



CIRF

Converging Industries Research Foundation
Practical Solutions for Communications Policy

BROADBAND DEPLOYMENT CHARTMAKER

Legend Instructions

Where is it deployed?
URBAN
RURAL
NATIONAL

20 yrs
10 yrs
5 yrs
How soon do you want it?

What are the markets?
RESIDENTIAL
BOTH
BUSINESS
 Do not show market detail

Do you want to compare broadband with the telephone line?
yes
no

DO YOU WANT JUST THE FIBER INFRASTRUCTURE OR THE ABILITY TO GET BROADBAND SERVICES?

VIEW CURRENT CHART
Go to broadband paper
Go to schools chartmaker
Go to home page

[Top of Page](#)

[Broadband Models](#)

[CIRF Home Page](#)

Instructions

Description

The Broadband Deployment Chartmaker generates charts that describe the revenue requirements for broadband deployment, under assumptions selected by the viewer. The costing data is based on a software model, called the *New Technology Deployment Model: Broadband with Associated Depreciation and Overheads*.

The charts indicate the revenue requirement per customer per month.

Instructions button

Clicking on the button labeled "Instructions" located on the upper right-hand edge brings you to these instructions.

Legend button

Clicking on the button labeled "Legend" located on the upper right-hand edge brings you to the Legend, which explains the underlying assumptions used to generate the charts and provides definitions of terms used on the chartmaker.

Where is it deployed?

There are four choices: urban, rural, national, and urban-rural. Click on one of the four choices. The selected button will be green. The default is urban-rural.

How soon do you want it?

There are three choices: 5 years, 10 years, and 20 years. Click on either the appropriate text, or the level on test tube. The level of the liquid in the test tube will change. The default is 20-years.

What are the markets?

When the button next to the text, "Do not show market detail", is green, then only national data curves are displayed on the generated charts. You may also select one of the choices on the handle above:

Residential, Business, or Both. Selecting one of these results in residential and/or business curves being displayed on the charts. The default is "Do not show market detail."

Do you want just the fiber infrastructure or the ability to get broadband services?

Clicking on the slide button changes the setting between "Just the fiber infrastructure" and "Broadband services". You can also click on the text below the slide to select one of these two choices. The selected choice is indicated by green text. The default is "Just the fiber infrastructure."

Do you want to compare broadband with the telephone line?

Clicking on the button labeled "Yes" will generate a benchmark line on the chart that shows traditional telephone revenue requirements per customer per month. To omit the benchmark from the chart, click on the "No" button. The selected button will have a green arrow on it. The default is "Yes".

VIEW CURRENT CHART

Click on the button on the base of the chartmaker to display the chart based on the current selections. To return to the chartmaker, click on the "return to chartmaker" button in the upper left-hand corner. This will return you with the same settings as the current chart

Go to schools chartmaker

Click on this button to go to the "Broadband to Schools Chartmaker".

Go to broadband paper

Click on this button go to the background paper for the charts generated by this model. The paper, ***Overview of New Technology Deployment Model: Broadband with Associated Depreciation and Overheads***, provides more detail on the various selections, on the assumptions underlying the model, and various caveats.

Go to home page

Click on this button to return to the home page.

[Top of Page](#)

[Broadband Models](#)

[CIRF Home Page](#)

Legend

Definition of broadband

Definition of broadband used in the model: A single "broadband" service is defined as one offered at data rates of 45 Mbps (megabits per second) or greater. The broadband service platform provides enough bandwidth for data transfer, faxing, voice communications, and two-way video services. The broadband deployment is based on the residential deployment for broadband developed in the *New Technology Deployment Model*, which is described in the [Overview of the New Technology Deployment Model](#) and the *1995 User Guide*.

Description of four buttons on the base of the chartmaker

VIEW CURRENT CHART

This button on the base of the chartmaker displays a chart based on the current selections.

Go to schools chartmaker

This button brings you to the page with the "Broadband to Schools Chartmaker".

Go to broadband paper

The paper [Overview of New Technology Deployment Model: Broadband with Associated Depreciation and Overheads](#), provides more detail on the various selections, on the assumptions underlying the model, and various caveats.

Go to home page

This button brings you back to the home page.

Description of the selections on the chartmaker

Where is it deployed?

- Urban:* Geographic areas equivalent to the U.S. Office of Management and Budget's metropolitan statistical areas (MSAs).
- Rural:* Geographic areas equivalent to the remaining market areas, or non-MSAs.
- National:* Combines both urban and rural areas and displays as a single curve.
- Urban-Rural:* Displays both the urban and the rural curves.

How soon do you want it?

- 5, 10, or 20 Years:* By the end of the selected time frame, 100% of the technology is deployed.

What are the markets?

Definition of broadband used in the model: A "broadband" service is defined as one offered at data rates of 45 Mbps (megabits per second) or greater.

- Do not show market detail:* When this button is clicked, only nation-wide data are displayed on the charts. Market detail provides data on Residential and Business markets on the charts.

Market detail

- Residential:* This technology platform provides work at home (data transfer, video conferencing, faxing, etc., all simultaneously) in addition to traditional voice. It also provides entertainment and other one-way video services. This platform should support an average of one switched wideband signal (up to 1.544 Mbps) per current residential access line (making work-at-home applications possible) and one broadcast video signal (providing video on demand) per person per household. In addition, this platform provides current residential narrowband service.

Business: This technology platform provides enough bandwidth to support a burgeoning need for higher than 64 kilobit business services (quality video-conferencing, two-way interactive data services, primary and basic rate ISDN). It also has a dynamic allocation of bandwidth that lets the customer reconfigure the network in real-time to meet tailored business needs. This platform should support two switched wideband signals per current business access line, as well as all current business services. Additionally, a business with a mix of wideband and broadband services should be able to reconfigure its own access to the public switched network up to the information capacity of services purchased.

Both: Combines both residential and business markets.

Additional network features for both residential and business platforms include electronic interfaces at customer and network interconnection points; network power sources and power back-up customized to customer density; and integration of narrowband, wideband, and broadband services on the same fiber. The subscriber is met electrically, not optically in this model.

Do you want just the fiber infrastructure or the ability to get broadband services?

These curves are revenue requirements per customer per month. The difference between the infrastructure (equipped) curves and the ability to get broadband services (capable) curves is the additional cost of equipping capable lines to provide broadband services. The model assumes a 2.35% annual growth rate in nationwide access lines. Revenue requirements equal expenses plus tax plus return on investment. Local exchange carrier revenue requirements include basic service, state toll, and access.

*Just the fiber
infrastructure:*

This is the cost for the modern telephone network carrying only traditional telephone services. On the chart these curves are labeled "Broadband Infrastructure," and are based on the following assumptions about telephone lines (access lines): 100% broadband capable and 0% broadband equipped. Broadband capable means that: (1) all copper feeder and distribution facilities (loop) have been replaced with fiber; (2) an asynchronous transfer mode (ATM) switching adjunct has been added to the central office (wire center); and (3) current services are deployed on this fiber infrastructure. Therefore, all customers subscribing to narrowband services, such as voice service, will continue to receive these services. Most of the capable costs are for the conversion of the copper lines.

*Ability to get
broadband
services:*

This is the cost of the telephone network carrying broadband services. On the chart these curves are labeled "Broadband Services," and are based on the following assumptions about access lines: 100% broadband capable and 100% broadband equipped by the end of deployment time (5, 10, or 20 years). "Broadband equipped" is the cost for the telephone network carrying broadband services. For example, for a 20 year deployment, each year the total number of lines equipped to provide broadband services increases by 5% of the total capable lines. A line must be broadband capable in order to be equipped; equipped lines are a percent of only those lines that are already broadband capable.

For a customer to receive broadband services, costs beyond those associated with converting an access line to broadband capability are required. Additional costs for equipping include the costs of channelization of broadband services near or at the customer premises, broadband switching capabilities at the wire center (switch), and transport through the interoffice network for broadband services. These facilities are new and not a replacement of existing facilities.

Do you want to compare broadband with the telephone line?

No: Only fiber deployment revenue requirement curves are on the chart.

Yes: Inserts the 1992 telephone revenues per line to provide a benchmark for comparison with the fiber deployment curves. This benchmark is a calculated revenue requirement for large local telephone companies divided by the number of telephone lines (access lines). The revenues include basic service, state toll, and access. The benchmark represents a marker rather than an exact threshold since it excludes the impact of competition or the effect of additional revenues from other potential sources (whether current services such as cable TV or new services which have yet to be developed).

[Top of Page](#)

[Broadband Models](#)

[CIRF Home Page](#)