UC2B Policy Board Agenda

Special Meeting
Wednesday, June 20, 2012
12 p.m. – 1:30 p.m.
Council Chambers, 102 N. Neil Street, Champaign, Illinois

I. Call to Order

II. Roll Call (By Roster) – Determine Quorum

III. Approve Agenda

IV. Approval of Minutes from the May 24, 2012 and June 6, 2012 Policy Board meetings

V. *Action/Discussion Items: (In this section, items will be presented to the Board and opened for technical questions. Then we will go to the audience for comments—audience comments are limited to five minutes per person—then we will return to the Board for general discussion and questions.)

a) NTIA and Grant Report (12:05)
b) *Resolution 2012-16 A Resolution Approving Policy Board Officer Appointments (12:15)
c) *Resolution 2012-13 A Resolution Accepting the UC2B Business and Strategic Plan and Forwarding It On the Member Agencies For Consideration (12:20)
d) *Resolution 2012-12 A Resolution Approving Wholesale and Dark Fiber Services and Rates (12:30)
e) *Resolution 2012-17 A Resolution Recommending Terms of an Agreement (Gigabit Neighborhood Gateway Proposal) (1:00)

VI. Items for future meeting agendas

a) Field Orders – Interim J.U.L.I.E. Locating Services and Fiber Restoration (Vandeventer, Shonkwiler)
b) UC2B Core Values Discussion
c) Policy Statement Regarding Use of Public Resources by Private Entities Furthering an Articulated Public Purpose (Schnuer)

VII. Public Participation

VIII. Adjournment

IX. Next Meetings:

Wednesday, June 27, 2012 – 12:00 noon **Special Meeting**
Council Chambers, 102 N. Neil Street, Champaign, Illinois

Thursday, June 28, 2012 – 6:00 p.m. Regular Meeting
Council Chambers, 102 N. Neil Street, Champaign, Illinois

UC2B Policy Board Minutes

Regular Meeting
May 24, 2012

Location:
Council Chambers
102 N. Neil Street, Champaign, Illinois

Board Members Present: Deb Feinen, Brandon Bowersox-Johnson, Dr. Jon Gant for Dr. Abdul Alkalimat (phone), Rev. Zernial Bogan (Skype), Mike Smeltzer for Mike DeLorenzo (phone), Pete Resnick by Skype, Richard Schnuer, Tracy Smith

Others Present: Teri Legner, Diane Kruse (phone), Mike Kennedy for Power Up Electrical (phone)

Members absent: Abdul Alkalimat, Minor Jackson

Action Items:

I. The meeting was called to order at 6:03 p.m. by Chair Feinen.

II. Roll Call – Determine Quorum

III. Approve Agenda: Bowersox-Johnson motioned, Smith seconded to approve the agenda as written. Motion passed by voice vote.

IV. Approve Minutes from May 9, 2012: Bowersox-Johnson motioned, Smith seconded to approve the minutes from the May 9, 2012 Policy Board meeting as written. Motion passed by voice vote.

V. Action/Discussion Items:

a) Resolution 2012-10: Approving a Contract for Phase II FTTP Construction and Installation: Legner introduced Mike Kennedy of Power Up, a company in St. Louis. They are the apparent low proposers for this award. The recommendation from the Policy Board is to recommend to the Champaign City Council that it allow the City Manager to award the contract in a total dollar amount of $1,629,775.00. It is a hybrid proposal; it is a price that is partially based upon a fixed cost and a per connection cost with fifty percent take rate estimate. We don’t have customers signed on the dotted line but hope we can deliver at least that many to this project. It also gives the City Manager the right to exceed that amount based on demand and funding availability.

Technical questions: Resnick asked if there is a ceiling limit being given to the City Manager. Legner answered no, as long as grant funding is available he is authorized to exceed the contract amount.

Audience questions: None.

Board comments: Bowersox-Johnson said he was thrilled about the contract, saying it is a win-win situation. We have a vendor here whom everybody is incredibly excited about who has pledged to use a diverse work force; they went above and beyond by using local minority sub-contractors even, so to me this couldn't be any better, and they can do this on such a short schedule.

Chair Feinen thanked the staff who worked so hard on coming up with a process that would yield these results and it worked. She hoped there would be future media coverage on it, perhaps when it hits the City Council agenda, as it is great for the community. Schnuer agreed, saying he wanted to thank the contractor for working within these unusual parameters.

Legner stated that the Resolution goes to Council on June 5 and she hoped we could get contracts in place by mid-June. The other piece needing approval is a materials and equipment purchase. The bid is due the following Wednesday (May 30). We will also have a better idea of where we are in terms of grant funding. The materials and equipment purchase will go to Council on June 12 at a Special Regular Meeting.

Bowersox-Johnson motioned to approve the Resolution. Schnuer seconded. The motion to approve the Resolution was approved by voice vote.

b) Resolution 2012-11: A Resolution Approving IRU and Maintenance Agreement Templates: Smeltzer explained that the form says no IRU holder can sub-lease the dark fiber without written permission from UC2B. If we were to elect to change that, we can do so. But if we end up allowing some and not others, the language there allows that. Right now as it's written it is decided on more of a case-by-case basis.

Schnuer motioned, Smith seconded to approve the Resolution as written.

Technical questions: Bowersox-Johnson clarified that the Policy Board could vote without worry about the issue of Section 5 of the draft IRU, which was stricken from voting upon at the last meeting. The standard template will still apply.

Resnick asked if we use this as a standard template and later on decide we do not want to put limitation on people at all, are we kicking ourselves by voting on this IRU template. Smeltzer answered that the nature of this committee is that a future Policy Board can overrule this as they see fit. Flexibility has been built in without having to come to an open conclusion on this issue. Jim Baller suggested that we get this form in front of all potential IRU holders and allow them collectively to give us their comments. We will not get into individual negotiations with IRU holders. We recommend we have a standard form. This will be reviewed by the attorneys for all the entities that are going to be given IRUs.

Schnuer asked Legner whether it is the intent to include just the nine initial investors or is this a template for all future IRUs? Legner answered that the intent is for this to be for the initial nine. Schnuer offered a motion to support that. Chair Feinen asked whether he is amending the motion on the floor to ask that the template applies only to the original nine investors. Schnuer said yes, as he wants language that is not ambiguous.

Bogan seconded the revised motion to only include the original partners.

Smeltzer asked whether this would also apply to ICN and other BTOP projects. Schnuer replied that he was only comfortable applying it to the original investors.

Chair Feinen reminded the Policy Board that the by-laws state that non-voting members may not second motions. She asked for a voting member to second the motion. Smeltzer seconded the amended motion.

Resnick asked if the Board needed to change the text in Section Two of the Resolution because it says “approval for general use.” He offered a friendly amendment starting on the second line of Section 1 of the Resolution where it says “are approved and adopted for general use” for the use of the initial investors. Schnuer accepted the amendment.

Legner added that the second “whereas” clause recognizes that there are partner agencies investing in UC2B, which helped us attain the federal grant of $22.5 million. She also noted that IDOT needs to be included among this group receiving this template IRU since we are needing and they are requiring their approvals be tied, in part, to the terms of an IRU. Schnuer agreed; the amendment is for the original entities and IDOT.

Bogan asked about open access and exclusive rights of use. Smeltzer responded that it does not mean we can’t have a different form for future IRUs. This is just for the original investors and IDOT. As to future entities who want dark fiber, UC2B would have to grant approval, but the Resolution is not stating entities in the future would be denied.

Resnick asked whether Smeltzer was okay with the second friendly amendment; he was.

Schnuer asked for a definition of the word “backbone.” Smeltzer said originally, we had seven backbone rings, called rings one through seven. Each of the Cities had needs they wanted addressed. We have four sub-rings. There is a sub-ring in Champaign, one on Fox Drive, southeast Urbana, and one from Ring Seven that picks up METCAD. Four of these eleven take shortcuts or long cuts. Those are the eleven backbone rings.

Gant asked whether Sections two and three were redundant, given the proposed changes on the table. Smeltzer said to scratch paragraph three. Legner agreed, saying to strike paragraph three because paragraph two clearly says who the IRUs are for. Due to the time, Chair Feinen asked for Schnuer and/or Legner to work on the wording and for the Board to come back to it because it will not be solved at this meeting.

Smeltzer commented that we have several organizations who have never signed a letter of intent, so we need to remove the qualification “by letter of intent.” Champaign County never signed letters of intent so that would not apply to them, so we need to scratch “via letter of intent.”

Audience questions: Peter Folk of S. Maple Street, Urbana: I am glad that the controversial terms have been limited to those who have some power in negotiating. I hope you keep this in mind for future developments—UC2B will be a monopoly otherwise.

Schnuer revised his motion to say to use the wording from the second “whereas” and to strike paragraph three and to make changes to Section 1 as Resnick asked for earlier. Chair Feinen added that instead of “General Use,” we will say original investing entities and IDOT.

Board comments: Schnuer had some concerns about the language. One is on the right to sell or sublease, particularly as the City is the biggest investor of local share. What if we find we do not have use for all of this fiber? We can either abandon it to avoid the ongoing maintenance cost and then nobody gets to use it. Is that good for the community? The other issue is about restricting use. I want to go back to the report from the Technical Committee and remind people that we adopted it. That report conveys that property rights include asset rights and transfers. He did not want to leave open-ended the “exclusive use” of the fiber. Are we going to prevent ourselves or others from providing service?

Smeltzer replied that the intent is not to censor content but it is very common to have restrictions on the use of the fiber. The City of Champaign is the fourth largest investor, with Unit 4 Schools being the largest, followed by Champaign Telephone, then the University. He also added that he and Legner went through the Policy Board minutes and he does not believe the Board approved the report from the Tech Committee on IRUs.

Rev. Bogan left the meeting at 6:54pm.

Resnick said he always considered the IRUs with these original investors as a “necessary evil.” We are selling off pieces of the network in exchange for their initial investments. We would not have gotten as far as we did if we did not say we would commit to giving dark fiber. He did not agree with the clauses about getting permission from UC2B to do with the fiber what they wanted.

Bowersox-Johnson agreed that this was a complex issue and with the Board not being fully present, suggested perhaps to defer voting on this item to a future meeting.

Legner said that the Resolution indicates that this is the document that we will use and it authorizes the City Manager to use them in substantially the same form. It is not intended as something that will be negotiated.

Schnuer motioned that the language be changed that the grantees may use the IRUs for any lawful use. Chair Feinen reminded the Board that we have a motion and an amendment and need a vote on the pending amendment.

The motion to amend passed by voice vote (originally amended by Schnuer and Smeltzer), with Schnuer making an additional amendment to the new Resolution.

Schnuer explicated that he was making a motion that grantees can use the fiber for any lawful use; it also gives direction to the attorneys to amend as appropriate. Resnick seconded the amended motion.

Bowersox-Johnson felt that on page 24 of the packet, section 5.6 states exactly the point Schnuer is making. It does what Schnuer wanted to amend, “any lawful purpose,” provided that we give our written consent. Schnuer still had some concerns, one being the idea of an open-ended policy that would affect the use. There is nothing discussed on what those policies are. It’s too open-ended. He wanted there to be a clear direction to the attorney and on legislative record that we are not restricting how people use the fiber.

Resnick pointed out that what Bowersox-Johnson had read omitted section 5.6.1, which says “subject to any Resolutions from the Policy Committee.” That is what limits the IRU by a simple vote of the Policy Committee after that fact. Chair Feinen agreed, saying if she were a business she would not want to enter into a contract with UC2B. We should not restrict future public entities. She wanted to be sensitive to Schnuer’s concerns about making sure that governmental entities can change and grow in ways we can’t yet imagine. That is different than us deciding to go into competition with private businesses and leasing lower than anyone else. If the concern is, can the government operate and do what we need to do, perhaps sublease to another entity that didn’t buy fiber originally, that is different than subleasing for competitive purposes in the marketplace. She was not comfortable with being in the business of being competitive.

Bowersox-Johnson said he was ready to keep the two paragraphs, 5.6 and 5.6.1, the same, even if it gives the Board more latitude. He would prefer to have a document that allowed more latitude that was written by our attorneys.

The Board voted on Schnuer’s second amendment to the Resolution (seconded by Resnick), to change the wording of sections 5.6 and 5.6.1: Resnick yes, Smeltzer no, Gant no, Schnuer yes, Chair Feinen no, Bowersox-Johnson no, Smith no. The motion failed.

Chair Feinen asked Legner to convey to the attorneys that the Board would like to talk about these policies.

The Board voted on the original motion to approve the Resolution made by Schnuer and seconded by Resnick: the motion passed by voice vote.

c) **Resolution 2012-12 A Resolution Approving Wholesale and Dark Fiber Services and Rates:** Smeltzer explained that this Resolution covered a variety of things. If we are going to do additional IRUs, it is proposed we do it at $2000 per strand mile. The NTIA will require us to offer dark fiber to maintain our open access status. They do not care if it is done through IRUs or leases. At some point, we have to decide whether we are selling additional IRUs. There are also bulk rates listed in here for dealing with multiple dwelling units and multiple tenant units. We've offered some possibilities and discounts, depending on how much their building will commit to.

Bowersox-Johnson asked Legner about the timeliness of everything laid out in the Resolution. Is it just the grid stuff that needed approval or the whole thing? Legner answered that it would be ideal to get this off the Board's plate and move on. She strongly emphasized the importance of timeliness when it comes to subscriptions. We cannot delay our canvassers going door-to-door. We have an agreement right now that we can take to our residential/commercial customers but we do not have an agreement in place that we can utilize for MDUs, no landlord agreement, for example. Chair Feinen has people calling and wondering when we will be in touch with them. She stressed how important it is to not be the bottleneck for the contractor. He also has to meet certain deadlines and it would be a shame if we stood in the way of progress.

Resnick asked how the Resolution relates to the contractor; are any of the plans to pull fiber changed by the pricing model? Legner said that our contractors can't pull fiber to an MDU without the landlords' permission in these cases.

Smeltzer said approval for MDUs was priority number one today, followed by wholesale services to providers. NTIA has a list of things they want us to be doing and one of those things is getting wholesale provider agreements signed, but first we need prices.

Bowersox-Johnson asked for Smeltzer to spell out his recommendation relating to the MDU pricing. Smeltzer asked how long do we require the landlord to pay, i.e. what is the term of the service agreement? Two years is probably adequate similar to the residential contract. The attorneys we hired suggested five. If we were to wire up every unit in an apartment building with fiber, it adds value to the building. But there will be some fine balance about how long a landlord wants to offer it. They may try to recoop that money from the tenants. Smeltzer suggested two years for the term.

Audience comments: David Glynn from Urbana and representing Pavlov Media: my question on the MDU proposals relates to whether this is about grant-funded areas or all properties. He asked whether the ownership of the fiber is UC2B's through-out the building . Where is the demarcation point? Smeltzer said there were some FTC court rulings that once a wire is put in your building, you own that wire.

Board comments: Schnuer said he was debating on the two-year issue. Resnick said he was unclear what the Board was voting on. Chair Feinen explained they were going through the numbered paragraphs one by one related to the MDU pricing. Resnick asked if there was a point at which the Board was going to discuss the matter of ownership of the fiber in the buildings?

Bowersox-Johnson added that he believed counsel was already working on that; the choice is simply for the term of the agreement at this point. Legner said these are standard issues that counsel deals with regularly so to suggest something other than industry standard is unnecessary.

Chair Feinen believed Schnuer wanted more explicit language around the time limit. Bowersox-Johnson felt that it was getting too complex for canvassers. Bottom line, they want to know the amount of time to commit to. To make a tiered set of options at this point, he worried that it's making things too hard. Resnick thought ownership of the fiber was going to be a problem. How do we "take back the fiber?" He asked Bowersox-Johnson if canvassers would sell a $20/month package so long as the person makes a two-year commitment?

Smeltzer said that this is standard pricing. The goal of getting this to every unit is from a customer support standpoint. UC2B controls the first five feet coming from the manhole up to the property, and then the property owner can do what they want with it after that. Kruse said the other reason we want to connect to each unit, aside from customer service support, is the inside wiring is usually very antiquated and it creates a whole set of customer service issues. This will eliminate problems by replacing bad wiring.

Resnick asked for a clearer understanding of the motion. It is for a two-year contract, such that the owner of the apartment building is on the hook for the units per month? Smeltzer replied yes, that comes up later. The term of the contract is proposed at two years.

Smeltzer motioned to offer a **two-year contract from the landlord**, Bowersox-Johnson seconded. The motion passed by voice vote.

The next item on the list, Smeltzer explained, is every unit in a building is considered a household. UC2B is requesting at least 50-60% of a complex be committed for subscriptions by the owner before service would be offered**. He submitted a motion to not enter into an agreement with an MDU landlord for less than 60% of the units of an apartment building. Bowersox-Johnson seconded.**

Chair Feinen asked if someone owns a complex that has five buildings, do we want to require that they meet their 60% per building or overall? Smeltzer agreed to the amendment allowing that to be applied to the total.

Audience comment re: 60% issue: David Glynn of Urbana/Pavlov Media: the proposal as it stands says the landlord needs to commit to 60% of the building and will have to pay to wire the rest of the building? Smeltzer replied that that was correct. Resnick agreed, saying he wished there was a better way to manage this problem.

Board comments: Bowersox-Johnson supported the motion on the table. He would like to encourage the marketing team to explain to landlords that they want to go with 100% so they can advertise that they are providing this service. Smeltzer believed that most landlords will be thrilled to provide this service.

The Board voted on the motion on the table; motion passed by voice vote.

The last item asks whether there will be a discount for landlords with respect to percentage of units committed to service? Smeltzer motioned for a 5% discount for 60% occupancy, 10% for 75%, 15% for 90%, and 20% for 100% occupancy, regardless of the number of units. Schnuer seconded the motion on the discount, though he would like the minimum to be higher. Smeltzer said he would be happy to raise the discount, starting with 10% and having it the top be 20%.

Smeltzer submitted an amended motion to offer a 10% discount for a 60% subscription rate, 15% at 80%, and 20% at 100% subscription rate. Schnuer accepted the revised motion.

Audience comments: Peter Folk of S. Maple Street, Urbana: I certainly agree that in a normal ISP business, you would save a lot of money on the scale. I would point out that in your sustainability model, you only have fifty cents per twenty dollars as your billing fee and the percentage is very small of uncollectible revenue. He cautioned the Board on steep discounts, considering the razor thin profit margins.

Board comments: Resnick was concerned about voting for the discounts if we have beliefs that the MDUs are going to make up a lot of our profit.

The Board voted on the motion on the table; motion passed by voice vote (Resnick voted no).

The next items relate to the dark fiber rates and core connection charges. Bowersox-Johnson clarified that this was at the bottom of page 72 in the agenda packet – it is the bottom half of the page. Lateral maintenance is $600 per year per lateral for the initial investors. Down the line, new providers will be charged $2,000 per strand.

Smeltzer motioned to approve the rates as written. Schnuer seconded. The motion passed by voice vote.

The next item up for consideration was ISP connection and transport services. **Smeltzer motioned to adopt the pricing at the top of page 72 (to include ramp-up pricing). Bowersox-Johnson seconded.**

Audience comments: Peter Folk of S. Maple, Street, Urbana: this gets at the core of what UC2B is supposed to be all about, an open access network, which is defined as one in which there is a free market to providers, where no provider is privileged over another. This pricing listed here does not do that. It has you as the provider with dramatically different pricing. We have customers in the area who have wanted our services over the UC2B network. It is absolutely contrary to the open access network concept. Bowersox-Johnson asked Folk if he was worried about the core backbone connection rates or the per customer connections? Folk replied they are all part of his costs. In an open access network, you must have a separation between retail and wholesale providers. By providing 20 for 20, I have to pay a minimum of $99 per customer then? These are components to make it impossible for Volo, for example, if we eliminated bandwidth costs, and decided to do everything we do for free, we still could not offer the same prices as UC2B, and that's the antithesis of an open access network.

Bowersox-Johnson clarified if he was to drop its prices on this table so other providers can offer this same pricing. Folk said yes, which he then said meant that the existing model is not sustainable. Chair Feinen pointed out that due to the late hour, there was not enough time to flesh this piece out and asked for a motion to defer.

Legner reminded the Board that they have an extremely heavy workload coming up, including discussion of the Business Plan. Currently, there are meetings scheduled for June 6 and June 13, with another regular meeting on the 28th, which is a Thursday evening. She asked for the Board to more closely consider moving meetings off of Thursday evenings and to take place solely on Wednesday afternoons, especially since the City Attorney, Fred Stavins, cannot make Thursday evening meetings, and therefore cannot give input on items such as IRUs as was evident tonight.

Chair Feinen asked the present members to block out Wednesdays in June, as the Board will need to meet more frequently than usual.

Schnuer motioned to defer the fiber rates discussion to June 6. Resnick seconded. The motion passed by voice vote.

Chair Feinen asked Peter Folk to forward any comments he had on the pricing model to Teri Legner for distribution. Legner said she would prefer to get Folk's information as soon as possible. Kruse agreed, saying she would need it by Monday or Tuesday of the following week. Folk said he could not promise to have it by then, saying that the response was a community initiative, but he did think having a response by June 13 was feasible.

d) NTIA Grant Report: as there was no action to make on this item, Chair Feinen asked to skip it. Smeltzer had one quick verbal note to add: he learned earlier in the day that we have until January 31, 2013 to complete the last bit of construction.

e) Canvassing Update: no one was present to give this update.

f) Phase III Network Expansion Opportunity: Smeltzer said the proposal coming out of Gig.U came out yesterday. We are not allowed to discuss it with others who applied for Gig.U and must continue to have quiet discussions about it.

g) Urbana Testbed for New Deployment Methods: Bowersox-Johnson said it's a really interesting idea. He loves the idea of Urbana being a testbed. Chair Feinen met with Peter Folk and Mike Monson. Folk has also met with Bill DeJarnette and she had the impression that Urbana is open to the idea, though that does not speak for the Urbana City Council.

Smeltzer felt it was an interesting proposal but that it is a fly in the ointment if we are going to take this project and say do everything but four blocks in Urbana. Resnick said it sounded reasonable to go forward but that the Board would have to take it up later.

Bowersox-Johnson wanted to clarify the issue of the strands. Part of the proposal was to use two strands of Urbana's.. If Urbana uses these two strands for something else, does that mean UC2B has two fewer strands?

Audience comments: Peter Folk: I did not intend to indicate that UC2B would have to maintain the testbed network. If you want to, that's fine, but the intent is to operate it as an open access network. The strands would still become UC2B's. Currently it's set as an IRU to the City or School District. This is all related to a grant we are pursuing from the State of Illinois. It does not need to be operational by the end of June but at least under way.

Board comments: Chair Feinen stated for the record and for those attending remotely, this meeting did not have any members of the public attending beyond the five people who would normally attend a Wednesday afternoon meeting. We are close to 9 o'clock at night and as she understood things, there has been public outreach in the census areas and at local churches, letting them know we're meeting on Thursday evenings. She said this only in anticipation of discussion meeting only on Wednesdays. At a minimum, she requested that Policy Board members block out their Wednesdays in the future, as it is highly anticipated the Board would be meeting weekly for a little while.

VI. Tasks to complete for next meeting: Policy Board Officer Appointments.

VII. Items for future agendas: none

VIII. Public Participation: none

IX. Adjournment: Bowersox-Johnson motioned to adjourn, Schnuer seconded. Chair Feinen adjourned the meeting at 8:42 p.m.

RESOLUTION NO. 2012- 10 (Revised 5.24.12)

A RESOLUTION

RECOMMENDING THE CITY OF CHAMPAIGN EXECUTE
A CONTRACT WITH POWER UP ELECTRICAL CONTRACTORS, LLC, TO INSTALL
AND CONSTRUCT THE PHASE II FIBER TO THE PREMISE CONNECTIONS FOR UC2B

BE IT RESOLVED BY THE UC2B POLICY BOARD, as follows:

Section 1. That it is recommended that a Contract between the City of Champaign, as lead agency for operations and on behalf of UC2B, and Power Up Electrical Contractors, LLC, be approved in a total calculated amount of $1,629,775.

Section 2. That the City Council authorize the City Manager to increase that amount based upon the per connection prices set forth in the proposal attached hereto so long as funding is available and the connections are consistent with the terms of the Federal grant.

RESOLUTION NO. 2012- 10

PASSED:

APPROVED: [signature]
Policy Board Chair

UC2B FTTP Proposal Packages

REVISED PROPOSAL FORM 05/11/2012

Name of Proposer: Power UP ELECTRICAL

Only submit proposals on the packages or the combinations of packages that you are willing to do.

Examples: If you are only willing to do Package A1 & A2 combined, then enter a Proposal on line #1 only (A1 & A2) and do not propose on A1 & A2 individually.
If you are willing to do either packages A1, or A2, or both of them and want to offer a better price for doing both, then propose on Proposal Line #1, #2, & #3 accordingly.

Your must submit a proposal all of the sub-elements of any given package

Example: If you enter a proposal for Line #10, you must also enter proposals for Lines #11, #12 & #13.
Failure to propose all the sub-elements of a package will invalidate your proposal on that package.
Please see the RFP for the definition of Workforce Diversity.
For a package that consists of multiple components, the Workforce Diversity pledge is a single percentage that covers all of the sub-components.

Payment and Performance bonding Requirements

If any of the packages you propose on, or any combination of the packages you propose on exceeds $125,000 you will be required to provide a payment and payment and performance bond for 100% of your executed contract. The only proposals that will not require a 100% payment and payment and performance bonds are those in which the final executed contract is less than $125,000.

Packages	Workforce Diversity Pledge % for this Package	Number of Locations	Approximate Number of Locations	Description	Your Proposal Cost	Proposal Line #	Notes
Packages A1 & A2 (All Champaign Anchor & IRU Sites - both Outside and Inside)	—	116		Champaign Anchor & IRU Sites Inside & Outside Installation (Enter total proposal amount for all sites.)	NB	#1	(This combination of packages may require the ability to produce a payment and performance bond.)
Package A1 only (Champaign Anchor & IRU Sites - Outside only)	—	116		Champaign Anchor & IRU Sites Outside Installation (Enter total proposal amount for all sites.)	NB	#2	"Outside" Anchor & IRU work includes terminating the OSP drop fiber cable in the building.
Package A2 only (Champaign Anchor & IRU Sites - Inside only)	—	71		Champaign Anchor & IRU Sites Inside Installation (Enter total proposal amount for all sites.)	NB	#3	OSP fiber drop cable will already be terminated in the building.
Packages B1 & B2 (All Urbana Anchor & IRU Sites - both Outside and Inside)	—	47		Urbana Anchor & IRU Sites Inside & Outside Installation (Enter total proposal amount for all sites.)	NB	#4	All Anchor & IRU sites in Urbana both inside and Outside.
Package B1 only (Urbana Anchors, IRU & internal hallway MTU/MDU sites - Outside only)	—	47		Urbana Anchor & IRU Sites Outside Installation (Enter total proposal amount for all sites.)	NB	#5	"Outside" anchor work includes terminating the fiber in the building.
Package B2 only (Urbana Anchors, IRU & internal hallway MTU/MDU sites - Inside only)	—	44		Urbana Anchor & IRU Sites Inside Installation (Enter total proposal amount for all sites.)	NB	#6	Fiber will already be terminated in the building.
Packages A1, A2, B1 & B2 (All Anchor & IRU Sites - both Outside and Inside)	24	163		All Anchor & IRU Sites Inside & Outside Installation (Enter total proposal amount for all sites.)	927,000	#7	(This combination of packages may require the ability to produce a payment and performance bond.)
Packages A1 & B1 (All Anchors & IRU Sites - Outside only)	—	163		All Anchors Outside Installation (Enter total proposal amount for all sites.)	NB	#8	"Outside" anchor work includes terminating the OSP fiber drop cable in the building. (This combination of packages may require the ability to produce a payment and performance bond.)
Packages A2 and B2 (All Anchors & IRU Sites - Inside only)	—	114		All Anchors Inside Installation (Enter total proposal amount for all sites.)	NB	#9	OSP fiber drop cable will already be terminated in the building.
Packages C1 & C2 **(All FTTP sites including MDU/MTU sites with no internal hallway - both Inside & Outside work.)**	84		2500	Price per single location installation (single residential & single business) Inside & Outside Installation (Enter a per site cost.)	310.00	#10	Lines # 10, #11, #12 & #13 must all be proposed with this package. (Supply proposals for each of the four subcomponents.) (The Workforce Diversity pledge should cover all four subcomponents.) (This combination of packages may require the ability to produce a payment and performance bond.)
			312	Price per single Mobile Home Inside & Outside Installation (Enter a per site cost.)	230.00	#11	
			129	Price per MDU/MTU Building Outside Installation (Enter a per site cost.)	675.00	#12	
			1114	Price per MDU/MTU Unit Inside Installation (Enter a per site cost.)	110.00	#13	

As Revised by Committee on May 24, 2012

RESOLUTION NO. 2012-11

A RESOLUTION

APPROVING IRUs AND MAINTENANCE AGREEMENT TEMPLATES

WHEREAS, the Policy Committee has previously discussed and approved a Report Regarding IRUs and a policy regarding private investment in network expansion; and

WHEREAS, UC2B desires to offer IRUs and maintenance agreements to those entities that have previously committed "match" funding toward the federal grant in 2009 and that desire access to the network to unactivated or dark fiber strands and to the Illinois Department of Transportation in exchange for UC2B's use of the State right-of-way for a portion of its network fiber; and

WHEREAS, the "template" IRU and Maintenance Agreements attached hereto are consistent with the Report Regarding IRUs and policy regarding private investment in network expansion recited above and provide for the terms and conditions under which other entities may gain access to the network.

NOW, THEREFORE, BE IT RESOLVED BY THE UC2B POLICY COMMITTEE, as follows:

Section 1. That the "template" IRU and Maintenance Agreement documents, which are attached hereto and incorporated herein, are approved and adopted for use by the entities that have previously committed match funding as described above, along with the Illinois Department of Transportation, and authorized to be executed by the City of Champaign City Manager in substantially the same form.

RESOLUTION NO. 2012-11
PASSED:

APPROVED: ______________________________
Policy Committee Chair

UC2B Policy Board Minutes

Regular Meeting
June 6, 2012

Location:
Council Chambers
102 N. Neil Street, Champaign, Illinois

Board Members Present: Dr. Jon Gant for Dr. Abdul Alkalimat, Brandon Bowersox-Johnson, Mike Smeltzer for Mike DeLorenzo, Deborah Frank Feinen, Pete Resnick, Richard Schnuer, Fred Halenar for Tracy Smith

Others Present: Fred Stavins, Diane Kruse, Teri Legner

Board Members Absent: Dr. Abdul Alkalimat, Rev. Zernial Bogan, Mike DeLorenzo, Minor Jackson, Tracy Smith

Action Items:

I. The meeting was called to order at 12:07 p.m. by Chair Feinen.

II. Roll Call – Determine Quorum

III. Approve Agenda: Bowersox-Johnson motioned to approve the agenda but asked to consider the Resolutions in order of IV. C, IV. B, and IV. A. Schnuer seconded.

Resnick got some feedback from Don Owen at the Urbana School District re: IRUs. He asked to discuss that too. Regarding the Business Plan report, he requested that it be made available electronically. He can't approve it today without believing the public has had more access to it. It is a lot of information to digest in a short period of time.

Resnick motioned to only discuss the Business Plan and not approve it. Schnuer seconded. On the motion to amend the agenda so the Business Plan is up for discussion only, members voted 4-3 to keep it in the agenda as-is, considered for action.

The motion to approve the agenda (with reversal of order of discussion items) was approved by voice vote.

IV. Action/Discussion Items:

a) Resolution 2012-14: A Resolution Approving a Contract to Purchase Materials and Equipment for the Phase II FTTP Construction Project: Legner explained that this is a recommendation from the Policy Board to City Council to purchase materials necessary for Phase II of construction. Total cost of the contract is $422,324.58. It is similar to the previous Resolution on the construction/installation contract with Power Up. The contract amount will probably be different at the end because we'll have more connections than we estimate. We think we'll have the funding available from the grant, as well. This Resolution also recommends that the City Council authorize the City Manager to exceed the contract amount as long as funding is available.

Technical questions: none.

Audience participation: none.

Board comments: Halenar asked where the materials will be warehoused. Legner noted they will be delivered to and kept in space controlled by the local subcontractors.

Bowersox-Johnson motioned to approve the Resolution as written, Resnick seconded. The motion passed by voice vote.

b) Resolution 2012-13: A Resolution Accepting the UC2B Business and Strategic Plan and Forwarding It on the Member Agencies for Consideration: Kruse thought it would be best to go through some of the findings and recommendations and talk about some suggestions for organizational structure (Section 2).

Kruse emphasized that this is a working tool which will change. Approval of the plan will allow the Policy Board to push it on up to the City Councils for approval. She reminded the group that she made certain fundamental assumptions for some issues such as operating expenses, etc. She based a lot of the numbers on those associated with the current environment. She first looked at the financials for maintaining the grant-funded areas only. She considered what those numbers look like in terms of take rate percentages that might make the plan more sustainable. She noted the financials would be enhanced if UC2B would offer dark fiber leases or additional IRUs.

After the initial assumptions and consideration of the financials for serving only the grant-funded areas, she also looked at expansion to new residential areas. The Plan explores some ways to do that. She cautioned that she did not prefer expansion on a per customer basis but rather one that would grow after a certain level of commitment is reached on a neighborhood by neighborhood basis, such as 40%. The Plan also explores expansion in commercials areas or to commercial customers and issuing new dark fiber leases and IRUs.

Halenar said the wireless public safety network suggests that there could also be a private wireless network. Kruse noted that they were not tasked with such an analysis or making a suggestion with regard to this additional level of service but that UC2B technically probably could consider doing that. In terms of providing the fiber network and a wireless overlay canopy, she did not recommend that such services be offered yet that would directly complete with the 20/20 service. The 20/20 service is the basis for the financial model associated with the initial grant-funded service area.

Resnick asked Kruse if she thought that providing wireless service for public use would eat into profit. Kruse said she was only giving her opinion but she thought that UC2B should hold off on the wireless piece until the grant period is over and then come back to it. When you're expanding fiber to the home, it's capital intensive. Your main concern in expansion is reducing your debt service. Your take rate percentages are key. It does not make sense to offer cable TV services as video cable head end costs are prohibitive at this point for UC2B.. She also noted that video services are changing drastically and quickly. She anticipates that customers will soon be receiving video services over the internet, such as IPTV.

Technical questions: Schnuer asked how the canvassing was going and whether Gant could speak to the status of subscriptions. What kind of Gant replied that they have been canvassing since the fall and have made five passes through the eleven targeted areas. The preliminary response rate is 70-80% for people who are likely to sign up for the service, so we think we're on target to reach the numbers. We'll be going back out on Monday to sign people up officially. Successful contact is when we're able to talk to someone in person; I think we've talked to 1800 or 1900 people that we found at home. The number of people that responded that they were not willing to adopt was very small, and mostly they were planning on moving or had an existing service they preferred.

Resnick asked Kruse if she had any idea of how many businesses will take the residential service rates Kruse said she made the assumption that most would qualify for the residential rate, so she rolled that into the analysis. We assumed a director would be hired in 2012, two more engineers, plus benefits and salaries throughout the years. She noted the University will pay for the engineers' salary/benefits from 2012-2014. As for the call center request RFP, we have not yet nailed down what the cost per subscriber is, but we assumed five dollars per subscriber in the financials, and then fifty cents per bill/invoice. We did the assumptions for JULIE locates. This is a portion of the plan that could be improved. This is a high percentage of your operating costs. Your EBIDTA (earnings before interest, taxes, depreciation and amortization) is high. But the goal is to break even and not have a huge profit center.

So what happens if the fifty percent take rate is not met? It doesn't have much of a negative impact when only serving the grant-funded areas because the construction is funded by the grant and there is no debt that UC2B has incurred for that; there's no debt service to pay. How could we improve the financial plan for the grant-funded areas? By adding dark fiber leases.

We looked at what the existing IRU rates were for the initial investors, and then we gave a range of what's typical. Then we computed dark fiber lease rates by providing a net present value vs. the long term costs of the IRU. There is no standard way of doing it. What we're offering is reasonable. There is a pretty good standard in the industry of what a reasonable IRU rate is.

Gant asked what some of the drivers are with the increase in costs beyond the grant-funded areas. It's modest but what drives that up? Kruse replied that sales and marketing costs identified here were based on a percentage of revenue given that those services are currently being paid for by grant funds. Some costs such as additional customer care costs or billing costs will change. These numbers will probably be improved once you have your responses to the pending customer care and truck rolls RFPs.

Smeltzer asked Kruse what she meant about expanding to business areas. Kruse said that when she talks about expansion models, she is taking the grant-funded areas and expanding, building out FTTP to businesses, residents, etcetera, so all of the expansion models make that assumption.

Resnick asked if debt service is going to be the same at the end of year N. Kruse said no, we'll have a more efficient use of our capital. Because we will be receiving revenue, we will reduce our debt service. If we can more closely tie our revenue to our outlay of capital, it will improve the financial model.

She continued that UC2B can be successful in getting a 40% take rate. A more efficient use of our capital improves the business model greatly. If UC2B can pre-sell a neighborhood and get a 40% take rate, that will give us a more efficient use of our capital.

There are over seven thousand businesses in the Champaign-Urbana area. If UC2B succeeds in getting a forty percent take rate the first year, the next year Kruse assumed forty-five percent, and three percent growth after that.

Schnuer added that the projection is that we will have half of all business customers in the community within five years and two-thirds in ten years. What does that say about us being an open network?

Kruse answered that it is philosophical. Make the pie bigger. Make it so everybody wins. You're just rolling out internet at this point. There are plenty of other business and residential applications. There's a bigger pie out there and everybody can win. You can do it by competing and having an open access network with great new services and applications beyond the tradition video and telephone services. Look for opportunities with new service providers or partner with non-traditional ISPs. Consider partnerships that may lead to energy conservation techniques or support telemedicine.

Audience comments: David Glynn of Pavlov Media, Urbana: I have a few questions, including the item on "broadband data". Kruse said that "broadband data" is the internet access fees currently being provided by the UI. $146,000 refers to the IRU maintenance fees. Glynn asked if the rest of the models are cumulative, as well. Kruse said they left the broadband data internet service revenue the same and added dark fiber leases on top of that.

Glynn asked if he was correct in looking at dark fiber sales and that it puts the grant obligation to break even status. Kruse said there is not a mandate from NTIA to break even. This organization is in the black except for negative net income because we are covering depreciation and amortization expenses. Schnuer added that such is a decline in the value of the asset (not a cash expense).

As to the broadband data line, Kruse said they assumed there was a different business mix. Fifty percent of customers would take 20 for 20, twenty percent would take the 40 for 40 product, and one percent would take the 60 for 60, one percent would take the 80 for 80, and twenty percent would take private service. Glynn replied that if we projected forty percent of businesses by 2013, he did not expect revenue to increase per business forty-one percent year to year.

Chair Feinen reminded the audience that they have a time limit of five minutes to comment.

Peter Folk of S. Maple Street, Urbana: I'm thrilled with this business plan. As business plans go, I've seen probably fifteen of them and it's hard to do them well, and they never last. They're projections. But a lot of the conclusions are good and it's all very good information. While there are lots of numbers in here and infinite numbers of ways to pick them apart, the model holds together. Just remember it's a working document. Don't forward to City Councils and say this is what we're doing, but instead say this is what we're doing right now, and making changes. It's a good start.

Dan Walker said he had only questions and no comments. Chair Feinen informed him that we could provide him with an email address if he has questions and staff can answer them. Or, he can direct his questions to a Policy Board member via email and answer them at the next meeting.

Kruse continued: a high percentage of the subscribers were assumed to be in MDUs. Fifty-five percent of the total housing units are in MDUs. The numbers here are just based on what we know today. Smeltzer added that there are several things built into the $45 residential rate applied outside of the grant-funded areas that are not in the $20 rate.

Schnuer asked whether the $500 equipment fee has been discussed. How did that affect the uptake? There are a number of low-income people living in the area. Kruse said that the installation fee for someone running a business out of their home is not a lot, though she understands it's a hardship for some.

Bowersox-Johnson asked Kruse to briefly lay out the landscape in the Midwest or the US about other potential partners in our region who own video heads who would be willing to have discussions about offering video triple play services. Do we have to find someone within fifty miles? What does this landscape look like for municipalities?

Kruse said we probably have some people here today even who would want to partner with us.

Resnick asked about the price for residential; is there a cost to us for different services? Kruse answered that because you'll be marketing UC2B as THE network, people will want to call even if we are not their service provider. Ninety-five percent of calls, in her experience, were remote control issues when she had her own FTTH company. She does not like the model of charging per customer because we don't have a good success model out there in the US yet. The model she likes includes wholesale services via dark fiber leases or IRUs.

What does work, as they are doing in Europe, is having one infrastructure in place and the service providers use the infrastructure. It's the concept of building one highway system and having multiple users use it but there's only one highway system that is built.

Chair Feinen interjected that the City Attorney had to leave soon. She asked the Board to take advantage of Kruse being present, asking her to highlight important things and give the audience a chance to comment.

Kruse went over the highlights of Section 3. There are pros and cons for each option regarding organizational structure. We are recommending a model that gives you the most flexibility and options for funding services, equipment and expansion and allows for being nimble and making quick decisions. We are recommending a hybrid organization, one that is a non-profit or a 501(c)3, as it opens up your availability for funding. You can receive grants and charitable contributions. Because the IRS is cracking down, they want to see a for-profit subsidiary for your business as well. Going forward, I think that making decisions in public slows you down. You're going to want to function like a business most likely. So we recommend perhaps looking at changing your organizational structure. Look at those opportunities for partnerships going forward, for example. There may be partners from the private sector who don't want to participate in an open forum for decision making, open their books for public scrutiny or disadvantage themselves with their competitors. So I think that going forward, you may still have a policy board and a governing body appointed by the member agencies as there are some things that are working well, there is a lot of social good that UC2B is doing. Perhaps have a blended governing body and you decide how you want it to be managed. We recommend going forward with a non-profit status.

Bowersox-Johnson asked how can LLCs be formed for particular initiatives. Kruse said the network can be used for different functions. UC2B may want to set up separate LLCs based on the business of that LLC and service offerings across the network.

Technical questions: Schnuer expressed disappointment with a couple of things. A governmental body provides transparency and that should be included in the advantages. One absent Board member is concerned about remaining transparent. UC2B is government, not quasi-government.

Kruse replied that we are doing this as a partnership between the Cities and it is working. We can also take the things that we like and what's working. There is no reason to do away with that. This just gives us more flexibility going forward.

Bowersox-Johnson asked about changing to the 501(c)3 structure. Are there other scenarios where a body has morphed into this model? Kruse answered yes and that the City has hired Holland and Knight, who has done this kind of evaluation and recommendation on previous occasions. One of the examples referenced in the Plan is One Community in Ohio and it was very successful, because they could get funding from a number of sources.

Legner added that Holland Knight did the organizational change in DeKalb for IFiber.

Resnick said he was inclined to defer the discussion to the next meeting. Gant added that to build on an earlier comment, the way this has to operate is the business model plus the core values. Resnick said there are ways to cause any 501(c)3 to operate openly, whether it is having three or more Council members on the Board or something similar. Smeltzer believed it would be beneficial to emulate what One Community is doing.

Audience comments: David Glynn of Pavlov Media, Urbana: I see a lot of debate on the 501(c)3 portion but my interest is in the for-profit nature as it's been designed. Who's borrowing the $11M? We had a discussion about competitive marketplace and open networks and now it's becoming a quasi-publicly funded for-profit venture that will go ahead and exist in an existing marketplace. If you subsidize the expansion of the network onto businesses and residences, do so as a public network. Take on the debt directly and seek compensation from providers, including the for-profit arm. The idea that we'd go ahead and finance the expansion of the network with a for-profit venture—I would argue against the initial spirit of the project.

Bowersox-Johnson asked Kruse to speak to the advantages, if any, for UC2B. Kruse said she assumed that UC2B will go forward with an open access environment. You can be creative and flexible in how you set up the governance of this entity and what I'm hearing is there is an issue with this for-profit subsidiary. I'd like to add that the IRS is coming down hard on non-profit organizations. This structure is not a gangbusters profitable organization, this is more so because the IRS will require you to set up a for-profit subsidiary.

Peter Folk of S. Maple Street, Urbana: one of the things that I was most excited about was the pages of the guiding principles. And I am thrilled and really impressed at how well they seem to have been captured. I'd like to see this at the forefront of the document. This is what the mission is of this organization. How do we make a business that reflects those values?

David Young, Urbana: I have to second Resnick's comments about being available to the public, especially electronically. The document was in high demand and the demand appears to be so high that we got black and white copies. I hope there isn't a repeat incident of this. I have tons of concerns about the competitiveness. I will email the committee. I'm concerned about your competing with Comcast.

Bowersox-Johnson asked if he meant just the grant-funded areas or everywhere? (Just grant service area.)

Young explained that he is a software engineer and works on routers. He does a lot of measurement of network products. He is on the Tech Committee, as well.

V. Items for future meeting agendas:

Resnick asked if it was possible to have the Business Plan made available electronically. Legner said they had concerns about duplication and copyright but would make sure it was available.

As to the next meeting's agenda, Legner pointed out that there is further discussion of the Business Plan, Wholesale Pricing Services and Rates (deferred from the last meeting), the meeting schedule, Officer appointments, and consideration of expansion options for Phase III, all meaty topics.

Regarding next week's meeting, the Board would not have a Chair the following Wednesday after 12:45 p.m. Staff will send out an email about an earlier meeting date.

VI. Public Participation: none

VII. Adjournment: Resnick motioned to adjourn, Bowersox-Johnson seconded. Chair Feinen adjourned the meeting at 2:12 p.m.

COUNCIL BILL NO. 2012 – 14

A RESOLUTION

RECOMMENDING A BID FOR A CONTRACT FOR THE PURCHASE OF MATERIALS AND EQUIPMENT FOR THE PHASE II FTTP CONSTRUCTION PROJECT
(KGP Telecommunications, Inc.)

BE IT RESOLVED BY THE UC2B POLICY BOARD, as follows:

Section 1. That the bid received from KGP Telecommunications, Inc. for the Phase II FTTP Construction project, in the amount of $422,324.58, is hereby recommended for approval by the City of Champaign.

Section 2. That the Champaign City Manager be authorized to exceed the contract amount identified in Section 1 above based upon the pricing provided on the bid form from KGP and so long as funding is available.

RESOLUTION NO. 2012 - 14

PASSED:

APPROVED: ______________________
Policy Board Chair

NTIA and Grant Update – 6/15/12

Our next call with NTIA will be the morning of your meeting, so I will need to give you a verbal update. I can tell you that the Assistant Secretary of NTIA, Larry Strickling had nice things to say about UC2B and our participation in US Ignite at the launch event on Wednesday. Brandon and Jon Gant were there in person and can tell you more. We were "on the US Ignite map" with some pretty impressive company. I have attached that map for one last look.

What follows will be in the order of the proposed agenda for Wednesday.

Diane Kruse has done some editing on the business plan and it is now more positive about openness and public participation. I hope the committee will follow through and accept it and forward it to the member agencies.

There are several unresolved issues with our wholesale pricing:

1. Will UC2B sell any additional dark fiber IRUs past those previously committed to?
2. If UC2B will sell additional dark fiber IRU's, at what rate and when will IRUs be sold?
3. Will we allow holders of dark fiber IRU's to sub-lease some of their fiber strands?
4. What will our rates be for short-term dark fiber leases?
5. What will be our wholesale rates be for layer two transport – both for customer end points and for connections to the UC2B network core.

I have not seen or heard anything that would sway my opinion that we should favor short-term dark fiber leases over long-term dark fiber IRUs. If we are not going to sell any additional IRUs, then I am in favor of an outright prohibition of all IRU holders subleasing any of their strands. If we are going to sell additional IRUs, then I am for prohibiting any public entity from subleasing any of its strands. If we are going to sell any additional IRU's, I believe we should only do so after the NTIA grant has expired on January 31, 2013.

Regardless of what we do on IRUs, we will need to establish dark fiber lease rates. I am in favor of rates suggested in the business plan, which assume a 7.2% business interest rate in calculating the net present value of our IRUs. If the Policy Committee believes that interest rate estimate over the next 20 years is too high, there short-term lease rates that are based on both lower and higher interest rates in packets from previous meetings.

On the wholesale rates for layer-two transport and core connections, the revised rate of $17.88 per customer site and the originally proposed three levels of core connectivity are both fair and very competitively priced. They do create a level playing field, as my analysis from a previous meeting showed.

Can a private provider profitably match our price for the "$19.99 for a 20 Mbps" service? Probably not, but that has nothing to do with our wholesale rates. It has everything to do with the subsidy that is being provided to our customers by the University in terms of network support and Internet access and transport. Once those subsidies expire (in two years and five years respectively), it is very possible that UC2B will need to raise its rates to be sustainable, but a lot can happen in two-five years that may not necessitate raising rates.

UC2B will not be covering all of its depreciation costs at the $19.99 rate and we know that. UC2B will also not be covering all of it depreciation costs at the $17.88 wholesale rate either. We should not be giving away access to our core, as there are real one-time and recurring costs to provide that access.

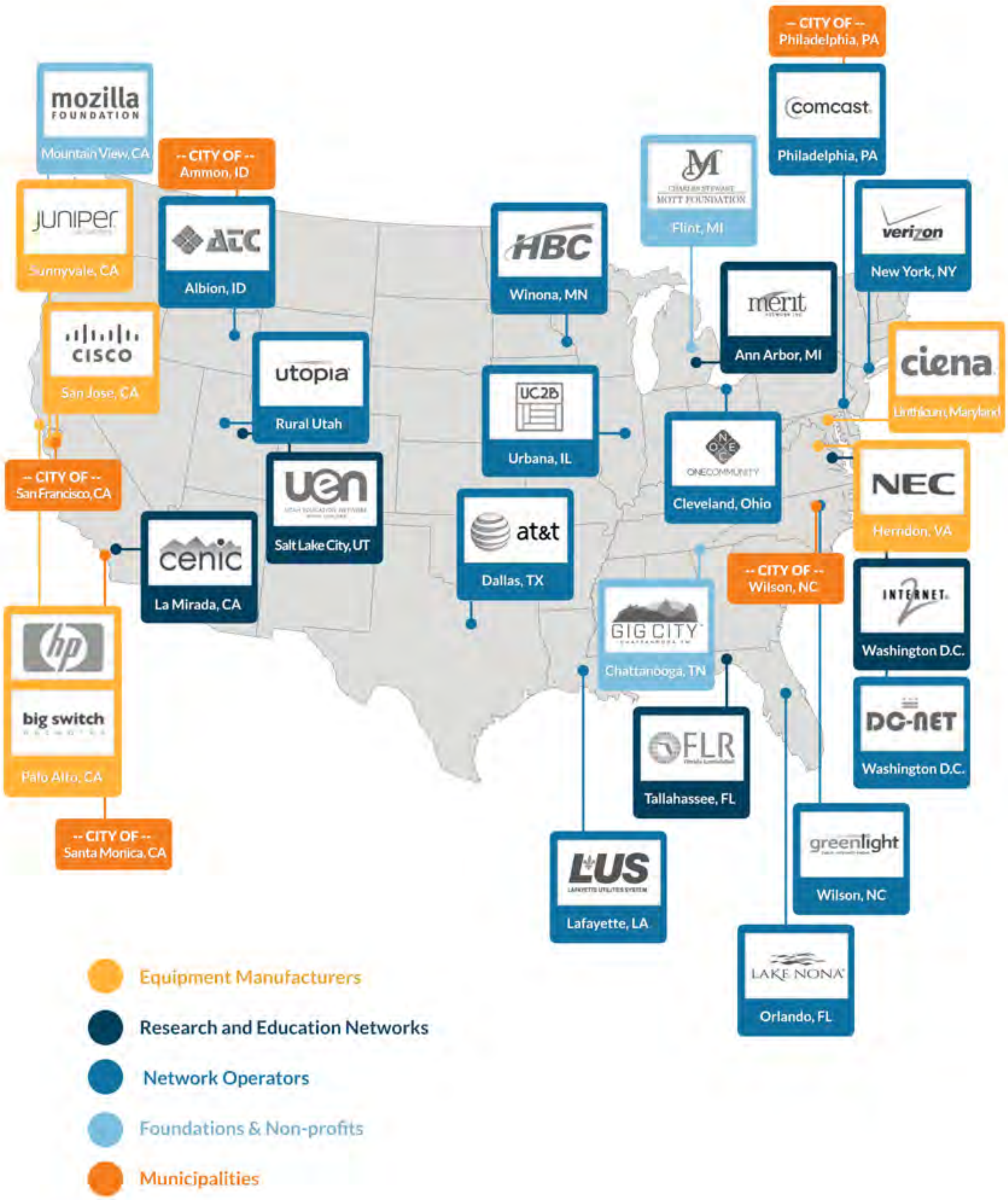
There is no other way that a local ISP could get a gigabit fiber connection to its subscribers for $19.99 a month. There are three firms with extensive fiber infrastructure in Champaign-Urbana, AT&T, Windstream (McLeodUSA/Paetec) and Comcast. None of them have a service that is anywhere close to what we are proposing in terms of price or speed. We are not just leveling a playing field, we are creating an entirely new one. UC2B wholesale connections can never be free and any provider who suggests they should be free is putting its best interests way ahead of UC2B's.

I believe that we should explore the opportunity with Gigabit Squared as far as possible and you have expressed that support. That effort does not prevent Volo from selling itself to a co-op and running its business as a cooperative if it believes that is the best way to be organized. Those are not either-or processes. Both can happen in parallel.

See you on Wednesday,

Mike

usignite Founding Sponsors and Partners



RESOLUTION NO. 2012-16

A RESOLUTION

APPOINTING OFFICERS FOR THE UC2B POLICY COMMITTEE

WHEREAS, the UC2B Policy Committee officers are elected for a two-year term; and

WHEREAS, the inaugural terms expire June 30, 2012.

NOW, THEREFORE, BE IT RESOLVED BY THE UC2B POLICY COMMITTEE, as follows:

Section 1. The Policy Committee hereby appoints Brandon Bowersox-Johnson, representing the City of Urbana, as the Chair and Deb Frank Feinen, representing the City of Champaign, as the Vice Chair effective July 1, 2012.

RESOLUTION NO. 2012-16
PASSED:

APPROVED: ______________________________
Policy Committee Chair

City of CHAMPAIGN

REPORT TO UC2B POLICY BOARD

FROM: **Teri Legner, Interim UC2B Consortium Coordinator**

DATE: **June 1, 2012**

SUBJECT: **UC2B Resolution 2012-13 - Acceptance of the UC2B Business and Strategic Plan**

A. Introduction: This purpose of this Resolution is to accept the UC2B Business and Strategic Plan. The Resolution also recognizes that the ultimate authority to determine the future organizational structure of the entity lies with the member agencies. To this end, it specifically recommends that the member agencies consider the original goals of the project and balance those with the need to become and remain financially sustainable in the long term when making this determination.

B. Recommended Action: Staff recommends approval of the Resolution.

C. Prior Policy Board Action:

- Policy Board approved a scope of services for use in recruiting and hiring a professional services consultant to assist UC2B in the preparation of a business plan and financial models on September 7, 2011.
- The Policy Board recommended that the Champaign City Council approve a contract with NEO Fiber, LLC to provide professional business planning and consulting services on October 19, 2011. And the Champaign City Council approved Council Bill No. 2011- 244 in December authorizing the City Manager to execute a contract with NEO Fiber, LLC for such services.
- Diane Kruse of NEO Fiber, LLC, along with her subcontractor Mark Ansboury of Gbps2, both nationally-recognized industry experts, visited Champaign-Urbana and met with community stakeholders and representatives of the UC2B member agencies in January 2012 to gather community input regarding the future of UC2B.
- NEO Fiber provided recommendations regarding residential and commercial pricing structures, services and policies and has also recommended, in conjunction with staff, wholesale provider pricing, and IRU terms and conditions.
- The Policy Board discussed and approved a series of recommendations at several different meetings beginning in January when it approved the lowest residential tier of internet service at “20 mbps for $20”. Other Policy Board decisions related to pricing, tiers, services and terms were also made in March through May, 2012. Those approved prices, services and policies to date have been incorporated into the financial models and provide the basis for the recommendations contained in the Plan. These prices, services, terms, conditions and

policies have also been utilized to develop customer service agreements, outreach and customer acquisition materials, and IRU's/maintenance agreements.

D. Summary:

- The UC2B Business and Strategic Plan is a policy document that guides the future of the entity.
- The Plan utilizes and is built upon stakeholder input, and the approved pricing structures and policies previously approved by the Policy Board.
- The Plan is based upon a rigorous financial analysis of the projected customer base from the eligible areas, i.e. 11 census blocks where connections are provided without charge, to narrow the digital divide and also that of the approximately 200 organizations that are identified as anchor institutions serving vulnerable populations.
- The attached Plan has 8 Sections, i.e. Introduction and Mega Trends; Overall Findings and Recommendations; Operational Structure and Governance; Guiding Principles; Market Overview, Competitive Assessment, and Pricing; Operating Models, Outsourcing and Staffing; Financing Options; Glossary.
- It discusses industry trends and key assumptions and identifies opportunities and options for UC2B to consider as it moves forward from its construction phase into its operational phase for success. The Plan and financial models are "working" documents meant to guide strategic decision-making in the future. The Plan does not contain all the "answers" for UC2B, but rather provides a road map for the future based upon a thorough analysis of the options, along with their advantages and disadvantages, particularly as they relate to UC2B's operational structure and governance model, pricing, staffing, and financing expansion.
- As the Plan is implemented, there are many positive outcomes that can be expected. These include opportunities for narrowing the digital divide especially in our communities' underserved areas and for expansion of a cutting edge fiber optic infrastructure into the remainder of the Champaign-Urbana area.
- The Plan clearly acknowledges that expansion of the infrastructure may position the Champaign-Urbana area and the University of Illinois to lead the nation in developing a gigabit network that can be utilized as a unique economic development tool to retain and recruit business and industry, create jobs, and mobilize local intellectual capital to expand high tech applications that are currently not available.

E. Background:

1. NEO Fiber, LLC Hired to Provide Business Planning and Consulting Services. In September, 2011, the UC2B Policy Board endorsed a scope of work that was incorporated into a Request for Interest and distributed to industry experts with the intent of identifying a qualified firm able to assist UC2B in the development of a business plan and financial model analysis. In October, 2011, the Policy Board recommended that the City of Champaign, as lead agency for operations, contract with NEO Fiber, LLC for such services. Under City staff supervision, Diane Kruse, NEO Fiber's President, subcontracted with Mark Ansboury of Gbps2 to begin work immediately on a preliminary scope of work which was determined to be time-sensitive in November. The Champaign City Council approved Council Bill No. 2011-244 in December.

Kruse and Ansboury visited the community in January, 2012 meeting with member agencies, stakeholders and potential subscribers gathering their input on the future of UC2B. Kruse and Ansboury provided an early recommendation that the introductory residential service tier and pricing be "20 mbps for $20". This was approved in January and incorporated into UC2B's marketing and outreach materials and customer acquisition activities.

Over the next several weeks, Kruse and Ansboury prepared a report titled "NEO Fiber Evaluation and Recommendations for Pricing and Positioning Strategies, Best Practices for Retail Service Offerings, Residential and Business Services" which coupled the stakeholder and community input received in January with their industry expertise. They also prepared and provided preliminary financial models and feasibility objectives. The Policy Board officially endorsed both the Report and its recommendations with a few revisions related to residential pricing, and the feasibility objectives at its March 22, 2012 meeting. Decisions relating to business pricing were made on April 11 and 18.

All of the Policy Board decisions made to date have been incorporated into the UC2B Business and Strategic Plan, and the supporting financial modeling tool, that are presented here with this Resolution for consideration and approval.

2. UC2B Business and Strategic Plan. The Plan and its supporting financial model workbook are considered to be "working" documents that will help guide future decision-making. The Plan is based upon UC2B's current scope which is to provide high speed internet/intranet access to the underserved areas of Champaign-Urbana and to connect anchor institutions that serve vulnerable populations. To this end, it is consistent with the goals of the federal grant that was used to construct the high speed fiber optic infrastructure that will set Champaign-Urbana apart from thousands of other communities across the country and the world. The Plan does look into the future as well and offers an analysis of the issues and opportunities that UC2B may want to consider operationally, including viable operating models and system expansion.

3. Plan Composition. The UC2B Business and Strategic Plan has 8 key Sections, Introduction and Mega Trends; Overall Findings and Recommendations; Operational Structure and Governance; Guiding Principles; Market Overview, Competitive Assessment, and Pricing; Operating Models, Outsourcing and Staffing; Financing Options; and Glossary. Each section is briefly described below.

> **Introduction and Mega Trends.** This Section explains how the Plan is organized and discusses national and international trends in the industry, with particular attention to fiber to the premise trends. In this Section, it is clear that the U.S. lags far behind many other countries and their investments in broadband infrastructures. Currently, upload and download speeds in the Champaign-Urbana area are much slower than U.S. averages and even as much as 10 times slower than those reported in leading global metropolitan areas. With the addition of this new broadband network, Champaign-Urbana has the opportunity to leapfrog others and attract/retain business and industry, create jobs and provide an improved quality of life for **all** of its residents. This Section also summarizes how customers are utilizing bandwidth, noting that intensive applications and the

growing use of cloud computing are demanding faster symmetrical upload and download speeds.

Overall Findings and Recommendations. This Section discusses the findings and recommendations of the Plan, particularly with regard to expansion. These findings and recommendations are supported by the financial modeling workbook/tool also provided by NEO. This Section recognizes that if UC2B maintains the grant funded area only and does not expand the network further, the system will operate at a breakeven level, only as long as the University subsidizes the backhaul costs of internet service. This scenario improves with the addition of revenue received from offering dark fiber leases during that period, but not to a level that is sustainable long term. That UI subsidy is provided via agreement only for the first 5 years of operation for UC2B, so the need exists to grow the customer base and expand the system, unless further public subsidy is going to be provided.

Given that the base model of only serving the grant funded customer base is not sustainable, this Section also then discusses and prioritizes expansion models (both retail and wholesale) with alternative pricing schemes and take rates, utilizing a previously-approved set of financial feasibility criteria.

Again, this Plan is a "working" tool that is designed to assist UC2B and its member agencies in their decision-making capacities in the future. The Plan includes a working financial model that is based upon a set of key assumptions that should be considered when exploring expansion options.

Operational Structure and Governance. This Section recognizes that the current UC2B structure operating as an intergovernmental consortium administered by the City of Champaign may be adequate for the short term, but encourages the member agencies to consider 5 other business models for the long term. In particular, it notes that the member agencies do not have experience in the utility, telecom, internet or fiber optic business which is a real disadvantage when trying to operate an open access network and compete effectively with the incumbent service providers. This disadvantage alone is a major dis-service to the customer base UC2B is initially attempting to serve. This Section provides a comparison of the business model options with their advantages and disadvantages. Ultimately, NEO provides a recommendation to restructure from an intergovernmental consortium into a 501(c)3 non-profit entity with a for-profit C-corporation subsidiary that is governed by the "community". It notes that this option does not remove the member agencies from the overall governance of the entity, but rather establishes the new organization as one that can be more nimble, competitive, and responsive to the private sector.

This Section of the Plan will certainly need to be considered and ultimately approved by the member agencies before any changes may occur. The Resolution on the agenda speaks to this, acknowledging that Policy Board evaluation of the issues is important to ensure that the original goal of the project is maintained and balanced with the long term need for system sustainability, but that the member agencies will ultimately make this determination. Simple acceptance of the Plan does not alone pre-determine the outcome on this issue, although it will be used as a guide for decision making in the future.

Guiding Principles. This Section provides a set of guiding principles that recognize both the social mission of UC2B and the need for business and technology independence.

Market Overview, Competitive Assessment, and Pricing. This Section incorporates and re-iterates the report previously provided by NEO, "NEO Fiber Evaluation and Recommendations for Pricing and Positioning Strategies, Best Practices for Retail Service Offerings, Residential and Business Services". It also incorporates retail and wholesale pricing decisions made by the Policy Board to date. This Section points out that there currently are no providers offering services via fiber to the premise technology, a huge advantage for UC2B. It also notes that current providers do not provide symmetric upload and download speeds and that customers do not always enjoy the speeds they are buying. In other words, they are paying for a service level (speed) that they are not actually receiving. The pricing structure and service tiers established by the Policy Board are much better than the incumbents' overall. The major disadvantage pointed out here though is that UC2B does not have a triple play option to compete effectively in that arena at this time.

Operating Models, Outsourcing and Staffing. The UC2B fiber network is organized and operated in layers, i.e passive infrastructure (physical network); active network (electronics); and retail services. Each requires varying levels of operational support and management. This Section recognizes that the maintenance and operation of each of these layers can be provided by outsourcing or by hiring staff. It is not recommended in this Section that UC2B organize or grow into an entity that will hire and employ numerous staff in the short term, but rather that UC2B contract for the various support services necessary to operate the system.

Financing Options. This Section suggests opportunities to partner with other entities, both public and private, to secure or generate additional funding to expand the physical infrastructure and use of the network.

Glossary.   The acronyms and terms unique to the industry are identified and defined in this Section. These acronyms and terms have been utilized throughout the Plan.

4. Next Steps. Following the acceptance of the Plan, Staff will present it to the member agencies for consideration. Representatives from each of the member agencies are meeting in the next few days to determine the process for approval of the Plan recognizing that the Policy Board has the authority to determine matters such as pricing and service tiers or policies related to wholesale services and prices consistent with the terms of the intergovernmental agreement. However, some matters, including any decisions to restructure in a manner that would be inconsistent with the agreement, which creates an intergovernmental consortium, must be determined by the parties to the agreement. Expansion of the network may also be an issue that requires specific action by the member agencies given that the mission of the consortium as per the Agreement is predicated upon work conducted during the grant period.

F. Alternatives:

1. Approve the Resolution adopting the UC2B Business and Strategic Plan, and recommend that the member agencies also consider the Plan and in particular address the issue of organizational structure and governance.

2. Do not approve the Resolution and give staff alternative direction on how to proceed.

G. Discussion of Alternatives:

Alternative 1 would adopt the UC2B Business and Strategic Plan and forward it on to the member agencies for approval.

a. Advantages

- Based upon stakeholder and Board input and previously-approved pricing structures and services, creates a plan for UC2B operations, its future growth and development.
- Provides a road map for decision-making regarding the future of UC2B, including UC2B's future organizational and governance structure.
- Provides a usable tool, Excel Workbook (deliverable) for analyzing financial implications of future decision-making, including rate structures for customers located outside of the grant-funded areas; future holders of dark fiber lease agreements; IRU holders beyond initial investors; etc.
- Identifies industry trends for partner entities to consider for system use and expansion.
- Recognizes operating options for the entity, including outsourcing and staffing considerations.
- Recognizes that there are many different options for the operational future of UC2B; provides the advantages and disadvantages of each; delivers on the scope of services required by the contract.
- Approval of the Plan acknowledges that UC2B and its member agencies will need to deliberate on its implementation in the near future. Does not preclude a specific direction, in particular with regard to its expansion, operational model or governance structure but does identify and analyze options and makes recommendations.

b. Disadvantages

- None

Alternative 2 would not adopt the Plan at this time and requests that the Policy Board provide staff with other direction.

a. Advantages

- Allows for revisions to be made to the Plan or provides an alternative method of completing the Plan that Staff or NEO Fiber may not have considered.

b. Disadvantages

- Revisions may not reflect stakeholder input and public input provided to date.
- Would delay implementation items including further consideration of the operational structure/governance model necessary to implement system expansion, if desired.

H. Community Input: Input and support from the community is important to the successful implementation of the Plan. Stakeholder input gathered in meetings in January and February, 2012 and at Policy Board or Technical Committee meetings to date has been used to develop the Plan. Collaboration with member agencies and initial investors was used extensively in the creation of the Plan.

Presentations were made to many different organizations, service clubs, and interest groups throughout the planning process. Staff invited representatives from community organizations, other units of government, and members of the faith community to assist in the preparation of the UC2B Business and Strategic Plan. These organizations also included utility providers, anchor institutions, economic development organizations and members of the local development community. Opportunities for additional public input were held at the Technical Committee, Policy Board, Champaign City Council and Urbana City Council meetings in January, 2012. Approximately 50 people attended these public meetings, ranging from potential users of the infrastructure, customers, young professionals to senior citizens. Participants expressed favorable comments about the new high tech infrastructure as a better, more-reliable option and encouraged deployment beyond the grant-funded areas.

The Plan does not prescribe a specific outcome at this time, but rather offers a host of options for future consideration. Future consideration will provide opportunity for more targeted public input.

I. Budget Impact: The Plan has been developed primarily by industry expert, NEO Fiber, along with Gbps2, in conjunction with staff. Costs have been incurred, or are projected, for those professional services, i.e. $60,000 for the Plan and financial model workbook plus another $6,000 to develop requests for proposals for customer care and technical/equipment repair.

NEO Fiber has informed staff that the allotted hours for development of the Plan, in addition to preparing the RFP's noted above, have been exhausted. As a result, staff is preparing a Council Bill for consideration at a special regular Council meeting on June 12 to execute a change order sufficient to complete the work. The added costs will be shared among the member agencies as part of the start up operations.

J. Staffing Impact: As expected, the development of the Plan is currently consuming a significant portion of staff time. Once the Plan is adopted, staff can focus on Plan implementation which is necessary for UC2B's future, even during the start-up operations phase through June, 2013.

Prepared by:

Teri Legner
Interim UC2B Consortium Coordinator

Attachments: UC2B Business and Strategic Plan (provided in hard copy form via delivery)

RESOLUTION NO. 2012-13

A RESOLUTION

ACCEPTING THE UC2B BUSINESS AND STRATEGIC PLAN AND FORWARDING IT ON TO THE MEMBER AGENCIES FOR CONSIDERATION

WHEREAS, the UC2B Policy Committee recommended and the City of Champaign approved a contract for services with NEO Fiber, LLC to assist with the development of a business plan and financial models; and

WHEREAS, the UC2B Policy Committee has considered and approved pricing models and service tiers for the residential and business customers in the grant-funded areas and for the community anchor institutions located throughout the community; and

WHEREAS, the UC2B Policy Committee has considered and approved pricing models related to certain wholesale services; and

WHEREAS, the UC2B Policy Committee will consider pricing models for wholesale and ISP service offerings and core connection charges in the near future and those approved fees and charges will be incorporated into the UC2B Business and Strategic Plan ("Plan"); and

WHEREAS, all of the approved prices, charges and fees have been or will be incorporated into the financial models of the Plan and provide the basis for many of the recommendations contained in the Plan; and

WHEREAS, the Plan recommends that the current organizational structure of UC2B as an intergovernmental agency created under an Agreement among the City of Champaign, City of Urbana and the University of Illinois be restructured into a hybrid non-profit 501(c)3 organization with a for-profit C-corporation subsidiary; and

NOW, BE IT RESOLVED BY THE UC2B POLICY COMMITTEE, as follows:

Section 1. That the UC2B Business and Strategic Plan ("Plan"), along with its associated financial models, is hereby accepted.

Section 2. That the UC2B member agencies are encouraged to consider and adopt the aforementioned Plan in substantially the same form.

Section 3. That the UC2B Policy Committee recommends that the Cities and the University fully consider and analyze the recommendations contained in the Plan consistent with the original goal of providing an open access fiber optic network for the community anchor institutions and the underserved areas of the Champaign-Urbana community and balance that with the need to provide a sustainable business model that can provide services to the broader community.

RESOLUTION NO. 2012-13
PASSED:

APPROVED: ______________________________
Policy Committee Chair

The following summarizes changes made to the Business Plan pursuant to Policy Committee Direction on June 11, 2012:

1. Moved Guiding Principles to Section 2

Reformatted the first (4) Sections with the correct Section numbers. Changed the Table of Contents page under Section 1.

2. Under Now Section 2, Guiding Principles

Page 3, reworded the following sentence from:

- **Providing an "Open" facilities based "Neutral Network"** that serves as a gateway for all network and service providers for both physical and logical network services;

To:

- **Providing an "Open" facilities based "Neutral Network"** that serves as a level playing field for all network and service providers for both physical and logical network services;

Page 3, reworded the following sentence from:

- **Creating a community presence and civic social network via a community portal to take advantage of crowd sourcing trends**

To:

- **Creating a community presence and civic social network via a community portal to promote digital inclusion for low income and other underserved populations.**

Page 5

Added under Trusted Advisory Services:

- Promote open transparency and community involvement and input when appropriate

Added under Open Network

- Network design that interconnects and leverages local carriers, Internet service providers and cable companies, creating a level playing field for participation.

Added under Non-Traditional ROI

- Promotes digital inclusion for low income and underserved populations

3. Under Section 3, Overall Findings and Recommendations

On the previous financial models, there was wholesale revenue in the amount of $146,400 shown in 2011. This revenue represents IRU maintenance fees and should not start until midyear 2012. $146,400 was removed from 2011; and the assumption of $73,200 was made for 2012. All of the financial spreadsheets were updated with these assumptions and charts were corrected and re-entered into the presentation/business plan.

4. Under Section 4, Operational Structure

Page 3,

The following paragraph was added:

Transparency can be considered both a positive and a negative in this business environment. Providing an open forum to solicit input and to share information with the public can often provide a good platform for innovation, creativity and valuable input into the processes. However, if openness and transparency affects UC2B's ability to negotiate with vendors, and continue to be nimble, flexible and make timely decisions, then perhaps there needs to be a Communication Policy put in place and/or a new organizational structure may need to be established. Additionally, NEO has tried to recommend an organizational structure that mitigates potential challenges and provides the most availability for funding, financing and establishment of partnerships.

Each type of organizational structure has its benefits and potential pitfalls. There is no bad organizational structure; each has its set of challenges. An outline of the possible organizational structures, their pros, cons and examples of other FTTP networks are shown on the following pages.

The current organizational structure may serve UC2B well in the short term. The question will be, "at what point does it makes sense to restructure the organization?" The answer to that question will be, "when the challenges of this organizational structure limit UC2B success."

…

Page 4, under cons, Public Utility

Transparency requirements in business practices can cause competitive conflict

Public procurement processes may cause delays in decision-making

Page 4, under Pros, Public Utility

Transparency and openness

Public participation in decision-making

No changes were made to Sections 5, 6, 7 or 8

The Business Plan that follows incorporates the summary of changes noted above and is in its final form.

UC2B
Urbana-Champaign Big Broadband

UC2B Business and Strategic Plan

NEO Fiber

Acknowledgements

This Business Plan would not have been possible without the time, patience, generous contributions and insight from:

<u>UC2B Team</u>

<u>Policy Board</u>

<u>Technical Committee</u>

<u>City of Champaign</u>

<u>City of Urbana</u>

<u>University of Illinois</u>

This report would also not have been possible without the informative contributions of dozens of hardware and software manufacturers and fiber network specialists, who shared both existing and planned product capabilities, industry trends, and 'lessons learned' from deployments and operations across the globe.

Special thanks to all the key stakeholders in the community who took the time to provide their thoughts and advice regarding the strategic direction, customer experience, quality of service, future fiber footprint, and operating model for the broadband line-of-business. Our meetings with the local providers, members of the medical, education, power, government services, and non-profit organizations were extremely helpful in understanding the Urbana-Champaign market and the various organizational and broadband needs of the communities.

Table of Contents, Sections

UC2B Urbana-Champaign Big Broadband

UC2B
Urbana-Champaign Big Broadband

UC2B Business Plan

Section 1, Introduction And Mega Trends

Business Planning Process Overview

Introduction

UC2B has been awarded a grant and is in the process of constructing a world-class fiber optic network that will serve the needs of anchor institutions that represent schools, the university, government agencies, the medical community, non-profit and social service organizations, as well as (11) census block areas within the Urbana-Champaign area representing approximately 4,650 households. The network build is currently underway and UC2B is looking at possible options of expanding the network, as well as best practices for operating the network and its associated services.

NEO was hired to provide guidance and expertise in business planning, organizational structure and governance, market analysis, pricing and positioning, financial modeling, operational considerations and financing options.

The UC2B network will serve as lifeblood to the community to bridge the gap between accelerating demand for bandwidth and access to an all fiber network. The question is, can the grant-funded asset be leveraged and expanded to serve the broader Urbana-Champaign area. And if so, how should the network best be expanded? Fiber-to-the-Business? Fiber-to-the-Home? How should UC2B structure its internal line-of-business operations and customer service offering? What areas of operations can be outsourced? What operational structure is best suited for UC2B? Should UC2B expand using a Wholesale Model? An Open Network? Vendor-Neutral? Transport Only? What services can the UC2B network support and what is feasible? Can additional services such as wireless be overlaid onto the network to support government and public safety applications?

This Business Plan examines these issues and provides analysis and guidance to assist UC2B in determining the best course suited for meeting internal fiscal requirements and to serve the larger community needs.

Financial Scenarios Examined in this Plan

"Maintain the Grant Funded Program Only"
Explores the implications of maintaining and operating the current Fiber to the Premise network for the (11) census block areas plus the anchor institutions funded by the grant program.

"Fiber to the Business"
Explores the implications of extending last mile connections to a critical mass of government, business, industry and citizen services institutions.

"Fiber to the Home"
Explores the implications of extending last mile connections to a critical mass of residential units within the Urbana-Champaign areas.

"Wholesale Models"
Explores the opportunity to partner with local service providers to use the UC2B network to provide services to the community.

"Wireless for Public Safety Applications"
Looks into the capital costs for expanding the existing network funded by the grant program to support a wireless/Wi-Max network for government and public safety use only.

Areas Examined in the Business Plan		
Planning Elements	**Considerations**	**Viability & Recommendations**
1. Introduction and Mega Trends ▪ Background on the Business Plan, Methodology ▪ Mega Trends, Internationally and Nationally	❖ What trends are occurring in the industry? ❖ How does the U.S. compare to other countries in the world? ❖ What does the U.S. FTTH/FTTP market look like today? ❖ Background information on the Business Plan	❖ Who is investing in FTTP networks today? ❖ How do we bridge the gap of current investment and need? ❖ What have the Internet usage trends been and what can we expect for the future?
2. Overall Findings and Recommendations ▪ Financial Models & Profitability ▪ Considerations ▪ Recommendations	❖ Projections, profitability, annual customer/revenue growth ❖ Feasibility Objectives ❖ Efficient Use of Capital	❖ Are the projections feasible and realistic? Where are the gaps? ❖ Do the numbers support maintaining current business and operating models? ❖ Do the numbers support additional expansion? How should the network be expanded? ❖ Does ROI support additional investment?
3. Operational Structure and Governances ▪ Current Limitations ▪ Organizational Structures ▪ Guiding Principals	❖ Organizational Structure Models, Pros, Cons and Examples ❖ Guiding Principles; what is UC2B's role?	❖ What organizational structure will best allow UC2B to be flexible and nimble, operate effectively, receive additional funding from a number of sources? Is there a point in this journey where a different organizational structure makes more sense than the existing structure? ❖ How can UC2B best serve the community?
4. Guiding Principles ▪ UC2B's Core Values ▪ UC2B's Mission ▪ Public/Private Partnerships ▪ Social Mission ▪ Business and Technology Independence	❖ How will UC2B govern and make decisions ❖ What are the guiding principles driving UC2B's Innovative Business Model? ❖ How can UC2B leverage its existing backbone network? ❖ What social missions can be achieved?	❖What are UC2B's Core Values and how will this impact UC2B's mission and decisions going forward? ❖ What impact can UC2B have on the community? ❖ What public/private partnerships can leverage UC2B's position? ❖ What are the guiding principles for social good? For business and technology independence?

Areas Examined in the Business Plan

Planning Elements	Considerations	Viability & Recommendations
5. Market Overview, Competitive Assessment, and Pricing ▪ Competitive Analysis ▪ Positioning and Market Strategy ▪ Pricing Analysis ▪ Customer Survey Results Highlighted ▪ Local/National Trends	❖ Who are the competitors in the market? What is their market share? What are they offering? At what price? ❖ What do customers want? ❖ What are the local/national trends for transport and bandwidth consumption?	❖ How should UC2B position itself in the marketplace? ❖ What value proposition does UC2B provide? ❖ What would be the most viable product and pricing set to meet take rate and customer acquisition targets?
6. Operating Models, Outsourcing and Staffing ▪ Employ vs. Outsource ▪ Stakeholders, partnerships, possibilities to consider	❖ What areas should UC2B outsource? ❖ What are UC2B's staffing needs? ❖ What local resources or partnerships are to be considered for operating the network and providing customer service?	❖ How shall UC2B provide customer service? Billing? Trouble resolution? Outside plant maintenance? ❖ Where are our competitors investing?
7. Financing Options ▪ Public/Private Partnerships ▪ Low Hanging Fruit ▪ Efficient Use of Capital	❖ What public/private partnerships could be levered for expansion of the network? ❖ Where is the low hanging fruit for collaboration and investment? ❖ How can UC2B leverage its existing asset for further expansion?	❖ Who are the potential players for co-investment and collaboration? ❖ What funding mechanisms are available today for further expansion of the network?
8. Glossary of Terms and Acronyms	❖ References ❖ Terms ❖ Acronyms	

Mega Trends in FTTP Networks

Urbana-Champaign Big Broadband

Rapid growth in FTTP adoption for non-traditional providers (Non-ILEC/MSO)
- 35 % Take rates common among ILECs/MSOs
- 50% Take rates for non-traditional providers (municipalities, co-ops)
- 70% and greater take rates for Utility companies within 6 to 8 years of operations providing triple play
- Significant early penetration for broadband - 4.5% to 8% in first 6 months
- Long-term trends show video services necessary for early adoption and higher take rates, but the issue of HOW to deliver video services is in question
- Traditional cable TV delivery of video is becoming antiquated

Increased demand for network services and transparency
- Greater access to low cost physical and logical transport services
- Needs for more than physical transport
- Network services - enterprise WAN and access to cloud services
- Reliable and redundant Ethernet Services
- Reliable and redundant IP Transport and Services (Growing Needs for Value Added Networked IP Services)

Reliable, resilient, scalable and affordable Internet
- Big broadband is a significant difference
- Access to high quality voice and video delivery services
- Access to content service providers and cloud services
- Wireless mobility through IP based services

Residential growth
- Still driven by video content, roughly 70% of broadband adopters also buy video services from their broadband providers
- Over the top trends having some impact on video, but not yet ready for 'prime time'
- Voice service trends towards VoIP
- Integration of home area network and wireless services

Commercial growth
- Driven by available bandwidth/cost
- Availability of value added network services
- Connection to community and network assets
- Connection to alternative providers/services

Commercial Provider Trends
- Incumbents and MSOs are:
  - reliant on aging infrastructure that has slowed down investment in FTTP in most areas
  - trending towards higher cost for services to alternative providers and resellers
  - unwilling to overbuild other FTTP networks

- Alternative providers and resellers:
  - need reliable Ethernet and IP transport services
  - require advanced MPLS/QoS service delivery
  - require multi-carrier/facilities/service access
  - need local IP Service Exchange
  - reduced time to market

FTTP/B Infrastructure Trends
- Fiber to the curb deployments
- Preference for underground solutions even if at higher cost
- Fiber management solutions in the field
- Active electronics closer to the distribution centers
- Hybrid architecture (WDM/GPON/AE)
- Ethernet to the edge and IP transport at the head-end
- Carrier neutral Ethernet interconnection
- Internet head-end for ISPs/wireless providers
- Integration of Home Area Network solutions into service offering

FTTP/B Business Model Trends
- Movement away from wholesale infrastructure separation in small, mid-size and rural markets
- Movement towards hybrid (e.g., ISP – Internet/VoIP/Cloud Services) business services and partnerships
- Full vertical integration in small to mid-size market
- Hybrid wholesale/retail service offerings (e.g., Creating Friendly Competition)
- Taking more participative role in the sale/marketing of services (even with partners)

U.S. Fiber-to-the-Home (FTTP) Trends in Focus

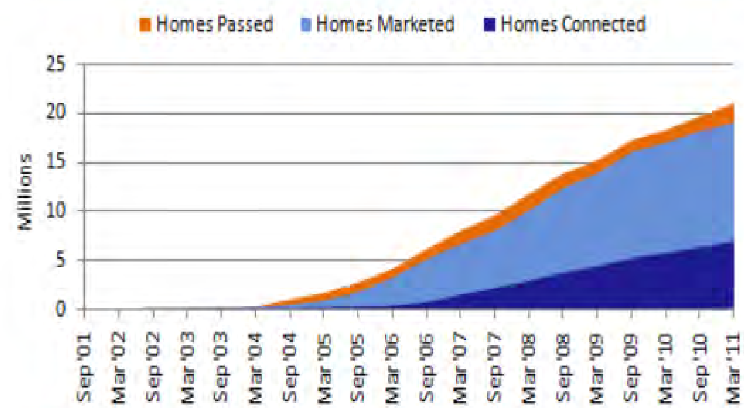
As the figures on this page illustrate, the fiber-to-the-home market is one of the fastest growing trends in technology today here in the United States. Globally, the U.S. currently ranks 11th in terms of market penetration for FTTP, and has deployments occurring across the country in an effort to catch market leaders South Korea, Japan, Hong Kong , China and a host of European nations.

In the past 10 years the number of homes passed with fiber has grown from 19,000 in 2001 to nearly 20.9 million as of March 30, 2011. There is typically a lag between the time networks are constructed and when the actual marketing to consumers begins, and this is reflected in the gap between homes connected and homes passed. Take rates for non-Regional Bell Operating Companies (RBOC) for FTTP deployments have remained steady at nearly 50%, with the cumulative total homes connected (fully lit and using the service) passing 7 million as of March 30, 2011.

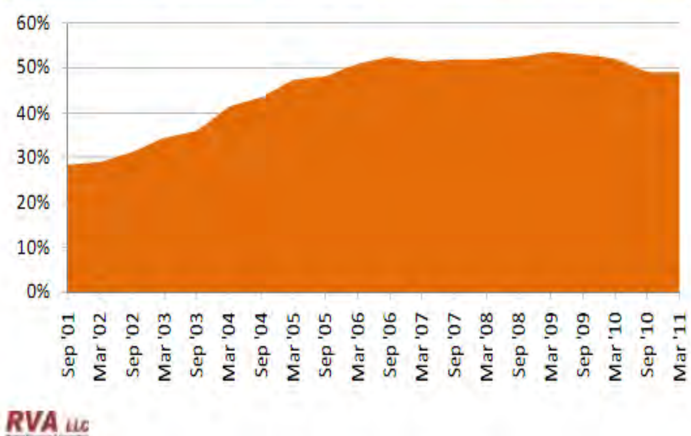
The U.S. has reached an important milestone with just over 18% of all homes passed of which 6% are connected. The market forecast for homes connected projects a doubling of that figure within 18 months as marketing efforts and markets deployed mature.

UC2B Urbana-Champaign Big Broadband

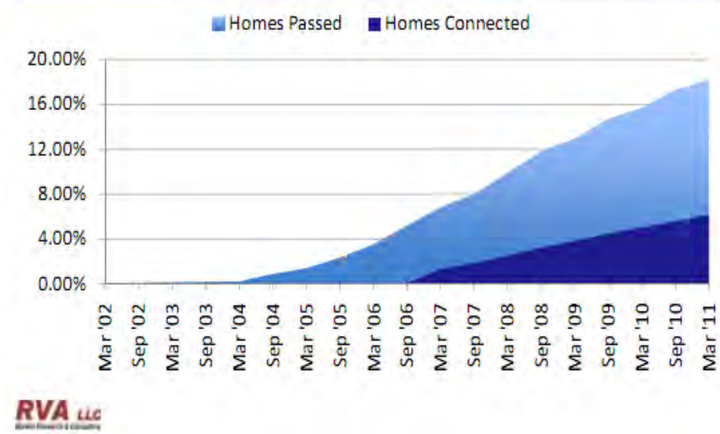
North American FTTH Homes Cumulative



FTTH Non RBOC Take Rates Homes Connected vs. Homes Marketed



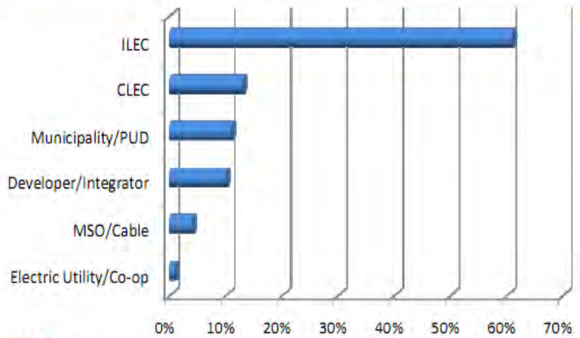
FTTH Penetration Cumulative – United States



U.S. Fiber-to-the-Home (FTTP)/(FTTP) Trends in Focus

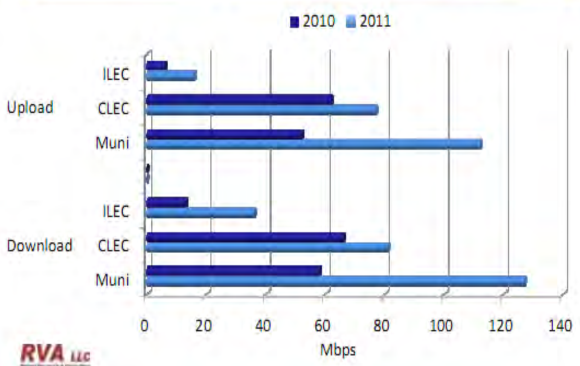
UC2B Urbana-Champaign Big Broadband

FTTH Non RBOC Deployments by Provider Type



RVA LLC

Highest Average Internet Speeds Offered by Non RBOC Provider Type



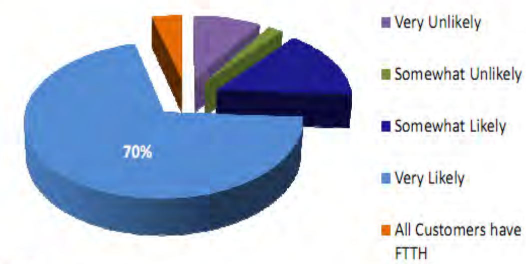
RVA LLC

Although Verizon is the clear market leader in terms of FTTP deployments by a large margin, municipalities, public utility districts, electric utilities and local Competitive Local Exchange Carriers (CLECs) have been a major force in fiber deployments across the country, far outstripping the FTTP investments of cable companies. A survey of hundreds of non-Regional Bell Operating Companies (RBOC) across the nation revealed that this trend is likely to continue, with 70% indicating that investment in FTTP connectivity was very likely in the near future.

Non-RBOC providers are also among the most aggressive in terms of services offered. Double, Triple and Quadruple Plays (Internet, VoIP, Video, Energy Management) are the rule, with customer Internet connectivity speeds averaging 100 MB per second (upload and download) for municipalities and utilities.

Take rates for video are in sync with the take rates for Internet and VoIP services, with roughly 5 million of the 7 million homes lit by fiber receiving video services today. The vast majority of the remaining 2 million are being provided services by companies that are not offering video services currently. The bundling of packages, similar to that which occurs in the cable industry, is the dominant trend at this time. For video, HD and 3D channels are in high demand, and most providers offer 80 to 250 channels including premium channels and movies on-demand.

Likelihood of Adding FTTH Lines by Current Non RBOC FTTH Providers



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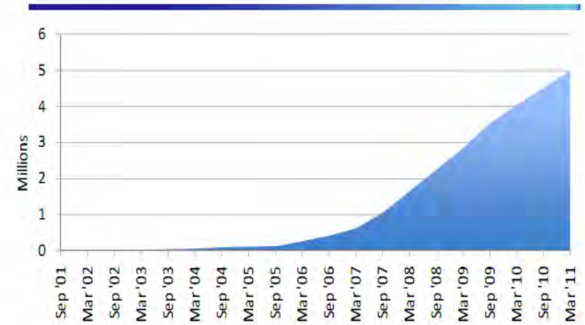
North American FTTH Video Homes Cumulative



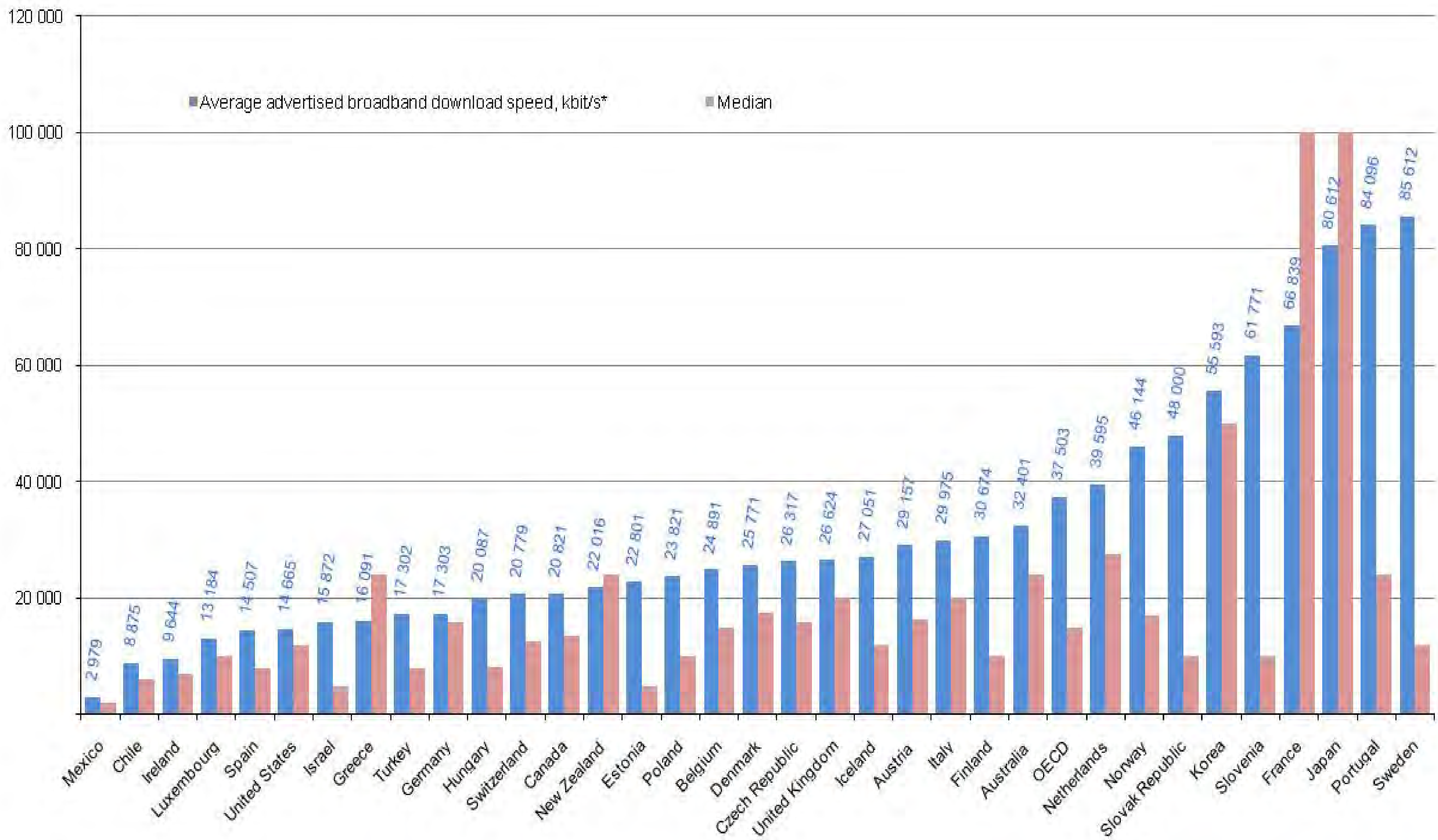
RVA LLC

NORTH AMERICAN FTTH STATUS (AS OF THE END OF THE FIRST QUARTER OF EACH YEAR)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Homes passed	35,700	110,000	189,000	1,619,500	4,089,000	8,003,000	11,763,000	15,170,900	18,249,900	20,914,500
Homes marketed	35,700	110,000	189,000	829,700	3,218,600	6,643,000	10,082,000	13,875,600	16,992,600	19,344,700
Homes connected	10,350	38,000	78,000	213,000	671,000	1,478,600	2,912,500	4,422,000	5,804,800	7,094,800

Global Trends in Focus

Urbana-Champaign Big Broadband



Global Trends in Focus

- The U.S. has fallen behind in the global broadband speed race, and is currently ranked #30 behind a host of Asian and European countries. Average advertised U.S. download speed is 14.7 Mbps, but actual delivered speeds are typically less.

- Governments across the world are investing heavily in broadband infrastructure to enhance their ability to compete in the global marketplace and provide enhanced citizen services and public safety solutions. Although their investment has moved the U.S. from 1st to 30th in less than a 7-year period, investments by the U.S. federal government through the ARRA BTOP and BIP programs as well as strong FTTP efforts across the country by Verizon, AT&T and municipal/utility companies is allowing us to begin closing the gap and enhance the global competitiveness of our communities.

- Investment disparity, however, remains significant: to put it in perspective, the Australian Government dedicated $43 billion for its national FTTP infrastructure (NBN) population in its drive to make Australia the new IT capital of the East. The U.S. government allocated $7 billion for its infrastructure backbone upgrade (primarily middle mile transport) for a population over 10x the size of that in Australia.

- South Korea, France and Japan all offer between 50 Mbps to 100 Mbps to over 80% of the population. Metropolitan areas in the Netherlands, France, South Korea, Japan, China, Switzerland, Singapore and Germany offer 100 Mbps FTTP to large segments of the population, with businesses enjoying synchronous or symmetrical 100 Mbps to 10 Gbps services.

- The Urbana -Champaign area is far below U.S. averages (and 10x slower than leading global metro areas) for both download and upload speeds, with nearly 80% of the commercial establishments and residences having download speeds of less than 10 Mbps, and 90% having upload speeds of less than 2 Mbps.

- Both commercial and residential bandwidth consumption <u>are doubling every year</u>, as video, cloud computing, advanced storage solutions, telemedicine, telecommuting, video conferencing, etc., and there is no entity investing in replacing the aging greater Urbana -Champaign infrastructure with fiber except UC2B.

- **Deployment of an FTTP infrastructure presents the opportunity for the Champaign and Urbana to leapfrog competing communities across the country and cash in on the recent economic development opportunity to attract further corporate investment, jobs and quality of life for its citizenry.**

Bandwidth Trends, Conventional Models are under Pressure

Application	Rate
Personal communications	300 to 9,600 bits/sec or higher
E-mail transmissions	2,400 to 9,600 bits/sec or higher
Remote control programs	9,600 bits/sec to 56 Kbits/sec
Digitized voice phone call	64,000 bits/sec
Database text query	Up to 1 Mbit/sec
Digital audio	1 to 2 Mbits/sec
Access images	1 to 8 Mbits/sec
Compressed video	2 to 10 Mbits/sec
Medical transmissions	Up to 50 Mbits/sec
Document imaging	10 to 100 Mbits/sec
Scientific imaging	Up to 1 Gbit/sec
Full-motion video	1 to 2 Gbits/sec

Service	Bandwidth	Number of Devices	Bandwidth Home Area Network	Bandwidth Residential Gateway to Network
TV	2 to 20 Mbps	3.5	2 to 70 Mbps	2 to 70 Mbps
DVR	2 to 20 Mbps	2	2 to 40 Mbps	0
Home Theater	1 to 6 Mbps	1	1 to 6 Mbps	0
Internet Browsing	1 to 20 Mbps	1 to 5	1 to 100 Mbps	1 to 10 MBPS
Printer	.5 to 1 Mbps	1 to 5	.5 to 5 Mbps	0
Digital imaging	1 to 20 Mbps	1 to 3	1 to 60 Mbps	0
On-line Gaming	.2 to 1 Mbps	1 to 3	.2 to 3 Mbps	.2 to 1 Mbps
Video Capture	.1 to 1 Mbps	1 to 10	.1 to 10 Mbps	.2 to 3 Mbps
Portable Audio	.1 to 20 Mbps	1 to 3	.1 to 60 Mbps	0
Total	**70 to 100 Mbps**		**12.5 to 354 Mbps +**	**4 to 84 Mbps +**

New Tools Enable Innovation

The Need for All Fiber Networks

There is a significant emergence of advanced, bandwidth-intensive applications that not only require large availability for download speeds, but also upload speeds as well. Customers are creating videos, pictures, and CAD files that need to be uploaded, requiring large bandwidth upload speeds. **In addition, over-the-top (OTT) TV applications, gaming and cloud-based services are driving up the need for available capacity and the move towards expanded two-way communications. These over-the-top frameworks are also increasing the need for attaching and sharing home/business access creating the need for greater two-way service access.**

The Fiber to the Home Council, a non-profit organization whose mission is to promote and educate about the need for more Fiber to the Home connections, cites research concluding that consumer demand for symmetrical bandwidth, with the increasing use of applications such as cloud computing and a host of essential services in the areas of education and healthcare will "easily exceed 25 Mbps within just five years."

Urbana-
Champaign
Big Broadband

UC2B Business Plan

Section 2 Guiding Principles

Guiding Principles
Creating the Core Value Proposition in Terms of Return on Investment (ROI)

Urbana-Champaign Big Broadband

UC2B is a community that has:

- A committed, cross-sector group of leaders that facilitate **sustainability** and **local ownership**
- A "digital climate" – an environment rich in **access options** and **awareness**
- Broad community **adoption** – citizens have the means and will to access broadband (training, devices, and motivation)
- Community **impact** – where broadband applications directly benefit the community
- A sense of place where **community assets** can help provide for the future economic success of our constituents.
- Long term **vision** with short term needs that must be met if it is to grow

Creating an Innovative Business Model
Guiding Principles

Work to develop an ***open carrier neutral and multi-stakeholder community network that aggregates and leverages community investments*** to increase availability, capacity, and value added services. This ***lowers overall total cost of ownership (TCO) while increasing the social value of the communities' investment.*** In addition, the UC2B network approach can provide additional value to both the public and private sector by:

- **Reducing the burden of government** and **improving health and education** services;
- Helping communities leverage high speed broadband to prompt **economic development;**
- **Aggregating demand** across stakeholders and industries for **sharp collective cost reductions;**
- Leveraging the sharing of public and private assets and competencies (including phone, cable and utility) **to facilitate the delivery of the highest capacities and lower capital and operating costs,** while helping attract additional investment;
- **Providing an "Open" facilities based "Neutral Network"** that serves as a level playing field for all network and service providers for both physical and logical network services;
- Using and leveraging strong existing partnerships and agreements with key local, state and national providers to **rapidly deliver high capacity, best of breed solutions, for sharply lower costs;**
- **Leveraging the capital creation ability** of shared infrastructure and aggregating services to invest and advance the needs for broadband infrastructure throughout the region;
- Creating a community presence and civic social network via a community portal to **promote digital inclusion** for low income and other underserved populations**.**
- **Investing in the highest quality infrastructure available for community use.**

Creating an Innovative Business Model
Guiding Principles

UC2B
Urbana-Champaign Big Broadband

Leverage Public and Private Investment to Resolve Market Inefficiencies

Collaborative public and private investment will:

- necessitate a role for the government, and community non-profit partnerships in part because benefits often accrue to society as a whole, while they are not an active part of the investment strategy of publicly-traded broadband providers;
- create community-driven strategies that invest in broadband infrastructure to meet the needs of the underserved micro-urban communities through collaborative multi-stakeholder investment;
- have the potential to contribute to long-term community broadband projects that impact economic growth based on cost savings and other benefits accrued to government, education, health and workforce programs;
- invest in the future of the community to attract and retain its youth and intellectual capital
- raise the standard of living and quality of life of all Champaign-Urbana citizens if the policies that promote adverse market inefficiencies are offset, and if efforts are made to expand infrastructure access.

Guiding Principles

The UC2B guiding principles are designed to help make technology accessible and invisible, removing all the barriers and providing support to our community and its stakeholders as needed.

UC2B's community objectives focus on scale, impact, and sustainability.

UC2B Guiding Principals – Social Mission

Urbana-Champaign Big Broadband

UC2B Guiding Principals – Social Mission	
Open Network	• Capability to deliver technology and services based on articulated community need that creates equal opportunities between the community's supply & demand • Network design that interconnects and leverages local carriers, Internet service providers and cable companies, creating a level playing field for participation. • Open and neutral exchange with open access to all community facilities and service providers • Enable physical and virtual network operating partnerships to provide shared facilities, services and applications • Co-Marketing Service Delivery
Low Operating Cost	• Aligned as open solutions provider between stakeholders and network service providers to address social priorities and provide community driven solutions.
Trusted Advisory Services	• Capability to deliver technology and services based on articulated community need that translates into a Social Return on Investment • Network to optimize economic development opportunities and provide revenues for the use of the Community Benefit Fund. • Promote open transparency and community involvement and input when appropriate
Non-Traditional ROI	• Aligned as neutral partner between stakeholders and network service providers. • Maximize Security for multi-use network • Promotes digital inclusion for low income and underserved populations
No Profit Motive	• Able to leverage donated and stakeholder investments to aggregate infrastructure and services for lower cost. • Invest in Infrastructure that reduces long term operational expenses • Maximize public interest, government, education, health care large institutional base for greater savings
Preservation of Invested Capital	• Ability to maximize, leverage and preserve stakeholder investment for the good of the community and individual stakeholder needs. • Tiered technology solution that incorporates layered service and low cost upgrade of Dark Fiber, Dim Fiber/Wave services, Metro Ethernet Services and Fiber/Wireless Access Services • Leverage existing community assets such as vertical structures, duct and conduit systems, rights-of-way, building collocations and licenses • Design that reduces the cost of the last mile, provides multiple low cost approaches for end user access and leverages carrier interconnect for end user access • Routes network infrastructure to emphasizes shared facilities, equipment and supports multi-use programs and applications

Social Mission – Proven Community Partner

UC2B Guiding Principals – Business & Technology Independence

UC2B Guiding Principals – Business & Technology Independence		
Infrastructure Diversity	• Ability to attract non-traditional investment, grants and loans through partnerships and traditional investment for community broadband development	Business & Technology Independence
Redundancy & Reliability	• Community ownership and governance of shared network infrastructure • Neutral third party aggregation partner capable of initiating, negotiating, and developing master service agreements directly with vendors and partners • Independent vendor management	
Life Cycle Management	• Pre-sales, plan, design, provision, implement, asset management, monitor and manage, help desk, day-8 support • Bandwidth scalability from small Business/Consumer Access (20-200 Mbps minimum service availability) to Commercial/Institutional Access (1 Gbps to greater than 10 Gbps service availability). • Industry Standards/Protocols applied to a Consistent Physical Layer and Network Architecture • Construction Standards	
Contract & Vendor Management	• Carrier Class engineering and service deployment with redundant/failover architecture that complements common carrier and cable provider networks to provide redundancy and survivability	
Alternative Forms of Capitalization	• Customized solutions across multiple technology, provider and service partners, emphasizing carrier and upstream diversity	

UC2B Business Plan

Section 3, Overall Finding and Recommendations

The Business Plan is a Working Tool

The purpose of this Business Plan is to provide guidance to UC2B as it goes about the business of being an infrastructure and services provider. This business plan is a working document to be updated, referenced, and as a guide to facilitate decisions.

Additionally the business plan is to be used as a tool to identify possibilities for expansion. Various expansion options are provided within the business plan with key assumptions made and possible circumstances in which the expansion could be feasible. If UC2B decides to expand its existing infrastructure to other areas in addition to the (11) census block areas, the business plan discusses ways in which this could be done.

As the various financials were run, assumptions were made for capital and operating expenses. A detailed design and engineering of the network and its possible expansion scenarios was not conducted. The projections within this document need to be further verified with actual design and engineering work.

The business plan provides documentation of decisions that have been made and their financial impact to the consortium, and the plan can be used as a guide to what is possible, whereby UC2B should investigate more. This is a working tool to help facilitate and guide the organization.

Summary of Findings: Expansion Scenarios

Maintain the Grant Funded Area Only

Congratulations to UC2B for winning the grant. Having capital costs funded by the grant allows UC2B to offer extremely competitive pricing to the 11 census block areas; build out a robust fiber optic backbone network that can be leveraged for expansion; and offer Gigabit Intranet services to anchor institutions, businesses and residents. As the capital costs are funded by the grant, there is no high debt that needs to be serviced.

Fiber to the Business

This is a no brainer. The business and financial model works well to further expand the grant funded network to businesses and commercial areas within Urbana -Champaign.

Fiber to the Residential Areas

Proceed cautiously. If UC2B decides to expand the existing grant-funded network to other residential areas, the business plan can work if UC2B charges monthly rates that are in the $40-$55 range, and/or if some of the capital costs may be re-captured by installation charges. The business plan works even better when UC2B pre-sells within a targeted area prior to building out. Once a pre-sell take rate of 40-50% is reached, then UC2B could begin construction of the network. This is a more efficient use of capital, tying receipt of revenue to outlay of capital.

Most successful FTTH networks are offering more services than Internet; and are bundling voice and cable/video services with high speed Internet. As the entry costs are extensive to build a video headend, and the manner in which cable TV use is changing, NEO does not recommend directly providing and offering cable TV services.

Wholesale Models

Again, be careful. There are many methods of offering wholesale services to service providers. Most FTTH Networks that are offering Layer 2 and 3 wholesale services; i.e. receiving a revenue share for voice, Internet and cable TV/video services are not thriving. It would seem that the operational costs of offering wholesale versus retail services would be lower; however, this is not always the case.

Although serving the grant-funded area with Layer 2 and 3 wholesale services works because there is no debt to be serviced, expanding the network with this type of wholesale strategy should be done with caution. Operational costs are high; debt service is high and revenue capture is low. This is risky.

However, offering dark fiber leases and long term IRUs (Layer 1) is a great strategy and will minimize operational expenses. UC2B could pursue this strategy, as revenue capture is good, and operating expenses are not increased.

Wireless Overlay for Public Safety Applications

The existing network could be further used for wireless services for public safety applications. Although there is not much revenue capture for this application, the benefits of providing the wireless network to allow for fire, police and emergency services has great intrinsic value.

SWOT Analysis: UC2B

Strengths

- ✓ Grant covers capital costs - No debt to service
- ✓ Community Anchor Tenant Institutions support this project
- ✓ Excellent investor partners
- ✓ Good potential partnership with Champaign Telephone to offer other services
- ✓ Good base of recurring revenue from long-term fiber IRUs, Maintenance Agreements
- ✓ Excellent fiber backbone footprint provides avenue for expansion
- ✓ Pent-up demand for services, (11) census block areas want and need high speed Internet services
- ✓ Reputation as a positive force and progressive entity within the community
- ✓ A GIGABIT NETWORK; no other competitor has this network capacity
- ✓ Gigabit connectivity for within the community (intranet)

Opportunities

- ✓ Expansion of Existing Fiber Footprint to Businesses: Expand to Businesses within the Champaign-Urbana area to increase revenue and provide an economic development engine to the community
- ✓ Expansion of Existing Fiber Footprint to Other Residential Areas: The existing network can be expanded to other residential areas if done properly. Pre-sell geographic service areas for efficient use of capital.
- ✓ Gig U: Possibility to use existing network to expand to other areas of the community and outsource operational issues to experienced network providers.
- ✓ Wireless Overlay for Public Safety: Possibility to use existing fiber network for a wireless overlay to be used for public safety purposes.

Weaknesses

- X No sales force to drive customer acquisition
- X Time is short on the grant period, need to sign up as many customers as possible. Time period put pressure on UC2B to get customers signed up and installed prior to formal processes in place.
- X Need to build customer care, support and billing from ground up (this could be a weakness and a strength)
- X Not yet run as an formal business unit with associated expectations and managed approaches to CAPX and OPX investment decisions
- X Current Operational Structure may be limiting for running and expanding the business

Threats

- X Competitive marketplace, Established single/double/triple play providers
- X Declining price trends regionally and nationally for fiber IRUs, dark fiber leases, Retail rates for both residential and business customer
- X Pressure to comply with existing ISPs needs and wants as it relates to UC2B
- X Operating at breakeven, no cash from operations to expand

Background Information on the Financial Model

NEO Fiber was asked by UC2B to run various financial scenarios to determine the following:

1. What should the UC2B pricing for business/commercial, anchor, non-profit and residential customers be for the grant-funded FTTP areas and to Anchor Institutions in the entire community?
2. Verify whether or not the pricing proposed is financially feasible for the grant-funded FTTP areas and to the Anchor Institutions. Verify the assumptions originally submitted by UC2B during the Due Diligence process are realistic.
3. Could UC2B extend the network beyond the grant-funded FTTP neighborhoods and businesses, and how? NEO was asked to provide financial models for extending the network for residential areas, business and commercial subscribers and to look into various Wholesale Models.
4. What would it cost to use the network to support public sector wireless applications?

UC2B had a fairly sophisticated financial model that was created and submitted to NTIA for the Due Diligence process. Rather than recreate the proverbial "wheel," NEO Fiber took this model and stripped away future and projected installation, revenue and capital costs occurring after the grant period. This created a Base Model from which to build upon various financial scenarios on how to further expand the UC2B's grant-funded FTTP network. We also expanded each spreadsheet to include projections for ten years, as the initial model only included financial projections for the first five years.

An additional worksheet was added to the Base Model to include one page with all of the Key Assumptions. This allowed NEO to make changes to the model easily to see what outcomes would occur. All of the existing spreadsheets were linked to the Key Assumptions page.

The Base Model assumptions were also verified and updated based upon the network topology and system design, the current competitive environment for pricing, and the projected operating and capital expenses made. Most of the assumptions regarding operating and capital expenses were nailed down; however, there are still a few areas that need further investigation. There are Request for Proposals that have been written to obtain proposals and pricing information regarding outsourced customer service call center services and maintenance/repair services. NEO's team is still investigating the various costs and models for day-to-day operations of the network and for providing customer service. As the responses to the RFP are received, we will further update the preliminary financial plans and an even clearer picture will be available.

For the financial models that project various scenarios for expansion, an additional worksheet named "Financing and Feasibility" was created with tools to assist UC2B in the decision to expand and whether or not certain feasibility metrics could be achieved.

Urbana-Champaign Big Broadband

Section 3, Overall Finding and Recommendations Grant Funded Area

UC2B Business Plan

UC2B, Maintain the Grant-Funded Area Only

If UC2B maintains the grant funded area only and does not expand the network further, the financial model shows that UC2B will operate at breakeven. In year 5 (2014), after the University no longer subsidizes the backhaul costs of Internet services, the financial models show UC2B operating at a loss. Key assumptions that were made for this financial scenario are the following:

Residential Assumptions

Residential and Anchor Institution Pricing		
UC2B 20/20Internet CNS		$19.99
UC2B 30/30Internet CNS		$29.99
UC2B 40/40Internet CNS		$39.79
Service #4		$0.00
Service #5		$0.00
Installation Fee		$0.00

Residential Revenue "Mix"		Percentage of Customers taking that service
20/20		98%
30/30		1%
40/40		1%
Service #4		0%
Service #5		0%
		100%

Customers Passed and Take Rate Percentages		
Total Customers Passed		4650
Total Customers Passed, Grant Funded		4650
New Customers Passed, Non-Grant, Year 3		0
Take Rate after 1 year		0%
Take Rate after 2 years		0%
Take Rate after 3 years		52%
Take Rate after 4 years		52%
Take Rate after 5 years		52%
Annual Growth Rate Years 6 through 10		0%

			Year Three, 2012			
			Q1	Q2	Q3	Q4
New Customers, Take Rate Projections for Residential			1/1/12 thru 3/31/12	4/1/12 thru 6/30/12	7/1/12 thru 9/30/12	10/1/12 thru 12/31/12
		Total New Customers	0	0	1440	960
		Total Cumulative Customers	0	0	1440	2400
		Take Rate Percentage	0	0%	31%	52%

UC2B, Maintain the Grant-Funded Area Only

No additional revenue is assumed for new business customers after the end of 2012. No additional revenue is assumed for wholesale customers, other than the IRUs that were committed for the original investors in UC2B.

Revenue Assumptions, Business:

Business/Commercial Pricing		
UC2B 20/20Internet CNS		$54.99
UC2B 40/40Internet CNS		$94.99
UC2B 60/60Internet CNS		$133.99
UC2B 80/80Internet CNS		$172.99
UC2B 100/100Internet CNS		$212.99
Private VLAN 10 Mbps		$100.00
Private VLAN 100 Mbps		$400.00
Private VLAN 1 Gbps		$1,200.00
Installation Fee		$0.00

Business and Commercial Revenue "Mix"		Percentage of Customers taking that service
UC2B 20/20Internet CNS		50%
UC2B 40/40Internet CNS		25%
UC2B 60/60Internet CNS		1%
UC2B 80/80Internet CNS		1%
UC2B 100/100Internet CNS		
Private VLAN 10 Mbps		20%
Private VLAN 100 Mbps		3%
Private VLAN 1 Gbps		0%
		100%

Business Customers Passed and Take Rate Percentages		
Total Customers Passed		200
Total Customers Passed, Grant Funded		200
New Customers Passed, Non-Grant, Year 3		0
Take Rate after 1 year		0%
Take Rate after 2 years		53%
Take Rate after 3 years		53%
Take Rate after 4 years		53%
Take Rate after 5 years		53%
Annual Growth Rate Years 6 through 10		0%

			Year Three, 2012			
			Q1	Q2	Q3	Q4
New Customers, Take Rate Projections for Business and Commercial			1/1/12 thru 3/31/12	4/1/12 thru 6/30/12	7/1/12 thru 9/30/12	10/1/12 thru 12/31/12
		Total New Customers	0	25	40	40
		Total Cumulative Customers	0	25	65	105
		Take Rate	0%	13%	33%	53%

Operating Expense Assumptions, Capital Cost Assumptions

- Staffing, Director is hired in September 2012; (2) Network Engineers will be hired in July 2012. A 3% increase in salary and benefits is realized each year for both positions.
- The University will pay for the Network Engineers salaries and benefits from 2012 through 2014.
- UC2B outsources its customer service; the cost of which is $5 per subscriber for call center operations and .50 per bill. This assumption was made and will be further verified based upon responses to the RFPs.
- JULIE Locates and Network Maintenance account for approximately 35% of the operating expenses

- 5% of Gross Revenues is paid out for the Community Benefit Fund
- No additional capital costs are assumed other than those that are paid for by the grant.

Grant-Funded Area: 50% Take Rate, Retail Internet Services

Income Statement										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Network Services Revenues:										
Local Voice Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Broadband Data	-	-	290,400	705,200	705,200	705,400	705,400	705,400	705,400	705,400
Video Services	-	-	-	-	-	-	-	-	-	-
Network Access Service Revenues	-	-	73,200	146,400	146,400	146,400	146,400	146,400	146,400	146,400
Universal Service Fund	-	-	-	-	-	-	-	-	-	-
Toll Service/Long Distance Voice	-	-	-	-	-	-	-	-	-	-
Installation Revenues	-	-	-	-	-	-	-	-	-	-
Other Operating Revenues	-	-	-	-	-	-	-	-	-	-
BTOP Grant	101,259	2,452,559	19,980,958	-	-	-	-	-	-	-
Matching Contributions	52,678	1,891,315	4,908,156	-	-	-	-	-	-	-
Tax Revenue	-	-	21,800	51,100	51,100	51,100	51,100	51,100	51,100	51,100
Donation from UI (cash and in-kind)	-	-	51,000	102,000	102,000	102,000	102,000	51,000	-	-
Donation from UI (salary)	-	-	85,000	175,100	180,400	-	-	-	-	-
Uncollectible Revenues	-	-	(7,300)	(17,000)	(17,000)	(17,000)	(17,000)	(17,000)	(17,000)	(17,000)
Total Revenues	$ 153,937	$ 4,343,874	$ 25,403,214	$ 1,162,800	$ 1,168,100	$ 987,900	$ 987,900	$ 936,900	$ 885,900	$ 885,900
Expenses										
Backhaul	$ -	$ -	$ 82,500	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000
Network Maintenance/Monitoring	$ -	$ 35,000	$ 240,000	$ 415,100	$ 420,400	$ 425,800	$ 431,400	$ 437,100	$ 443,000	$ 449,100
Utilities	$ -	$ 12,000	$ 15,000	$ 18,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000
Leasing	$ -	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Sales/Marketing	$ -	$ -	$ 7,300	$ 17,000	$ 17,000	$ 17,000	$ 17,000	$ 17,000	$ 17,000	$ 17,000
Customer Care	$ -	$ -	$ 60,800	$ 150,900	$ 150,900	$ 150,900	$ 150,900	$ 150,900	$ 150,900	$ 150,900
Billing	$ -	$ -	$ 6,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100
Corporate G&A	$ -	$ -	$ 37,200	$ 117,400	$ 120,500	$ 123,700	$ 127,000	$ 130,400	$ 133,900	$ 137,500
ROW Access Fees	$ -	$ -	$ 21,800	$ 51,100	$ 51,100	$ 51,100	$ 51,100	$ 51,100	$ 51,100	$ 51,100
Community Benefit Fund	$ -	$ -	$ 17,815	$ 41,730	$ 41,730	$ 41,740	$ 41,740	$ 41,740	$ 41,740	$ 41,740
Total	$ -	$ 59,000	$ 500,515	$ 1,024,330	$ 1,035,730	$ 1,044,340	$ 1,053,240	$ 1,062,340	$ 1,071,740	$ 1,081,440
EBITDA	$ 153,937	$ 4,284,874	$ 24,902,699	$ 138,470	$ 132,370	$ (56,440)	$ (65,340)	$ (125,440)	$ (185,840)	$ (195,540)

What Happens if the 50% Take Rate is Not Achieved?

NEO ran various financial models of the existing grant funded areas with assumptions of 20%, 30%, 40% and 50% take rates. As Gigabit fiber networks are capital intensive, the biggest risk that most fiber infrastructure organizations face is not having enough revenue, or high enough take rate percentages of customers passed, to service the debt and cover operating expenses.

In UC2B's case, the grant is paying for all capital costs, and this minimizes the risk to UC2B if the 50% take rate is not achieved. The revenues for the network will obviously be impacted, but much of UC2B's operating expenses are variable and depend upon the number of customers using the network.

The grant money will only fund the capital costs of the network build during the grant period. With this in mind, UC2B will need to continue to be aggressive in its marketing, sales, and customer installations to take full advantage of the NTIA funds, aiming for full achievement of the projected take rates.

Improve the Financial Projections with Dark Fiber Leases

The financial model for the grant area could be improved dramatically by offering dark fiber leases to Internet Service Providers, businesses and Over-the-top (OTT) Service Providers. Based upon initial conversations with the local Internet Service Providers, this seems to be a product that UC2B could offer and they would want to buy. We made very conservative projections, assuming (6) providers signed up for dark fiber leases in the last quarter of 2012.

For simplicity, it was assumed that the average fiber ring monthly price was $1,000. With our proposed pricing, the pricing range for the various fiber rings are between $413 - $1,324; with an average fiber ring price of $964. The mileage for each of the backbone rings varies slightly, and therefore, the pricing will also vary slightly. It is also assumed that some of the Internet Service Providers might lease (1) backbone ring, and some may choose to lease (3), (5) or all (7) backbone rings. In all likelihood, most Internet Service Providers or OTT providers would want to offer their product to the entire community, and therefore, all (7) backbone rings would be leased. We used conservative assumptions regarding this. In years 6-10; an additional customer is added in year 7, leasing all backbone rings.

This dramatically improves the financial projections.

Wholesale Pricing, Dark Fiber Leases		
Dark Fiber Lease, (1) Backbone Ring		$1,000.00
(3) Rings		$3,000.00
(4) Rings		$4,000.00
(5) Rings		$5,000.00
(7) Rings		$7,000.00
Installation Fee		500

Wholesale Revenue "Mix"		Percentage of Customers Taking Service
Dark Fiber Lease, (1) Backbone Ring		10%
(3) Rings		20%
(4) Rings		30%
(5) Rings		30%
(7) Rings		10%
		100%

		Year Three, 2012			
		Q1	Q2	Q3	Q4
		1/1/12 thru 3/31/12	4/1/12 thru 6/30/12	7/1/12 thru 9/30/12	10/1/12 thru 12/31/12
Total New Customers		0	0	0	6
Total Cumulative Customers		0	0	0	6

Grant-Funded Area: Improve the Plan with Dark Fiber Leases

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Network Services Revenues:										
Local Voice Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Broadband Data	-	-	386,400	1,089,200	1,089,200	1,173,400	1,173,400	1,173,400	1,173,400	1,257,400
Video Services	-	-	-	-	-	-	-	-	-	-
Network Access Service Revenues	-	-	73,200	146,400	146,400	146,400	146,400	146,400	146,400	146,400
Universal Service Fund	-	-	-	-	-	-	-	-	-	-
Toll Service/Long Distance Voice	-	-	-	-	-	-	-	-	-	-
Installation Revenues	-	-	4,000	-	-	500	-	-	-	500
Other Operating Revenues	-	-	-	-	-	-	-	-	-	-
BTOP Grant	101,259	2,452,559	19,980,958	-	-	-	-	-	-	-
Matching Contributions	52,678	1,891,315	4,908,156	-	-	-	-	-	-	-
Tax Revenue	-	-	27,600	74,100	74,100	79,200	79,200	79,200	79,200	84,200
Donation from UI (cash and in-kind)	-	-	51,000	102,000	102,000	102,000	102,000	51,000	-	-
Donation from UI (salary)	-	-	85,000	175,100	180,400	-	-	-	-	-
Uncollectible Revenues	-	-	(9,200)	(24,700)	(24,700)	(26,400)	(26,400)	(26,400)	(26,400)	(28,100)
Total Revenues	$ 153,937	$ 4,343,874	$ 25,507,114	$ 1,562,100	$ 1,567,400	$ 1,475,100	$ 1,474,600	$ 1,423,600	$ 1,372,600	$ 1,460,400
Expenses										
Backhaul	$ -	$ -	$ 82,500	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000
Network Maintenance/Monitoring	$ -	$ 35,000	$ 240,000	$ 415,100	$ 420,400	$ 425,800	$ 431,400	$ 437,100	$ 443,000	$ 449,100
Utilities	$ -	$ 12,000	$ 15,000	$ 18,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000
Leasing	$ -	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Sales/Marketing	$ -	$ -	$ 9,200	$ 24,700	$ 24,700	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 28,100
Customer Care	$ -	$ -	$ 60,900	$ 151,400	$ 151,400	$ 151,400	$ 151,400	$ 151,400	$ 151,400	$ 151,500
Billing	$ -	$ -	$ 6,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100	$ 15,100	$ 15,200
Corporate G&A	$ -	$ -	$ 37,200	$ 117,400	$ 120,500	$ 123,700	$ 127,000	$ 130,400	$ 133,900	$ 137,500
ROW Access Fees	$ -	$ -	$ 27,600	$ 74,100	$ 74,100	$ 79,200	$ 79,200	$ 79,200	$ 79,200	$ 84,200
Community Benefit Fund	$ -	$ -	$ 22,720	$ 60,545	$ 60,545	$ 64,695	$ 64,670	$ 64,670	$ 64,670	$ 68,810
Total	$ -	$ 59,000	$ 513,220	$ 1,074,345	$ 1,085,745	$ 1,105,295	$ 1,114,170	$ 1,123,270	$ 1,132,670	$ 1,153,410
EBITDA	$ 153,937	$ 4,284,874	$ 24,993,894	$ 487,755	$ 481,655	$ 369,805	$ 360,430	$ 300,330	$ 239,930	$ 306,990

Section 3,
Overall Finding and Recommendations

Expansion Model: Business and Commercial

UC2B Business Plan

Expansion Models, Feasibility Objectives

Every entity, whether it is a business, or a non-profit organization, or a government agency, will have a different set of financial objectives for defining what is "feasible" in order to assist the organization in making financial decisions. These decisions may be to seek financing, to further expand the network, to roll out new products, etc. For example, a typical business may need to see an unleveraged IRR of 30% or greater in order to obtain financing to further extend the FTTP network. Without an IRR of 30% or greater, the business may have trouble getting financing approved by a banking institution or an investor. Being a quasi-governmental consortium, in order to meet its goals, UC2B may not need to see an IRR of 30%; but rather simply a positive IRR. As UC2B is government consortium, its set of financial objectives to meet the "feasibility test" may be vastly different than a private sector business. During its engagement with UC2B, NEO recommended various feasibility objectives to be considered that were typical for an entity to use as decision tools to expand or further invest in infrastructure. The Policy Board gave NEO the direction of the following feasibility objectives to be considered:

1. **Debt Service Constant on Outstanding Debt.** The Debt Service Constant calculates the factor that, multiplied by the original loan principal, yields the annual debt service payment (principal plus interest) required to amortize a loan. NEO provided a Debt Service Constant on Outstanding Debt with Net Operating Cash flows that ask the questions, "Can Net Operating Cash flows cover the payment of principal plus interest on the outstanding debt? And what percentage of Net Operating Cash flows can service the debt?" When this formula is over 200 percent, there is a likely opportunity to refinance; or use the collateral of the network and the collateral of the Net Operating Cash flows to further expand the network. As a litmus test, we want to see if the network is "financeable" with this Debt Service Constant on Outstanding Debt calculation of greater than 200 percent within the first 4-5 years.
2. **Cumulative Cash flows of the Network over 10 years are greater than the Debt Service.** This objective provides that UC2B will be able to cover its Debt Service by the operating cash flows generated from the network, if UC2B decides to expand the network beyond the grant coverage area.
3. **Positive Income.** Income from operations covers interest and taxes. As depreciation and amortization are not subject to cashflow, we left these out of the assumptions. This objective allows UC2B to seek debt financing, if it decides to expand the network beyond the grant coverage areas, and have operating income cover interest and tax expenses. This objective meets UC2B's goal of expanding the network without public financial support.
4. **Positive IRR.** UC2B may simply need to see a positive return on the investment.

Expansion Models, Assumptions

Under all of the expansion models, it was assumed that a subsidy would be in place; whereby the (11) residential census block areas that were funded by the grant activities, would continue to receive the $19.99 pricing.

It was also assumed that UC2B would improve the grant-funded model by offering Dark Fiber Leases.

From this, various expansion models and scenarios were run. The models have been built to allow UC2B to continue to work with various assumptions on pricing, take rates, number of customers passed, as well as all operating and capital cost assumptions. The financial models are meant to be a tool that UC2B will continue to use.

For purposes of this report, most of the capital costs contemplated under various expansion models are assumed to occur in year 4 (2014); and it is assumed that 100% of the expansion build would take place within that year. In reality, UC2B may want to expand more gradually, building out neighborhoods or areas at a time.

Scenario 2, Expand Fiber to the Business

According to the 2010 Census, there are approximately 7,678 businesses in the Champaign-Urbana area. NEO assumed that 200 of these businesses were passed with the construction activities from the grant, leaving 7,478 businesses to be addressed. Most of the businesses in the grant-funded area would be eligible to receive the residential pricing. Two scenarios were run with expanding to the business areas. The first assumes the pricing that was approved by the Policy Board during the grant construction. The second scenario makes the assumption that the pricing for businesses would be increased.

	Business Pricing	Business Pricing for the Grant	Business Pricing
	UC2B 20/20Internet CNS	$ 54.99	$114.80
	UC2B 40/40Internet CNS	$ 94.99	$213.80
	UC2B 60/60Internet CNS	$ 133.99	$312.60
	UC2B 80/80Internet CNS	$ 172.99	$411.00
	UC2B 100/100Internet CNS	$ 212.99	$509.00
	Private VLAN 10 Mbps	$ 100.00	$100.00
	Private VLAN 100 Mbps	$ 400.00	$400.00
	Private VLAN 1 Gbps	$ 1,200.00	$1,200.00
	Installation Fee	$ -	$ -

The financials for offering pricing to businesses at the higher price are more favorable. NEO assumed a 40% take rate percentage under both models occurring in year 4, and then an additional 5% take rate in year 5, and 3% growth from years 6 through 10.

Expansion Model, starting in Year 4, Additional Business Customers Pass and Take Rate Percentages		
Total Customers Passed in Expansion Area Only		7478
Take Rate, Expansion Area, Year 4		40%
Take Rate Expansion Area, Year 5		45%
Annual Growth Rate Years 6 through 10		3%

Expansion Model: Income Statement, Fiber to the Business, Grant-Funded Pricing

Income Statement										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
			Forecast Project Period					Forecast Project Period		
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Network Services Revenues:										
Local Voice Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Broadband Data	-	-	674,200	3,758,400	5,176,300	5,563,200	5,801,400	6,039,600	6,277,800	6,515,900
Video Services	-	-	-	-	-	-	-	-	-	-
Network Access Service Revenues	-	-	73,200	146,400	146,400	146,400	146,400	146,400	146,400	146,400
Universal Service Fund	-	-	-	-	-	-	-	-	-	-
Toll Service/Long Distance Voice	-	-	-	-	-	-	-	-	-	-
Installation Revenues	-	-	364,800	-	-	-	-	-	-	-
Other Operating Revenues	-	-	-	-	-	-	-	-	-	-
BTOP Grant	101,259	2,452,559	19,980,958	-	-	-	-	-	-	-
Matching Contributions	52,678	1,891,315	4,908,156	-	-	-	-	-	-	-
Tax Revenue	-	-	44,800	234,300	319,400	342,600	356,900	371,200	385,500	399,700
Donation from UI (cash and in-kind)	-	-	51,000	102,000	102,000	102,000	102,000	51,000	-	-
Donation from UI (salary)	-	-	85,000	175,100	180,400	-	-	-	-	-
Uncollectible Revenues	-	-	(14,900)	(78,100)	(106,500)	(114,200)	(119,000)	(123,700)	(128,500)	(133,200)
Total Revenues	$ 153,937	$ 4,343,874	$ 26,167,214	$ 4,338,100	$ 5,818,000	$ 6,040,000	$ 6,287,700	$ 6,484,500	$ 6,681,200	$ 6,928,800
Expenses										
Backhaul	$ -	$ -	$ 82,500	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000
Network Maintenance/Monitoring	$ -	$ 35,000	$ 240,000	$ 415,100	$ 420,400	$ 425,800	$ 431,400	$ 437,100	$ 443,000	$ 449,100
Utilities	$ 6,000	$ 12,000	$ 15,000	$ 18,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000
Leasing	$ 6,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Sales/Marketing	$ -	$ -	$ 14,900	$ 78,100	$ 106,500	$ 114,200	$ 119,000	$ 123,700	$ 128,500	$ 133,200
Customer Care	$ -	$ -	$ 61,000	$ 264,000	$ 345,800	$ 368,000	$ 381,700	$ 395,300	$ 409,000	$ 422,700
Billing	$ -	$ -	$ 6,100	$ 26,400	$ 34,600	$ 36,800	$ 38,200	$ 39,500	$ 40,900	$ 42,300
Corporate G&A	$ -	$ -	$ 37,200	$ 117,400	$ 120,500	$ 123,700	$ 127,000	$ 130,400	$ 133,900	$ 137,500
ROW Access Fees	$ -	$ -	$ 44,800	$ 234,300	$ 319,400	$ 342,600	$ 356,900	$ 371,200	$ 385,500	$ 399,700
Subsidy of Grant Area (Pricing stays at $20)	$ -	$ -	$ -	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712
Community Benefit Fund	$ -	$ -	$ 36,825	$ 191,335	$ 260,810	$ 279,770	$ 291,440	$ 303,115	$ 314,785	$ 326,455
Total	$ 12,000	$ 59,000	$ 550,325	$ 2,010,347	$ 2,294,722	$ 2,377,582	$ 2,432,352	$ 2,487,027	$ 2,542,297	$ 2,597,667
EBITDA	$ 141,937	$ 4,284,874	$ 25,616,889	$ 2,327,753	$ 3,523,278	$ 3,662,418	$ 3,855,348	$ 3,997,473	$ 4,138,903	$ 4,331,133

Expansion Model: Income Statement, Fiber to the Business, Grant-Funded Pricing

EBITDA	$ 141,937	$ 4,284,874	$ 25,616,889	$ 2,327,753	$ 3,523,278	$ 3,662,418	$ 3,855,348	$ 3,997,473	$ 4,138,903	$ 4,331,133
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Depreciation	$ 7,697	$ 217,643	$ 2,008,280	$ 3,289,443	$ 3,410,283	$ 3,410,283	$ 3,410,283	$ 2,691,704	$ 1,606,839	$ 1,485,999
Amortization	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Earnings Before Interest and Taxes	$ 134,240	$ 4,067,231	$ 23,608,609	$ (961,690)	$ 112,995	$ 252,135	$ 445,065	$ 1,305,769	$ 2,532,064	$ 2,845,134
Interest Expense - New Debt	$ -	$ -	$ -	$ 532,966	$ 567,405	$ 588,069	$ 608,732	$ 629,396	$ 650,060	$ 670,723
Interest Expense - Existing Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest Expense - Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Before Taxes	$ 134,240	$ 4,067,231	$ 23,608,609	$ (1,494,655)	$ (454,410)	$ (335,933)	$ (163,667)	$ 676,373	$ 1,882,004	$ 2,174,411
Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Income	$ 134,240	$ 4,067,231	$ 23,608,609	$ (1,494,655)	$ (454,410)	$ (335,933)	$ (163,667)	$ 676,373	$ 1,882,004	$ 2,174,411

There is positive EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization, and there is enough EBITDA to cover the interest on the new debt. There is negative Net Income with the Depreciation and Amortization expense in 2013, 2014, 2015 and 2016.

Expansion Model: Fiber to the Business, Grant-Funded Pricing, Feasibility Objectives

1. Debt service constant on outstanding debt; target over 200% after Year 5.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
OPERATIONS										
Net Cash Flow from Operations	$ (12,000)	$ (59,000)	$ 727,775	$ 2,327,753	$ 3,523,278	$ 3,662,418	$ 3,855,348	$ 3,997,473	$ 4,138,903	$ 4,331,133
Debt Service										
Interest	$ -	$ -	$ -	$ 532,966	$ 567,405	$ 588,069	$ 608,732	$ 629,396	$ 650,060	$ 670,723
Principal			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Cash Flow	$ (12,000)	$ (59,000)	$ 727,775	$ 1,794,787	$ 2,955,873	$ 3,074,349	$ 3,246,616	$ 3,368,077	$ 3,488,843	$ 3,660,410
Cumulative Cash Flow	$ (12,000)	$ (71,000)	$ 656,775	$ 2,451,562	$ 5,407,435	$ 8,481,785	$ 11,728,400	$ 15,096,477	$ 18,585,321	$ 22,245,730
Debt Service Constant on Outstanding Debt		#DIV/0!	#DIV/0!	305%	433%	435%	442%			

The target for Debt service constant on outstanding debt is over 200% after Year 5. This feasibility objective is met.

		2019
		YEAR
		10
OPERATIONS		
Net Cash Flow from Operations		$ 4,331,133
Cumulative Cash Flow from Operations		$ 26,493,081
CAPITAL EXPENDITURES		
Capital Expenditures		$ 362,520
EQUITY	5%	$ 18,126
Debt Service		
Required Draws		$ 344,394
Total Outstanding Debt		$ 11,178,721
Interest		$ 670,723

Cumulative Cashflows from Operations in Year 10 ($26493,0811) are greater then the Outstanding Debt ($11,178,721)

Expansion Model: Fiber to the Business, Grant-Funded Pricing, Feasibility Objectives

3. Positive EBITDA?										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
EBITDA	$ 141,937	$ 4,284,874	$ 25,616,889	$ 2,327,753	$ 3,523,278	$ 3,662,418	$ 3,855,348	$ 3,997,473	$ 4,138,903	$ 4,331,133
Less Interest Expense	$ -	$ -	$ -	$ 532,966	$ 567,405	$ 588,069	$ 608,732	$ 629,396	$ 650,060	$ 670,723
Earning after Interest Expense	$ 141,937	$ 4,284,874	$ 25,616,889	$ 1,794,787	$ 2,955,873	$ 3,074,349	$ 3,246,616	$ 3,368,077	$ 3,488,843	$ 3,660,410

EBITDA is positive and Earnings cover the Interest Expense.

4. Positive IRR?										
RETURN ON INVESTMENT										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
Cash Flow fromOperations	$ (12,000)	$ (59,000)	$ 727,775	$ 2,327,753	$ 3,523,278	$ 3,662,418	$ 3,855,348	$ 3,997,473	$ 4,138,903	$ 4,331,133
Capital Expenditures	$ -	$ -	$ -	$ 9,350,275	$ 604,200	$ 362,520	$ 362,520	$ 362,520	$ 362,520	$ 362,520
Net Cash Flow	$ (12,000)	$ (59,000)	$ 727,775	$ (7,022,522)	$ 2,919,078	$ 3,299,898	$ 3,492,828	$ 3,634,953	$ 3,776,383	$ 3,968,613
IRR	49%							Terminal Value		$ 14,726,006
MIRR	17%	Finance Rate	5%	Reinvestment Rate		6%		Capitalization Rate		10%

IRR is 49%, a very healthy return on investment.

Expansion Model: Income Statement, Fiber to the Business, Higher Pricing

Income Statement										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Network Services Revenues:										
Local Voice Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Broadband Data	-	-	717,900	5,287,600	7,750,400	8,424,100	8,839,500	9,255,200	9,670,700	10,086,200
Video Services	-	-	-	-	-	-	-	-	-	-
Network Access Service Revenues	-	-	73,200	146,400	146,400	146,400	146,400	146,400	146,400	146,400
Universal Service Fund	-	-	-	-	-	-	-	-	-	-
Toll Service/Long Distance Voice	-	-	-	-	-	-	-	-	-	-
Installation Revenues	-	-	364,800	-	-	-	-	-	-	-
Other Operating Revenues	-	-	-	-	-	-	-	-	-	-
BTOP Grant	101,259	2,452,559	19,980,958	-	-	-	-	-	-	-
Matching Contributions	52,678	1,891,315	4,908,156	-	-	-	-	-	-	-
Tax Revenue	-	-	47,500	326,000	473,800	514,200	539,200	564,100	589,000	614,000
Donation from UI (cash and in-kind)	-	-	51,000	102,000	102,000	102,000	102,000	51,000	-	-
Donation from UI (salary)	-	-	85,000	175,100	180,400	-	-	-	-	-
Uncollectible Revenues	-	-	(15,800)	(108,700)	(157,900)	(171,400)	(179,700)	(188,000)	(196,300)	(204,700)
Total Revenues	$ 153,937	$ 4,343,874	$ 26,212,714	$ 5,928,400	$ 8,495,100	$ 9,015,300	$ 9,447,400	$ 9,828,700	$ 10,209,800	$ 10,641,900
Expenses										
Backhaul	$ -	$ -	$ 82,500	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000	$ 186,000
Network Maintenance/Monitoring	$ -	$ 35,000	$ 240,000	$ 415,100	$ 420,400	$ 425,800	$ 431,400	$ 437,100	$ 443,000	$ 449,100
Utilities	$ 6,000	$ 12,000	$ 15,000	$ 18,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000
Leasing	$ 6,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Sales/Marketing	$ -	$ -	$ 15,800	$ 108,700	$ 157,900	$ 171,400	$ 179,700	$ 188,000	$ 196,300	$ 204,700
Customer Care	$ -	$ -	$ 61,000	$ 264,000	$ 345,800	$ 368,000	$ 381,700	$ 395,300	$ 409,000	$ 422,700
Billing	$ -	$ -	$ 6,100	$ 26,400	$ 34,600	$ 36,800	$ 38,200	$ 39,500	$ 40,900	$ 42,300
Corporate G&A	$ -	$ -	$ 37,200	$ 117,400	$ 120,500	$ 123,700	$ 127,000	$ 130,400	$ 133,900	$ 137,500
ROW Access Fees	$ -	$ -	$ 47,500	$ 326,000	$ 473,800	$ 514,200	$ 539,200	$ 564,100	$ 589,000	$ 614,000
Subsidy of Grant Area (Pricing stays at $20)	$ -	$ -	$ -	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712
Community Benefit Fund	$ -	$ -	$ 38,965	$ 266,265	$ 386,945	$ 419,955	$ 440,310	$ 460,680	$ 481,040	$ 501,395
Total	$ 12,000	$ 59,000	$ 556,065	$ 2,207,577	$ 2,626,657	$ 2,746,567	$ 2,824,222	$ 2,901,792	$ 2,979,852	$ 3,058,407
EBITDA	$ 141,937	$ 4,284,874	$ 25,656,649	$ 3,720,823	$ 5,868,443	$ 6,268,733	$ 6,623,178	$ 6,926,908	$ 7,229,948	$ 7,583,493

Expansion Model: Income Statement, Fiber to the Business, Higher Pricing

EBITDA	$ 141,937	$ 4,284,874	$ 25,656,649	$ 3,720,823	$ 5,868,443	$ 6,268,733	$ 6,623,178	$ 6,926,908	$ 7,229,948	$ 7,583,493
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Depreciation	$ 7,697	$ 217,643	$ 2,008,280	$ 3,289,443	$ 3,410,283	$ 3,410,283	$ 3,410,283	$ 2,691,704	$ 1,606,839	$ 1,485,999
Amortization	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Earnings Before Interest and Taxes	$ 134,240	$ 4,067,231	$ 23,648,369	$ 431,380	$ 2,458,160	$ 2,858,450	$ 3,212,895	$ 4,235,204	$ 5,623,109	$ 6,097,494
Interest Expense - New Debt	$ -	$ -	$ -	$ 532,966	$ 567,405	$ 588,069	$ 608,732	$ 629,396	$ 650,060	$ 670,723
Interest Expense - Existing Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest Expense - Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Before Taxes	$ 134,240	$ 4,067,231	$ 23,648,369	$ (101,585)	$ 1,890,755	$ 2,270,382	$ 2,604,163	$ 3,605,808	$ 4,973,049	$ 5,426,771
Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Income	$ 134,240	$ 4,067,231	$ 23,648,369	$ (101,585)	$ 1,890,755	$ 2,270,382	$ 2,604,163	$ 3,605,808	$ 4,973,049	$ 5,426,771

There is positive EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization, and there is enough EBITDA to cover the interest on the new debt. There is negative Net Income with the Depreciation and Amortization expense for 2013.

Expansion Model: Fiber to the Business, Higher Pricing, Feasibility Objectives

1. Debt service constant on outstanding debt; target over 200% after Year 5.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
OPERATIONS										
Net Cash Flow from Operations	$ (12,000)	$ (59,000)	$ 767,535	$ 3,720,823	$ 5,868,443	$ 6,268,733	$ 6,623,178	$ 6,926,908	$ 7,229,948	$ 7,583,493
Debt Service										
Interest	$ -	$ -	$ -	$ 532,966	$ 567,405	$ 588,069	$ 608,732	$ 629,396	$ 650,060	$ 670,723
Principal			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Cash Flow	$ (12,000)	$ (59,000)	$ 767,535	$ 3,187,857	$ 5,301,038	$ 5,680,664	$ 6,014,446	$ 6,297,512	$ 6,579,888	$ 6,912,770
Cumulative Cash Flow	$ (12,000)	$ (71,000)	$ 696,535	$ 3,884,392	$ 9,185,430	$ 14,866,095	$ 20,880,540	$ 27,178,052	$ 33,757,941	$ 40,670,710
Debt Service Constant on Outstanding Debt		#DIV/0!	#DIV/0!	487%	722%	744%	759%			

The target for Debt service constant on outstanding debt is over 200% after Year 5. This feasibility objective is met.

		2019
		YEAR
		10
OPERATIONS		
Net Cash Flow from Operations		$ 7,583,493
Cumulative Cash Flow from Operations		$ 44,918,061
CAPITAL EXPENDITURES		
Capital Expenditures		$ 362,520
EQUITY	5%	$ 18,126
Debt Service		
Required Draws		$ 344,394
Total Outstanding Debt		$ 11,178,721
Interest		$ 670,723

Cumulative Cashflow from Operations in Year 10 ($44,918,061, which is $18M greater than previous model) are greater then the Outstanding Debt ($11,178,721)

Expansion Model: Fiber to the Business, Higher Pricing, Feasibility Objectives

3. Positive EBITDA?										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
EBITDA	$ 141,937	$ 4,284,874	$ 25,656,649	$ 3,720,823	$ 5,868,443	$ 6,268,733	$ 6,623,178	$ 6,926,908	$ 7,229,948	$ 7,583,493
Less Interest Expense	$ -	$ -	$ -	$ 532,966	$ 567,405	$ 588,069	$ 608,732	$ 629,396	$ 650,060	$ 670,723
Earning after Interest Expense	$ 141,937	$ 4,284,874	$ 25,656,649	$ 3,187,857	$ 5,301,038	$ 5,680,664	$ 6,014,446	$ 6,297,512	$ 6,579,888	$ 6,912,770

EBITDA is positive and Earnings cover the Interest Expense.

4. Positive IRR?										
RETURN ON INVESTMENT										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
Cash Flow fromOperations	$ (12,000)	$ (59,000)	$ 767,535	$ 3,720,823	$ 5,868,443	$ 6,268,733	$ 6,623,178	$ 6,926,908	$ 7,229,948	$ 7,583,493
Capital Expenditures	$ -	$ -	$ -	$ 9,350,275	$ 604,200	$ 362,520	$ 362,520	$ 362,520	$ 362,520	$ 362,520
Net Cash Flow	$ (12,000)	$ (59,000)	$ 767,535	$ (5,629,452)	$ 5,264,243	$ 5,906,213	$ 6,260,658	$ 6,564,388	$ 6,867,428	$ 7,220,973
IRR	130%							Terminal Value		$ 33,150,986
MIRR	28%	Finance Rate	5%	Reinvestment Rate		6%		Capitalization Rate		10%

IRR is 130% (up from 146% from previous model), a very healthy return on investment.

UC2B Urbana-Champaign Big Broadband

UC2B Business Plan

Section 3, Overall Finding and Recommendations

Expansion Model: Residential

Scenario 3, Expand Fiber to the Other Residential Areas

According to the 2010 Census, there are approximately 53,524 residential units in the Champaign-Urbana area. 42.3% of these housing units in Champaign are in multi-dwelling units (apartments, duplexes), and 55.7% of the total housing unit in Urbana are multi-dwelling units. NEO assumed that 4,650 of these residential units were passed with the construction activities from the grant, leaving 48,874 residences to be addressed.

Many scenarios were run. NEO ran the financial model assuming that the pricing approved during the grant period ($19.99) was extended to the residential expansion areas. Under this scenario, none of the financial objectives were met. Offering this pricing to the (11) census blocks covered by the grant is feasible because the grant paid for the capital costs of the network. The University is also subsidizing the 1 Gbps of Internet and transport services through mid-2017.

NEO also assumed increasing the monthly pricing to between $45 (96% of residential customer would choose this tier) and $75 for Internet services and various take rate percentages of 20%, 30% and 40% were applied. It was assumed that the (11) census block areas would continue to receive the subsidized pricing of $19.99. The feasibility objectives came close to being met with higher pricing and 40% take rates.

Most of the successful FTTP networks are offering triple play services (voice, Internet and cable TV) via a retail model. As UC2B is providing Internet services only, there is a substantial amount of revenue that is not being generated per customer. However, that being said, without offering video or cable TV services, UC2B is not paying massive video content expenses or head-end construction debt service expenses either.

Expansion could be feasible with pre-selling various areas prior to construction. When a 40% take rate is pre-sold, construction activities can begin. Expansion could also be feasible if some of the capital costs per customer are absorbed through installation fees. Expanding to the multi-dwelling units reduces capital costs because the drop cable is extended once to the building (approximately ½ of the total capital costs per customer). The expansion could be done; however, it is recommended to do so cautiously; with the idea of outlaying capital efficiently by tying revenues to when capital costs are incurred.

Scenario 3, Expand Fiber to the Other Residential Areas

	Take Rates		
	20%	30%	40%, with $500 install
Cumulative Cashflow from Operations	$ 44,969,811	$ 58,079,181	$ 87,067,716
Debt after 10 years	$ 58,020,191	$ 65,397,473	$ 72,774,755
Delta	$ (13,050,380)	$ (7,318,292)	$ 14,292,961
IRR	-11%	-6%	6%

Take rate assumptions are critical; if UC2B is not able to effectively compete against the existing providers, then UC2B would not be able to cover its debt service.

The model is upside-down with extending the $19.99 pricing to the residential expansion area.

	Monthly Pricing	
	$19.99	$45.00 monthly, $500 install
Cumulative Cashflow from Operations	$ 17,706,226	$ 87,067,716
Debt after 10 years	$ 65,397,473	$ 72,774,755
Delta	$ (47,691,247)	$ 14,292,961

Scenario 3, Expand Fiber to the Other Residential Areas

On the following pages, the model is shown where it makes sense, but barely. Here are the assumptions of the following financial outcomes:

* 40% Take rate
* $500 Installation Fee
* 96% of customers take a service that has $45 per month

Expansion Model: Income Statement, Fiber to the Residential Units, 40% Take Rate

Income Statement										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues										
Network Services Revenues:										
Local Voice Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Broadband Data	-	-	674,200	8,407,500	13,197,000	14,488,000	15,280,700	16,073,400	16,866,100	17,658,800
Video Services	-	-	-	-	-	-	-	-	-	-
Network Access Service Revenues	-	-	73,200	146,400	146,400	146,400	146,400	146,400	146,400	146,400
Universal Service Fund	-	-	-	-	-	-	-	-	-	-
Toll Service/Long Distance Voice	-	-	-	-	-	-	-	-	-	-
Installation Revenues	-	-	1,206,500	9,776,000	1,230,000	734,000	734,000	734,000	734,000	734,000
Other Operating Revenues	-	-	-	-	-	-	-	-	-	-
BTOP Grant	101,259	2,452,559	19,980,958	-	-	-	-	-	-	-
Matching Contributions	52,678	1,891,315	4,908,156	-	-	-	-	-	-	-
Tax Revenue	-	-	44,800	513,200	800,600	878,100	925,600	973,200	1,020,800	1,068,300
Donation from UI (cash and in-kind)	-	-	51,000	102,000	102,000	102,000	102,000	51,000	-	-
Donation from UI (salary)	-	-	85,000	175,100	180,400	-	-	-	-	-
Uncollectible Revenues	-	-	(14,900)	(171,100)	(266,900)	(292,700)	(308,500)	(324,400)	(340,300)	(356,100)
Total Revenues	$ 153,937	$ 4,343,874	$ 27,008,914	$ 18,949,100	$ 15,389,500	$ 16,055,800	$ 16,880,200	$ 17,653,600	$ 18,427,000	$ 19,251,400
Expenses										
Backhaul	$ -	$ -	$ 82,500	$ 427,500	$ 616,500	$ 627,000	$ 648,000	$ 679,500	$ 711,000	$ 742,500
Network Maintenance/Monitoring	$ -	$ 35,000	$ 240,000	$ 415,100	$ 420,400	$ 425,800	$ 431,400	$ 437,100	$ 443,000	$ 449,100
Utilities	$ 6,000	$ 12,000	$ 15,000	$ 18,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000
Leasing	$ 6,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Sales/Marketing	$ -	$ -	$ 14,900	$ 171,100	$ 266,900	$ 292,700	$ 308,500	$ 324,400	$ 340,300	$ 356,100
Customer Care	$ -	$ -	$ 61,000	$ 884,700	$ 1,416,900	$ 1,560,300	$ 1,648,400	$ 1,736,500	$ 1,824,500	$ 1,912,600
Billing	$ -	$ -	$ 6,100	$ 88,500	$ 141,700	$ 156,000	$ 164,800	$ 173,600	$ 182,500	$ 191,300
Corporate G&A	$ -	$ -	$ 37,200	$ 117,400	$ 120,500	$ 123,700	$ 127,000	$ 130,400	$ 133,900	$ 137,500
ROW Access Fees	$ -	$ -	$ 44,800	$ 513,200	$ 800,600	$ 878,100	$ 925,600	$ 973,200	$ 1,020,800	$ 1,068,300
Subsidy of Grant Area (Pricing stays at $20)	$ -	$ -	$ -	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712	$ 467,712
Community Benefit Fund	$ -	$ -	$ 36,825	$ 419,140	$ 653,825	$ 717,085	$ 755,930	$ 794,770	$ 833,610	$ 872,455
Total	$ 12,000	$ 59,000	$ 550,325	$ 3,534,352	$ 4,938,037	$ 5,281,397	$ 5,510,342	$ 5,750,182	$ 5,990,322	$ 6,230,567
EBITDA	$ 141,937	$ 4,284,874	$ 26,458,589	$ 15,414,748	$ 10,451,463	$ 10,774,403	$ 11,369,858	$ 11,903,418	$ 12,436,678	$ 13,020,833

Expansion Model: Income Statement, Fiber to the Residential Units, 40% Take Rate

EBITDA	$ 141,937	$ 4,284,874	$ 26,458,589	$ 15,414,748	$ 10,451,463	$ 10,774,403	$ 11,369,858	$ 11,903,418	$ 12,436,678	$ 13,020,833
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Forecast Project Period					Forecast Project Period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Depreciation	$ 7,697	$ 217,643	$ 2,008,280	$ 10,364,054	$ 11,146,334	$ 11,146,334	$ 11,146,334	$ 10,427,755	$ 3,354,924	$ 2,572,644
Amortization	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Earnings Before Interest and Taxes	$ 134,240	$ 4,067,231	$ 24,514,724	$ 5,050,694	$ (694,871)	$ (371,931)	$ 223,524	$ 1,475,663	$ 9,081,754	$ 10,448,189
Interest Expense - New Debt	$ -	$ -	$ -	$ 3,478,311	$ 3,701,261	$ 3,834,306	$ 3,967,351	$ 4,100,396	$ 4,233,440	$ 4,366,485
Interest Expense - Existing Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest Expense - Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Before Taxes	$ 134,240	$ 4,067,231	$ 24,514,724	$ 1,572,383	$ (4,396,132)	$ (4,206,236)	$ (3,743,826)	$ (2,624,733)	$ 4,848,313	$ 6,081,704
Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Income	$ 134,240	$ 4,067,231	$ 24,514,724	$ 1,572,383	$ (4,396,132)	$ (4,206,236)	$ (3,743,826)	$ (2,624,733)	$ 4,848,313	$ 6,081,704

There is positive EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization; and there is enough EBITDA to cover the interest on the new debt. There is negative Net Income with the Depreciation and Amortization expense in 2014, 2015, 2016 and 2017. Note the assumptions for this are based upon $45 pricing, $500 installation fee and 40% take rate.

Expansion Model: Fiber to the Residential Units, 40%, Feasibility Objectives

1. Debt service constant on outstanding debt; target over 200% after Year 5.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
OPERATIONS										
Net Cash Flow from Operations	$ (12,000)	$ (59,000)	$ 1,569,475	$ 15,414,748	$ 10,451,463	$ 10,774,403	$ 11,369,858	$ 11,903,418	$ 12,436,678	$ 13,020,833
Debt Service										
Interest	$ -	$ -	$ -	$ 3,478,311	$ 3,701,261	$ 3,834,306	$ 3,967,351	$ 4,100,396	$ 4,233,440	$ 4,366,485
Principal			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Cash Flow	$ (12,000)	$ (59,000)	$ 1,569,475	$ 11,936,437	$ 6,750,202	$ 6,940,097	$ 7,402,507	$ 7,803,022	$ 8,203,238	$ 8,654,348
Cumulative Cash Flow	$ (12,000)	$ (71,000)	$ 1,498,475	$ 13,434,912	$ 20,185,114	$ 27,125,211	$ 34,527,718	$ 42,330,740	$ 50,533,978	$ 59,188,326
Debt Service Constant on Outstanding Debt		#DIV/0!	#DIV/0!	309%	197%	196%	200%			

The target for Debt service constant on outstanding debt is over 200% after Year 5. This feasibility objective is NOT met, but almost met.

		2019
		YEAR
		10
OPERATIONS		
Net Cash Flow from Operations		$ 13,020,833
Cumulative Cash Flow from Operations		$ 86,869,876
CAPITAL EXPENDITURES		
Capital Expenditures		$ 2,334,120
EQUITY	5%	$ 116,706
Debt Service		
Required Draws		$ 2,217,414
Total Outstanding Debt		$ 72,774,755
Interest		$ 4,366,485

Cumulative Cashflow from Operations in Year 10 ($86,869,876 is greater then the Outstanding Debt ($72,774,755)

Expansion Model: Fiber to the Residential Units, 40%, Feasibility Objectives

3. Positive EBITDA?										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
EBITDA	$ 141,937	$ 4,284,874	$ 26,458,589	$ 15,414,748	$ 10,451,463	$ 10,774,403	$ 11,369,858	$ 11,903,418	$ 12,436,678	$ 13,020,833
Less Interest Expense	$ -	$ -	$ -	$ 3,478,311	$ 3,701,261	$ 3,834,306	$ 3,967,351	$ 4,100,396	$ 4,233,440	$ 4,366,485
Earning after Interest Expense	$ 141,937	$ 4,284,874	$ 26,458,589	$ 11,936,437	$ 6,750,202	$ 6,940,097	$ 7,402,507	$ 7,803,022	$ 8,203,238	$ 8,654,348

EBITDA is positive and Earnings cover the Interest Expense.

4. Positive IRR?										
RETURN ON INVESTMENT										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR	YEAR
	1	2	3	4	5	6	7	8	9	10
Cash Flow fromOperations	$ (12,000)	$ (59,000)	$ 1,569,475	$ 15,414,748	$ 10,451,463	$ 10,774,403	$ 11,369,858	$ 11,903,418	$ 12,436,678	$ 13,020,833
Capital Expenditures	$ -	$ -	$ -	$ 61,023,005	$ 3,911,400	$ 2,334,120	$ 2,334,120	$ 2,334,120	$ 2,334,120	$ 2,334,120
Net Cash Flow	$ (12,000)	$ (59,000)	$ 1,569,475	$ (45,608,257)	$ 6,540,063	$ 8,440,283	$ 9,035,738	$ 9,569,298	$ 10,102,558	$ 10,686,713
IRR	6%							Terminal Value		$ 10,264,871
MIRR	6%	Finance Rate	5%	Reinvestment Rate		6%		Capitalization Rate		10%

IRR is 6%. Proceed cautiously.

Under What Conditions would it Work?

Not to be easily told "no," NEO's team put together a number of options for UC2B to consider that could possibly work for residential expansion. Here are a number of possibilities:

- 50% or great take rates
- Pre-sell neighborhoods
- Do it gradually, tie capital costs to revenue
- Installation fees of $500 to $1000 OR Build out to the Business and Commercial areas first and then expand to the Residential areas. (The financials for this follow on the next slides)
- Partner with a Triple Play or Over-the-Top Provider; share in the capital costs of the network, increase the monthly revenue per customer
- Partner with the Power Utility; share in the capital costs of the network and provide utility savings with Smart-Grid applications.
- Focus initially on the Fiber to the Business and MDU market; then consider building to the Residential areas
- Raise over 30% Equity; Reduce Debt to 70% of the Capital Costs (Equity could be grants, partnerships with businesses or anchor institutions)
- Figure out how to reduce the Capital Costs per Customer (Reduced Equipment Costs? Reduced Labor Costs?)

UC2B Business Plan

Section 3, Overall Finding and Recommendations

Expansion Model: Business and Residential

Expand to Businesses and Commercial Users, then to the Residential Users

The financial model works when the Business and Commercial users are built out first, followed by expansion to the residential user. The higher priced businesses supplement expansion to the residential customers.

Expansion Model, starting in Year 4, Additional Residential Customers Pass and Take Rate Percentages	
Total Customers Passed in Expansion Area Only	48874
Take Rate, Expansion Area, Year 4	40%
Take Rate Expansion Area, Year 5	45%
Annual Growth Rate Years 6 through 10	3%

Residential Pricing, Expansion Area	
UC2B 20/100Internet CNS	$45.00
UC2B 30/100Internet CNS	$60.00
UC2B 40/100Internet CNS	$75.00
Service #4	$0.00
Service #5	$0.00
Installation Fee	$150.00

Expansion Model, starting in Year 4, Additional Business Customers Pass and Take Rate Percentages	
Total Customers Passed in Expansion Area Only	7478
Take Rate, Expansion Area, Year 4	40%
Take Rate Expansion Area, Year 5	45%
Annual Growth Rate Years 6 through 10	3%

Business Pricing	
UC2B 20/20Internet CNS	$114.80
UC2B 40/40Internet CNS	$213.80
UC2B 60/60Internet CNS	$312.60
UC2B 80/80Internet CNS	$411.00
UC2B 100/100Internet CNS	$509.00
Private VLAN 10 Mbps	$100.00
Private VLAN 100 Mbps	$400.00
Private VLAN 1 Gbps	$1,200.00
Installation Fee	$150.00

Expand to Businesses and Commercial Users, then to the Residential Users

		YEAR 10
OPERATIONS		
Net Cash Flow from Operations		$ 17,806,673
Cumulative Cash Flow from Operations		$ 102,707,721
CAPITAL EXPENDITURES		
Capital Expenditures		$ 2,696,640
EQUITY	5%	$ 134,832
Debt Service		
Required Draws		$ 2,561,808
Total Outstanding Debt		$ 76,570,152
Interest		$ 4,594,209

Cashflow from Operations is greater than the Outstanding Debt Service (left).

EBITDA is positive and covers interest expense (below) and the IRR is 10% (also below).

3. Positive EBITDA?	2010 YEAR 1	2011 YEAR 2	2012 YEAR 3	2013 YEAR 4	2014 YEAR 5	2015 YEAR 6	2016 YEAR 7	2017 YEAR 8	2018 YEAR 9	2019 YEAR 10
EBITDA	$ 141,937	$ 4,284,874	$ 25,673,449	$ 9,346,323	$ 12,869,853	$ 14,095,688	$ 15,054,393	$ 15,962,378	$ 16,859,078	$ 17,806,673
Less Interest Expense	$ -	$ -	$ -	$ 3,568,278	$ 3,825,667	$ 3,979,375	$ 4,133,084	$ 4,286,792	$ 4,440,501	$ 4,594,209
Earning after Interest Expense	$ 141,937	$ 4,284,874	$ 25,673,449	$ 5,778,045	$ 9,044,186	$ 10,116,313	$ 10,921,309	$ 11,675,586	$ 12,418,577	$ 13,212,464

4. Positive IRR? RETURN ON INVESTMENT	2010 YEAR 1	2011 YEAR 2	2012 YEAR 3	2013 YEAR 4	2014 YEAR 5	2015 YEAR 6	2016 YEAR 7	2017 YEAR 8	2018 YEAR 9	2019 YEAR 10
Cash Flow fromOperations	$ (12,000)	$ (59,000)	$ 784,335	$ 9,346,323	$ 12,869,853	$ 14,095,688	$ 15,054,393	$ 15,962,378	$ 16,859,078	$ 17,806,673
Capital Expenditures	$ -	$ -	$ -	$ 62,601,360	$ 4,515,600	$ 2,696,640	$ 2,696,640	$ 2,696,640	$ 2,696,640	$ 2,696,640
Net Cash Flow	$ (12,000)	$ (59,000)	$ 784,335	$ (53,255,037)	$ 8,354,253	$ 11,399,048	$ 12,357,753	$ 13,265,738	$ 14,162,438	$ 15,110,033
IRR	10%							Terminal Value		$ 22,107,561
MIRR	7%	Finance Rate	5%	Reinvestment Rate		6%		Capitalization Rate		10%

UC2B Business Plan

Section 3,
Overall Finding and Recommendations

Wholesale Models

Types of Wholesale Services, Models to Consider

There are three types of wholesale services that UC2B is anticipating providing per the NTIA grant.

Layer-Two transport: The Internet Services Provider (ISP) redundantly connects to the UC2B network core and UC2B provisions a VLAN for that ISP to each of its customers. UC2B charges the ISP for the dual connections to the UC2B core network and then for each customer that the ISP "owns" on the network. UC2B-owned electronics are used to deliver the ISP's services and each of the ISP's customers has specific port speeds at which they can connect to the ISP. The faster those customer port speeds the more they cost.

Layer-Three service: The ISP redundantly connects to the UC2B network core, but then utilizes the UC2B Intranet and the fact that the customer has an existing IP service provider to piggyback additional services to that customer. UC2B charges the ISP the same rates for redundantly connecting to the UC2B network core, but there are no additional charges for each customer. This ISP does not "own" the end customers, who must rely on their IP services providers to be able to receive the services from the second provider. **Example:** Company Y only provides IP telephone services. Any UC2B Internet customer has an ONT that can also be used by Company Y to provide SIP-based IP telephone services. The customer pays UC2B for Internet access and Company Y for telephone services. In the fullness of time UC2B may be able to combine those billings.

Dark Fiber: Dark fiber is optical fiber infrastructure that is currently in place but is not being used. Optical fiber conveys information in the form of light pulses so the "dark" means no light pulses are being sent. To the extent that these installations are unused, they are described as dark. There are two ways UC2B can provide dark fiber – by long-term IRUs or by short-term dark fiber leases.

Scenario 4: Caution on Layer Two and Layer Three Services

Although intuitively it may seem that the costs for customer service would be reduced with providing wholesale services, regardless of who provides the first line of customer service and trouble resolution, the customer service costs to UC2B are still the same as providing retail services; the customer – whether the customer is the end user or the service provider – still needs to be maintained, and UC2B needs to anticipate these costs.

UC2B's Policy Board agreed to offer retail residential pricing for the grant-subsidized areas starting at $19.99 for 20 Mbps. The non-grant subsidized retail residential rates will need to be at a different rate in order to allow UC2B to effectively expand the network if UC2B chooses. In order to build out to other areas in the Urbana-Champaign area, UC2B would most likely need to offer a retail residential rate of at least $45 for 20 Mbps. While we want to incent service providers to use the network and provide services, we also want UC2B to be able to compete effectively with the service providers if UC2B decides to expand the network. Having a wholesale pricing strategy of $19.99 or 30-45% revenue share, whichever is greater, also protects UC2B if UC2B decides to expand the network, and offer a higher retail price for the non-grant-subsided areas.

Wholesale Model for Expansion of the Network

NEO would caution UC2B to not rely solely on a wholesale model for the network expansion with higher layer open access services. The $19.99 per customer or a percentage of gross revenue concept may be difficult under an expansion model. It may be difficult to put together a service offering that would compel the customer or end user to make a change, thus making it difficult to receive more than $19.99 per customer. NEO has already modeled the $19.99 per customer; it will not cover the debt of the network. Additionally, operating costs are high with this type of model and the coordination that needs to occur between UC2B as the network owner and the service provider is arduous. For these reasons, NEO would not recommend using a Layer 2 or 3 Wholesale Model to build out the network further. However, with that being said, the model could work if UC2B could share in the capital costs of the network with the service provider(s).

UTOPIA Example

The Utah Telecommunication Open Infrastructure Agency (UTOPIA) is perhaps the most famous example of wholesaling Layer Two and Layer Three services. Utopia burst onto the scene with much fanfare in 2004 as a consortium of (16) Utah cities joined together to provide fiber optic infrastructure under an FTTH design to their citizens and residents. Nearly $185 million in bonds were raised for the project, along with additional state and federal monies for construction over the ensuing decade. By the end of fiscal 2010, the network had grown to over 1,700 route miles with 56,000 homes and businesses connected.

All commercial and residential subscriber sales were entirely dependent upon and driven by 3rd party channel sales partners, resulting in flat performance. To complicate issues further, the multi-municipality consortium board insisted on equal development across the 16-city footprint in tandem, leaving no room for concentration on markets with potentially high take rates to support early operations.

This "build it and they will come" approach, utterly lacking of a financially viable and sustainable business model, found itself in serious financial difficulties by 2007, a situation that continues to this day. **By the end of Fiscal 2010, the Statement of Net Assets showed a negative balance of over $166 million, with nearly $260 million of debt and an operating income of only $3 million.** The anticipated wholesale value of the network was grossly over-estimated, and the unfocused nature of their build-out resulted in fewer connected potential subscribers a decade later than expected. Despite all issues, however, take rates have still been in the 20% - 30% range for those connected. The underlying financials and product set are not sustainable, however,

Scenario 4: Wholesale Models to Consider

The wholesale model has been extremely successful in European counties. The unique environment in Europe that has allowed for successful deployment of the wholesale model includes:

1. One infrastructure provider
2. Many service providers
3. Excellent services, compelling reasons to change
4. Regulatory environment

Some cities have had success complementing retail models with a wholesale component, such as Jackson, Tenn., Lafayette, La, and Sho-Me Technologies in Missouri.

NEO's Recommendation

NEO recommends that UC2B **supplement its retail offering with wholesale services such as dark fiber leases,** long-term IRU agreements or leasing of wavelengths on the network. These leases do not require much from UC2B and will not increase the call center or billing costs of operating a wholesale model.

The Wholesale Model, Layer Two or Layer Three Service Works for the Grant-Funded Areas Only.

The higher layer open access concept would work under the grant-funded areas of the network, where there are no capital costs or debts to be serviced. Under this scenario, UC2B would install the drop fiber and the ONT, and UC2B would still "own" this connection to the customer and the ONT installed at the customer site. If the customer would like to use a different provider, the connection can simply be "pointed" to a different provider, no equipment would need to be replaced. **As there is no debt to be serviced, the Layer Two or Layer Three Service works only in the Grant-Funded Areas.**

Urbana-
Champaign
Big Broadband

UC2B Business Plan

Section 3, Overall Finding and Recommendations,

Wireless Overlay

Wireless Overlay, Estimated Costs for Public and Government Applications

And finally, NEO was asked to put together estimated costs for a wireless overlay network that would be used for public and government applications. Estimated capital costs vary based upon coverage and penetration of the wireless overlay network. On the following pages are estimated costs, the first with minimal coverage, the second with 80% coverage.

Wireless Overlay for Public Safety Applications

Outside Coverage Models (Minimal Interior Coverage)					
Public Safety	km²	Coverage km2	WiMax Sites	Cost Per Site Deployed	Capital Cost/Installed
Tower Design Leverages Anchor/Tower Access Near Fiber	4944	36	138	20,000	$ 2,760,000.00
Network Headend Cost					$ 350,000.00
			Subscriber Units	SubSciber Access	
Remote (Nomadic)			1	1,250	$ 1,250.00
Public Access	km²	Coverage km2	WiMax Sites	Cost Per Site Deployed	Capital Cost/Installed
Tower Design Leverages Anchor/Tower Access Near Fiber	4944	100	50	20,000	$ 1,000,000.00
Network Headend Cost					$ 200,000.00
			Subscriber Units	SubSciber Access	
WiFi Units			1	1250	$ 1,250.00
WiFi Commercial/Public Access	mi²	Coverage mi2	WiFi Sites	Cost Per Site Deployed	Capital Cost/Installed
Pervasive (High-End) Coverage	1924	0.25	7696	2,750	$ 21,164,000.00
Network Headend Cost					$ 2,308,800.00
WiFi Commercial/Public Access	mi	Coverage mi2	WiFi Sites	Cost Per Site Deployed	Capital Cost/Installed
Commercial (Mid-Range) Coverage	187	0.19	988	2,750	$ 2,717,000.00
Network Headend Cost					$ 296,400.00
WiFi Commercial/Public Access	mi	Coverage mi2	WiFi Sites	Cost Per Site Deployed	Capital Cost/Installed
Commercial (Best Effort- Hot Zone/Spot) Coverage	187	0.25	748	2,750	$ 2,057,000.00
Network Headend Cost					$ 224,400.00
Household/Business Wireless Access Point			Subscriber Units	SubSciber Access	Capital Cost/Installed
Commercial Remote (Nomadic) 300 Mbps Wireless Access Point			1	399	$ 399.00
Residential Remote, 54 Mbps Wireless Access Point			1	199	$ 199.00
Service Options					Core Network Costs
Option 1 WiMax Public Safety Only					$ 3,110,000.00
Option 2 Wimax Public Safety & Commercial Services					$ 4,310,000.00
Option 3 Wimax Public Safety & WiFi Commerical/Public Services (Best Effort - Hot Zone/Spot)					$ 5,391,400.00

Wireless Overlay for Public Safety Applications

High Density Coverage Models (80% Interior Coverage)					
Public Safety	km²	Coverage km2	WiMax Sites	Cost Per Site Deployed	Capital Cost/Installed
Tower Design Leverages Anchor/Tower Access Near Fiber	4944	16	309	20,000	$ 6,180,000.00
Network Headend Cost					$ 350,000.00
			Subscriber Units	SubSciber Access	
Remote (Nomadic)				1,250	$ -
Public Access	km²	Coverage km2	WiMax Sites	Cost Per Site Deployed	Capital Cost/Installed
Tower Design Leverages Anchor/Tower Access Near Fiber	4944	36	138	20,000	$ 2,760,000.00
Network Headend Cost					$ 200,000.00
			Subscriber Units	SubSciber Access	
WiFi Units			1	1250	$ 1,250.00
WiFi Commercial/Public Access	mi²	Coverage mi2	WiFi Sites	Cost Per Site Deployed	Capital Cost/Installed
Pervasive (High-End) Coverage	1924	0.25	7696	2,750	$ 21,164,000.00
Network Headend Cost					$ 2,308,800.00
WiFi Commercial/Public Access	mi	Coverage mi2	WiFi Sites	Cost Per Site Deployed	Capital Cost/Installed
Commercial (Mid-Range) Coverage	187	0.19	988	2,750	$ 2,717,000.00
Network Headend Cost					$ 296,400.00
WiFi Commercial/Public Access	mi	Coverage mi2	WiFi Sites	Cost Per Site Deployed	Capital Cost/Installed
Commercial (Best Effort- Hot Zone/Spot) Coverage	187	0.25	748	2,750	$ 2,057,000.00
Network Headend Cost					$ 224,400.00
Household/Business Wireless Access Point			Subscriber Units	SubSciber Access	Capital Cost/Installed
Commercial Remote (Nomadic) 300 Mbps Wireless Access Point			1	399	$ 399.00
Residential Remote, 54 Mbps Wireless Access Point			1	199	$ 199.00
Service Options					Core Network Costs
Option 1 WiMax Public Safety Only					$ 6,530,000.00
Option 2 Wimax Public Safety & Commercial Services					$ 9,490,000.00
Option 3 Wimax Public Safety & WiFi Commerical/Public Services (Best Effort - Hot Zone/Spot)					$ 8,811,400.00

Should UC2B offer a Wi-Fi Public Access Network Using the ADTRAN ONTs?

UC2B could consider offering a Wi-Fi Access Network using the ADTRAN ONT's. NEO's caution on this would be to consider doing this after the grant period so that efforts that are underway to sell, install and secure customers that will be funded through the grant are not diminished.

After UC2B has met the requirements of the grant and secured its 2,400 customers, then consideration could be given to using the ADTRAN ONTs to expand the number of users on the network. Although the capital costs to use the wireless feature for the ADTRAN ONT are minimal, it should also be taken into consideration what the additional customer service costs would be to use the wireless feature.

Section 4, Operational Structure and Governances

UC2B Business Plan

Choosing the Right Operational Structure and Governances, Then Using it to Transform Urbana-Champaign

UC2B today is operating as a governmental consortium in partnership with the City of Urbana, the City of Champaign and the University of Illinois. Although there have been numerous successful endeavors that have been executed in cooperation between these agencies, and this organizational structure and governance may be more than adequate in the short term, there may be potential issues in continuing to operate an Internet and FTTP network in the long term within this current organizational structure.

The potential pitfalls may be the following:

- Government fund accounting may not allow certain shared revenue/shared cost for the municipal utility and other partners.
- Procurement processes are public with open bids, open negotiation and full disclosures. Key vendors and strategic partners may see this as a barrier to do business with UC2B as they may not want to disclose all of the nuances of the relationship, pricing, cost structures, etc. to potential competitors, their customers and the public in general. Transparency requirements in business practices often cause competitive conflict.
- The open procurement process and the nature in which decisions are made, i.e. with City Council or Board approval, may create a hindrance for UC2B to remain nimble, flexible and able to make decisions in a timely manner in order to best compete in the marketplace.
- Long term commitment to the mission, goals and business of the business may be threatened with the change in City Council members occurring every two years, or that the mission may not be aligned with the mission of the three agencies. It is recognized that all three agencies are fully committed to the success of UC2B today; however, this may change over time as new members are brought to the City Council or to the various Boards. Long term ability to attract funding from a range of sources may be limited based upon the current organizational structure. Operating expenses will be significant and funding or revenue must be in place to cover investment and operational expenses.
- The FTTP business is a new line of business for the consortium and the ability to operate must be built, acquired or outsourced. This requires a strong management team that will oversee this process of organizational growth. Aside from a few individuals who now work for the University, UC2B does not currently have organizational experience in the utility, telecom, Internet or fiber optic business. UC2B must develop and manage marketing and sales and compete with other community network providers. This business requires a commitment to maintenance, customer service and management of an organization that is not yet in place.

Choosing the Right Operational Structure and Governances, Then Using it to Transform Urbana-Champaign

Transparency can be considered both a positive and a negative in this business environment. Providing an open forum to solicit input and to share information with the public can often provide a good platform for innovation, creativity and valuable input into the processes. However, if openness and transparency affects UC2B's ability to negotiate with vendors, and continue to be nimble, flexible and make timely decisions, then perhaps there needs to be a Communication Policy put in place and/or a new organizational structure may need to be established. Additionally, NEO has tried to recommend an organizational structure that mitigates potential challenges and provides the most availability for funding, financing and establishment of partnerships.

Each type of organizational structure has its benefits and potential pitfalls. There is no bad organizational structure; each has its set of challenges. An outline of the possible organizational structures, their pros, cons and examples of other FTTP networks are shown on the following pages.

The current organizational structure may serve UC2B well in the short term. The question will be, "at what point does it makes sense to restructure the organization?" The answer to that question will be, "when the challenges of this organizational structure limit UC2B success."

On the following pages is a recommended path for an organizational structure that may mitigate the potential challenges of these various organizational structures, while at the same time provide flexibility in gaining funding from a number of potential sources, and give the organization the ability to offer multiple types of products, services and revenue sources.

Business Model Comparison

Commonly Called	Owned By	Operated By	Pros	Cons	Examples
1. Public Utility	Municipal/Co-Op	City, Enterprise or Private Sector	• Enterprise services with a high level of local control over network funding and priorities. • Public good often overrides profit motives. • User access fees; can result in savings for the public utility. • Utility investment can be managed in either a wholesale model which encourages provider partners and extends community investment or through retail model which engages end-users. • Dedicated retail customer (sticky). • Community model creates loyalty –not just price. • Transparency and openness • Public participation in decision-making	• Often greater capital investment with no guarantees that service adoption will cover investment and operational expenses. • Usually a new line of business requirements • Organization must build –acquire organizational experience • Public Utility must develop and manage marketing, sales and compete with other community network providers • Many cities are uncomfortable with maintenance and management commitment • Government fund accounting not allow certain shared revenue/cost for municipal utility • Transparency requirements in business practices can cause competitive conflict • Public procurement processes may cause delays in decision-making	Wholesale Models: • Chelan, WA Retail Models: • St. Louis Park, MN; • Chattanooga, TN • Bristol, VA • Chaska. MN; St. • Cloud, FL • Benton Public Utility District, -Kennewick, Washington • Saint Louis Park, Minnesota
2. Non-profit 501(c)3 501(c)12	Typically a committed, cross-sector group of leaders that facilitate sustainability and local ownership. (Community Stakeholders, Independent Service Corporation, Institutional or Institutional Partners)	Management of Non-profit with flexible governance: • Charitable Community Leaders • Private and/or public sector governance • Hybrid Public-Private Governance Can either be a charitable or service related non-profit.	• Non-profit mission will be directed by the selected governance model and their individual mandates. • Non-Profit can have a social mandate that focuses on community needs and operates network independent from other govt. business. • Can aggregate demand and leverage capital assets. • More funding options are available to the non-profit versus municipal led initiatives. • Also provides flexible business models that can evolve to address selected community needs. • 501(c)3 enables charitable giving and provides shelter for assets. • 501(c)12 provides tax advantages for service organizations that lesson the burden of government or address the social needs of the community	• Usually a new line of business requirements • Organization must build –acquire organizational experience • Non-Profit must develop and manage marketing, sales and compete with other community network providers. • Start-up structure and funding may be complex and difficult. • Requires member or stakeholder buy-in Fund-raising may be difficult. • Traditional financing may be more complicated by business model and ROI analysis. • IRS has had increasing interest in reviewing and ensuring non-profit status and has in recent years pierced the veil when a non-profit is used as a shelter. • IRS may require hybrid non-profit and for-profit corporation to manage unrelated business income. • Mission often limits ability to take advantage of new opportunities	• OneCommunity, OH, • Boston, MA; • Cape Cod, MA; • Rhode Island

3. Publicly Owned **Municipality** **Government Authority** **Privately Operated**	**Municipal/Government governance, non-profit, consortium of cities, public/ private consortium, or private company operated**	**Management of the Non-profit governed by a municipal or government council or through operating agreement with private sector partner.**	• **Can encourage build out of "middle mile" across a region and competition in local broadband market. Generally encourages private sector investment through incentives or through revenue commitments.** • **Easier for government to leverage assets, participate in collaborative ventures, and partner with non-profit.** • **Can aggregate public enterprise demand-use and leverage capital assets to reduce cost.** • **Can create alternative revenue streams to lower overall operating expenses.**	• **Providers develop and invest in infrastructure based on anticipated ROI.** • **Varying business models make it difficult to ensure success** • **Competitive providers may not continue to invest in the network and may not offer services that meet community needs pushing the underserved burden and expenses onto the publicly owned asset while they cherry pick the high value customers.**	• **Utopia, West Valley City, UT;** • **Windom, Minnesota** • **Network; Nevada, MO;** • **Corpus Christi, TX**
4. Consortium	Group of public partners, private partners, or public and private partners	Private and/or public sector	• Buying consortia with the option to aggregate services with the benefit of volume discounts and option to co-invest in new infrastructure at a lower shared cost per individual if services are otherwise unavailable. • A Broadband buyers club for big broadband users across a region.	• Usually focuses on consortia/membership and does not solve connectivity for all end users in a region. • Buyers club is subject to market conditions and rates may change based on provider market costs and willingness to sell at discounted rates. • Consortia member's services limited to provider contracts/services.	• Fredericton, NB; • Ohio Middle Mile Consortium (OMMC) • Wireless Silicon Valley
5. "Public/Private" Or Franchise	Public/Private Investment with either public or Private leadership Typically a Private sector provider or reseller	Private sector	• Minimizes financial, development and operational commitment by the cities/university • Provides the entity option to use services for their direct benefit without significant capital risk.	• Cities/University has limited input and control; typically the entity contracts with one private sector partner for network services. • The entity has little or no impact on competition in the local broadband market. • Citizen services are driven by purely profit motive.	• Philadelphia; • Umatilla county; • Rio Rancho, NM; • Tucson, AZ
6. Subscriber Based Private	Private sector	Private sector	• No financial risk for the and no control over services being delivered or made available to the community. Limited or no political risk for city.	• No control over the service providers and services being offered. There is no guarantee that service provider will invest and whether they will provide services that meet the needs of community.	• Common carrier, cable and third party providers. • The status quo! Any number of private networks may serve a community.

<table>
<tr><th>Commonly Called</th><th>Start Up – Project Based Financing Options</th><th>Revenue Options to Reach Sustainable - ARPU</th></tr>
<tr><td>1. Public Entity
2. Non Profit 501(c)3 or 501(c)12
3. Publicly Owned, Municipality, Government Authority or Privately Operated
4. Consortium</td><td>• Municipal Asset Financed through General Obligation or Revenue Bonds
o Municipal Guarantee
o Revenue Projections
o Subscriber Opt-In Commitments
• Grants
o State Appropriations
o State/Federal Program Grants
• Service Revenues (Pre-Paid Commitments/Guarantees)
• Non-Profit (501(c)3 can leverage foundation and corporate giving, passing along donation status under charitable charter
• Non-Profit's in a better position to generate stakeholder investment as a corporate entity without public-government governance constraints
• IRS becoming stricter on Non-Profits related to Unrelated Business Income (UBIT) – IRS requiring quasi charitable/service organizations to consider wholly owned For-Profit to manage/capture UBIT.</td><td rowspan="3">Sources of Service Revenues

Initial Transmission/Transport Service Types:
• Fiber - Indefeasible Right to Use (IRUs)
• Fiber Service Lease
• Wave Services Lease
• Ethernet Services
• Internet Services
Value Added Service Options
• Voice over IP
• IP Television
• Security (Firewall/Intrusion Detection/Virtual Private Networks)
• Device M2M Services
• Data Center/Metro Facility Access
• Hosting/Cloud Based Services
• Wireless Access Services (4G/WiFi)

Channels to Market

Wholesale services to:
• Providers, Incumbents, CLECs, MSOs, ISPs, Data Center Providers, Wireless ISPs/Cellular
• Institutional Services - government, healthcare, education
• Private Developers/Providers – Tech Parks, community housing developments, multi-dwelling Units (MDUs)
Channel Partners
• Independent Carriers
• Technology Integrators/service organizations
• Institutions (e.g., Health, education, government)
Retail services – User Fees to:
• Residential, business and institutional
• Recurring State/Federal Service Grants (e.g., USF, E-Rate)
• Service Subsidies – Utility Service Partners</td></tr>
<tr><td>5. "Public/Private" or Franchise</td><td>Private sector
• Private Sector Asset Financed primarily by the private sector, though the city(ies) may serve as an anchor institution, and/or contribute start-up funds
• Access to Private Capital - Venture/Investment Bank
• Access to some grants
• Able to attract vendor financing
• Non-Profit/Private entities can Leverage Government Revenue Bonds in partnership with public entity</td></tr>
<tr><td>6. Privately Owned or Subscriber Based Private</td><td>Private sector
• Access to Private Capital - Venture/Investment Bank
• Access to some grants
• Able to attract vendor financing
• Non-Profit/Private entities can Leverage Government Revenue Bonds in partnership with public entity</td></tr>
</table>

Choosing the Right Operational Structure and Governances, Then Using it to Transform Urbana-Champaign

UC2B is creating a seamless, digital infrastructure for the residents, businesses and institutions of Urbana-Champaign. The program's objectives include:

- Empowering individuals for personal and economic opportunities
- Enhancing education and training opportunities for students and adults
- Helping cities and other government units to provide services in new ways
- Supporting the delivery of world-class health services
- Expanding opportunities for cultural institutions and neighboring communities
- Creating an economic development environment that fosters innovation and keeps intellectual capital in the region.
- Improves local quality of life.

UC2B has created a mission oriented program that services both public and private interests.

The existing operational structure of a quasi-governmental organization helps ensure its mission; however, the existing operational structure restricts future capitalizations, service development and expansion, and long-term stability with the private sector partners/customers.

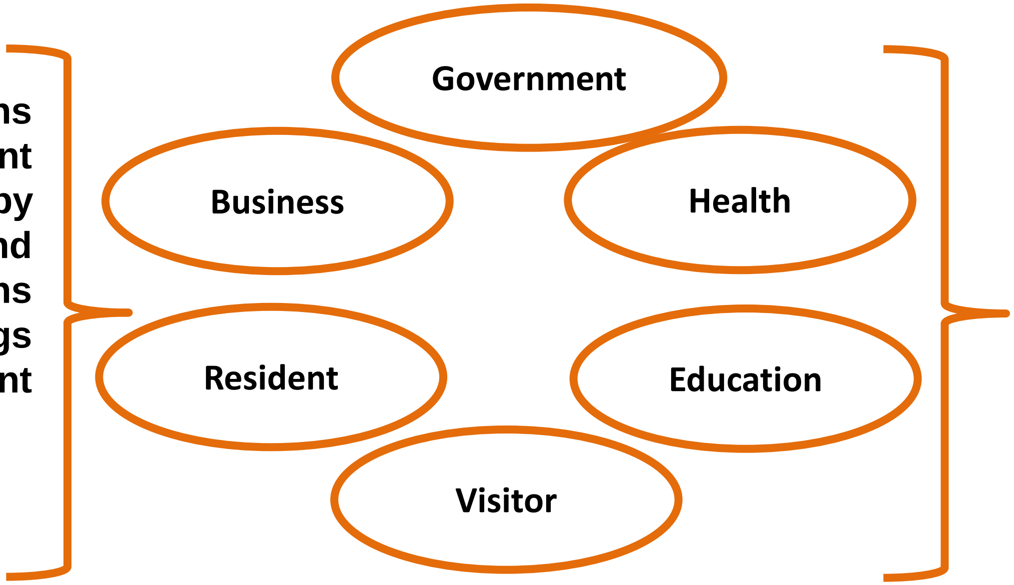
What is the best operational structure to be:
Innovative
Scalable
Sustainable
Nimble and Flexible
Financeable

Scalability and sustainability will require flexibility in governance, continued innovation and deployment, and the ability to adapt to the competitive environment through partnerships, service enhancements and salable pricing models.

Creating and Maintaining a Sustainable Operational Model and Foundation Needs to Facilitate:

- A variety of sources of funds in combination over time
- A variety of revenue and other outcomes
- A portfolio management approach

Appropriations
Grant
Philanthropy
Bond
Loans
Achieved Savings
Private Investment



Transaction Revenue
Subscription Revenue
Community Re-Investment
Retain/Create Jobs
Community & Societal Good

UC2B – Consequences Require Careful Progress

UC2B is managing developments which will have significant

impact on many

areas of local life:

- Business
- Education and Learning
- Health
- Community
- Culture

These developments will impact governance and the operation of the political system, the delivery of public services and the relationship between government, the private sector and citizens.

These developments will impact and influence the way all the involved institutions and business entities work together.

And they will raise your global profile – the eyes of the world are upon projects like UC2B

UC2B – Business Strategy & Operations
Organizational and Operational Recommendations

Current Status	Recommendation
Publicly Owned Government Authority Privately Operated	Consider Hybrid Non-Profit 501(c)3 with For-Profit Subsidiary Organization and Continued Community Governance

At some point in time, UC2B may want to consider restructuring the organization to a hybrid Non-Profit 501(c) 3 organization with a For-profit C-corporation subsidiary. The Non-Profit 501(c) 3 organization will allow charitable contributions, limit taxes, maintain the mission for the societal good, and maintain the interest of government and the community.

The For-Profit C-corporation subsidiary will provide another set of funding sources, and may maximize opportunities for operational flexibility, efficiency and financial sustainability. This organizational structure may alleviate the potential concern of open procurement processes which may be seen by vendors, key strategic partners as a barrier to do business with UC2B. This organizational structure may also allow UC2B to make decisions more quickly and allow UC2B to be more nimble and flexible in order to best compete in the marketplace. This organizational structure may mitigate the potential concern of change in City Council members occurring every two years and may provide an environment whereby long-term commitments to the mission, goals and business of the business can be kept in place.

The recommendation of a hybrid structure gives UC2B the advantages of both a non-profit entity and a for-profit business.

UC2B – Business Strategy & Operations
Non-Profit Structure

UC2B would transition its current Government Authority to 501(c)3 non-profit corporation and would create a 100% wholly owned For-Profit C-Corporation.

- 501(c)3 Structure
  - 501 (c)3 will remain focused on mission related activities
    - Technology adoption in core business segments (Government, Education, Healthcare, Non-Profits)
    - Member Services (Member Applications)
    - Community Applications and Services
    - Digital Inclusion
  - All grants, donations and community benefit program funds and activities will remain in the 501(c)3
    - All core donations of fiber and equipment will remain in the 501(c)3
  - Move Unrelated Business income to C-Corporation
    - Wholesale, commercial and residential subscriber revenue and expenses will be moved into the C-Corporation
  - 501(c)3 will develop an operating agreement with the C-Corporation for Related activities
    - C-Corporation will develop a royalty/dividend agreement with the 501(c)3 for the fiber and equipment services

UC2B – Business Strategy & Operations
Organizational/Operational Recommendations

Implications

UC2B's mission must maintain, both in fact and in appearance, the charitable and educational nature of its activities.

- UC2B would set up a for-profit subsidiary (a C-corporation) that will carry on all activities not "substantially below cost". (Or for profit, in other words)
- Subscriber activity: Acknowledged to the IRS that the subscriber fees that are not at or below costs for anchor institutions, for societal benefit, or for public service will be treated as Unrelated Business Income ("UBI") for UC2B.
- Subscriber activity: The licensing fees that the C-corporation will pay to UC2B will be UBI to UC2B.
- Profit sharing in the form of non-taxable dividends will be passed up from the C-Corporation based on internal policies.

UC2B – Business Strategy & Operations
Structuring Partnerships and Joint Ventures

- C-Corporation Structure
  - C-Corporation provides 501(c)3 shelter from unrelated business activity
  - Subscriber based revenue and expenses will be moved into the C-Corporation
    - C-Corporation would develop a royalty agreement with the 501(c)3 for the use/resale of fiber and equipment services
  - Additional partnerships related to network services will be managed through Limited Liability Corporations as appropriate

- Limited Liability Corporations (LLC)
  - LLCs will be used when entering into joint ventures requiring separate legal structure for investment and revenue generation
    - LLCs can be formed by the C-Corporation for network service related activities
    - LLCs can be formed by the 501(c)3 for specific mission and member related activities

UC2B – Business Strategy & Operations
Recommended Operation, Legal and Tax Structure (Post Grant)

Mission Oriented Community Programs

Capital Infrastructure
- Fiber IRUs
- Equipment Donations

Community Applications
- Government Service
- Underserved Health & Education
- Digital Inclusion Programs

Member Programs

Maintain Target Percentage of Ownership <30%

Un-Related Business Income

Maintain Target Percentage of Ownership <30%

UC2B
501(c)3 Non-Profit

LLC's

100% Ownership by UC2B Non-Profit

Unrelated revenue recognition
Royalty Use of Assets
Target Unrelated Mission Use

UC2B
C-Corp

Advantages of Operating Structure

- Non-Profit Maintains Mission Focus
- Non Profit Can Service the Interest of Government & Community
- Non-Profit/For-Profit Arrangement Manages IRS UBIT Requirements
- Non-Profit/For-Profit Maximize Opportunities for Operational and Financial Sustainability

Limited Liability Company

Vendor Service Partnerships
Network Vendor Agreements
100% Unrelated Income Recognition

LLC's

UC2B – Business Strategy & Operations
Important Notes:

A partnership or an LLC can be owned by the C-Corporation subsidiary instead of ownership by the exempt entity. The income from the partnership would flow to the C-corporation, and the C-corporation would pay taxes on that income. Thus, none of the revenue (which would likely be UBI to the exempt parent) would be attributed back to the tax-exempt parent because of the C-corporation particularly if the LLC had ownership of less than 50%. Often, the C-corporation has ownership in more than one flow-through entity and essentially acts like a holding company.

This UBI rule presents a significant challenge to the structuring of UC2B's operations. If UC2B has to license any of its hardware, software, or other technology to its subsidiaries to avoid having too much "direct" UBI (meaning, the income from providing the unrelated goods or services directly by service agreements), the licensing revenue that the subsidiaries will pay to UC2B will likely constitute UBI. Given this, it may be prudent to keep the various ownership of each of the partners in the LLC(s) to a less than 50% stake.

UC2B – Business Strategy & Operations
Multiple New Funding Options Available to Hybrid Operation

- Grants/Loans from Charitable Foundations & Trusts
- Donations form Corporate Entities
- Bond Financing-public ownership and either G.O. Debt or Revenue Bonds
- Hybrid Bond financing using Pooled or Citizen Opt-In Bond Programs
- Private operator and private capital with Public ownership of underlying asset
- Institutional Investor (international fund)
- Potential investor/banker
- International Infrastructure Funds
- International/Sovereign wealth funds with an interest in such investments targeting education and social programs
- Hybrid public/private model using an "on behalf of entity" or alter ego entity or even create a community venture fund partnered with Private sector owner who would also manage

This hybrid organizational structure allows for numerous funding options that wouldn't necessarily be available to all types of organizations, giving UC2B more flexibility and options available for funding expansion.

This Structure Facilitates Flexibility in Sourcing Operations

Outsourcing and Staffing Flexibility

- Service Trades
- Accept Donations and In-Kind Service Partnerships
- Simplified Service Contracting
- Broad Range of Contract Service Options

Urbana-
Champaign
Big Broadband

Section 5, Market Overview Competitive Assessment, Pricing

UC2B Business Plan

Market Overview

The purpose of this section is to provide market information and analysis, data and insight into competitive service and pricing offerings in the marketplace, and to provide strategies and best practices for retail residential and business service offerings and pricing considerations for UC2B.

This report will address the following questions:

- Provide recommendations on current pricing proposals and associated bandwidths with particular attention paid to offerings in the FTTP areas.
- Provide an evaluation of and recommendations for UC2B's options for pricing retail services for business v. residential customers.
- Should UC2B consider non-profit pricing alternatives?
- Provide alternatives, advantages and disadvantages, and recommendations for UC2B to consider related to FTTP equipment deposits.
- Identify UC2B's options, the associated advantages and disadvantages, and recommendations for addressing/providing service to multi-use or multi-family structures. Should UC2B contract with landlords or the tenants? Provide draft customer service agreements if different than above.

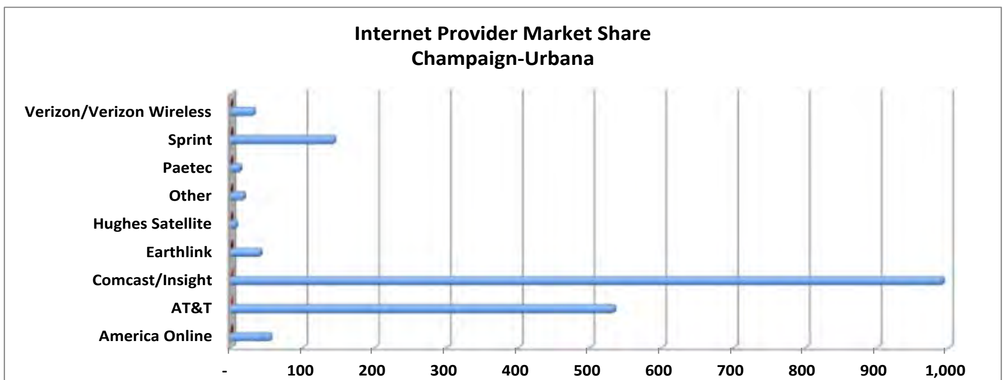
Methodology

NEO has access to a comprehensive, broadband Internet transactions database. This database is the result of collecting and analyzing over a half a billion Internet transactions from all over the country. We use proprietary analytical modeling, which includes demographic information, speed tests, Internet order information, the physical addresses of subscribers and the IP addresses of subscribers. These transactions come from hundreds of sources including e-subscription services, and various other sources where the consumer submits their address information, and the database captures the consumer's IP address which the database tool then discriminates between residential carriers and business carriers.

Market Overview

For this study, NEO analyzed database data for all of the zip codes and census tracts by block in the Champaign-Urbana area from January through September 2011. The Champaign-Urbana communities represent over 48,761 households and 1,760 businesses. The sample data was scrubbed for duplicate transactions (in other words, we eliminated the returning customer data records in information regarding churn rate) and then we analyzed 5% of the total households (1,845 discrete sample households) and 5% of the businesses (77 discrete sample businesses) to determine providers or carriers, type of services, pricing information. A slightly smaller sample (1,111 households and businesses) was analyzed to determine actual speed tests.

On this and the following pages, actual market data in the Champaign-Urbana area was captured.



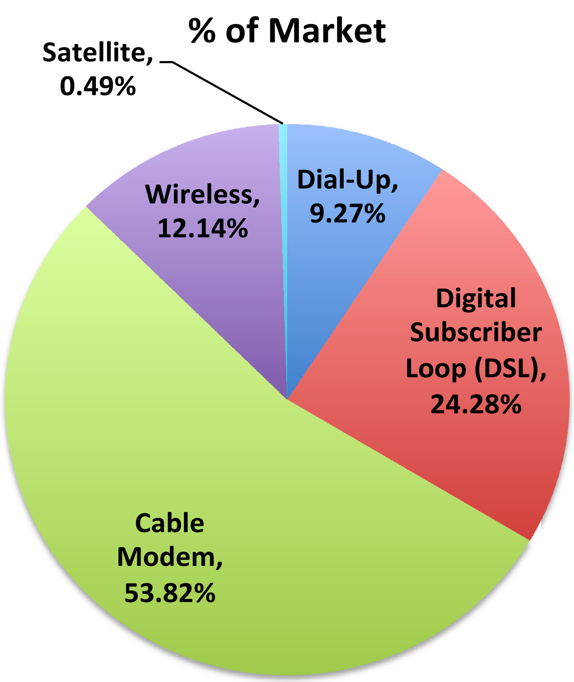
	America Online	AT&T	Comcast/ Insight	Earthlink	Hughes Satellite	Other	Paetec	Sprint	Verizon/ Verizon Wireless
% of Internet Market	3.0%	29.0%	53.8%	2.3%	0.4%	1.0%	0.8%	7.9%	1.8%
Internet Provider	56	535	993	42	8	19	14	145	33

Existing Providers and Market Share

Provider	Internet Provider	% of Internet Market
America Online	56	3.0%
AT&T	535	29.0%
Comcast/Insight	993	53.8%
Earthlink	42	2.3%
Hughes Satellite	8	0.4%
Other	19	1.0%
Paetec	14	0.8%
Sprint	145	7.9%
Verizon/Verizon Wireless	33	1.8%
Total	1,845	100%

Comcast is the market leader with 53.8% of the market share. AT&T follows Comcast with 29% of the market share. Third party providers such as America Online, Volo, Juno, Earthlink and others make up over 6.4% of the market. Third party providers use DSL/Cable partners and fixed wireless to deliver network access. Approximately 1.8% currently relies on wireless as their sole Internet access service.

Type of Service Delivery, All Customers



With Comcast/Insight having 54.6% of the market share, it makes sense that a similar percentage of the service delivery is cable modem.

AT&T is offering their service via Digital Subscriber Loop (DSL) services and U-verse, which bonds two or more pairs of copper wires for faster DSL speeds. No one is currently offering services via FTTP technology.

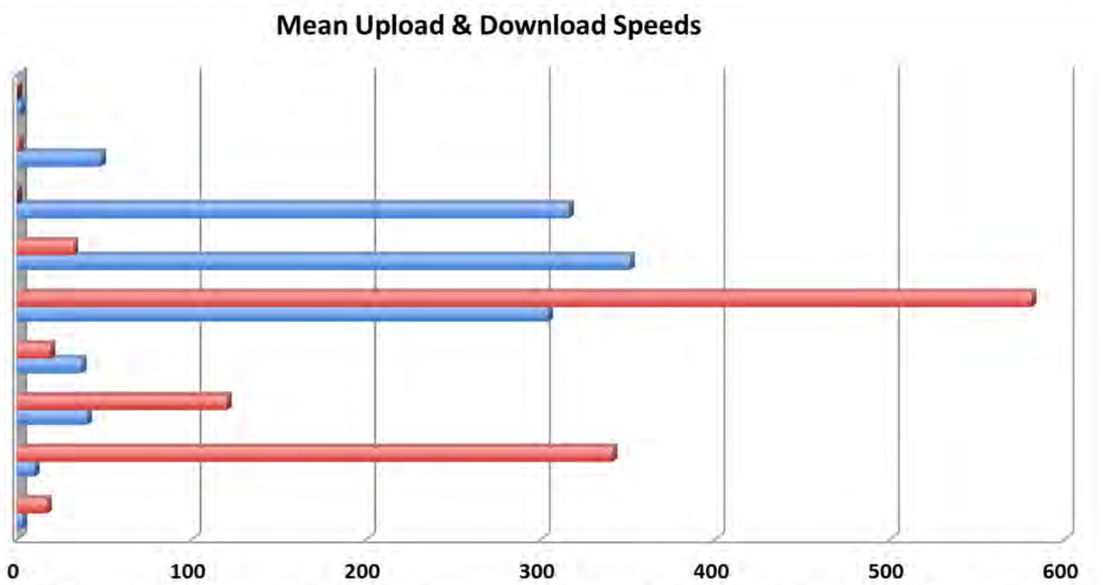
As no other company is currently offering their services using FTTP technology, UC2B should highlight this as a main selling point and advantage of its service offerings. The benefits and applications only available on FTTP are provided later in this document.

Service	Subscribers	% of Market
Dial-Up	171	9.27%
Digital Subscriber Loop (DSL)	448	24.28%
Cable Modem	993	53.82%
Wireless	224	12.14%
Satellite	9	0.49%
	1845	100%

No other provider in the Urbana-Champaign area is offering services via Fiber to the Premise technology; a huge competitive advantage for UC2B.

No Symmetrical Service Offerings are Available

Existing service offerings are asymmetrical, meaning, the download speeds are not the same as the upload speeds. The competitors are providing service offerings where the upload speeds are much slower than the download speeds. Most of the customers are subscribing to download speeds between 5 Mbps and 15 Mbps. The upload speeds that customers are subscribing to are between less than 1 Mbps up to 5 Mbps.



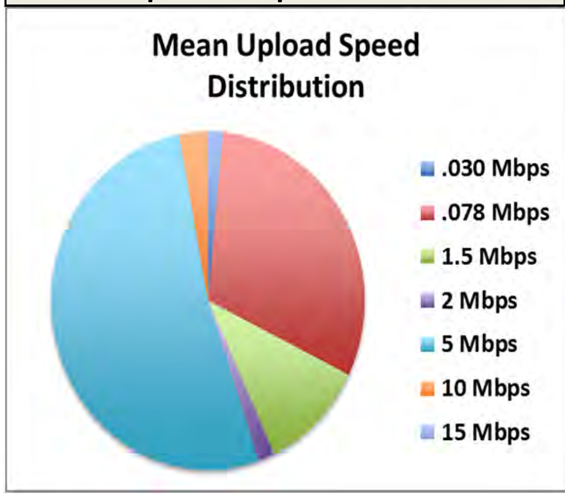
	.030 Mbps	.078 Mbps	1.5 Mbps	2 Mbps	5 Mbps	10 Mbps	15 Mbps	20 Mbps	30 Mbps
Upload	17	341	120	19	581	32	0	1	0
Download	3	10	40	37	304	351	316	48	2

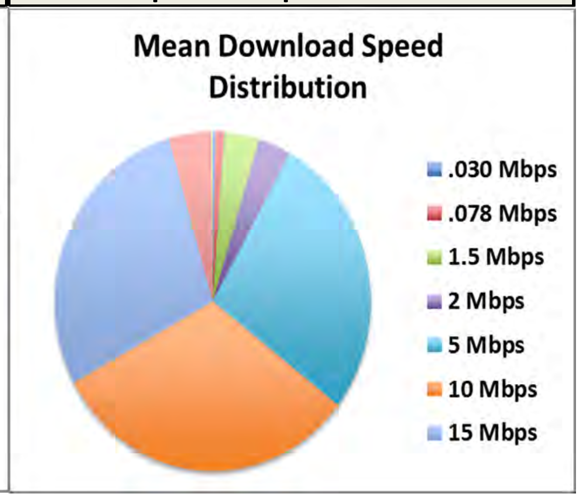
The chart on the left shows SUBSCRIPTION LEVELS, i.e. the number of customers in the sample that subscribed to a level of service; most subscribing to 5-10 Mbps download and 5 Mbps upload.

Actual Speed Tests

Mean Upload Speeds	Upload
.030 Mbps	1.53%
.078 Mbps	30.69%
1.5 Mbps	10.80%
2 Mbps	1.71%
5 Mbps	52.30%
10 Mbps	2.88%
15 Mbps	0.00%
20 Mbps	0.09%
30 Mbps	0.00%
Subtotal Speed Samples	**100%**

Mean Download Speeds	Download
.030 Mbps	0.27%
.078 Mbps	0.90%
1.5 Mbps	3.60%
2 Mbps	3.33%
5 Mbps	27.36%
10 Mbps	31.59%
15 Mbps	28.44%
20 Mbps	4.32%
30 Mbps	0.18%
Subtotal Speed Samples	**100%**





Another differentiator of FTTP networks is that more speed is available for both upload and download applications, and should be emphasized as another selling point of UC2B's service offering.

Actual speed test samples were taken by Broadband Scout in March, 2012. The actual mean upload speeds are between less than 1 Mbps and 5 Mbps, with most of the upload speeds at 5 Mbps (52.3%). The actual download speeds range between 5 Mbps (27.36%), 10 Mbps (31.59%) and 15 Mbps (28.44%).

Residential Pricing, Service Offerings

Urbana-Champaign Big Broadband

Note: These are mostly Asymetrical Services with a cap of around 5 Mbps upstream.

Residential/SMB	AT&T	Comcast/Insight DOCSIS Cable	OneEleven Wireless	OneEleven DSL	Conxxus DSL	Volo DSL/Wireless	Consolidated DSL	HughesNet Satellite
1.5 Mbps								
6 Month Introductory Price								39.99
12 Month Intorductory Price								
Post Introductory Price			$ 40.00					79.99
Bundled Price								
3-4 Mbps								
6 Month Introductory Price								
12 Month Intorductory Price	$ 19.95							
Post Introductory Price	$ 38.00		$ 50.00	$ 69.95	$ 39.95	$ 32.00	$ 19.95	
Bundled Price								
5-8 Mbps								
6 Month Introductory Price								
12 Month Intorductory Price	$ 24.95							
Post Introductory Price	$ 43.00		$ 75.00	$ 89.95				
Bundled Price								
10-12 Mbps								
6 Month Introductory Price		$ 19.95						
12 Month Intorductory Price	$ 29.95							
Post Introductory Price	$ 48.00	$ 59.95		$ 101.95				
Bundled Price		$ 44.95						
18 Mbps								
6 Month Introductory Price								
12 Month Intorductory Price	$ 39.95							
Post Introductory Price	$ 53.00							
Bundled Price								
20 Mbps								
6 Month Introductory Price								
12 Month Intorductory Price								
Post Introductory Price		$ 69.95						
Bundled Price								
24 Mbps								
6 Month Introductory Price								
12 Month Intorductory Price	$ 49.95							
Post Introductory Price	$ 63.00							
Bundled Price								

Most pricing in the market has an initial 6 month or 12 month rate that reverts to a higher rate after the initial period.

Your world. Delivered.

Pricing Residential Services

UC2B Business Plan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Section 5, Market Overview, Competitive
Assessment, Pricing

Residential Service for Grant-Funded Area: “20 Mbps for 20 Bucks”

UC2B Urbana-Champaign Big Broadband

UC2B is proposing to offer 20 Mbps for $20 per month ($19.95). UC2B’s initial proposal at the time of the grant applications was to offer 5 Mbps at the $19.95 price. After a more diligent market analysis, it is clear that this offering 20 Mbps of bandwidth for the same price will encourage current subscribers to move to UC2B, especially when it is pointed out that the customer is not always receiving the level of bandwidth from the current providers that the customer is subscribing to. **In other words, the customer is not getting what they are paying for from the competition.**

With UC2B offering 20 Mbps for $20 per month; the competition is offering the same amount of bandwidth for 2-3 times this price. AT&T is offering 18 Mbps for $39.95 initially; with the price increasing to $53 per month after 12 months. Comcast/Insight is offering 20 Mbps for $69.95. Most of Comcast’s customers are on the 10-12 Mbps offering, for a price of $19.95 for six months, then jumping to $59.95 per month. Other competitors are offering 3-4 Mbps for $19.95 to $69.95.

Comparison of UC2B Pricing vs. the "Market"

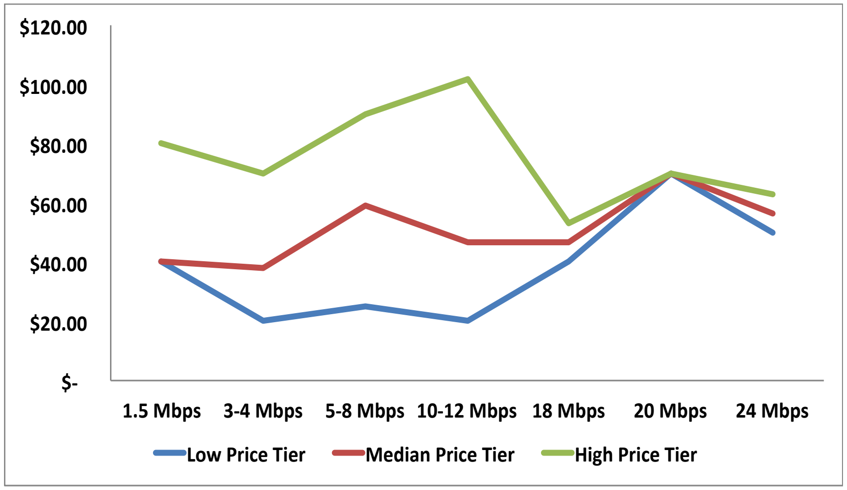
Consumer	Symetrical	Basic Services Best Effort Upstream	Upgraded Upstream 1-2 Mbps Max	Upgraded Upstream 2 to 5 Mbps Max
Price/Service Tiers	**UC2B's Initial Pricing**	**Low Price Tier**	**Median Price Tier**	**High Price Tier**
1.5 Mbps	NA	$ 39.99	$ 40.00	$ 79.99
3-4 Mbps	NA	$ 19.95	$ 38.00	$ 69.95
5-8 Mbps	$ 19.99	$ 24.95	$ 59.00	$ 89.95
10-12 Mbps	$ 19.99	$ 19.95	$ 46.48	$ 101.95
18 Mbps	NA	$ 39.95	$ 46.48	$ 53.00
20 Mbps	$ 39.99	$ 69.95	$ 69.95	$ 69.95
24 Mbps	NA	$ 49.95	$ 56.48	$ 63.00
30 Mbps	$ 49.99			
40 Mbps	$ 59.99			
Upstream		<700 Kbps	1 to 2 Mbps	2 to 5 Mbps
Low		**$ 19.95**	**$ 38.00**	**$ 53.00**
Median		**$ 39.95**	**$ 46.48**	**$ 69.95**
Max		**$ 69.95**	**$ 69.95**	**$ 101.95**

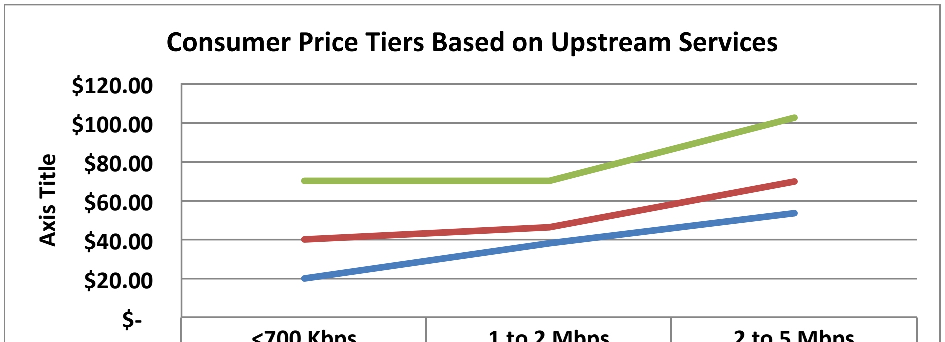
All of the service providers offer a “best effort” service; meaning, they will make their best effort, yet do not always deliver the level of service or the amount of bandwidth to which the customer subscribes. To receive a higher level of service and to upgrade the available bandwidth for uploading data, the existing service providers charge the customer more. This could be a differentiating feature of UC2B’s service offering. With FTTP, and the Gigabit capacity that UC2B is building, UC2B will have a much better chance of meeting the subscription levels it offers its customers.

UC2B Disadvantage: No Bundled Video Services; Position as Price/Service Leader

UC2B should be aware that many of the consumers of broadband are currently purchasing bundled services from cable/DSL providers. Comcast currently offers a bundled Triple-play service at $99 which is the predominate bundle within the underserved community. Since UC2B is competing with bundled and unbundled services it will have to consider that the bundled offerings will be tougher to compete with unless there is a VoIP/IPTV alternative. Comcast unbundled VOIP/TV will increase in price to as much as $112 for VoIP/TV without the data component making the UC2B and Cable package more expensive for the existing consumers of these services. Comcast has already announced that it will be lowering its price for bundled services.

Existing Services Max out at 18 Mbps





	<700 Kbps	1 to 2 Mbps	2 to 5 Mbps
Low	$19.95	$38.00	$53.00
Median	$39.95	$46.48	$69.95
Max	$69.95	$69.95	$101.95

What is interesting is that there are currently very few high bandwidth providers and only one above 18 Mbps. So, the convergence of low, medium and high pricing at the 20 Mbps service level around $66 per month is based on the fact that there is no competition above 18 Mbps. In addition, there is a wide variance in pricing across the Cable, DSL and Wireless providers.

Summary of Salient Points

- Comcast/Insight is the market leader with 53.8% of the market share. AT&T follows Comcast/Insight with 29% of the market share.

- With Comcast having approximately 54% of the market share, it makes sense that a similar percentage of the service delivery is cable modem. AT&T is offering their service via traditional Digital Subscriber Loop (DSL) services as well as U-Verse, which bonds DSL copper pairs for greater bandwidth.

- No one is currently offering services via FTTP technology. In addition, Comcast/Insight and AT&T have not upgraded their data cable network infrastructure to support the next tier of services (100 Mbps). UC2B should market the advantages of its FTTP offering, being the only service provider using this technology.

- 97% of the Upload Speeds are less than 5 Mbps. Over 35% of the download speed is less than 5 Mbps, now considered underserved.

- Approximately 64% within the micro-urban setting have speeds greater than 5 Mbps, 12% lower than the national average. The actual speeds are typically 20 to 30% less than advertised and because of oversubscription, often are less than 50% of the advertised rates at peak periods..

Summary of Salient Points Continued

- No other provider is marketing symmetrical services or any kind of service level agreement. This is an advantage for UC2B.

- Customers are paying for a service level that they are not actually receiving. All of the other service providers are offering their service as a "best effort." In order to actually receive better bandwidth, especially for uploading data, the customer needs to pay higher rates. UC2B could offer a guarantee on service levels as a differentiator in the marketplace.

- Comcast has a 6-month introductory price of $19.99; after than it reverts to $59.99 or a bundled price of $44.95 for bandwidth speeds of **10 Mbps** of download, asymmetrical of **5 Mbps** or less upload. AT&T has a 12-month introductory price of $29.95; after that it reverts to $48.00.

- Comcast/Insight does provide bundled services (Triple Play) that reduce the overall cost based on the uptake of the additional product offers. Both Comcast and AT&T will be able to offer bundled rates, simplifying the "triple play" decision and providing the appearance of lower rates for similar services. As UC2B does not have this capability, this is a disadvantage for UC2B. UC2B could partner with other VoIP/IPTV providers to mitigate this disadvantage. Groups like Roku, Boxee, and others are building a portfolio of Over-The-Top applications to compete with the local cable operators. UC2B will continue to negotiate with companies such as Netflix and Google as peering partners to offer movies and content on demand.

Urbana-Champaign Big Broadband

Pricing Business and Commercial Services

UC2B Business Plan


Section 5. Market Overview, Competitive Assessment, Pricing

Business and Commercial Pricing Strategy

The objectives and core values of the business pricing strategy for UC2B are as follows:

- Simple, straight-forward pricing
- Superior service than the competition
- Much better pricing than what is available in the market today
- Attractive pricing and packaging to meet the goals of the grant, a sustainable financial plan
- A possible financial path for further expansion of the network
- Provide novel, unique approach to UC2B's offering

Tiers of bandwidth with flat-rate pricing

NEO recommended to have flat-rate tiers of bandwidth available. Larger data users may purchase faster tiers of service and small users may subscribe to smaller Internet bandwidth (yet much better bandwidth speed, performance and availability than what is available in the marketplace today).

The chart on the right shows Comcast's Cable offering and Comcast's Ethernet offering. The difference between Comcast's Cable and Ethernet offering is their Ethernet product is delivered via fiber, their Cable offering uses their cable network. Below Comcast's rates is what NEO initially recommended to the Policy Board for pricing for business and commercial Internet users.

Comcast Cable			
	22 Mbps/5 Mbps	$ 106.95	
	50 Mbps/10 Mbps	$ 196.95	
	100 Mbps/10 Mbps	$ 376.95	
Comcast Ethernet		Low End	High End
	22 Mbps/5 Mbps	$ 399.00	$ 899.00
	50 Mbps/10 Mbps	$ 489.00	$ 948.00
	100 Mbps/10 Mbps	$ 650.00	$ 1,048.00
UC2B Ethernet, Fiber Optic, Initial Recommended Pricing			
	20 Mbps/20 Mbps	$ 114.80	
	40 Mbps/40 Mbps	$ 213.80	
	60 Mbps/60 Mbps	$ 312.60	
	80 Mbps/80 Mbps	$ 411.00	
	100 Mpbs/100 Mbps	$ 509.00	

Business and Commercial Pricing Continued

For the grant-funded areas only, the Policy Board approved giving businesses the "20 Mbps for $20" pricing if the business did not require a larger bandwidth tier, and/or if the business did not need more than one IP address. For all other businesses, meaning those that needed more than one IP address and/or a higher pricing tier, the Policy Board approved the following pricing:

Upstream Internet Bandwidth	Downstream Internet Bandwidth	Cost per Month
20 Mbps	20 Mbps	$ 54.99
40 Mbps	40 Mbps	$ 94.99
60 Mbps	60 Mbps	$ 133.99
80 Mbps	80 Mbps	$ 172.99
100 Mbps	100 Mbps	$ 212.99
125 Mbps	125 Mbps	$ 261.99
150 Mbps	150 Mbps	$ 309.99
200 Mbps	200 Mbps	$ 406.99

All Local network connections are symmetrical at 1,000 Mbps or 1 Gbps
Fiber Installation Cost - Grant Funded
Equipment Cost - Grant Funded

This pricing is far more competitive than its equivalent in the marketplace, offering better service, reliability and pricing that is more than 50% less than Comcast's Ethernet service. The pricing is competitively priced versus Comcast's cable product. UC2B customers would also be able to connect to the Gigabit Intranet service at no additional charge.

Intranet service is non-Internet access services provided within the communities of Urbana-Champaign for those that are connected to the UC2B network.

The primary advantage of flat-rate pricing for customers is that they know exactly what their bill will be each month. If experience shows that a customer has purchased too much bandwidth, they may elect to go with a less-expensive, slower tier in the future. UC2B loses a little future revenue, but we allow the customer to purchase the correct package to meet its needs.

From UC2B's perspective, there is minimal overhead involved in operating a tiered-bandwidth system. It is certainly possible that a business customer paying for the least amount of bandwidth could actually transfer more Internet data on the network over any given period of time than a customer paying for more bandwidth. While that may seem unfair, it is actually OK for UC2B. We will have the ability to increment the Internet bandwidth we have available, and stay ahead of the heavy users' demand.

Approved Pricing for Business/Commercial Customers, Grant-Funded Areas

If experience shows that a customer has not purchased enough bandwidth, they will have two options. First, they can simply elect to move to a faster and more expensive tier for the future. However, if the customer does not want to purchase a more expensive tier, the customer may elect to stay with their current tier and monthly rate and accept the fact that for some percentage of the day, they will be constrained by their bandwidth limit. If that congestion is only 10 minutes a day, it may be acceptable to the customer. If that congestion is 10 hours a day, they may want to purchase additional bandwidth. As long as UC2B remains flexible about allowing customers to change their bandwidth packages for future months, this is absolutely the most customer-friendly, simple and straight-forward, and understandable way UC2B can sell Internet services to businesses.

A two-year service commitment is required to receive the grant-funded fiber installation and equipment. These grant-funded service rates include one public IP address. The equipment provided by UC2B will support an unlimited number of wired or wireless devices on private IP addresses. The customer will be responsible for providing an Ethernet switch if connecting more than four wired devices is desired. Should a customer require more than one public IP address or require more than 40 Mbps of Internet bandwidth, the commercial rates on this page will apply. UC2B is an open-access network. In addition to UC2B Internet service, there will also be services available from other providers over the same fiber connection and equipment.

Public IP Addresses are available in IP subnets of 5, 13, 29, 61, 125 and 253 customer usable addresses. The monthly costs for additional Public IP addresses are: 5 hosts - $4.99, 13 hosts - $12.99, 29 hosts - $28.99, 61 hosts - $60.99, 125 hosts - $124.99 and 253 hosts - $252.99. There are also one-time charges associated with setting up Public IP subnets: 5 hosts - $20, 13 hosts - $25, 29 hosts - $30, 61 hosts - $35, 125 hosts $40, and 253 hosts - $45. After the initial setup, and changes to the Domain Name Service will be charge $20 per request. This $20 change service charge may involve changing a single IP address or changing a series of IP addresses that are submitted at the same time.

Approved Pricing for Business/Commercial Customers, Grant-Funded Areas

VLAN Service. UC2B is also considering pricing for a direct connection or Private VLAN connection on the network. Anchor tenants would be charged this pricing for Ethernet connections to other customers on the network.

Private VLANs are used for connecting multiple locations of an organization to each other. This is sometimes referred to as "Metro Ethernet". There is no Internet connectivity or Community Network Service connectivity included in the Private VLAN Service. In this model, organizations would typically centralize Internet connectivity, and then use the Private VLAN to distribute Internet and organizational data to all remote locations.

UC2B is planning to offer the following pricing:

Business and Anchor Institutions, Private VLAN, Layer Two Service			
	Downstream Mbps	**Upstream Mbps**	**Pricing Plan per Month**
Private VLAN 10 Mbps Location	10	10	$ 100
Private VLAN 100 Mbps Location	100	100	$ 400
Private VLAN 1 Gbps Location	1000	1000	$ 1,200

This pricing seems to be competitively priced as well. AT&T is offering a Private VLAN product for health and education applications of $650 for 100 Mbps (UC2B is offering this at $400 per month) and $1,100 for 1Gbps. UC2B may want to adjust their pricing to be more competitively priced with AT&T (UC2B is planning to offer this at $1,200).

Pricing Wholesale Services: Dark Fiber Leases, IRU Agreements, etc.

UC2B Business Plan

Types of Wholesale Services, Models to Consider

There are three types of wholesale services that UC2B is anticipating providing per the NTIA grant.

- **Layer-Two transport**: VLAN
- **Layer-Three service:** Per customer
- **Indefeasible Rights of Use (IRUs) and Dark Fiber Leases:** Upfront capitalized fee (IRU) or Monthly lease (Dark Fiber Lease)

NEO will first discuss IRUs and Dark Fiber Leases and will address in detail the Layer Two and Three services later in this section.

Indefeasible Rights of Use (IRUs) and Dark Fiber Leases

An Indefeasible Right of Use (IRU) is the effective long-term lease (or often thought of as temporary ownership) of a portion of the capacity of fiber optic cable. IRUs are specified in terms of a certain number of fiber counts for a given segment of a fiber optic network. In most cases, the IRU is a 20- to 25-year agreement to use the fiber count for a segment. Payment for the IRU is typically an upfront fee based upon the fiber count miles. The fiber count miles are the number of miles of the segment times the number of fibers used.

Typically, the per route mile fee can range anywhere between $1,500 to $3,500 per fiber count. These numbers are based upon national statistics. In the State of Illinois, the per route mile fee has ranged anywhere between $500 to $6,500 per fiber count for long-haul fiber routes. For very shorter routes, the per route mile fee can be up to $25,000 per route mile. This large range in pricing is due to a number of factors.

Pricing for rural-based and long-haul IRU's are thought to be lower than metropolitan IRU's because a metropolitan lease may bring more customers and more revenue potential. Based upon national pricing, the up-front fee for a rural, long-haul IRU may be $1,500 - $2,500; the pricing for a metropolitan IRU may be $2,500 - $3,500. However, pricing is also dependent upon supply and demand factors. For instance, if there is little fiber available for lease, the pricing will be higher. Many of the incumbent phone and cable companies will not provide IRU agreements, which create a greater demand for IRU's. Pricing for IRUs is also not regulated, and unpublished; and therefore, there is often a large fluctuation of pricing offered to various customers from providers.

IRU Pricing

An example of how the pricing for the IRU is shown below. For example, ABC Company wants a 20-year IRU agreement for a (6) count fiber cable from Location 1 to Location 2. The distance on the network between Location 1 and Location 2 is 100 miles. ABC Company will pay $2,200 per mile.

The upfront payment would be:

(6) counts of fiber * $2,200 per mile * 100 route miles = $1.32 Million

Additionally, there is typically an annual maintenance fee in addition to the up-front payment. Annual maintenance fees are typically anywhere from $200 to $350 per mile. In some cases, the annual fee is included in the up-front payment as it is treated as a capital expense from the buyer. In other cases, the maintenance fee is paid monthly or annually for the term of the agreement. Also, in some cases, the maintenance fee is a simple monthly or annual fee per customer and the number of fiber counts is not taken into consideration.

Assuming the annual maintenance fee is $200; the annual maintenance payment would be:

$200 per mile * 100 route miles = $20,000 annually

In addition to the up-front payment and maintenance fees, additional revenue can be gained through leasing rack-space at UC2B's hub or equipment locations. Collocation is another term used for leasing space for placement of equipment in hub locations along UC2B's fiber network. Collocation fees are typically charged monthly by the rack, by space on the rack, or by chassis or cabinet. Additional fees are typically charged for use of power at the facility. In some cases, additional up-front fees can be charged for make ready use.

IRU Pricing, Dark Fiber Lease Pricing

Investors in the grant will receive IRU rates of $1,500 per fiber-strand-mile and $300 per route mile for annual maintenance. If UC2B provides additional IRUs to non-investors, NEO suggests offering pricing of $2,000 per fiber-strand-mile on a 20-year IRU.

Dark Fiber Leases. UC2B may decide that it will not offer additional IRUs, but would rather offer dark fiber on a monthly lease. As we have already established the IRU price based upon a 20-year capital fee, the time value of money calculation could be used to determine dark fiber leases. A very lengthy discussion paper has been provided to the Policy Board. NEO recommends the following pricing for dark fiber leases.

Monthly Dark Fiber Leases										
Ring #1	Ring #1A	Ring #2	Ring #3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring#7A
$ 957	$ 413	$ 981	$ 1,165	$ 502	$ 1,324	$ 932	$ 892	$ 932	$ 675	$ 872

The business plan for the grant-funded area can be greatly improved by offering dark fiber leases. See Section 2 for more information.

Layer Two and Layer Three Services

Layer-Two transport: (VLAN) The Internet Services Provider (ISP) redundantly connects to the UC2B network core and UC2B provisions a VLAN for that ISP to each of its customers. UC2B charges the ISP for the dual connections to the UC2B core network and then for each customer that the ISP "owns" on the network. UC2B-owned electronics are used to deliver the ISP's services and each of the ISP's customers has specific port speeds at which they can connect to the ISP. The faster those customer port speeds the more they cost.

Layer-Three service: The ISP redundantly connects to the UC2B network core, but then utilizes the UC2B Intranet and the fact that the customer has an existing IP service provider to piggyback additional services to that customer. UC2B charges the ISP the same rates for redundantly connecting to the UC2B network core, but there are no additional charges for each customer. This ISP does not "own" the end customers, who must rely on their IP services providers to be able to receive the services from the second provider. **Example:** Company Y only provides IP telephone services. Any UC2B Internet customer has an ONT that can also be used by Company Y to provide SIP-based IP telephone services. The customer pays UC2B for Internet access and Company Y for telephone services. In the fullness of time UC2B may be able to combine those billings.

In either of these two scenarios above, the service provider could be responsible for billing the customer, providing customer service and trouble resolution and would "own" the relationship with the customer. UC2B may decide to provide billing services for the service provider; this is a negotiable point. Trouble resolution and adds, moves, changes, and upgrade processes would need to be solidly created and agreed upon with the service providers. UC2B could co-market services with the provider and could include marketing information about the relationship with the service provider, the service provider's products and services and how to order services. UC2B would bill the service provider the wholesale rates and the service provider would mark-up these rates to the end user.

Layer Two and Layer Three Pricing

Customer Connections (Layer Three)	Locations Where Available	Symmetric Ethernet Port Speed (Mbps)	Monthly Pricing	Comments
Last Mile Internet Service Provider (ISP) Customer 100 Mbps Port	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	100 Mbps	$17.88	ISP/Service Provider must connect to UC2B core in one of the 3 ways below
Last Mile Internet Service Provider (ISP) Customer 1 Gbps Port	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	1,000 Mbps (1 Gbps)	$99.99	ISP/Service Provider must connect to UC2B core in one of the 3 ways below
Core Backbone Connections (Layer Two)	Locations Where Available	Symmetric Ethernet Port Speed (Mbps)	Monthly Pricing	Comments
Last Mile Internet Service Provider (ISP) Redundant Core Connections Dual 1 Gbps Ports	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	1,000 x 2 (1 Gbps x 2)	$1,200.00	No CIR/VLAN charge. (Includes any UC2B ring fiber needed to connect to ISP)
Last Mile Internet Service Provider (ISP) Redundant Core Connections Dual 2 Gbps Ports (2 bridged 1 Gbps Ports)	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	2,000 x 2 (2 Gbps x 2)	$1,600.00	No CIR/VLAN charge. (Includes any UC2B ring fiber needed to connect to ISP)
Last Mile Internet Service Provider (ISP) Redundant Core Connections Dual 10 Gbps Ports	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	10,000 x 2 (10 Gbps x 2)	$3,600.00	No CIR/VLAN charge. (Includes any UC2B ring fiber needed to connect to ISP)

NEO would like to suggest offering the $17.88 pricing with the caveat of adding in a revenue share to be paid to UC2B of 30-45% of the service provider's gross revenue to the customer, whichever is greater. In other words, the service provider either pays $17.88 for the 100 Mbps connection or 30% of gross revenues to UC2B.

Revenue Share Concept

For example, the service provider would be charged a minimum of $19.99 for the 100 Mbps customer connection. If the service provider used the 100 Mbps connection to the customer for triple play services (voice over IP, data and IPTV) for $100 in gross revenues; UC2B would receive $30 for that customer. This pricing strategy allows UC2B to capture greater revenues for additional services provided and it provides additional revenues for serving the business customer.

The range of 30-45% revenue share is negotiable with the service provider and much depends upon who provides what services. For example, if UC2B provides billing services to the customers, UC2B would receive a greater revenue share percentage. Also, if more services such as Voice over IP, and IPTV services are provided, the revenue share may be greater.

Although intuitively it may seem that the costs for customer service would be reduced with providing wholesale services, regardless of who provides the first line of customer service and trouble resolution, the customer service costs to UC2B are still the same as providing retail services; the customer – whether the customer is the end user or the service provider – still needs to be maintained, and UC2B needs to anticipate these costs.

UC2B's Policy Board agreed to offer retail residential pricing for the grant-subsidized areas starting at $19.99 for 20 Mbps. The non-grant subsidized retail residential rates will need to be at a different rate in order to allow UC2B to effectively expand the network if UC2B chooses. In order to build out to other areas in the Urbana-Champaign area, UC2B would most likely need to offer a retail residential rate of at least $45 for 20 Mbps. While we want to incent service providers to use the network and provide services, we also want UC2B to be able to compete effectively with the service providers if UC2B decides to expand the network. Having a wholesale pricing strategy of $19.99 or 30-45% revenue share, whichever is greater, also protects UC2B if UC2B decides to expand the network, and offer a higher retail price for the non-grant-subsided areas.

"Yes" to Dark Fiber Leases

NEO's Recommendation

NEO recommends that UC2B supplement its retail offering with wholesale services such as dark fiber leases, long-term IRU agreements or leasing of wavelengths on the network. These leases do not require much from UC2B and will not increase the call center or billing costs of operating a wholesale model.

The Wholesale Model, Layer Two or Layer Three Service Works for the Grant-Funded Areas Only.

The higher layer open access concept would work under the grant-funded areas of the network, where there are no capital costs or debts to be serviced. Under this scenario, UC2B would install the drop fiber and the ONT, and UC2B would still "own" this connection to the customer and the ONT installed at the customer site. If the customer would like to use a different provider, the connection can simply be "pointed" to a different provider, no equipment would need to be replaced.

In NEO's modeling, we also provide for UC2B to bill the ISP at $17.88. This pricing can work for the grant-funded areas only. This pricing does NOT work for expansion of the network.

UC2B Business Plan

Positioning and Best Practices

Market Positioning and Best Practices

Position UC2B as the:
- **LOCAL, SOCIALLY-GOOD NETWORK**
- **TECHNICALLY SOUND**
- **EXCELLENT CUSTOMER SERVICE**
- **The ONLY Fiber to the Premise or ALL FIBER NETWORK**
- **One of few GIGABIT NETWORKS in the country**
- **Economic Development Tool, Good for Business**

UC2B is a community that has:

- A committed, cross-sector group of leaders that facilitate **sustainability** and **local ownership**
- A "digital climate" – an environment rich in **access options** and **awareness**
- Broad community **adoption** – citizens have the means and will to access broadband (training, devices, and motivation)
- Community **impact** – where broadband applications directly benefit the community
- A sense of place where **community assets** act as an anchor for future
- Long term **vision** with short term needs that must be met if it is to g

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Section 6, Operating Models Outsourcing and Staffing

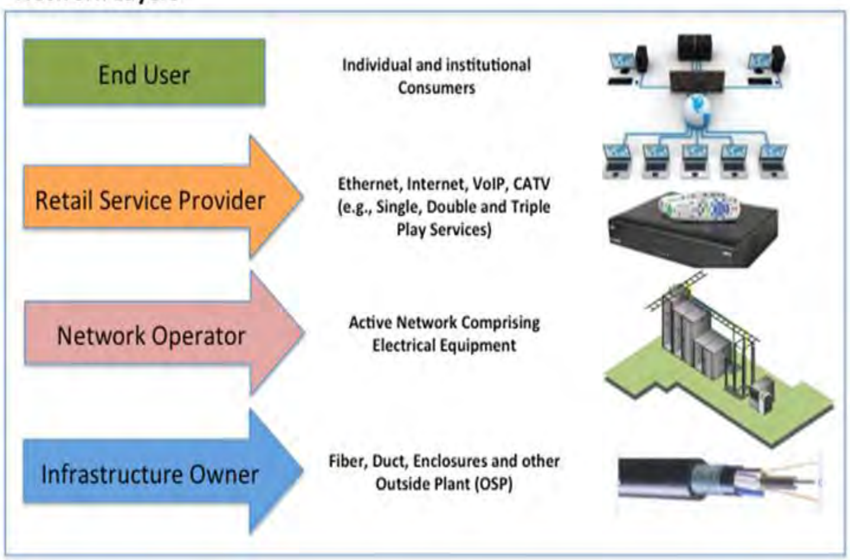
UC2B Business Plan

Fiber Network Overview: Network Layers

An FTTH network can be considered to have four layers: the passive infrastructure comprising the fiber, duct, enclosures and other outside plant; the active network comprising the electrical equipment; retail services, which provides connectivity to the services (e.g., Ethernet, internet, VoIP, IPTV, Sensors); and of course the end-users. Some people also visualize an additional layer, the content layer, lying above the retail services layer, which may also be exploited commercially.

This technological structure has implications for the way that a FTTH network is organized and operated.

Network Layers



Clarity in the overall business model and service offering guides resource and equipment investment decisions, as well as marketing, sales and support activities. The three primary technology structures are:

Passive infrastructure - Physical Network
The passive infrastructure layer comprises all the physical elements needed to build the fiber network. This includes physical objects such as the optical fiber, the trenches, ducts and poles on which it is deployed, fiber enclosures, optical distribution frames, patch panels, splicing shelves and so on. The organization in charge of this layer will normally be responsible for network route planning, right-of-way negotiations, and the civil works to install the fiber. This is the layer where the network topology is implemented.

Active Network – Electronics
The active network layer refers to the electronic network equipment needed to bring the passive infrastructure alive, as well as the operational support systems required to commercialize the fiber connectivity. The network operator in charge of this layer will design, build and operate the active equipment part of the network. This is the first layer where active services such as coarse wave or dense wave division multiplexing (C/DWDM), Gigabit Passive Optical Networking (GPON), and Ethernet (Active Ethernet) services are provided.

Retail Services –
Once the passive and active layers are in place, retail services come into play. This is the layer where the Internet, voice, video or other network service connectivity are packaged as a service for consumers and businesses. Besides enabling those services technically, the company responsible for this layer is also in charge of customer acquisition, go-to-market strategies, and customer service. The retail service provider may also decide to offer premium services from the content layer, such as IPTV.

Passive Infrastructure, Physical Network

This includes physical objects such as the optical fiber, the trenches, ducts and poles on which it is deployed, fiber enclosures, optical distribution frames, patch panels, splicing shelves. The primary functions for this layer are:

Construction Activities, Backbone Network

- **During the Grant**. UC2B has outsourced the construction of the network to various companies. As the grant has a short-term window of construction activities and UC2B did not have staff in place or experience in fiber optic construction, outsourcing the construction of the network made the most sense.
- **Post Grant.** Most entities other than the incumbent providers outsource the construction activities of their networks. If UC2B does decide to build out to other residential areas within the Champaign-Urbana area, it still makes the most sense to outsource construction activities.

Construction Activities, Drop Cable, Laterals

- **During the Grant**. The primary challenge that UC2B has right now, is the short amount of time remaining on the grant and the number of households and businesses that need to be installed. Given this short timeframe and the amount of work that needs to take place, outsourcing to several companies to install the drop cable and electronics to "light" up a customer location is the best alternative.
- **Post Grant**. After the grant period, if UC2B decides to expand the network, in the short-term (1-3 years), it most likely makes sense to continue to outsource this function. During expansion and construction, there may be fury of new sign-ups and installations and in most cases, this tapers off after a few years.

Monitoring of the Network. The University will do this initially, providing alarm monitoring and network management of the network.

Maintenance of the Network. An entity that has trucks, people certified and trained to splice fiber, fiber optic testing equipment and the like should be hired to maintain and repair the network. During the grant period, the companies that are currently providing construction activities for the network are also contracted to maintain and/or repair the network.

Passive Network, Physical Network

Passive Network, Physical Network	Timeframe	Funding Source	Responsible Party
Construction of the Network	Now through November 30th	Grants	Multiple Contractors
Installing Fiber Drops into Problematic or Time Sensitive Anchor and IRU Sites	Now through August 1st	Grants	Phase 1, Western & Burns
Installing Fiber Drops into Remaining Anchor and IRU Sites	June 18 through November 30th	Grants	Phase 2, PowerUp
Installing Fiber Drops into Residential & Business FTTP Sites in the Grant-Funded Areas	June 18 through November 30th	Grants	Phase 2, PowerUp
	December 1st through Infinity	Operations	To be Determined
Activities	Timeframe	Funding Source	Responsible Party
Infrastructure Support			
Locating fiber for JULIE requests	Now through January 31, 2013	Grants	Phase 1, Western & Burns
	February 1, 2013 thru Infinity	Operations	JULIE Locates RFP Winner
Repairing Damaged Fiber	Now through January 31, 2013	Grants	Phase 1, Western & Burns
	February 1, 2013 thru Infinity	Operations	Fiber Maintenance RFP Winner
Alarm Monitoring	Now through January 31, 2013	Grants	University
	February 1, 2013 thru Infinity	Operations	Alarm Monitoring RFP Winner

Active Network - Electronics

Active Network

The active network layer refers to the electronic network equipment needed to bring the passive infrastructure alive, as well as the operational support systems required to commercialize the fiber connectivity. The network operator in charge of this layer will design, build and operate the active equipment part of the network. This is the first layer where active services such as coarse wave or dense wave division multiplexing (C/DWDM), Gigabit Passive Optical Networking (GPON), and Ethernet (Active Ethernet) services are provided.
The primary functions for this layer are:

Installation of the Active Equipment. An RFP hit the street in May of 2012 for the installation of the drop cable and active equipment of the network.

Maintenance of the Active Equipment. An RFP has been written and will be published for maintenance and repair of active equipment.

Activities	Timeframe	Funding Source	Responsible Party
Active Network, Core Network Support - Nodes & Cabinets, Electronics			
Provisioning Customers on Network Core	Now thru January 31, 2013	Grants	**CITES**
	February 1, 2013 thru June 30, 2014	UIUC	**CITES**
	July 1, 2014 thru Infinity	Operations	**To Be Determined**
Configuring and Maintaining the Network Core Equipment	Now thru January 31, 2013	Grants	**CITES**
	February 1, 2013 thru June 30, 2014	UIUC	**CITES**
	July 1, 2014 thru Infinity	Operations	**To Be Determined**
Repair of ONTs	Now thru January 31, 2013	Grants	Electronics RFP Winner
	February 1, 2013 thru June 30, 2014	Operations	Electronics RFP Winner
	July 1, 2014 thru Infinity	Operations	Electronics RFP Winner

Retail Services

Once the passive and active layers are in place, retail services come into play. This is the layer where the Internet, voice, video or other network service connectivity are packaged as a service for consumers and businesses. Besides enabling those services technically, the company responsible for this layer is also in charge of customer acquisition, go-to-market strategies, and customer service. In this case, UC2B is the Internet Service Provider.

The primary functions for this layer are:

- Sales and Marketing
- Order Entry, Provisioning
- Customer Service
- Trouble Resolution
- Billing
- Vertical Management of Customer Groups, i.e. Wholesale Customers, Anchor Institutions, Business and Commercial Customers, Residential Customers

An RFP has been written and will be published soon for order entry, provisioning, customer service, trouble resolution and billing. This is an important layer to get right in terms of outsourcing or staffing because it is closely tied to the public's perception of UC2B, UC2B's ability to provide excellent customer service, and UC2B's ability to generate revenue. The jury is still out on whether it is best to outsource these functions to a third party or to hire and provide call center services internally; this depends upon the quality of the responses to the RFP.

The ability to truly succeed under this business model relies on strong sales channel and delivery provider partners to effectively market and manage services and customer relationships. Having the canvassers provide this function for UC2B is an excellent idea. They have already had contact through their efforts to gauge interest.

Retail Services

Activities	Timeframe	Funding Source	UIUC CITES	City of Champaign	GSLIS, Canvassers & Vendors	GSLIS Call Center	Phase One Contractors - Western & Burns	Phase Two Contractor - PowerUp	Call Center RFP Winner	Field Ops RFP Winner	To Be Determined
Customer Acquisition & Installation											
Canvasing & Signing Up Customers in UC2B CRM	Now thru January 4, 2013	Grants	**	**	**	**					
	January 5, 2013 through Forever	Operations							**		
Coordinating Grant-Funded Installations	Now thru January 31, 2013	Grants	**	**	**	**					
Installing Fiber Drops into Problematic or Time Sensitive Anchor and IRU Sites	Now through August 1st	Grants					**				
Installing Fiber Drops into Remaining Anchor and IRU Sites	June 25 through January 31, 2013	Grants						**			
Installing Fiber Drops into Residential & Business FTTP Sites in the Grant-Funded Areas	June 25 through January 31, 2013	Grants						**			
	February 1, 2013 through Forever	Operations									**
Customer Support											
Answers the UC2B Phone # and Triages - Tier 1 Customer Phone Support	Now thru January 31, 2013	Grants				**					
	February 1, 2013 through Forever	Operations							**		
Provides Tier 2 Customer Phone Support	1st 7 days after Install thru 1/31/13	Grants			**	**					
	After 7th day - July 2nd thru Forever	Operations								**	
Provides On-Site Customer Support	1st 7 days after Install thru 1/31/13	Grants						**			
	After 7th day - July 2nd thru Forever	Operations								**	
Provides Tier 3 Customer Phone Support	Day of Install thru January 31, 2013	Grants	**								
	February 1, 2013 thru June 30, 2014	UIUC	**								
	July 1, 2014 through Forever	Operations									**
Billing & Collections											
Issues Customer's First Bill for UC2B Service	30 days before Installation	Grants			**						
Issues All other Bills for UC2B Service	8 days after Installation thru Forever	Operations							**		
Provides Physical Location to Pay Bills	Now through Forever			**							

Coordination and Management											
Administer Grant and Construction	4/3/10 thru 5/1/13	Grant	**								
Manage Operations	Now through Forever	Operations		**							

Urbana-Champaign Big Broadband

Section 7, Financing Options

UC2B Business Plan

Public Private Partnerships & Funding

Broadband infrastructure is a wonderful tool for the brokering of public private partnerships that can subsidize -build, last mile connectivity, on-going operational and customer acquisition costs. If UC2B takes a trans-sector approach to the planning, capitalization and implementation phases of its FTTP initiative, it has the opportunity to generate new multipliers for funding, impact, services and competitiveness. How does it work? In theory, it's really quite simple: Map the potential beneficiaries of any proposed project and join forces.

This sounds easy, but it requires methodological structure and discipline to obtain optimal results. For success in brokering public-private partnerships UC2B must:

1. Think 'outside its operational and quasi-governmental silo'
2. Map potential beneficiaries
3. Sell co-investment ROI
4. Establish governance
5. Manage the partnership(s)
6. Design and execute across institutional boundaries

The beautiful thing about a FTTP investment is that it crosses departmental and institutional boundaries when conceived, designed, constructed and implemented effectively. If UC2B expands its thinking regarding the broadband service offering to the same level of impact that the electrical grid or highway system has on any community, the pathways to successful partnership become clearer. Who are the beneficiaries? It turns out to be simpler to ask who isn't a beneficiary, because the list of beneficiaries crosses all sectors (is 'trans-sector') within society:

- Government
- Health Care
- Education
- Manufacturing
- Distribution
- Food and Retail
- Small Business Enterprises
- Large Business
- Financial Institutions
- Social Service Organizations
- Arts and Cultural Institutions
- National/Global Supply Chain
- National/Global Retailers
- People: Residents & Tourists

Co-Investment opportunities identified through structured trans-sector stakeholder mapping is the first step to achieving UC2B's public-private partnership goals. All too often communities and enterprises determine it wise through traditional return-on-investment analysis to settle for an Edsel, when the market, our partners, stakeholders and constituents require a Ferrari. Actively pursued and carefully managed collaboration is the key.

The challenge is understanding how to position and craft true 'win-win' value propositions that overcome the traditional ownership, control and motive issues that undermine and ultimately doom most partnering and co-investment efforts. This is not a trivial undertaking, and the stakes are high. If a partner's functional objective can be achieved for a fraction of the cost through collaboration – that's what matters . It's the basis for 'win-win' co-investment:. Given the high cost of entry to a FTTP world, the value proposition for commercial, civic, state and federal partners is clear.

'Low Hanging Fruit'

The number of public-private partnership opportunities spurred by an investment in FTTP are numerous – all of which have significant cost-avoidance, customer acquisition and/or revenue generation value. But the benefit is mutual to the organizations that partner and co-invest with UC2B: it enables an extension of their enterprise, service delivery or mission-driven objective not possible without a core investment in FTTP infrastructure that creates real-time interconnectivity with their key stakeholders.

Sample opportunities, requiring attention by UC2B in order to generate results, include:

- <u>Healthcare</u>
  Both interviews with potential healthcare customers and the trajectory of HIPAA regulations and Medicare/Medicaid reimbursement policies indicate that primary institutions like Carle, Provena Covenant, or Community Healthcare providers are potential co-investors in a FTTP program. The extension of advanced telehealth, telemedicine and home health monitoring solutions, including those currently being subsidized at the federal level in pilot programs across the country to study the impact of the avoidance of institutionalization for the chronically infirm and elderly, make these institutions obvious partners for targeted neighborhood/institutional builds, last mile subsidies and in-home equipment costs.

- <u>Municipal, Township and County Government, Power Companies or Other Utility Companies</u>
  FTTP solutions, if offered in conjunction with enhanced services (i.e. Triple Play) and big bandwidth, (e.g. 100 MB+, Smart-Grid) provide government and utility companies with the opportunity to create dramatic efficiencies while extending, enhancing and deepening citizen services. From public safety and intelligent surveillance solutions to advanced traffic management, video arraignment and shared platforms, the business case for co-investment and anchor tenancy is strong.

'Low Hanging Fruit'

- Medium and Large Commercial Enterprises
  Information communication technologies (ICT) and business are so intertwined today as to be inseparable. From employee attraction and retention via flexible work times and telecommuting arrangements to the 24x7x365 demands of the global economy, employers are looking for ways to extend the workplace into the places where their employees are 'after hours.' The ability to create employee benefit subsidy packages for last mile connectivity, equipment and Internet/VoIP connectivity (much like bus pass and cell phone subsidies) is an obvious public-private partnership initiative.

- Higher Education, K-12 and Social Service Agencies
  By definition, all three of these groups have a vested interest in their constituents being connected via high speed options. From distance learning, to advanced research and collaboration, to parent engagement and client tracking, services delivery and interaction, intercommunication is core to the missions of all three groups. This is a key opportunity for collaboration once value-added services are offered, as the direct benefits to their stakeholders are tremendous and funds largely come from state and federal sources.

- Providers and 3rd Party Operators
  There is the opportunity to partner with providers and 3rd party operators for both capital and on-going operational costs associated with a FTTP deployment. IPTV and cellular operators, such as Microsoft MediaRoom, AT&T, Verizon, Sprint and others may subsidize a build if given rights and co-branding for the delivery of content over the network (a pennies on the dollar investment for them as compared to the cost of a fiber deployment) or if connecting cell towers with fiber for LTE services.

  3rd party operators are also very viable potential partners for a FTTP build-out should UC2B decide to take a wholesale or active sharing approach to the commercial and/or residential sectors. If, for business, political or other reasons UC2B decides to eschew the delivery of enhanced services to either of these sectors, there may be 3rd party providers willing to directly invest CAPX and OPX capital in exchange for on-going rights to use fiber or wave IRUs for commercial purposes.

Other Funding Sources

Gig U, BTOP, RUS, State Grants, Federal Grant, Co-ops

Section 8, Glossary of Terms and Acronyms

UC2B Business Plan

List of Acronyms

AE	Active Ethernet
BTOP	Broadband Technology Opportunities Program
BIP	Broadband Infrastructure Program
CAPX	Capital Expense
CLEC	Competitive Local Exchange Carrier
COGS	Cost of Goods Sold
DSL	Digital Subscriber Loop
FTTH	Fiber-to-the-Home
FTTB	Fiber-to-the-Business
FTTP	Fiber-to-the-Premise
GPON	Gigabit Optical Networking
ICT	Information Communications Technologies
IPTV	Internet Protocol Television
IP	Internet Protocol
IRU	Indefeasible Right of Use/Capital Lease
ISP	Internet Service Provider
IT	Information Technology
MB	Megabits
Mbps	Megabits Per Second
MDU	Multi-Dwelling Unit
MPLS	Multi Protocol Label Switching
NGO	Non-Governmental Organization
OPX	Operating Expenses
QoS	Quality of Services
RBOC	Regional Bell Operating Company
ROI	Return on Investment
SG&A	Sales, General and Administrative Expenses
SIP	Session Internet Protocol
VoIP	Voice over Internet Protocol
VLAN	Virtual Local Area Network

Glossary of Terms

This Glossary of terms is broken up into specific categories as they relate to fiber-to-the-home (FTTH).

Fiber-to-the-Home (FTTH)

"Fiber to the Home" is defined as a communications architecture in which the final connection to the subscriber's premises is Optical Fiber.
The fiber optic communications path is terminated on or in the premise for the purpose of carrying communications to a single subscriber.

In order to be classified as FTTH, the access fiber must cross the subscriber's premises boundary and terminate inside the premises, or on an external wall of the subscriber's premises, or not more than 2m from an external wall of the subscriber's premises.
FTTH services may deliver just one application, but generally deliver several such as data, voice and video.

This FTTH definition excludes architectures where the optical fiber terminates in public or private space before reaching the premises and where the access path to the subscriber over a physical medium other than optical fiber (for example copper loops, power cables, wireless and/or coax).

Fiber-to-the-Building (FTTB)
"Fiber to the Building" is defined as a communications architecture in which the final connection to the subscriber's premises is a communication medium other than fiber. The fiber communications path is terminated on the premises for the purpose of carrying communications for a single building with potentially multiple subscribers.

It is implicit that in order to be classified as FTTB, the fiber must at least enter the building, or terminate on an external wall of the building, or terminate no more than 2m from an external wall of the building, or enter at least one building within a cluster of buildings on the same property, or terminate on an external wall of one building within a cluster of buildings on the same property, or terminate no more than 2m from an external wall of one building within a cluster of buildings on the same property.

FTTB services may deliver just one application, but generally deliver several such as data, voice and video.

This FTTB definition excludes architectures where the optical fiber cable terminates in public space more than 2m from an external wall of one building (for example an operator's street-side cabinet) and where the access path continues to the subscriber over a physical medium other than optical fiber (for example copper loops, power cables, wireless and/or coax).

Fiber-to-the-Node (FTTN)

There are two technologies for delivering broadband: Fiber-to-the-node (FTTN) uses fiber to bring data to a node and uses copper to bring the data into the home. Fiber-to-the-home (FTTH) brings fiber all the way into the home.

Glossary of Terms (Continued)

Communications Architecture Definition

The cable plant, which connects the operators' premises and subscribers' premises, can be deployed in the following different topologies:

"Point-to-Point" (P2P, Pt-Pt, or PtP) cable plant provides optical fiber paths from a communication node to single premises such that the optical paths are dedicated to traffic to and from this single location. (Uninterrupted single fiber from last communication switching equipment-point to the premises.)

"Point-to-Multipoint" (P2MP) cable plant provides branching optical fiber paths from a communication node to more than one premises such that a portion of the optical paths are shared by traffic to and from multiple premises. In generic terms this is a tree topology.4

"Ring" cable plant provides a sequence of optical fiber paths in a closed loop that connects a series of more than one communication node.
Note that from these definitions it is not possible to identify the access protocol used over the cable plant.
It is possible for a network to be built so that a common cable plant can include a mix of different architectures, or be re-configured over time to support different architectures, to allow for mixed user categories, to allow access diversity for reliability, and for future flexibility and network longevity.

Premises, Subscriber "**Premises**" is defined as the subscriber's home or place of business. In a multi-dwelling unit5 each apartment is therefore counted as one premises.

"**Subscriber**" is a premises that is connected to an FTTH/B-network and uses at least one service on this connection under a commercial contract.

<u>Network Size</u>

The size of FTTH/FTTB Networks is described in the following terms:

The number of **"Homes Passed"** is the potential number of premises to which an operator has capability to connect in a service area, but the premises may or may not be connected to the network.

This definition excludes premises that cannot be connected without further installation of substantial cable plant such as feeder and distribution cables (fiber) to reach the area in which a potential new subscriber is located.

The number of **"Homes Connected"** is the number of premises that are connected to an FTTH/FTTB-network.

With respect to a particular network, either FTTH or FTTB, the following three definitions are measures of network utilization and calculated as follows:

The "**Penetration Rate**" - "Homes Connected" divided by the number of premises in a served area.

The **"Take Rate"** - "Subscribers" divided by "Homes Connected"

The **"Connect Rate"** - "Homes Connected" divided by "Homes Passed"

Glossary of Terms (Continued)

FTTH/B Access Protocols Definition

Access Protocols are the methods of communication used by the equipment located at the ends of the optical paths to ensure reliable and effective transmission and reception of information over the optical paths. These protocols are defined in detail by the standards organizations that have created them, and are recognized and implemented by manufacturers around the world.

The Access Protocols in use today for FTTH Networks and the optical portion of FTTB Networks are:

“Active Ethernet” uses optical Ethernet switches to distribute the signal, thus incorporating the customers' premises and the central office into one giant switched Ethernet network.

“EFM” defined as Ethernet in the First Mile in IEEE 802.3ah **“EP2P”** defined as Ethernet over P2P in IEEE 802.3ah

“EPON” defined as Ethernet PON in IEEE802.3ah (Note that the expression Gigabit EPON is synonymous with EPON.)

“BPON” defined as Broadband PON in ITU-T Recommendation G.983 **“GPON”** defined as Gigabit PON in ITU-T Recommendation G.984

“GPON” (gigabit passive optical network) standard differs from other PON standards in that it achieves higher bandwidth and higher efficiency using larger, variable-length packets. GPON offers efficient packaging of user traffic, with frame segmentation allowing higher quality of service (QoS) for delay-sensitive voice and video communications traffic.

“OTHER” access protocols such as proprietary or pre-standard access protocols may be noted for the purpose of completeness in research.

Where a Passive Optical Network (PON) is defined as a point-to-multipoint, fiber to the premises network architecture in which unpowered optical splitters are used to enable a single optical fiber to serve multiple premises, typically 32-128. A PON consists of an Optical Line Terminal (OLT) at the service provider’s central office and a number of Optical Network Terminals (ONTs) also called Optical Network Units (ONUs) at the premises

Glossary of Terms (Continued)

Other Network Services Protocols Definition

"Digital Subscriber Line (DSL)" Xdsl refers collectively to all types of digital subscriber lines, the two main categories being ADSL and SDSL. Two other types of xDSL technologies are High-data-rate DSL (HDSL) and Symmetric DSL (SDSL). DSL technologies use sophisticated modulation schemes to pack data onto copper wires. They are sometimes referred to as last-mile technologies because they are used only for connections from a telephone switching station to a home or office, not between switching stations. xDSL is similar to ISDN inasmuch as both operate over existing copper telephone lines (POTS) and both require the short runs to a central telephone office (usually less than 20,000 feet).

"High Definition Television (HDTV)" An improved television system that provides approximately twice the vertical and horizontal resolution of existing television standards. It also provides audio quality approaching that of compact discs.

"Interactive Video Data Service (IVDS)" A communication system, operating over a short distance that allows nearly instantaneous two-way responses by using a hand-held device at a fixed location. Viewer participation in game shows, distance learning and e-mail on computer networks are examples.

"Internet Protocol (IP)" pronounced as two separate letters. IP specifies the format of packets, also called data grams, and the addressing scheme. Most networks combine IP with a higher-level protocol called Transport Control Protocol (TCP), which establishes a virtual connection between a destination and a source.

"Internet Protocol television (IPTV)" is a system through which television services are delivered using the Internet Protocol Suite over a packet-switched network such as the Internet, instead of being delivered through traditional terrestrial, satellite signal, and cable television formats.
IPTV services may be classified into three main groups:

- live television, with or without interactivity related to the current TV show;
- time-shifted television: catch-up TV (replays a TV show that was broadcast hours or days ago), start-over TV (replays the current TV show from its beginning);
- video on demand (VOD): browse a catalog of videos, not related to TV programming.

IPTV is distinguished from Internet television by its on-going standardization process (e.g., European Telecommunications Standards Institute) and preferential deployment scenarios in subscriber-based telecommunications networks with high-speed access channels into end-user premises via set-top boxes or other customer-premises equipment.

"Multiprotocol Label Switching (MPLS)" is a mechanism in high-performance telecommunications networks that directs and carries data from one network node to the next with the help of labels. MPLS makes it easy to create "virtual links" between distant nodes. It can encapsulate packets of various network protocols.

"Session Initiation Protocol (SIP)" is an IETF-defined signaling protocol widely used for controlling communication sessions such as voice and video calls over Internet Protocol (IP). The protocol can be used for creating, modifying and terminating two-party (unicast) or multiparty (multicast) sessions. Sessions may consist of one or several media streams.
Other SIP applications include video conferencing, streaming multimedia distribution, instant messaging, presence information, file transfer and online games.

"Voice over Internet Protocol (VoIP)" is a method of transmission of voice or fax calls over the Internet.

Glossary of Terms (Continued)

Network Usage Definition

FTTH/FTTB Networks may be dedicated to the services of a single retail service provider, or made available to many retail service providers, who may connect to the network at the packet, wavelength or physical layer.

"Bandwidth" is the capacity of a telecom line to carry signals. The necessary bandwidth is the amount of spectrum required to transmit the signal without distortion or loss of information. FCC rules require suppression of the signal outside the band to prevent interference.

"Broadband" is a descriptive term for evolving digital technologies that provide consumers a signal switched facility offering integrated access to voice, high-speed data service, video-demand services, and interactive delivery services.

"Exclusive Access" refers to the situation where a single retail service provider (who may or may not be the network operator) has exclusive use of the FTTH network.

"Megabyte (MB)" a measure of amount of information used, for example, to quantify computer memory or storage capacity. There are (8) Megabits in a single Megabyte.

"Megabits Per Second (Mbps)" is an abbreviation for megabits per second. It refers to data transfer speeds as measured in megabits.

"Open Access (Packet)" refers to the situation where multiple retail service providers may use the FTTH Network on an equable base by connecting at a packet layer interface and compete to offer their services to end users.

"Open Access (Wavelength)" refers to the situation where multiple retail or wholesale service providers may use the FTTH Network on an equable base by connecting at a wavelength layer interface and compete to offer their services.

"Open Access (Fiber)" refers to the situation where multiple retail or wholesale service providers may use the infrastructure by connecting at a physical layer ("dark" fiber) interface and compete to offer their services.

"Open Access (Duct)" refers to the situation where multiple retail or wholesale service providers may share the use of infrastructure covering a substantial region by drawing or blowing their fiber cables through the shared ducts, and compete to offer their services.

Glossary of Terms (Continued)

Services Definition

FTTH/FTTB Networks are used to deliver the following services;

“Indefeasible right of use (IRU)” is a contractual agreement between the operators of a communications cable, such as submarine communications cable or a fiber optic network and a client.
The IRU: shall mean the exclusive, unrestricted, and indefeasible right to use the relevant capacity (including equipment, fibers or capacity) for any legal purpose.

It refers to the bandwidth purchased after the submarine cable system has sealed the Construction and Maintenance Agreement (C&MA) among the owners or after the system came into service and where the un-owned capacity is available. IRU may also be purchased from the existing owner.

The right of use is indefeasible, so as the capacity purchased is also un-returnable and maintenance cost incurred becomes payable and irrefusable. “IRU user” can unconditionally and exclusively uses the relevant capacity of the “IRU grantor’s” fiber network for the specified time period.

In some cases with an IRU, there are often restrictions imposed on the lessee by the lessor to not resell the fiber strands to other users.

“Internet/Data” refers to use of the Public Internet for exchanging email, web- browsing, etc..

“Voice” refers to the exchange of human bi-directional, real time, full-duplex conversations by use of **“IP”** or **“Other”** encoding and transport protocols. (This category does not include Voice carried over the Public Internet.)

“Video” refers to the exchange of visual material by use of **“IP” (IPTV), “RF”** (carried via a separate optical wavelength, overlay video) or **“Other”** encoding and transport protocols. (This category does not include Video carried over the Public Internet.) Applications other than those listed above are categorized as **“Other”**.

“Quality of Service (QoS)” In the field of computer networking and other packet-switched telecommunication networks, the traffic engineering term quality of service (QoS) refers to resource reservation control mechanisms rather than the achieved service quality. Quality of service is the ability to provide different priority to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow. For example, a required bit rate, delay, jitter, packet dropping probability and/or bit error rate may be guaranteed. Quality of service guarantees are important if the network capacity is insufficient, especially for real-time streaming multimedia applications such as voice over IP, online games and IPTV, since these often require fixed bit rate and are delay sensitive, and in networks where the capacity is a limited resource, for example in cellular data communication.

“UNIVERSAL SERVICE” The financial mechanism that helps compensate telephone companies or other communications entities for providing access to telecommunications services at reasonable and affordable rates throughout the country, including rural, insular and high costs areas, and to public institutions. Companies, not consumers, are required by law to contribute to this fund. The law does not prohibit companies from passing this charge on to customers. The Universal Service Fund, which is administered through the FCC is currently being revised. In the past, the Universal Service Fund was used to help build out telecommunications phone service to rural or underserved areas. The Universal Service Fund may be used to help build out Internet access to underserved or un-served areas.

Glossary of Terms (Continued)

Service Provider Definitions

"Aggregator" Any person or business that, in the normal course of business, provides a public telephone for the use of patrons through an Operator Service Provider (OSP).

"Common Carrier" The term used to describe a telephone company. It is a telecommunications company that is available for hire on a nondiscriminatory basis to provide communication transmission services, such as telephone and telegraph, to the public.

"Competitive Access Providers" Common carriers who provide local service and compete against local telephone companies' access services that connect customers to long distance companies. These carriers often use fiber optic networks.

"Enhanced Service Providers" A for-profit business that offers to transmit voice and data messages and simultaneously adds value to the messages it transmits. Examples include telephone answering services, alarm/security companies and transaction processing companies.

"Internet Service Provider (ISP)" A company that provides access to the Internet. For a monthly fee, the service provider gives you a software package, username, password and access phone number. Equipped with a modem, you can then log on to the Internet and browse the World Wide Web and USENET, and send and receive e-mail.

"Non-governmental organization, or NGO", is a legally constituted organization created by natural or legal persons that operates independently from any government. The term originated from the United Nations (UN), and is normally used to refer to organizations that do not form part of the government and are not conventional for-profit business. In the cases in which NGOs are funded totally or partially by governments, the NGO maintains its non-governmental status by excluding government representatives from membership in the organization. The term is usually applied only to organizations that pursue some wider social aim that has political aspects, but that are not overtly political organizations such as political parties. Unlike the term "intergovernmental organization", the term "non-governmental organization" has no generally agreed legal definition. In many jurisdictions, these types of organization are called "civil society organizations" or referred to by other names.

"Regional Bell Operating Company (RBOC)" Any one of the seven local telephone companies. Created in 1984 as part of the break-up of AT&T. The (7) RBOCs or "Baby Bells" were originally Ameritech, Bell Atlantic, Bell South, NYNEX, Pacific Telesis Group, Southwestern Bell, and U S West. Pacific Telesis Group was acquired by SBC Communications in 1997. Ameritech was acquired by SBC Communications in 1999 which subsequently acquired AT&T Corporation in 2006, becoming the present-day AT&T Inc. In 1997, Bell Atlantic merged with another Regional Bell Operating Company, NYNEX, based in New York City with a footprint spanning from New York to Maine. The combined company kept the Bell Atlantic name. In 2000, Bell Atlantic acquired former independent phone company GTE, and adopted the name "Verizon" In 2006, AT&T acquired Bell South and Southwestern Bell. U S WEST merged with Qwest Communications International Inc. on June 30, 2000 and over time the US WEST brand was replaced by the Qwest brand. Qwest Communications International Inc. merged with CenturyLink on April 1, 2011 and the Qwest brand was replaced by the CenturyLink brand. The RBOCs were created to break up AT&T, and within (20) years, AT&T acquired most of them back.

"Resale Carrier or Reseller" A carrier that does not own transmission facilities, but obtains communications services from another carrier for resale to the public for a profit.

"Service Provider" A telecommunications provider that owns circuit switching equipment.

RESOLUTION NO. 2012-12

REVISED #2
6.5.12

A RESOLUTION

APPROVING WHOLESALE AND DARK FIBER SERVICES AND RATES

NOW, BE IT RESOLVED BY THE UC2B POLICY COMMITTEE, as follows:

Section 1. That the wholesale and dark fiber services and rates and core connection rates identified in the attached NTIA and Grant Report with attachments are hereby incorporated herein and approved.

Section 2. That in particular, UC2B will offer dark fiber leases on a monthly basis for up to five years in length and that the approved pricing for new monthly dark fiber leases are as proposed in the table titled “400% Increase of New IRU Rate” on page 4 of 4 of the of the attachment labeled “Dark Fiber Leases Pricing”.

Section 3. That UC2B will not offer dark fiber IRU’s to any additional entities beyond the original investors, IDOT and other BTOP-funded networks that may offer “infrastructure trades” to reach St. Louis or Chicago.

Section 4. That holders of IRUs are prohibited from subleasing or “selling” their interests to third party interests.

RESOLUTION NO. 2012-12
PASSED:

APPROVED: ______________________________
Policy Committee Chair

NTIA and Grant Update – 6/1/12

Our regular call with NTIA last Wednesday morning was cancelled due to the overlap with the FTTP materials bid opening. I did meet with our Program Officer in DC last week, so he was fine with cancelling the phone call.

As we explored the proposed wholesale charges for customer connections, I did seek guidance from NTIA, about whether any of our proposed wholesale rates or terms violated NTIA's rules on non-discrimination. The short answer to the question is no, they do not. The key language is what follows from NTIA's policy on Non-Discrimination:

• Rates and Terms: Recipients should offer wholesale broadband services at rates and terms that are reasonable and nondiscriminatory. Many recipients set forth wholesale pricing in their applications and, as such, those rates will be presumed reasonable and nondiscriminatory.

We are of course free to make our rates and terms more favorable to wholesale providers, and that is what I am recommending, but from NTIA's perspective we could stick with what was originally proposed and approved by them.

When we made the decision to use gigabit electronics on our FTTP system, we adjusted all of our retail rates, but until now have not addressed how that bandwidth change impacted our wholesale rates. In our grant application, everyone had at least a 100 Mbps Intranet connection, and customers that needed more bandwidth could pay more and have a 1 Gbps Intranet connection, which required different electronics. The fact that we still had 100 Mbps and 1 Gbps wholesale rates is an artifact from the original grant application.

I am recommending eliminating the 100 Mbps wholesale product, and pricing the 1 Gbps rate at $17.88 per month. The attached chart shows in very general terms the projected cost components of delivering UC2B retail and wholesale services. Of all those cost components, there are only two where UC2B achieves any savings from providing a wholesale service – billing and tier 1 customer support. This would bring parity in access to the Intranet for all retail and wholesale customers.

The $17.88 rates reflects a $2.00 per customer savings in those two categories, which also impacts the Community Benefit fund, which is how we ended up with a $2.11 difference in pricing after rounding some numbers. The exact numbers indicated for each of these cost areas are quick estimates, not to be taken as gospel. Because the retail and wholesale costs are the same for most of our cost categories, having exact figures for the most of the numbers does not matter.

I have also attached a new wholesale rates page that reflects this change, and also references the suggested ramp-up of the core connection rates.

I encourage you to adopt the resolution in your packets concerning the business plan. Along the way to that decision, you will hopefully make decisions on the resale of IRU fiber, whether or not we sell any additional IRUs and then the rates for dark fiber leases and future IRUs (if you decide to sell any more IRUs.)

Mike

Cost Components of 20 Mbps UC2B FTTP Retail Service and Dedicated ISP Wholesale Service over ADTRAN Active Ethernet Electronics

Years 1 and 2 of UC2B Operations only in Grant-Funded Areas

Costs per Retail and Wholesale Subscriber	**Retail** Years 1-2 Grant-Funded UC2B Customers	**Wholesale** Years 1-2 ISP Customers in Grant-Funded Areas
Monthly Cost of Billing	$0.50	$0.25
Monthly Cost of Call Center - Tier One Phone Support	$4.00	$2.25
Total # of Retail and Wholsale Cusromers Users for Model	2,700	2,700
Monthly Rate for ISP 1 Gbps Customer Connection	N/A	**$17.88**
Monthly UC2B Retail Charge for 20 Mbps of Internet Bandwidth	**$19.99**	N/A
BANDWIDTH COSTS		
Internet Cost per Customer with Over-Subscription	$4.00	N/A
TOTAL ALL ELECTRONICS COSTS PER SITE		
Total All One-Time FTTP Equipment Costs per Site	$559.52	$559.52
TOTAL ELECTRONIC EQUIPMENT DEPRECIATION		
Monthly Straight-Line Equipment Depreciation	$6.66	$6.66
FTTP FIBER PLANT COSTS PER ACTIVE SITE		
Total all Fiber and Install Costs	$4,200	$4,200
TOTAL FIBER PLANT DEPRECIATION		
Monthly Straight-Line Fiber Infrastructure Depreciation	$17.50	$17.50
BORROWING & DEBT		
Monthly Debt Service on Fiber & Equipment Per Customer	$0.00	$0.00
JULIE & LOCATES		
Monthly JULIE Cost Per Customer	$2.31	$2.31
FIELD SUPPORT		
Monthly Field Support Cost per Customer & Tier 2 Phone support	$1.38	$1.38
NETWORK ENGINEERS		
Monthly Core Network and Tier 3 Phone Network Support	$4.63	$4.63
FIBER REPAIR		
Fiber repair costs per customer per month	$1.73	$1.73
ADMINISTRATION & OVERHEAD		
UC2B Administrative overhead per Customer	$3.09	$3.09
UTILITIES		
UC2B Utilities Cost Per Customer	$0.75	$0.75
COMMUNITY DEVELOPMENT FUND		
Monthly Community Development Fund per Customer	$1.00	$0.89
Cash Expenses per Customer per Month	$14.77	$12.66
Debt Service per customer per month	$0.00	$0.00
Reserve for Depreciation	**$5.22**	**$5.22**
Monthly Rates	**$19.99**	**$17.88**
Equipment Depreciation	$6.66	$6.66
Fiber Infrastructure Depreciation	$17.50	$17.50
All Depreciation Expenses	$24.16	$24.16
University Subsidized Expense	$8.63	$4.63

Proposed UC2B Wholesale & ISP Service Offerings

6/1/12

For customer sites in the grant-funded areas

ISP and Service Provider Layer Two Transport Service Offering

Customer Connections	Locations Where Available	Symmetric Ethernet Port Speed (Mbps)	Monthly Pricing	Comments
Last Mile Internet Service Provider (ISP) Customer 1 Gbps Port	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	1,000 Mbps (1 Gbps)	$17.88 or 30-45% of customer rate - whichever is greater	ISP/Service Provider must connect to UC2B core in one of the three ways below
Core Backbone Connections				
Last Mile Internet Service Provider (ISP) Redundant Core Connections Dual 1 Gbps Ports	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	1,000 x 2 (1 Gbps x 2)	$1,200	No CIR/VLAN charge. (Includes any UC2B ring fiber needed to connect to ISP)
Last Mile Internet Service Provider (ISP) Redundant Core Connections Dual 2 Gbps Ports (2 bridged 1 Gbps Ports)	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	2,000 x 2 (2 Gbps x 2)	$1,600	No CIR/VLAN charge. (Includes any UC2B ring fiber needed to connect to ISP)
Last Mile Internet Service Provider (ISP) Redundant Core Connections Dual 10 Gbps Ports	Any of 500 Points of Interconnection (POI) or customer locations on the UC2B network	10,000 x 2 (10 Gbps x 2)	$3,600	No CIR/VLAN charge. (Includes any UC2B ring fiber needed to connect to ISP)

Note # 1 - All core elements of the network are non-blocking and are interconnected at 10 Gbps.

Note # 2 - All ring fiber necessary to connect Provider is included in the Backbone Connection rates.

Note # 3 - Customer-end electronics are provided by UC2B.

Note # 4 - There is an initial 12-month ramp up of the Core Connection Rates - described on additional pages.

Dark Fiber - Indefeasible Rights of Use Agreements (IRUs) for Initial UC2B Investors

IRU Element	One-Time Charge for 20-Year IRU	Recurring Annual Charge for Maintenance	Comments
IRU - Per Strand Mile - Sold in complete rings	$1,500 per strand mile	N/A	Sold only in pairs of fiber and for the entire length of a UC2B ring
IRU - Per Lateral Connection	Actual construction costs, or pro-rated costs if shared	N/A	Sold only in pairs of fiber
Fiber and Facilities Maintenance - Charged in complete rings	N/A	$300 per year per route mile	Not dependent on the number of strands
Maintenance - Per Lateral Connection	N/A	$600 per year per lateral	No pro-rating if shared

Dark Fiber - Indefeasible Rights of Use Agreements (IRUs) for New IRU Purchasers

IRU Element	One-Time Charge for 20-Year IRU	Recurring Annual Charge for Maintenance	Comments
IRU - Per Strand Mile - Sold in complete rings	$2,000 per strand mile	N/A	Sold only only for the entire length of a UC2B ring
IRU - Per Lateral Connection	Actual construction costs, or pro-rated costs if shared	N/A	Customer may purchase a single strand of fiber
Fiber and Facilities Maintenance - Charged in complete rings	N/A	$300 per year per route mile	Not dependent on the number of strands
Maintenance - Per Lateral Connection	N/A	$600 per year per lateral	No pro-rating if shared

Ramp Ups for Wholesale UC2B Core Connections 6/1/12

These charges are in addition to per end-user site charges of:

$17.88 per month or 30-45% of the gross rate charged to the customer for a 1 Gbps connection to the Provider

Dual 1 Gbps Connections

For the 1st 12 months, the Provider pays the lessor of the per customer rate or the tiered rate.

Full Monthly Rate	$1,200		
Per Customer Rate	$10.00		
Month 1	$100	Month 7	$700
Month 2	$200	Month 8	$800
Month 3	$300	Month 9	$900
Month 4	$400	Month 10	$1,000
Month 5	$500	Month 11	$1,100
Month 6	$600	Month 12	$1,200

After 12 months the monthly rate moves to the full rate, regardless of customer count.

Dual 2 Gbps Connections

For the 1st 12 months, the Provider pays the lessor of the per customer rate or the tiered rate.

Full Monthly Rate	$1,600		
Per Customer Rate	$13.33		
Month 1	$133	Month 7	$933
Month 2	$266	Month 8	$1,066
Month 3	$400	Month 9	$1,200
Month 4	$533	Month 10	$1,333
Month 5	$666	Month 11	$1,466
Month 6	$800	Month 12	$1,600

After 12 months the monthly rate moves to the full rate, regardless of customer count.

Dual 10 Gbps Connections

For the 1st 12 months, the Provider pays the lessor of the per customer rate or the tiered rate.

Full Monthly Rate	$3,600		
Per Customer Rate	$30.00		
Month 1	$300	Month 7	$2,100
Month 2	$600	Month 8	$2,400
Month 3	$900	Month 9	$2,700
Month 4	$1,200	Month 10	$3,000
Month 5	$1,500	Month 11	$3,300
Month 6	$1,800	Month 12	$3,600

After 12 months the monthly rate moves to the full rate, regardless of customer count.

Calculation of UC2B Dark Fiber Lease Rates - Existing IRU Rates

5/18/12

IRU Rates from NTIA Grant Proposal and Letters of Intent

$1,500	20-Year IRU rate per strand mile for initial UC2B Investors
$600	Annual Flat Rate per Lateral Connection for Fiber Maintenance (independent of strands used)
$300	Annual Maintenance Rate for Ring Fiber Maintenance per route mile (independent of strands used)
$75	IRU Rate per strand mile per year - based on 20 year IRU

IRU Length of each UC2B Backbone Ring in Miles

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
16.41	7.08	16.82	19.97	8.60	22.70	15.98	15.29	15.98	11.57	14.95

Base Rate - based on existing UC2B IRU rates

$75.00	Annual IRU Rate per strand-mile per year
$300.00	Annual IRU Maintenance rate per route mile
$375.00	Annual Lease Rate per strand-mile
$31.25	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$513	$221	$526	$624	$269	$709	$499	$478	$499	$362	$467

200% Increase of Base IRU Rate

3.6%	Annual Percentage rate used for simple Net Present Value calculation
$150.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$450.00	Annual Lease Rate per strand-mile
$37.50	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$615	$266	$631	$749	$323	$851	$599	$573	$599	$434	$561

300% Increase of Base IRU Rate

5.4%	Annual Percentage rate used for simple Net Present Value calculation
$225.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$525.00	Annual Lease Rate per strand-mile
$43.75	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$718	$310	$736	$874	$376	$993	$699	$669	$699	$506	$654

400%	Increase of Base IRU Rate
7.2%	Annual Percentage rate used for simple Net Present Value calculation
$300.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$600.00	Annual Lease Rate per strand-mile
$50.00	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$821	$354	$841	$999	$430	$1,135	$799	$765	$799	$579	$748

500%	Increase of Base IRU Rate
9.0%	Annual Percentage rate used for simple Net Present Value calculation
$375.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$675.00	Annual Lease Rate per strand-mile
$56.25	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$923	$398	$946	$1,123	$484	$1,277	$899	$860	$899	$651	$841

600%	Increase of Base IRU Rate
10.8%	Annual Percentage rate used for simple Net Present Value calculation
$450.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$750.00	Annual Lease Rate per strand-mile
$62.50	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$1,026	$443	$1,051	$1,248	$538	$1,419	$999	$956	$999	$723	$934

Calculation of UC2B Dark Fiber Lease Rates - New IRU Rates

5/18/12

New IRU Rates

$2,000	New 20-Year IRU rate per strand mile for new IRU purchasers
$600	Annual Flat Rate per Lateral Connection for Fiber Maintenance (independent of strands used)
$300	Annual Maintenance Rate for Ring Fiber Maintenance per route mile (independent of strands used)
$100	IRU Rate per strand mile per year - based on 20 year IRU

IRU Length of each UC2B Backbone Ring in Miles

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
16.41	7.08	16.82	19.97	8.60	22.70	15.98	15.29	15.98	11.57	14.95

Base Rate - based on New UC2B IRU rates

$100.00	Annual IRU Rate per strand-mile per year
$300.00	Annual IRU Maintenance rate per route mile
$400.00	Annual Lease Rate per strand-mile
$33.33	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$547	$236	$561	$666	$287	$757	$533	$510	$533	$386	$498

200% Increase of New IRU Rate

3.6%	Annual Business Percentage rate used for simple Net Present Value calculation
$200.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$500.00	Annual Lease Rate per strand-mile
$41.67	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$684	$295	$701	$832	$358	$946	$666	$637	$666	$482	$623

300% Increase of New IRU Rate

5.4%	Annual Business Percentage rate used for simple Net Present Value calculation
$300.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$600.00	Annual Lease Rate per strand-mile
$50.00	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$821	$354	$841	$999	$430	$1,135	$799	$765	$799	$579	$748

400% Increase of New IRU Rate

7.2%	Annual Business Percentage rate used for simple Net Present Value calculation
$400.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$700.00	Annual Lease Rate per strand-mile
$58.33	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$957	$413	$981	$1,165	$502	$1,324	$932	$892	$932	$675	$872

500% Increase of New IRU Rate

9.0%	Annual Business Percentage rate used for simple Net Present Value calculation
$500.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$800.00	Annual Lease Rate per strand-mile
$66.67	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$1,094	$472	$1,121	$1,331	$573	$1,513	$1,065	$1,019	$1,065	$771	$997

600% Increase of New IRU Rate

10.8%	Annual Business Percentage rate used for simple Net Present Value calculation
$600.00	Annual IRU Rate per strand-mile per year
$300.00	IRU Maintenance rate per strand mile
$900.00	Annual Lease Rate per strand-mile
$75.00	Monthly Lease Rate per strand-mile

Monthly Lease Rate of Each Fiber Strand on a UC2B Backbone Ring

Ring # 1	Ring #1A	Ring # 2	Ring # 3	Ring #3A	Ring #4	Ring #5	Ring #6	Ring #6A	Ring #7	Ring # 7A
$1,231	$531	$1,262	$1,498	$645	$1,703	$1,199	$1,147	$1,199	$868	$1,121

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June 8, 2012

MEMORANDUM

TO: UC2B Policy Board Member

FROM: Mark Scifres
CEO – Pavlov Media, Inc.

RE: Commentary re 6/6/12 Board Meeting

Based on comments made at the June 6th, 2012, UC2B Policy Board Meeting, Pavlov Media would like to explore the possibility of creating additional services for customers soon to be served by the UC2B Network. To serve the demand regarding certain video options, Pavlov Media desires to conclude its analysis of whether a business case exists for Pavlov Media to provide these services in the Champaign-Urbana marketplace. However, in order to do so, Pavlov Media maintains that the UC2B Policy Board must support the leasing of IRU's at commercially reasonable rates. If Pavlov Media can ascertain the availability, terms and conditions of leasing IRU's, it can:

- Complete its analysis of equipment and related costs to provide these services;
- Examine these costs in light of expected revenue from potential customers;
- Request access to and begin testing the network system regarding the feasibility and quality of services;
- Perform additional due diligence regarding potential fees and costs related to video services.

Lastly, dependent upon its own internal approval processes on whether to pursue this business opportunity, Pavlov Media is prepared to work with the Policy Board and staff to formulate those documents necessary to effectuate the expansion of service options to customers.

We look forward to working with you.

Sincerely,

Mark Scifres
CEO

RESOLUTION NO. 2012-17

A RESOLUTION

RECOMMENDING TERMS OF AN AGREEMENT
(Gigabit Neighborhood Gateway Proposal)

WHEREAS, UC2B has an opportunity to respond to a Request for Proposals issued by Gigabit Squared for the Gigabit Neighborhood Gateway Program; and

WHEREAS, UC2B is an open access network and a level playing field among service providers is a

WHEREAS, proposals in response to this opportunity are due July 31, 2012.

NOW, THEREFORE, BE IT RESOLVED BY THE UC2B POLICY COMMITTEE, as follows:

Section 1. The Policy Committee recommends that the following terms and principles be included in and guide UC2B's response to the Gigabit Squared Request for Proposals:

1. The new fiber infrastructure should be operated as an open-access network.
   A. Other service providers will be given fair opportunity and a level playing field to provide services over the shared fiber infrastructure from day one at competitive wholesale rates.

2. Gigabit Squared should agree to manage and support the existing UC2B fiber infrastructure and customers.

3. UC2B will maintain ownership of the fiber infrastructure that was installed with the NTIA and DCEO grant funds.

4. Regardless of what Internet bandwidth a customer may subscribe to, they will always have gigabit access to all local UC2B-GBPS^2 customers and to local community resources.

5. Gigabit Squared should enter into voluntary franchise agreements with the cities of Champaign and Urbana and the Village of Savoy.
   A. As part of those franchise agreements, the cities and UC2B would agree to make some existing UC2B fiber infrastructure available to Gigabit Squared.
   B. As part of those franchise agreements, the Cities and Village would agree to make their rights-of-way available to Gigabit Squared.
   C. As part of those franchise agreements, Gigabit Squared would agree to build fiber infrastructure to the curb of every residence and business in Champaign, Urbana and Savoy within a four-year period.

D. As part of those franchise agreements, Gigabit Squared would agree to pay an annual fee to the cities, which would be based on a percentage of its local total gross revenue from all services.
E. As part of those franchise agreements, Gigabit Squared would agree to pay into the UC2B Community Benefit Fund a percentage of its local total gross revenue from all services. That fund is administered by UC2B to provide training and other programs to reduce the digital divide and promote digital inclusion.
F. As part of those franchise agreements, Gigabit Squared would agree to maintain a local customer service presence.

6. Gigabit Squared is strongly encouraged to hire and train a local workforce, or contract with existing local providers, to manage, operate, and expand the network.

RESOLUTION NO. 2012-17
PASSED:

APPROVED: ______________________________
Policy Committee Chair

Proposal to UC2B Board for Gigabit speeds in Urbana-Champaign

Presented: June 15, 2012

Contact us

Corporate Headquarters
Pavlov Media, Inc.
P.O. Box 25
Champaign, IL 61824

800.677.6812
Visit us at: *www.pavlovmedia.com*

Executive Summary:

- Pavlov Media proposes installing Tesseractiv™ Internet, providing Gigabit speeds for on-net and 50Mbps off-net.

- Pavlov Media provides UC2B with a 50%/50% revenue-sharing agreement for services directly sold on the UC2B fiber network.

- Network remains open access, as opposed to the proposed plan to turn the network over to a private corporation with closed access.

- UC2B's fiber optic network is managed by a local company with 95 employees with a national presence building, operating and maintaining data networks.

Details of Proposal

Pavlov Media, headquartered in Champaign, IL, and the largest national provider of Internet services to the student market in the US, has developed an Internet product service offering specifically tailored for the unique opportunity presented by the high capacity of the UC2B infrastructure. Pavlov Media is proposing a Gigabit speed network solution for Champaign-Urbana using our Tesseractiv™ technology.

Pavlov Media Tesseractiv™ Internet service product will deliver the most popular content on the web at Gigabit speeds. This is often referred to as "on-net" content. "Off-net" content would then be delivered at 50 Mbps.

Tesseractiv™ from Pavlov Media allows Urbana-Champaign residents to access the most popular internet content, including streaming video service like Netflix, Hulu, Youtube, plus Google and more.

Tesseractiv™ from Pavlov Media provides an opportunity for UC2B to become the first municipal infrastructure project in the U.S. to be capable of delivering internet content at a Gigabit per second.

What Urbana-Champaign Residents Get:

- Pavlov Media's state of the art industry leading Tesseractiv™ service with industry leading performance up to Gigabit (1,000Mbps) to residents.
- Resident speeds up to Gigabit (1,000Mbps) for Tesseractiv™ on-net content and 50Mbps for off-net content, and 25Mbps upload speeds, for a proposed price of $__.
- Professionally staffed call center and support process that is proactive and responsive to resident's needs.

What Urbana-Champaign Businesses Get:

- Internet downloads at Gigabit speed (1,000Mbps) for on-net content and 50Mbps for off-net.
- A great partner with dedicated account staff to maximize the value of the network and solve any issues quickly and professionally.
- High performance network connectivity for the office, and business center. *Upgradable to higher speeds available with discussion.*

What UC2B Gets:

A revenue-sharing agreement that provides funding back to the entities involved to recover deployment costs. Pavlov Media proposes…

A community-wide Ethernet infrastructure that delivers Gigabit speed content.

A networked managed by a local firm with years of experience.

A managed Gigabit network filled with possibilities including:

- IP Cameras
- Power monitoring
- Key or access control systems
- Fire panels
- Future IP enabled devices

Pavlov Media will work with UC2B and the cities on a possible community messaging system.

Simplicity of use

- Residents, when opening their browser for the first time, will be presented with a services sign-up splash screen.
- Residents will sign up for services through the splash screen and have access within seconds upon completion of the process.
- A technician does not have to be deployed to start Internet service.

Common Wireless for the Downtown Areas

Pavlov Media already delivers open Wi-Fi connectivity in the downtown Champaign area and is currently working with the City to expand and improve the service. Access to the UC2B fiber will help improve this service as it allows more data to be moved efficiently.

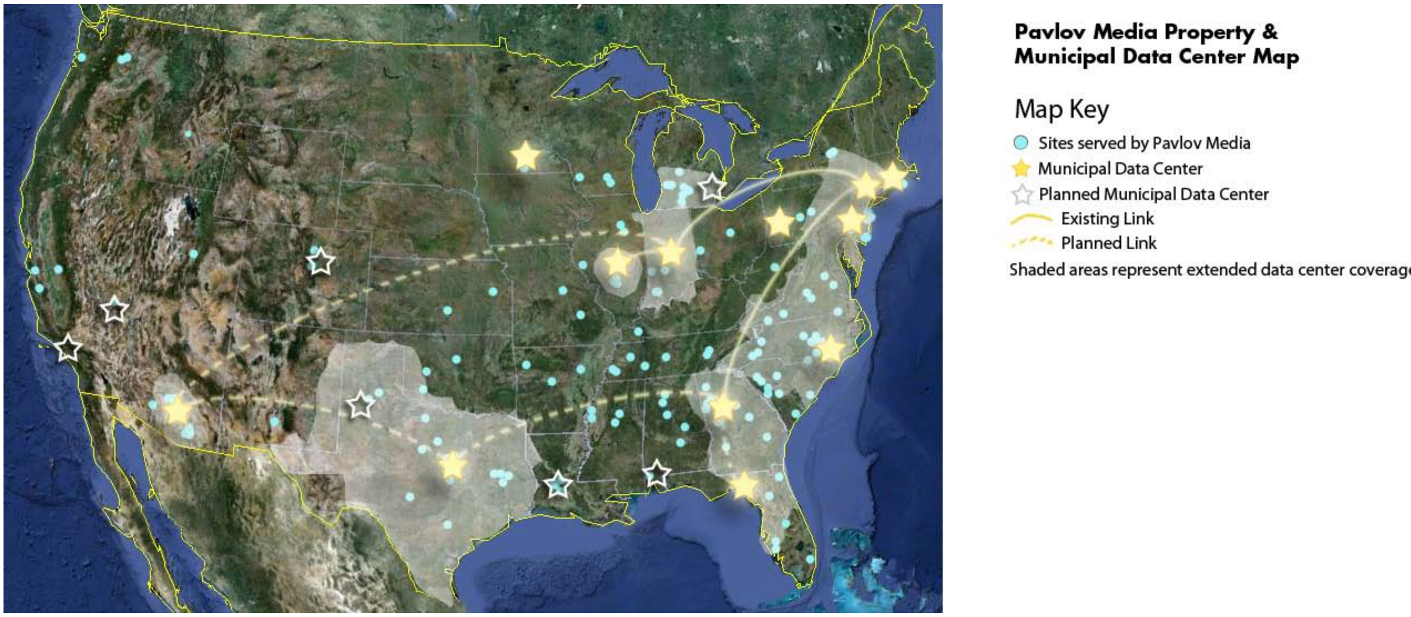

Figure 1 This shows Pavlov Media's National backbone

To the UC2B Board:

Thank you for the opportunity to submit our proposal.

Pavlov Media is a locally grown company with 95 employees in Champaign/Urbana, with expertise designing, building and managing private networks. Our company has made the journey from local provider to off-campus housing at the University of Illinois to one with a nationwide presence. We bring nearly $25 million in annual revenue into Champaign/Urbana and our goal is to grow into a $100 million per year operation, headquartered in Champaign. We operate a network with more end-users than the University of Illinois, including the Chicago and Springfield campuses. Pavlov Media has deployed a national backbone (see illustration in proposal). For more information, our website is http://www.pavlovmedia.com.

This process of response seems to deviate from a standard process that UC2B would otherwise normally follow. Normally, governance would be determined for the entity, and an RFP would be issued for multiple providers to respond to the operation and expansion of the network. *We believe there are more opportunities for expansion than currently proposed.*

In the absence of the Gigabit Squared "race" to July 31st, we would presume that UC2B would make deliberate, informed decisions about its operating model and governance structure involving local companies. UC2B would then publicly offer the opportunity for operation and expansion of the network.

We suggest governance to be proposed in the business model should be reviewed by the policy committee prior to submittal to the cities.

Pavlov Media suggests the entity retain public ownership of the UC2B fiber assets.

We understand the basic approach of the existing proposal would convert UC2B and the balance of the network into essentially a private monopoly facility which the monopoly would not only maintain but use to compete with all other providers. We believe that this is a fundamentally poor policy choice.

A fundamental goal of the last 20 years of telecommunications policy specifically (utility policy in general) has been to break the idea of monopoly bottleneck facilities. This was pursued first through extensive regulation requiring monopoly facility providers (e.g., telephone companies) to "share" their local facilities "at cost" with significant policing by expert regulators to ensure fair competition and a level playing field. That policy goal has been pursued next and more robustly by encouraging diverse ownership of competing facilities, i.e. the cable and the phone company

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each having a connection into a home and competing for both types of service. To operate UC2B through a defacto private monopoly is directly contrary to the last 20 years of utility policy, and raises several serious concerns.

Allowing a monopoly provider to also own and operate the network will require significant policing by the municipalities to ensure that monopoly continues to provide a level playing field with its competitors/customers. Do the municipalities really have the resources and expertise to do this on a continuous basis?

Will the corporate structures established to own the UC2B facilities and interact with that monopoly allow real transparency into how the operator interacts with its competitors/customers? Will they allow real and direct oversight by the municipalities?

How will the municipalities be able to ensure that the monopoly is maintaining a level playing field for its competitors/customers? Will the municipalities have access to the real "cost" of providing service so they can ensure that the monopoly is not subsidizing its own costs by charging its competitors above market rates (since the operator will have a monopoly facility).

In short, the proposal takes what is currently a municipal facility under the direct oversight of the municipal governments and turns it over to a private monopoly provider. That does not make policy sense. These questions could be mitigated if not avoided entirely by encouraging the operation of the UC2B facility either directly by UC2B or by a contract provider that is also not a competitor.

Sincerely,

Mark A S

Mark Scifres
CEO
Pavlov Media