

# **Do Third Party ISPs Facilitate Broadband Competition?**

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August 1, 2002

Restrictive practices by first-mile broadband service providers are harming long-term prospects of high-speed access. In some cases government regulations require the carrier to open the network to third party ISPs in an attempt to encourage first-mile competition. Ideally competition should be facilities based where each company deploys a physical network that extends directly to the customer's premise. Economic reality dictates only a few players will be able to make the massive investment needed to wire millions of customers. The question for regulators: given the small number of first-mile carriers should network infrastructure be open to third party ISPs or is there another way to encourage broadband competition?

This paper argues forcing facilities based carriers to open their networks to third party ISPs does not increase competition – since the ISP is still totally beholden to the carrier. As a side effect it gives carriers an excuse to not upgrade. Forcing first-mile carriers to share facilities with third party ISP's blurs different aspects of ISP service -- carriage and applications. A better solution is to require the first-mile network to provide transparent end-to-end services. The carrier's role is to deliver-the-bits. With a transparent network it does not matter where the service provider connects. Separating carriage from application solves a number of thorny issues without eliminating business incentives to network providers or service providers.

A quick history lesson: dialup ISPs operate at the edge of the Public Switched Telephone Network (PSTN) – they do not require internal access to the PSTN. Their ability to deliver Internet service is dependent on US regulations that require Telco's to function as common carriers. The Telco cannot dictate how the network is used or refuse to connect an ISP to the network. As long as data looks like a voice phone call it must be carried. Telco's cannot use discriminatory pricing to raise barriers to entry. Any entity, regardless of what they do, can connect to the PSTN.

I think a similar approach to broadband, defining first-mile Internet access as "common carriage," provides the incentives to develop the network while preserving critical public interest aspects. In this model first mile carriers are required to provide transparent ISO Layer 1-3 (physical, data link, network) services needed to “deliver-the-bits.” Typical services are: address allocation, routing, name service, maintenance, etc. This creates a transparent end-to-end network, much as the existing PSTN network does for voice.

## **Transparent Carriage**

The powerful notion embodied in the Internet is end-to-end connectivity. It separates carriage from application. As long as the network is transparent anyone can connect at

the edge and deliver whatever service they chose. By declaring first-mile network providers “common carriers” they are forced to adopt a business model that generates profit based solely on carriage - **what the network carries is irrelevant**. As long as it is legitimate IP traffic they must deliver it. This allows customers to access services from remote locations and to provide services to other Internet users.

End-to-end accessibility requires the customer’s IP address be publicly routable. This allows traffic to flow into the customer’s location or originate from it to provide services to other Internet users.

First-mile carriers are free to engineer their network in any fashion they desire as long as they provide transparent carriage. Internal network operation is solely the responsibility of the network owner.

## **Nondiscriminatory connection**

Non-discrimination means anyone is able to connect at the edge of the network to deliver a service. The network owner must connect all qualified customers.

The customer does not require network owner cooperation or permission to deliver services. The network owner has no control over traffic between Internet hosts.

## **Persistent Addressability**

For the Internet to function as an end-to-end communication medium endpoints must be accessible. In the IP world this requires a public IP address that is accessible to other hosts on the Internet. Accessibility requires a mechanism to allow hosts to learn the address of the desired party. Traditionally this has been accomplished by issuing static IP addresses. Static addresses have a number of disadvantages for mass deployment so vendors have adopted dynamic schemes. This causes interference with access since the remote party needs to know the current address.

Persistent addressability requirement is met if the ISP allocates the customer one or more static IP addresses or combines dynamic address allocation with dynamic DNS service. This way regardless of how the ISP allocates addresses the customer has a persistent identifier.

## **Flat rate pricing**

The effect of flat rate local calling is often overlooked as one of the reasons Internet use developed so rapidly in the US. Flat rate pricing encourages experimentation. As users and suppliers discover innovative ways to use the connection demand increases. Customers have repeatedly demonstrated a desire for flat rate pricing to eliminate “end of the month surprise.” This notion should be carried over to first-mile carriers.

Service offerings are tiered by speed, not usage. This should have the same effect as unmetered local phone service. Customers select a service plan based on instantaneous speed. In general heavy users will opt for higher speed and casual for lower. Within each plan actual usage is unmetered. This encourages experimentation since there is no incremental cost to the user. As more demanding services are developed users have incentive to migrate to higher speed services. While metered service appear to be a rational response to conserve corporate resources it creates usage disincentives, thus slowing down creation of new services, which drives demand for ever faster service. The broadband business model should be structured to encourage ever-greater usage – along the lines of PC evolution.

## **Summary**

These modest requirements: transparent carriage, nondiscriminatory connection, persistent access, and flat rate pricing maintain the openness of the Internet while preserving profit incentives to upgrade the network and deploy service offerings. Network carriers compete based on network attributes. Service providers compete on the ability to attract customers to the service.

A somewhat more controversial question is: should first-mile carrier be allowed to bundle value add services? One can argue this places independent suppliers at a disadvantage since administrative overhead for first-mile carriers is much less than an independent third party. On the other hand one stop shopping is certainly convenient for typical customers. On balance as long as transport is transparent and revenue from one activity not used to subsidize another first-mile carriers should be allowed to offer any service they desire.

This model satisfies public interest concerns and provides incentive for companies to invest the capital needed to roll out high-speed service. It preserves openness allowing new services to be deployed at the edge.