Creating Opportunities for Broadband Deployment

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Status Quo

- One or two major broadband providers (25 x 3)
- No real price competition
- No service quality commitments ("up to...")
- Gaps in availability especially in business and commercial districts and lower income areas
- I-Nets (if any) become "managed services"

Goal

- Advanced networks capable of providing high speed symmetrical broadband via fiber-to-thepremises/curb (and/or wireless technologies)
- Ubiquitous availability all businesses, institutions and residences
- Competitive prices
- "Best efforts" service quality
- Low-cost and no-cost options to address digital divide

Basic Network Design

FIBER RING

Goes all the way around the city, so it's easy to bring service to any eligible neighborhood

FIBER HUT

The real "brains" of the fiber network. Thousands of individual glass fibers enter the hut, then each strand passes through the devices that receive and transmit signals between your computer and the Internet.

TELECOM CABINETS

These small cabinets, often on the side of neighborhood roads, divide Fiber into small bundles which travel out of the cabinet towards clusters of homes.

FIBER-TO-THE-HOME

A fiber cable passes through your neighborhood along telephone poles or underground. From that cable, each home gets its own individual fiber strand, which delivers Google Fiber Gigabit Internet and TV service.

Tech: What's a Google Fiber Hut?



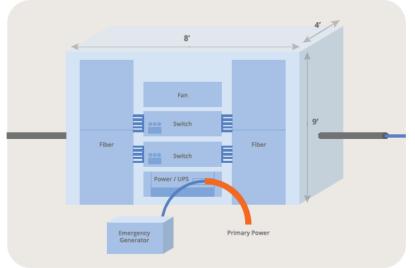
About 70 enclosures of this size would be required for *residences* for the City of Los Angeles





Assume a box like this every 3-5000 feet for passive network substantially larger for active network (like AT&T boxes)



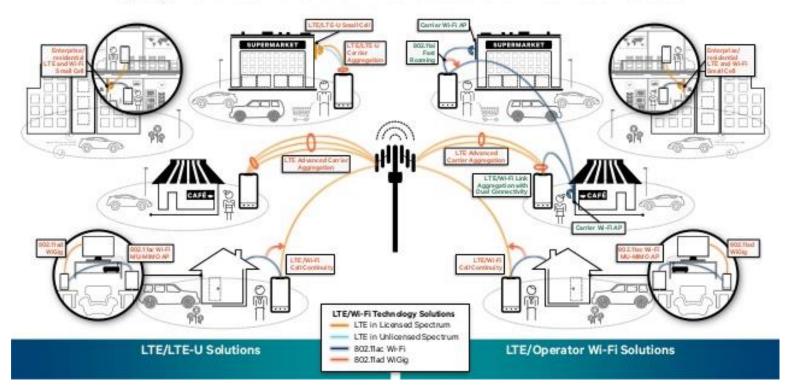




Pole – mounted version – Verizon FiOS cabinet



Deployment Scenarios for Licensed and Unlicensed Access



Source: Qualcomm







Ericsson-Philips Light Deployment





Private Entry at Retail – Where Can We Make A Difference?

- Providers typically say
 - Speed to market (and cash flow) is critical
 - Existing permitting processes are too lengthy and overlapping
 - Access to poles and other critical infrastructure is difficult to obtain in a timely way
 - Access to city property is too expensive
 - Access to real estate required for hubs, antennas and other facilities required for system is too difficult
 - Environmental/labor issues may present barriers
 - Building codes don't adequately encourage deployment

Some Ways Others Pursue Broadband

- Continuum of approaches from public support to full public ownership
- Incentivize construction of private networks through issuance of RFP (Los Angeles).
 - PRIVATE PROVIDERS ARE NOT PROMISING TO BUILD OUT ENTIRE COMMUNITY WITHOUT COMMUNITY INVESTMENT – GOOGLE DOES NOT PROMISE BUILDOUT
- Build all or part of a network and attempt to attract providers on a wholesale basis (lit or unlit) (Shafter, Huntsville)
 - For retail, commercial
 - For middle mile
 - For system components (fiber; conduit)
- Build all or part of a network and lease/sell/share with entity that agrees to meet certain service parameters (Brentwood, Ontario, Anne Arundel County, Tacoma)
- Build network and provide retail services, through enterprise or cooperative (San Bruno, Chattanooga, Lafayette, Anza)
 - Retail services to public
 - Self-provisioning/provisioning other public agencies



Typical Deal Documents

- Construction contracts
- Operator agreements
- Fiber/conduit/infrastructure leases
- Indefeasible Right of Use (IRU) agreements
- Service Level Agreements (SLAs)
- Pole attachment agreements
- Site leases
- Collocation agreements
- Franchise agreements (not in CA)

First Steps in Broadband Planning

- Investigate options and set general direction.
 Decide which type of model seems the best fit to pursue
- Stay flexible. Recognize that by going through any RFI/RFP process, locality can gain important information for developing the best approach to deployment.
- Bear in mind legal limitations and most promising opportunities.

Legal Limitations

- Access to asset most critical to deployment public rightsof-way:
 - is already available at no charge to companies that can qualify under Pub. Util. Code 7901
 - companies with DIVCA franchises claim access at 5% of <u>cable</u> revenues
- Non-discrimination provisions in state/federal law may limit local authority to tilt the permitting process/fees for permits or RoW use to favor particular providers
- CPUC rules may prevent localities from successfully addressing another potential major hurdle: access to poles

Opportunities

- Legal limitations should not prevent:
 - granting favorable access to locality's proprietary (non-RoW) property (parks/light poles/buildings)
 - aggregating locality's own and other assets to make it easier to enter market (excess fiber)
 - streamlining permitting process for projects that meet certain tests
 - favoring broadband providers in deciding with whom to contract for services locality needs
 - "marketing" efforts to create a favorable environment for new entry

Case Study – the LA RFP Process

- Began with issuance of an RFI designed to determine what *might* encourage entry into the market (what were the localized problems)
- Review of all processes that were identified as barriers to entry directly, or in other communities
 - Permitting on and off RoW
 - Zoning
 - Inspection/approval processes



Case Study – the LA RFP Process

- Cataloguing City assets that might be useful to deployment of network, and developing price models and uniform contracts for access to most useful assets [locations for Fiber Huts and Wi-Fi devices]
- Working with other public/private agencies that could bring assets to the table, or whose involvement may be critical to deployment:
 - Public housing authority
 - LADWP
 - LACMTA
- Developing a brand that could be used to spur deployment/create demand
- Examining opportunities for City to serve as an anchor tenant



Case Study – the LA RFP Process

- Developing a process for streamlining the permitting process
 - Creation of a Digital Infrastructure Permitting Group
- Significant legal review of existing processes/requirements
- Creating databases to make it easy to plan network deployment, and uniform processes for obtaining access to that information
- Allowing for flexibility in responding to RFP in light of market realities [demand-based models]
- Working with community groups that could assist in deployment, and help address deployment issues
- KEY: Leadership support at highest levels

Bottom Line

- Attracting new entrants is more likely if locality can show that it has taken concrete steps to address identified issues
- There is little reason to respond to an RFP that imposes obligations with no benefits, since the provider always has the option of entering the market through DIVCA/7901 process, and serving markets of the providers' own choosing
- For smaller communities, mixed approaches/joint efforts may be key

Establish Long Term Strategies

- Consider altering codes/requirements with respect to new developments/public housing
 - Installation of conduit before construction of roadway in new developments/road repaying?
 - Conduit in buildings?
- Build deployment into long term strategic planning for all departments, e.g. in connection with construction of traffic control systems, major road/sidewalk reconstruction
- Expand participation (health care/schools) and think about ways of planning to aggregate demand
- Coordinate, and prepare to take advantage of new market opportunities

Questions?



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