



## Public Private Open Access Fiber Infrastructure

Capsule: Direct stimulus infrastructure investment funds to building a nationwide fiber infrastructure on the model of the national highway and local roadway system, based on federal funds, with federal, state, and local implementation. Use competitive bidding to bring fiber to the curb. Add targeted, time-bound tax incentives to fund residents to connect to the network. Make some of the funds available for organizations seeking to light up existing dark fiber in ways that would implement the goals of the program. The resulting network would be open access for public or private providers who would use it to provide competitive Internet services.

Rationale: High Speed Internet connectivity is a critical strategic infrastructure for innovation and competitiveness. The present rate of deployment in the United States has the U.S. falling behind competing nations. This is a result of an only weakly competitive market, in part due to failed regulation. The incoming Administration's commitment to implement net neutrality alone is important, but does not address the problem of basic infrastructure capacity growth. Duopoly does not provide sufficient market discipline. Net neutrality in practice means behavioral regulation imposed on an imperfectly monitored, and imperfectly driven actor.

To spur High Speed Internet deployment and availability of an open, core common infrastructure, what is necessary is either genuine competition or a well-funded public utility for pure bit carriage, which would then provide the core facilities over which new entrants could innovate in electronics and services.

Unbundling and open access approaches to incumbent infrastructure were the core strategy of enabling competition envisioned by the 1996 Act. These approaches were implemented in other industrialized countries with a substantial degree of success. Countries that implemented unbundling or structural separation, with the compliance of formerly government-owned incumbents, saw substantial gains in competition and performance. They have surpassed us by relevant measures. In the U.S., this approach was fought to a standstill by the incumbents, until the Bush-appointed FCC reversed course and embraced intermodal competition as sufficient. While regulation is clearly not the sole cause, it certainly functioned in these other countries as predicted, with superior results. Revisiting this erroneous decision is important, but given the present investment climate, private funds to build this competitive infrastructure are unlikely to be available in the near future, as they were in the 1990s.

The present condition is typified by (a) weak competition, and no mechanism to allow entrants to leapfrog high-cost, low-innovation, long-lived and amortized elements, like digging in the ground and pulling conduits, to establish a service; (b) absence of capital in the markets in the near- to mid-term; (c) low cost of federal funding, which could provision high-cost, long-lived infrastructure assets and then open them up to any services, private, public, or mixed, to provide electronics and services. User payments would return investment over a time horizon that the federal government can, but a private company cannot, sustain. An open access fiber infrastructure would introduce substantial competition to the other two wires into the home, because it would not



merely be a third wire, but a platform for multiple competitors, as conceived in the original model of the 1996 Act.

Stimulus: Short term: Similar to fixing roads and bridges: creating jobs in construction, but also in more technology-heavy jobs necessary for network services. Using an open bidding model for construction, the pathways could be locally variable, based on idle local construction capacity: the presence or absence of local government or utility capacity; local construction firms; or the extent to which an incumbent is able to increase its construction capacity locally to introduce an open platform alongside, or instead of, its planned proprietary platform. Bids can include the costs of acquiring and lighting up existing dark fiber, where available and appropriate given the scope of the project and local conditions. The major concern is that this approach has a longer ramp-up period than implementation of existing road and bridge construction plans. It should be mitigated by starting with speeding up and expanding existing plans, like Internet 2, and targeting grants at states and regions that implement rapid approval procedures. Mid-term: Higher capacity networks increase productivity.

Model: Funds would be made available first to speed up existing plans for fiber deployment that made a case for its extensibility to a fiber infrastructure. Applications could come from states or local governments that already had plans for fiber deployment to schools or hospitals, but were awaiting universal service or other funds; from companies or universities that need to connect private fiber to a campus, on condition that this would now be constructed as an element in an open access fiber infrastructure, by, for example, creating a middle-mile to an otherwise weakly connected populated region; or from public private partnerships that might build on existing projects, such as the National LambdaRail, to provide an alternative open fiber infrastructure beyond their original research task. Funds could also be applied for by incumbent infrastructure owners who need it to upgrade or reconfigure existing conduits and fibers, on condition that the resulting fiber infrastructure be under an open access framework that allows any service-level competitors to use the infrastructure.

Payments would be awarded through competitive bidding. It is important that these funds not be used simply to reimburse incumbents for already-planned investments, as these would serve neither stimulus nor competitive infrastructure goals. Receipt of funds would depend on acceptance of an open access model. Payments would be in the form of grants, loans, or participation rights, depending on whether the particular project was to be publicly owned and primarily physical infrastructure, or primarily focused on lighting up existing fiber to provide a service.

Individual homeowners and condominiums will receive a tax credit if they connect from their premises to the curb within a set period of open access fiber being available at their curb, or within 12 months of the availability of a local service to install such user-owned or condominium fiber connections to the open access fiber infrastructure. Service entrants could build the driveway-level connection into their offering, making the homeowner eligible for the tax incentive; or bypass the need for driveway-level connection by building neighborhood level wireless distribution systems.