

FIBER-TO-THE-HOME: NORTH AMERICAN MARKET UPDATE

FOR THE FTTH COUNCIL

April 2010

RVA LLC
Market Research & Consulting

15 West 6th Street, Suite 1204
Tulsa, Oklahoma 74119

Copyright Notice

**This report is copyright protected.
Unauthorized copies, duplicates, scans, faxes, etc. are prohibited
and will be prosecuted according to copyright laws.**

**Questions about the use of this document should be directed to
RVA LLC
800-619-3102 or info@RVALLC.com**



FIBER-TO-THE-HOME: NORTH AMERICAN MARKET UPDATE

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION AND METHODOLOGY	
A. <i>A Word About the Language and Style of the Report</i>	4
B. <i>Emphasis and Scope of the Report</i>	4
C. <i>Survey Methodology</i>	4
1. <i>Background Information/Secondary Research</i>	5
2. <i>Interviews with FTTH Experts</i>	5
3. <i>Study of FTTH Deployments</i>	5
II. OVERVIEW OF NORTH AMERICAN FTTH ACTIVITY	
A. <i>FTTH Market Size Definition and Methodologies</i>	6
B. <i>FTTH Market Size—Homes-Passed, Marketed, and Connected</i>	6
C. <i>FTTH Growth versus Historic Copper and Coax Rates</i>	8
D. <i>FTTH Deployments by Type of Provider</i>	8
E. <i>Overall Penetration of FTTH</i>	9
III. FTTH TAKE-RATES	10
IV. CURRENT FTTH GROWTH PROSPECTS	13



© RVALLC 2009

I. INTRODUCTION AND METHODOLOGY

A. A WORD ABOUT THE LANGUAGE AND STYLE OF THE REPORT

The goal of this research is to provide a review of the fiber-to-the-home (FTTH)/fiber-to-the-premise (FTTP) market and industry. The report is written to a wide audience, and therefore is written in plain language, as it is evident that a diverse group of people are interested in understanding fiber-to-the-home and its market. Graphics have been incorporated where appropriate.

B. EMPHASIS AND SCOPE OF THE REPORT

This report is focused on running fiber all the way to the subscriber residence. All figures referenced relate to cases where fiber is run all the way to the *individual living unit*. Thus, fiber-to-the-curb (FTTC) or fiber-to-the-node (FTTN) installations are not the report's focus. (The terms FTTC and FTTN define cases where the last few hundred feet to the home or business are actually still served with DSL over copper.) For multi-tenant buildings, the report focuses on fiber all the way to the individual living unit. (Fiber to other than the living unit might more accurately be defined as "fiber-to-the-building" or "fiber-to-the-floor", or "fiber-to-the-building plus LAN", and data for living units connected in this way are generally not included in this report.)

It should be noted that many systems designed for fiber-to-the-home also supply service to small and medium sized businesses, as well as government agencies. The report also addresses such activity.

C. SURVEY METHODOLOGY

The methodology for this study is multi-faceted. It includes a thorough review of the market using extensive primary research. (Many other research studies merely gather data using secondary research or by interviewing people toward the top of the market pyramid, i.e. known experts who

may have a sense of industry.) This study is different from most in that its detailed methodology works from the bottom of the deployment side up and includes interviews with representatives of many FTTH projects. (Data from interviews more than one month old were prorated slightly based on anticipated build schedules.)

The following methods were used to gather data for this study:

1. Background Information/Secondary Research

Extensive Internet searches retrieved dozens of articles and white papers related to broadband, FTTH, and specific FTTH projects.

2. Interviews with FTTH Experts

A total of over 100 interviews were completed with vendors and other experts knowledgeable about FTTH and projects being completed throughout North America.

3. Study of FTTH Deployments

Over 350 personal phone interviews were completed with representatives of FTTH projects throughout the United States and Canada.

Using this methodology, we believe a very accurate count of FTTH projects and homes currently passed, marketed, and connected has been developed.

II. OVERVIEW OF NORTH AMERICAN FTTH ACTIVITY

A. FTTH MARKET SIZE DEFINITION AND METHODOLOGIES

The goal of RVA is to report the most accurate, current FTTH market numbers possible. We also strive to provide clear definitions of the terms associated with the data in order to minimize misunderstandings.

The term “homes passed” in this report means the *actual number of homes where a fiber connection is available – i.e. a homeowner already has a connection, or could call and order a connection and receive service within a short time.*

“Homes-marketed” means the actual number of homes being marketed to consumers. There is sometimes a delay between technically being able to serve consumers and tangibly marketing to them. This is especially true for large builds. In certain instances, providers may choose to avoid marketing to a specific area until the entire area is ready for service.

“Homes-connected” means the actual number of homes connected via fiber and getting some kind of service over fiber.

B. FTTH MARKET SIZE—HOMES-PASSED, MARKETED, AND CONNECTED

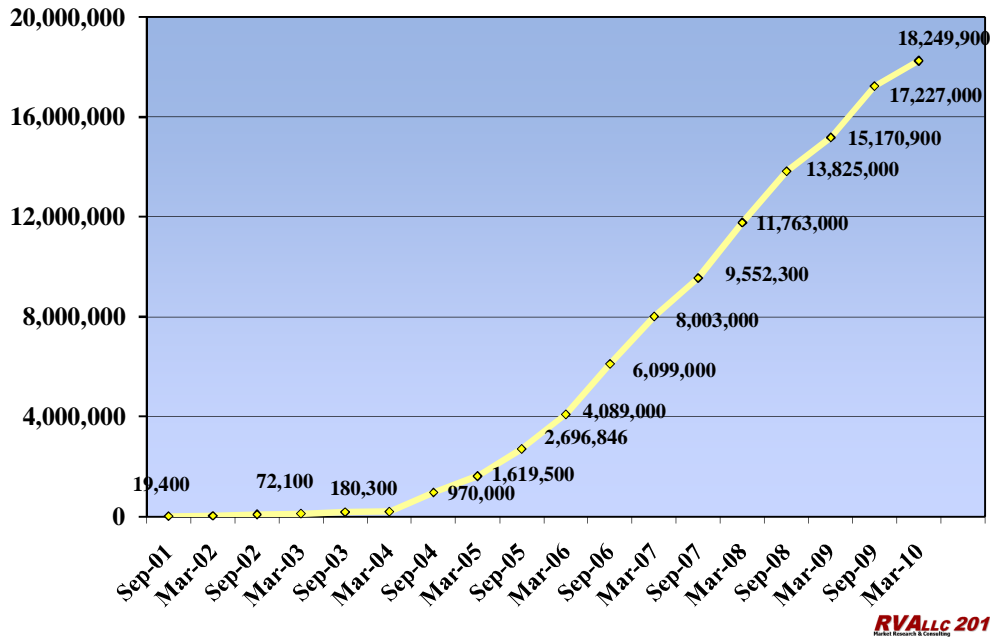
It is clear that the market for FTTH is truly a market of the new century. FTTH may have been conceived in the previous century (it first became commercially viable around 1998), but for the past several years, America has watched the birth of a new market.

The FTTH market continues to grow. As of March 30, 2010, there are approximately 18.2 million homes-passed in North America. About 99% of this activity has been in the United States to date.

While still relatively strong, FTTH growth has slowed somewhat in the past six months because of the recession and other factors. Also, most providers and vendors interviewed feel that the government economic stimulus programs have actually had the unintended consequence of being

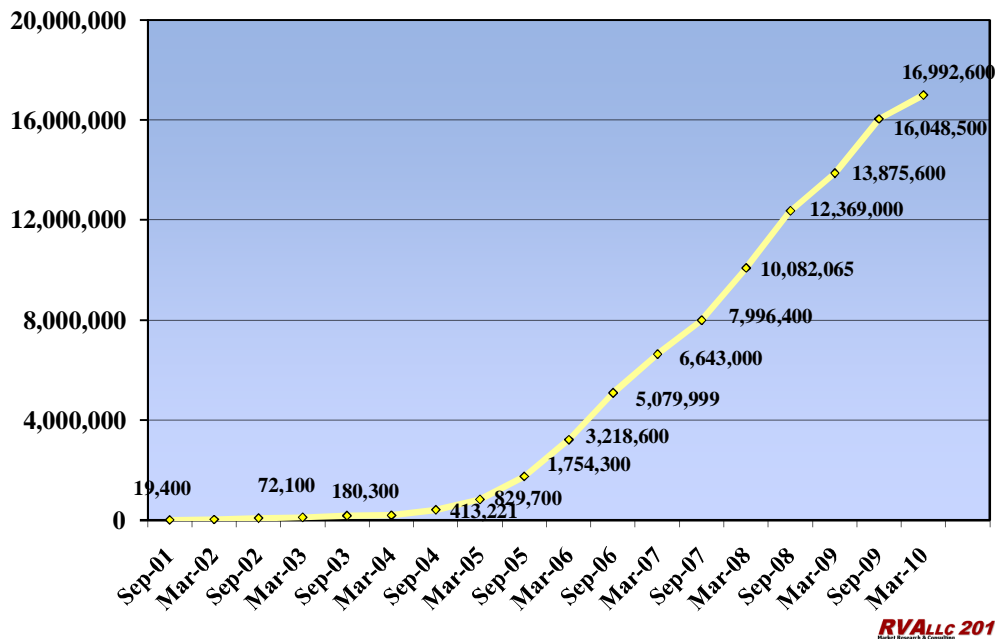
negative to growth - to this point - as some projects were put on hold waiting possible public money.

FTTH Homes Passed Cumulative – North America

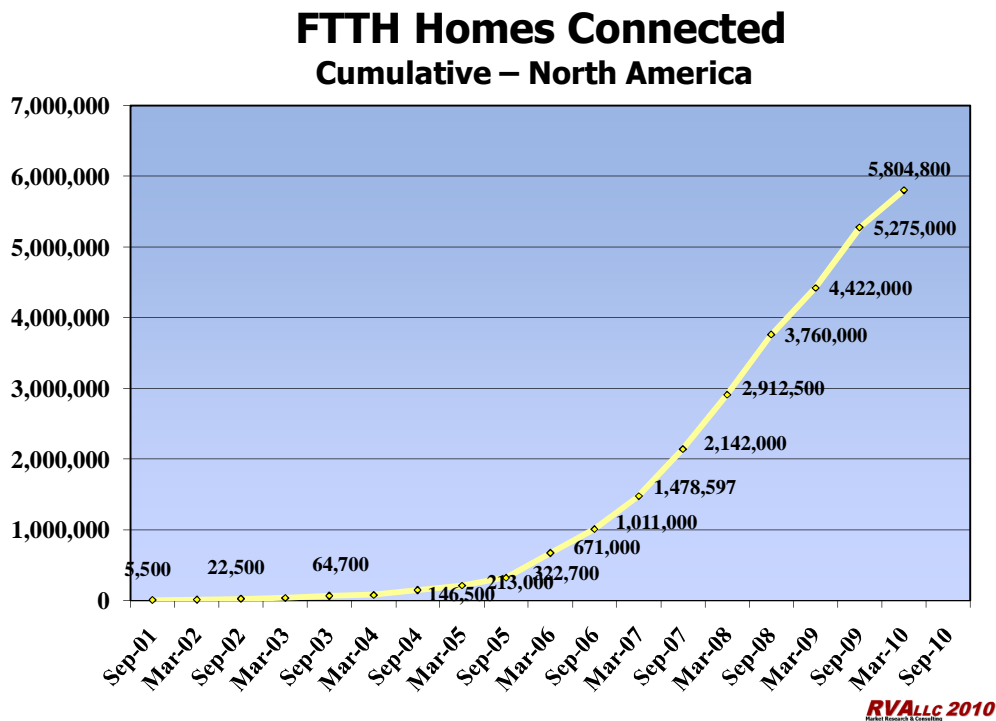


The estimated number of actual FTTH homes-marketed to consumers is approximately 17 million as of March 30, 2010.

FTTH Homes Marketed Cumulative – North America



The number of homes actually connected has now exceeded 5.8 million.



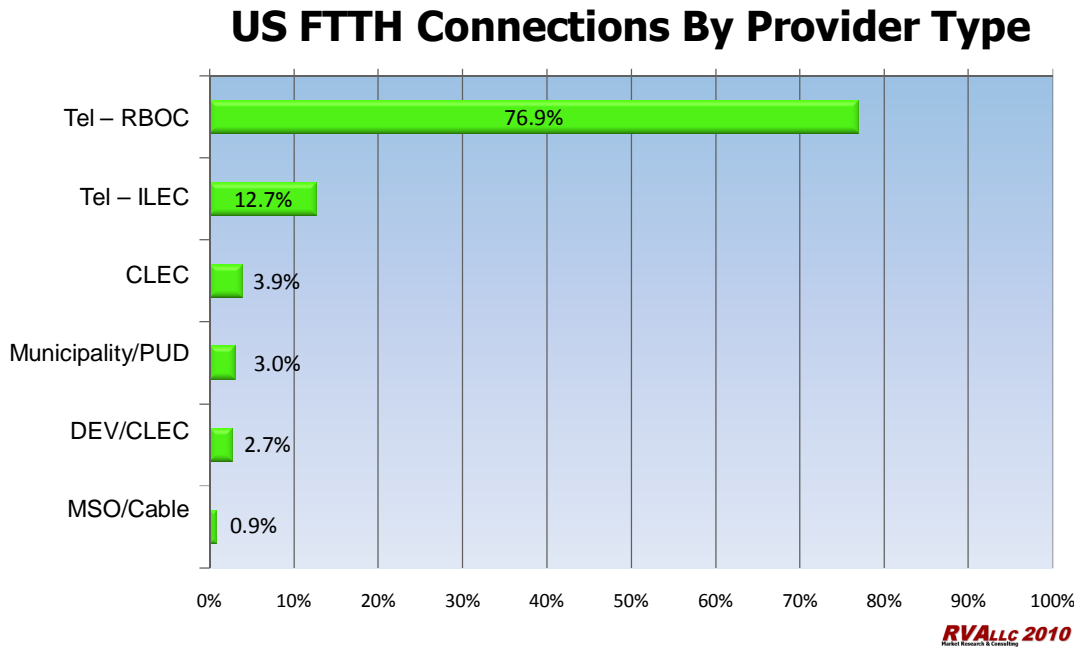
C. FTTH GROWTH VERSUS HISTORIC COPPER AND COAX RATES

Comparison to the first two hard-wired networks in the United States (copper telephone lines started in 1876 and coax cable TV lines started in 1948) helps put deployment timelines in context – i.e., it is important to consider the speed of installation of a completely new physical network such as FTTH into every home in America compared with similar deployments of earlier generation networks. Year over year growth rates have generally been higher with fiber than with earlier copper and coax networks. The highest early annual growth rate for copper was 76% and 125% for coax and annual growth rates for copper and coax dropped below 20% after a decade. By contrast, the highest FTTH growth rate was 250% and it still exceeds 30% annual growth after a decade.

D. FTTH DEPLOYMENTS BY TYPE OF PROVIDER

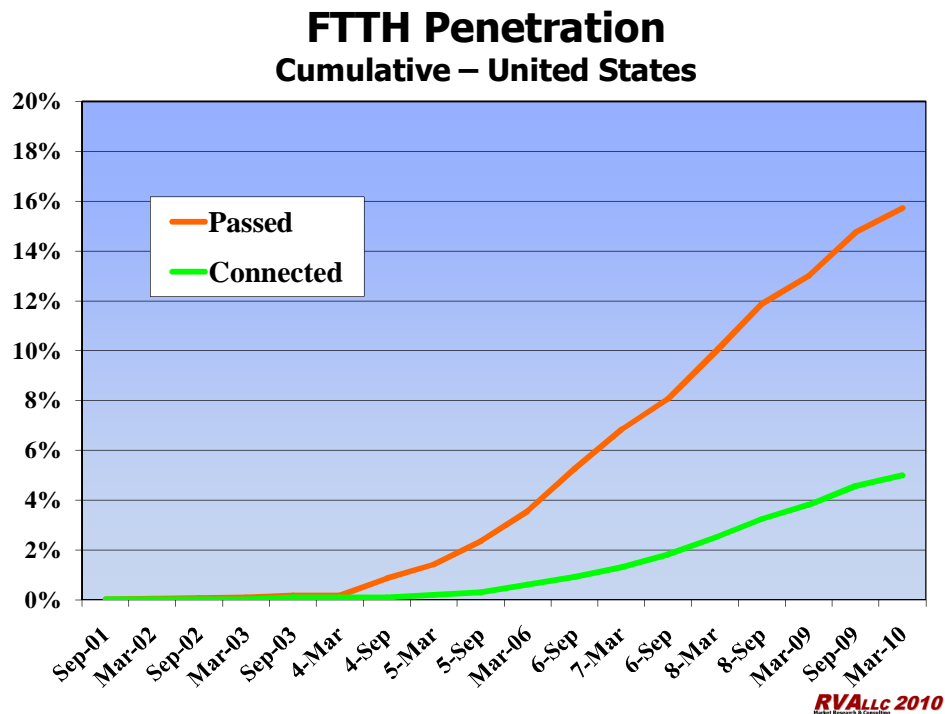
RBOCs (mostly Verizon) had over 4.3 million homes connected as of March 30, 2010. While Verizon is the largest provider by a very large margin, there is actually a very long tail of other providers. As of March 30, 2010, RVA had identified a total of over 750 other providers of FTTH in

North America which represents over 1.4 million total connections.



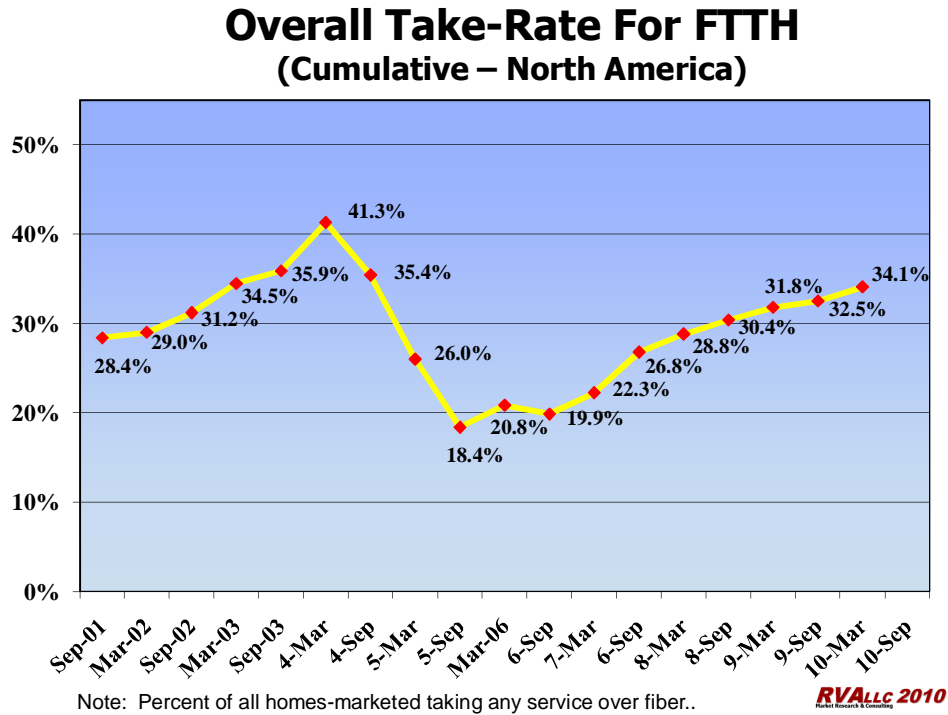
E. OVERALL PENETRATION

FTTH has now reached nearly 16% penetration of U.S. households in terms of homes passed and 5% in terms of homes connected.



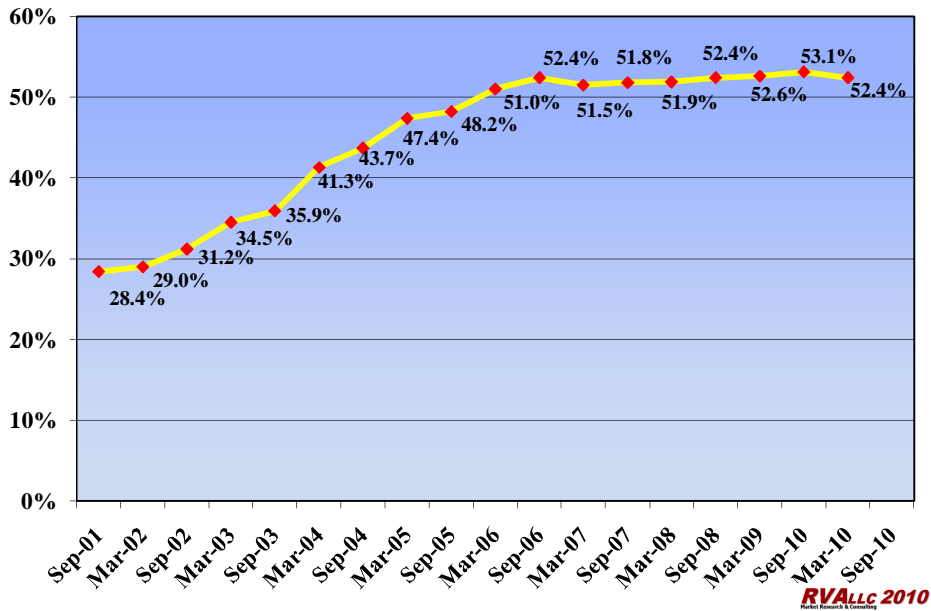
III. FTTH TAKE-RATES

The overall take-rate for FTTH services continues to increase. (Rates declined in a period from March 2004 to September 2005 due to the heavy infrastructure build by Verizon before the company’s focus on marketing the service began in earnest. After Verizon began connecting customers at a good pace, overall take-rates turned upwards again.)



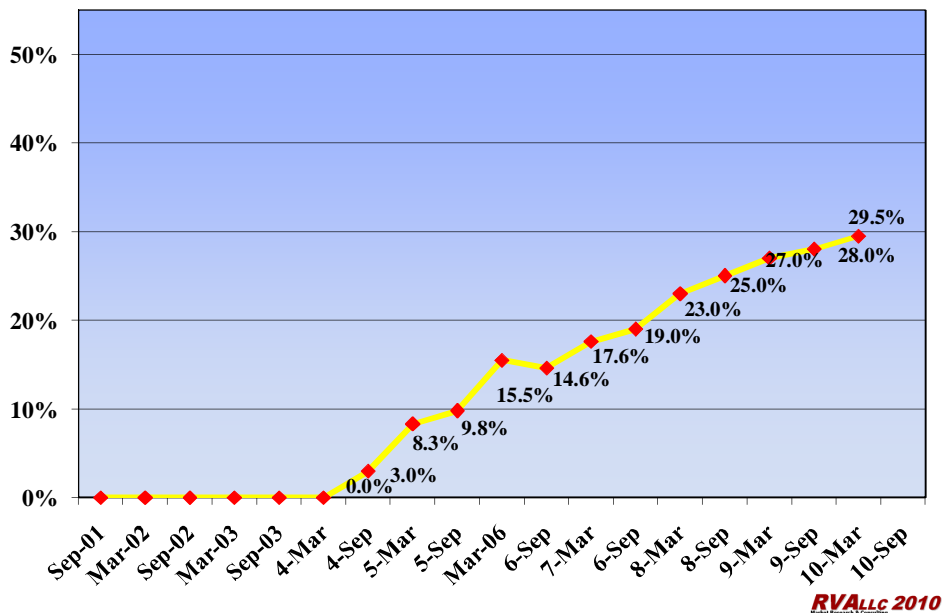
For non-Verizon FTTH customers, take-rates have been fairly steady at over 52%. (While these rates include some cases where fiber has been replaced to all customers, even voice only customers, it is important to note that even voluntary take-rates for some individual FTTH projects exceed 70%. This is especially true in rural areas that were previously underserved with both Internet and video product and therefore have little real competition.)

Overall Take-Rate For FTTH Non RBOC Cumulative – North America By Year



For RBOCs (especially Verizon FiOS), take-rates continue to increase, despite service territories with competition from large MSO's with reasonably good product, and a significant continuing build which suppresses net take-rates. (Verizon's take-rate in areas where FTTH has been available for two to three years is certainly higher than the net rate shown below.)

RBOC Take-Rate For FTTH Cumulative – North America



In terms of penetration, Verizon and Tier 3 ILECs (generally small, single independent local exchange carriers) have actually penetrated a relatively high percent of their customer base. These providers – who we may call aggressive ILECs - cover roughly one third of the US population.

Verizon recognized early a need for a new business model, and their strategy appears to have been driven by a visionary view of the future. Regulatory changes, such as the 2003 FCC Triennial Review Order, and later video franchise rulings have also played a key role in their decision to move forward.

Drivers for the rural independent telcos include aging copper lines in need of replacement, the opportunity to deliver video given a more robust platform, a pioneering tradition, and in some cases, subsidies such as rural broadband loan programs and universal service funds.

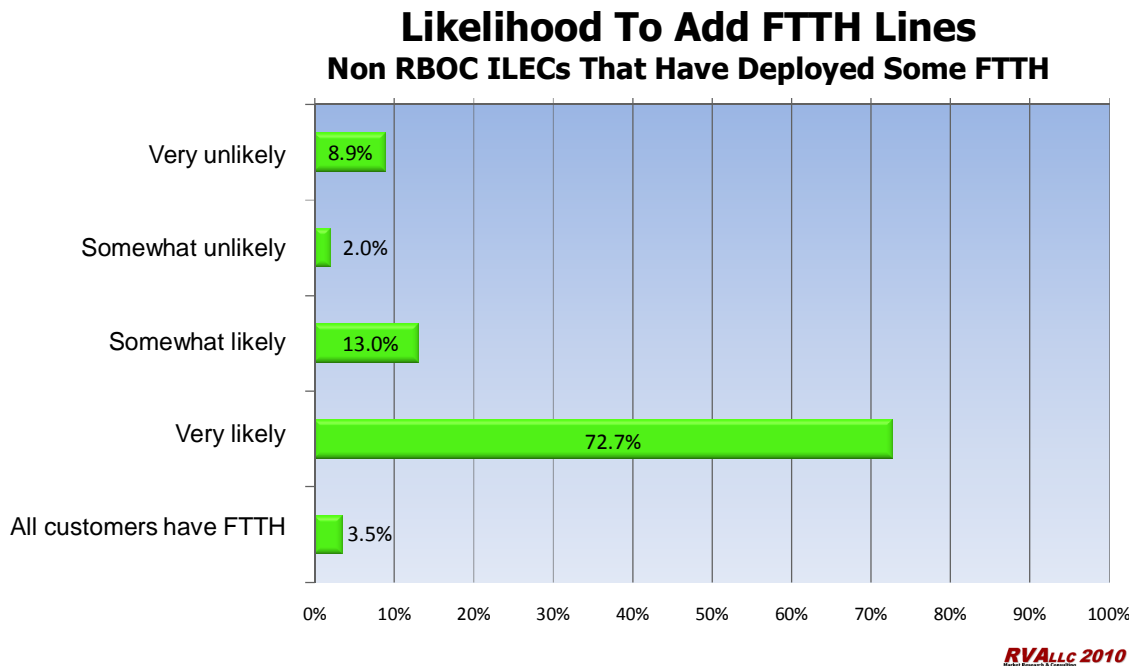
The other two-thirds of the US has had more spotty FTTH deployment – mostly from facilities-based CLECs, real estate developers, and public entities such as municipalities and groups of municipalities. (In these other areas, the incumbent telcos such as AT&T, Qwest, and Tier 2 ILECs, have completed some builds of FTTH in new housing developments, but have done only limited overbuilding of their existing copper network to date.) Some FTTH builds by cable TV providers in new developments are also now beginning.

IV. FUTURE FTTH GROWTH PROSPECTS

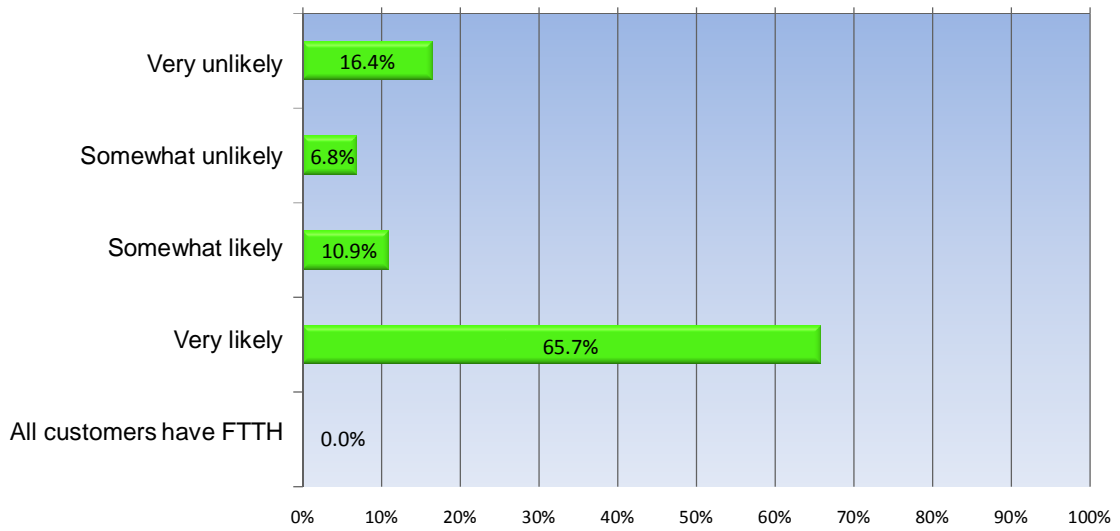
According to a recent RVA 2010-2014 North American FTTH forecast (www.rvallc.com), growth will slow somewhat in the next couple of years before turning upwards again. Most significantly, Verizon is currently finishing its originally planned FTTH build. On the other hand, a wider variety of providers – incumbents and public and private competitive providers will be entering the market providing new opportunities. The broadband stimulus program and national broadband plan may also have future positive impacts. Underlying all this, based on consumer FTTH market research (www.ftthcouncil.org), positive consumer reaction to FTTH will continue to drive growth overall.

North American countries outside of the United States are also increasing activity in the next five years.

As just one example, non RBOC incumbent telephone companies are already very bullish on FTTH. Most ILECs that have already deployed FTTH plan continued deployment, and those who have not deployed any FTTH plan future deployment.



Likelihood To Add FTTH Lines Non RBOC ILECs That Have Not Deployed FTTH



RVA LLC 2010
Market Research & Consulting