

Suggestions for Research and Expertise

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1 Introduction

During the budget hearings on April 21, as I sat just outside Council Chambers listening to the deliberations, I spoke briefly with Laura Gonzales who is IT Manager for the county. She told me that she is going to retire from the county this October. In response to my request, she sent me links to studies that the IT department has done on making broadband Internet access available in the county. As I read that material (and discovered that Estevan Gonzales has already left county employment), I developed the opinion that the county is losing much of the expertise and knowledge that it has had on the issue and that we should have more staff expertise in the area.

I expressed that opinion at the Council Leadership meeting on Monday, May 4 and suggested that formal expressions of interest by Council and BPU could direct staff to develop and maintain the appropriate expertise. At the meeting, as I read from notes that I had prepared for myself, Councilor Girrens suggested that I send the notes to the Council. This document is a revision of those notes that I've written in response to that suggestion.

2 Opinions and Forecasts

While I believe that freedom to communicate and freedom to develop technology are at stake and that those freedoms are essential for economic development and if not life, at least liberty and the pursuit of happiness, I will limit my points here to what I believe about the technology and economics of the 21st century communications business. I've developed these beliefs based on a solid theoretical understanding of a few of the technical issues mixed with reading a fair amount of lay journalism and a little bit of guessing. I am advocating for county staff having a broader command of the economics and technology than my splinter skills even though that would empower them to correct the errors in my guessing.

The following points summarize my view of the present situation and the likely future:

Landline communication is a natural monopoly Since installing a second parallel set of fibers to each residence would roughly double the fixed costs

and drive prices down to the marginal costs of providing service, it would only make sense for a business that was big enough to use predatory pricing to eliminate competition in the short term and later raise prices to recover fixed costs. The parallel phone and cable systems that we have now were built before the technology emerged that allows us to roughly substitute one for the other.

Video on demand will drive broadband deployment Several of my friends, neighbors and colleagues report that the capacity of the systems installed in Los Alamos now limits their families viewing choices. There were reports in the business news last week, that Comcast now has more Internet customers than cable subscribers.

Comcast is an unregulated discriminating monopolist For example, in the past year Comcast extracted payments from Netflix to enable communication between Netflix and Comcast customers. I believe that behavior tipped the balance in the decision by the Department of Justice to oppose the merger between Comcast and Time Warner.

Federal law and regulation will change Presently, the FCC is trying to enforce *net neutrality* and Congress opposes that policy. It will be years before the nation has stable policies at the federal level. Cities that install their own fiber will enable their citizens to avoid some of the effects of that instability. Also, if we end up with federal law that permits unregulated monopolies, those cities that own fiber will avoid the ill effects locally.

Fiber is the best option I have not done the analysis myself, but I've heard and believe that neither wireless connections nor copper wires can provide the channel capacity that widespread video on demand will require.

Co-ops and community owned utilities are the best options I know folks who are served by telephone co-ops in Oregon, and they have marvelous inexpensive Internet service. Residents and businesses in Chattanooga seem similarly pleased with their new fiber service.

3 Actions and Expertise I Recommend

Prepare for new capacity: I want us to exploit every opportunity, eg,:

- Place conduit when we dig.
- Plan for fiber when we replace utility poles.

We should ensure that the DPU cooperates closely with the county IT and Public Works departments to accomplish this.

Analyze cost recovery: Find out if and how we can charge Comcast or Qwest for our preparations if they ultimately use them.

Staff command of communication economics: Staff should understand the business in general. For example, we should know:

- How much does Comcast's monopoly cost LA County citizens?
- What regulations apply to various communication services?
- How expensive and difficult is it to provide access to various entertainment products (sports, sit-coms, etc.) and how lucrative?
- Are the last mile aspects of the business separable from the rest of the business for Comcast and Qwest?
- How expensive is it to duplicate/replicate the last mile fiber connection? Does that expense mean that the first installer will acquire a monopoly?
- What aspects of the business aside from the last mile connections could enable firms to exclude competition?
- Are there realistic alternatives to fiber for providing video on demand?

Rather than studying these questions as original research, we should seek partnerships with other communities that need the same information.

Support competition: Keep track of businesses that could provide alternatives to Qwest and Comcast and understand how the county could help them serve our citizens. Consider owning key components that would prevent entrenchment of a for profit communication monopoly.

Consider neighborhood deployments: County staff should know how expensive it would be to build broadband systems for various kinds of neighborhoods in the county, and they should research possible business models for building those systems. In particular I recommend studying county support for co-ops in neighborhoods that choose to fund deployment themselves.

We are better off than most cities because our public utility owns the electric distribution system along which fiber will be installed. I hope that we can exploit that advantage and the changes required by video on demand to provide ourselves with better options for communication services than much of the rest of the country have.