to Broadband
- Up to a 10% match of total project
- UC2B received a $3.5 million commitment
What is UC2B?

Intergovernmental Consortium
- University of Illinois at Urbana-Champaign
- City of Champaign
- City of Urbana

Created to secure ARRA broadband funding
$29.4 million infrastructure project
- Awarded $22.5 million from NTIA in March
- Awarded $3.5 million from State of Illinois
- Raised $3.4 million in local matching funds
What was not funded

Two “sister” UC2B proposals

- Public Computing Centers
  - BTOP Round One - lots of PCCs
  - BTOP Round Two - fewer PCCs
  - Same result - no funding

- Sustainable Broadband Adoption
  - Training
  - Computers
  - Community Help Desk
  - Not funded in either BTOP round

The need still exists

- Private foundations?
What will UC2B provide?

7 fiber rings spanning the community
- Fiber connectivity & Internet service for 143 very broadly defined “Anchor Institutions”
- Schools, Public Safety, Government, Medical, Senior Living & Activity, Youth Centers, Social Service Agencies, Public Computing Centers

Fiber-to-the-Premise (FTTP)
- To the curbs of 4,650 homes & 200 businesses
- In 11 “underserved” Census Block Groups
  - Areas were determined by a statistically valid door-to-door survey and are primarily low-income
  - Areas had less than 41% broadband adoption
- 2,700 projected FTTP customers
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<th>Public/Safety/Sites</th>
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<th>Park District &amp; Youth/Sites</th>
<th>Public Computing Centers</th>
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Lots of Anchor Institutions
Fiber to the Premise

11 Census Block Groups
- Will pass 4,650 primarily low-income households
- Will pass 200 businesses

Greenfield planning
- Overbuild of all existing infrastructure

We are directly only selling data
- Unlimited local Intranet connectivity
- 1 Gbps symmetric to all UC2B customers and Anchors
- Tiers of symmetric Internet access
  - 5, 10, 20, 30 & 40 Mbps
- TV and phone services from others and OTT
Why Fiber-to-the-Premise?

Only “future-proof” technology
- Speeds are unlimited
- Will last for generations
- No licensing required
- Cities own their rights-of-way
- New electronics
- Faster and cheaper

Who will pay for Stimulus $?
- Our children and grandchildren
- They will benefit from the fiber
Why Symmetric Gigabit?

The electronics are a 5-7 year investment
  • Who thinks bandwidth demand will decrease?

The $ delta for 1 Gbps electronics is small

Symmetric connections are the future
  • More user generated content
  • U- Tube is just the beginning
  • More cloud-based services
  • Backup services, on-line software, disaster recovery
  • More remote desktop and work from home
  • Competitive advantage
  • It is not easy to do symmetric gigabit over copper
  • Keeping up with Kansas City and elsewhere
Where we are today

Selected our FTTP delivery technology
  • Active Ethernet beat WDM-PON in the RFP

Engineering firm finished fiber design

Construction contracts signed this week
  • 3 bid packages - Urbana, Champaign & University

Construction starts this week

First customers live in February/March

Grant-funded construction will be complete by February 1, 2013

Then the rest of the community?
Groundbreaking on Tuesday
Applications and Services?

A classic “chicken or the egg?”

Will connectivity follow applications?
- One Community focused on applications first
  - We will all benefit from their accomplishments

Will applications follow connectivity?
- UC2B sought funding for both
  - Only Infrastructure was funded by NTIA
  - Therefore.........
“If you build it... he will come.”

“Go the distance.”

Ray Kinsella - 1989

“If you connect Anchor Institutions to each other and to the local community with fiber at Gigabit speeds, they will leverage that connectivity to better fulfill their missions and serve the community.”

Mike Sherman - 2011
How UC2B will be used

All the same ways we do today
  • But faster and for lower costs

Local schools, libraries and government
  • Will not be bandwidth constrained

Social Service agencies
  • Will have unlimited bandwidth to each other
  • Will have improved bandwidth to their clientele

Senior Living Centers
  • Will be able to extend connectivity into living units
  • Not just the common areas

Public Safety Agencies
  • Will enable increased monitoring & public input
How UC2B will be used - 2

Smart-grid & Energy Conservation
• Smart meters and appliance shut offs

Faith-based organizations
• Wednesday night virtual Bible study groups
• Broadcast Sunday services
• Video communications with home-bound parishioners

Mental Health Transitional Group Homes
• Remote observation and dispute resolution
• Monitoring medication compliance
How UC2B will be used - 3

Off-air digital TV and Internet-based content

- ivi - http://www.ivi.tv/
  - National off-air retransmission to everywhere
  - Worked well, but has legal issues
- Sezmi - http://www.sezmi.com/
  - On-site antenna and controller/DVR box
  - $149.99 hardware package at Amazon.com
  - Only 36 markets thus far.
- BamBoom - http://bamboom.com/
  - Centralized micro-antennas and cloud-based DVR
  - New York City will be the first market
How UC2B will be used - 4

IP-Based landline telephone
  • Skype, Magic Jack, Vonage, local CLECs

Cloud Storage and Disaster Recovery
  • Businesses and households

Security and Remote Monitoring
  • Home Security
  • Day-care cams

Telemedicine
  • Two regional healthcare providers
  • Public Health District
Why was UC2B “special”?

• Local funding raised through the sale of fiber IRU’s
  • Did not rely on altruism
• Expansive definition of “Anchor Institution”
  • 1+ for every 1,000 citizens
  • Lots of social service organizations
• University technical support
  • NTIA believed we could make this work
• Close to bleeding edge technology choice
  • We promised a symmetric 100 Mbps connection for everyone
  • Who knew Google would promise 1 Gbps just 6 months later?
• Broad community support
  • 60 pages of supporting letters
• A valid survey to document “underserved” areas
First things first

We have been in head’s down mode
  • Focused on planning and starting construction

UC2B has to be real
  • More than just presentations and maps
  • We have had 2 years of talk, now it is time to build

Once we have live customers
  • People will find ways to use the Gigabit network
  • We can attract multiple service providers
  • Possibility for price and service competition
Questions

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