Municipal Fiber Internet in DAVIS
Gigabit Service for Davis, and owned by the City of Davis.

Here is my compelling argument, lets think outside of the box for a bit.

This response to the RFEI is a municipal-owned open fiber model, no other respondent at this level will provide one, so it will stand out, and have community support. Plus you don't have to rely on end users to pay for the install b/c the City will. In brief, we will have a wholesale entity that contracts with the city and manages the fiber rings on behalf of the city, and then we have open access to the fiber for retail entities that want to sell Gigabit Speeds over the wholesaler's network. This is a marketing play for the city, and University, as much as a great and fast new network. Having the new network will bring more medium and larger business and attract and retain graduating talent and business to the community.

We have to convince city council its a good idea. Then, I'm sure some sort of ballot measure will ensue or not, that will pass because this idea is so Davis-y and there is a lot of enthusiasm for it among the populace.

It will succeed financially, because the City will pay for the implementation costs, and will bill a monthly fee to all the doors that are connected to the network. City can get the 30 year term financing for the project, from loan bond measure or infrastructure bank. The city will get a return on its investment and then some. The City does this because being the owners of the fiber they will take some monthly revenues, though they outsource management, maintenance, collection, to a wholesale entity. A subset of that money, say about 30% goes to the wholesale entity that manages the fibers.

Heres how it would work

 We make a wholesale CLEC entity LLC, e.g. om.utility, to install the fiber rings one neighborhood at a time and pull runs back to om.utility NOC, which could be our OM office on a fiber accessible main thoroughfare. This facility becomes the network peering point for retail providers that want to sell over the network, and it can be a customer facing location where customers can interact with gigabit speeds, order services, and see to customer service issues. We deploy neighborhoods like Google fiber does, saying we will be launching muni fiber and waiting for commits/contracts of over 85 or 90% in a given neighborhood. Then deploy that particular neighborhood fiber loop as to ensure best use of resources, and will secure the most users on that particular ring when its deployed. After it is done deploying throughout the 22 neighborhoods, the wholesale entity provides maintenance, should things need to be spliced, does new residential developments, manages CPEs, manages provisioning and decommissioning VLANSs/MPLS for retail providers and provides Network Exchange type Interconnect for the retail service providers on the network to reach the end users.

 The retail service providers are the ones providing "services" to end users/businesses, who will buy IP/ TV/Phone/Whatever from whatever retail entities interconnect at our NOC to sell such services. It will be open, and the consumer will have choices of whatever retail service provider they want to work with. Anyone who wants to inter exchange with the City Fibers at the NOC to provide retail services, may by paying the City a monthly fee to have a PORT on the infrastructure. Maybe they also pay a monthly fee for the traffic they use or a higher CIR to the end user NID, or a hookup/take down fee, whereby we automagically provision them to the customer over the shared network.

Hopefully, we get like 10 or 15 IP/TV/Phone providers. Consumers will pick and choose based on what service needs and wants they have. See http://www.utopianet.org/about-utopia/

Heck even Omsoft, separate from the wholesale manager entity could also be retail entities selling on the platform. So would, say Cal.net, or CWO, Sonic.net, or Surewest or others. I do not think ATT or Comcast would inter exchange with us.

This model will definitely drive residents and businesses to connect to the wholesale fiber network and use retail providers off our wholesale network because of the ease of switching and picking between non duopoly providers. We work out some system to switch between retail providers automatically through the variety of tools available, VLAN, MPLS, ATM, to the network management space currently. This framework will cause competition at the retail level and will force prices to be reasonable and service to be better. They want to get away from duopoly customer service and ever increasing pricing. They will also want to because wholesale city owned network interconnects with UCD, City or School and that is available, because those sites are on the network, without buying any retail IP transit offerings out to the larger Internet.

The structural budget deficit plagued city will love it because it will give them a 30 year revenue stream monthly of say $20 * 20000 households/business. This gives them a cost justification vehicle to float a bond to the residents/business to obtain the financing now to pay for the network, and also close their revenue hole. After the city gets paid, they pay a subset of that money, say about 30%, goes to the wholesale not for profit, CLEC entity that manages the fibers. All the wholesale entity would do is provide the physical loop maintenance plus private IP addressing to all the NIDS, commission/decommission retail services over the physical layer (all automated stuff) and a micro amount of bandwidth, say 3 Mbps. The city then gets to work with its forthcoming Public owned utility to have smart grid capability and other IP Internet of things automation.

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Here is how a residence or business cost would look.

1) Paul is a college resident

Wholesale bill - This is billed to and paid by the landlord as this fiber is now a muni owned "utility" so it could get billed like WSG. This is the wholesale fee the city is recouping to pay back its 30 year term bond issue it paid om.utility to deploy this "to just have the fiber to your house"

Wholesale could come with like a 3 Mbps Internet, give you 100MBps CIR on the network which allows you FAST Access to campus, between neighbors, and smart grid for the new City of Davis Public owned utility - see - chattanoogagig.com

$20 or $25 month

Paid by Paul -

Retail Internet - $50 to Cal.Net to have 100 Mbps
Retail TV - $35 to WAVE for a full package of channels over IPTV

2) Valley Auto Parts is a small business

Wholesale Bill - $20 or $25 month paid by landlord built in rent, landlord gets smart grid monitoring plus gets to say there is free basic inter nets that come with this suite.

Paid by Valley Auto Parts -

Retail Internet + IPPhone bundle - $200 to Utility Telecom for like 8 IP phones 4 talk paths and 50 Mbps network transit.

Both of these examples still fall under the 100MBps CIR provided at the $20/$25 wholesale level

3) Mori Seiki is a big business

Wholesale Bill - $25 a month for their fiber drop and 100 Mbps CIR on the network - which employees could use for VPN'ing even without outbound IP transit, because all CPEs at all doors have private IPs already.

But they are going to need a higher CIR (500 Mbps, 1Gbps, 10Gbps?) which they will buy through one of the retail providers on the muni fiber.

The retail provider can expect a tariffed rate structure from the wholesale CLEC om.utility, for higher CIR on the Metro Area Network, and so we make sure we recover costs for big users and anticipate capacity needs along the rings and the backbones.

Paid for by Mori Seiki b/c they own their building.

Retail

 1 Gbps DIA from Surewest - ($1000/mo)
 100 IP Phones from Surewest - ($2000/mo)
Also now can be easily multi homed
 1 Gbps DIA from Omsoft - ($1500/mo)

City comes out well because they are getting paid for higher CIR at the customer prem on this customer, and paid the amount of CIR and port at the inter exchange fabric as Surewest or Wave or IP Provider X needs more capacity to serve the customer on the wholesale-entity-managed city-owned network.

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This is a new and visionary idea for the deployment of Internet in a community. The alternative, incumbent monopoly and poor service is detrimental, and its showing its inadequacies and limitations. Net neutrality issues aside, especially with people just seeing how greedy all these big companies are. They are just going to keep raising prices, and providing crappier service. Now they are extracting revenues coming, going, and in between. WE don't need yet another monopoly here that builds out a network at its own great expense and then charges exorbitant rates while providing poor service. Citizens will be assured that their telecommunications infrastructure has been secured by their city in

conjunction with a non profit oversight group made of City, UCD, School, business, and citizen and management outsourced to the reliable wholesale entity that implemented the fiber. Schools and City government are on board, although they don't get the fiber paths for free, they know they are getting them at the wholesale entity's tariffed cost for CIR and network ports to transit traffic between their facilities.

So lets do this!

This is the first draft collection of thoughts I've been mulling on the subject and welcome any discussion on this concept, or criticism. I'd like to think the economics could work out for everyone, and I think Davis would be a good place to do it. This would definitely be a victory if it were executed properly and, be a good example for other like-minded communities.