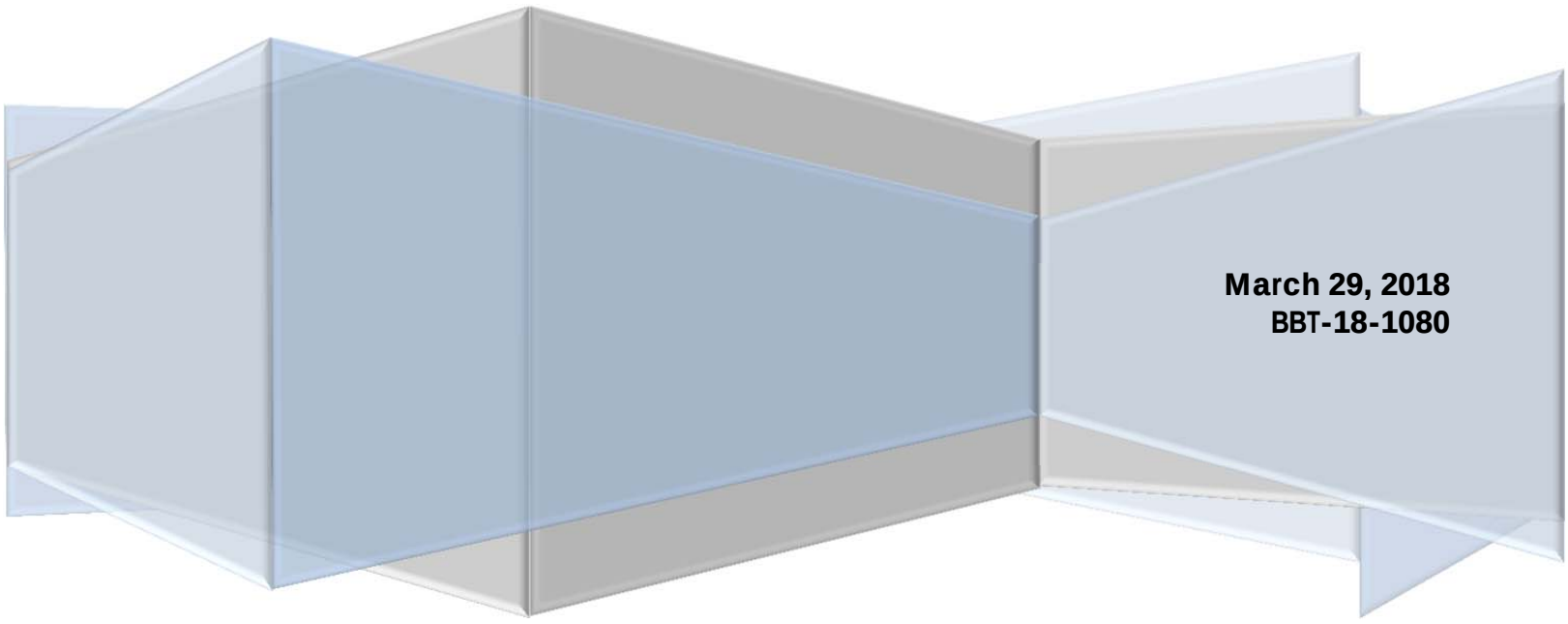
Global Service Provider Survey

2018 G.fast Deployment Strategies & Vendor Leadership

Author: Teresa Mastrangelo



March 29, 2018
BBT-18-1080

Report Overview

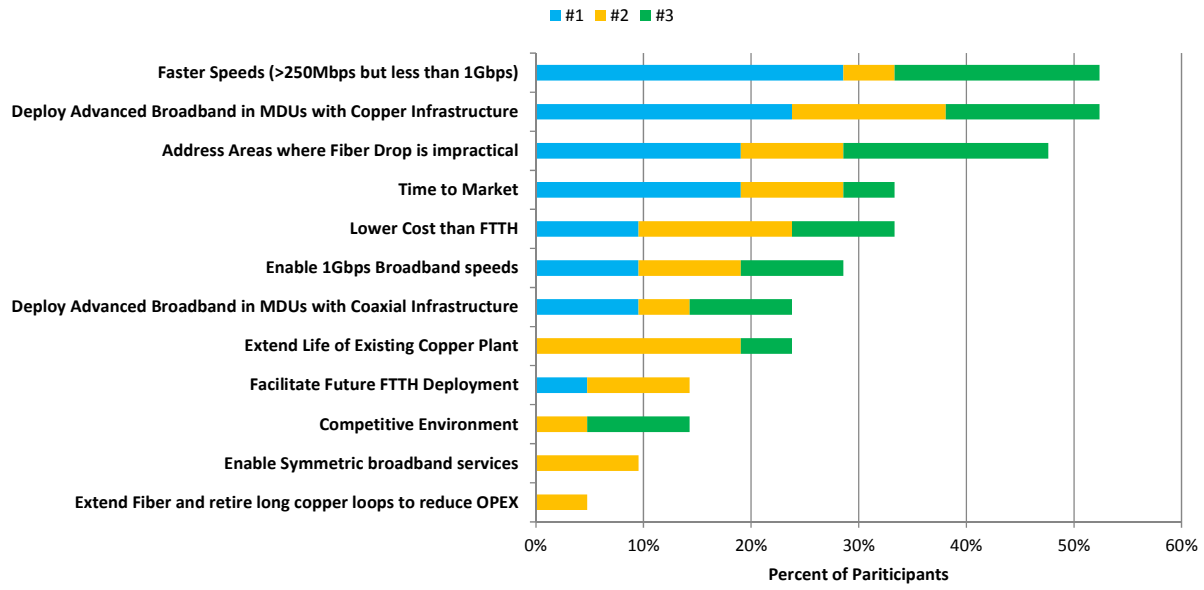
Advances in copper-based broadband technologies, such as G.fast, continue to extend the life of the copper plant, providing a time to market alternative to FTTH offering downstream speeds up to 2 Gbps aggregate over very short loop lengths.

With the copper plant continuing to support a significant number of broadband subscribers (over 272 million at the end of 2017), copper solutions such as G.fast enable operators to further leverage this infrastructure to effectively combat the competitive threat of alternative broadband technologies, such as FTTH, DOCSIS 3.1, LTE and in the near future 5G, in a time-efficient manner.

Technologies such as G.fast avoid the need to install new wiring in the home or in a multi-dwelling building and offer the same self-installation capabilities as ADSL, which greatly reduces the time to service activation. Furthermore, because it leverages the existing infrastructure, it helps to rapidly accelerate the availability of these higher bandwidth services within the operators' footprint.

With aggregate speeds up to 2Gbps, G.fast is offering operators an opportunity to address both the competitive environment and time-to-market pressures, but it is the ability to offer these faster speeds that is the overwhelmingly key objective for operator deployment of G.fast.

Key Objectives for G.fast Deployment (n=33)



Source: broadbandtrends

Broadbandtrends' Global Service Provider G.fast Deployment Strategies survey analyzes the results from interviews with 33 incumbent and competitive operators in all major regions, about their plans and deployment strategies for G.fast. The report provides a global overview of the results as well as commentary on any notable regional differences found in the results.

Key Questions Answered in this study includes the following:

- *What are operator timelines for the deployment of G.fast?*
- *What are the key objectives for deployment of G.fast technology?*
- *What are the top challenges/concerns related to the deployment of G.fast technology?*
- *What are the expected shortest, average and longest loop lengths for G.fast deployment?*
- *What are the average downstream/upstream speeds expected to be offered with G.fast?*
- *Will operators offer symmetrical speeds over their G.fast Networks?*
- *What are the top use cases for G.fast?*
- *What is the deployment potential for each G.fast use case?*
- *What is the average size for G.fast DPUs by use case?*
- *Which backhaul technology is most likely to be used for the DPUs?*
- *What are operator plans with respect to using Reverse Powering in a G.fast environment?*
- *What percent of the network will be capable of supporting G.fast in 2018 and 20189*
- *Which emerging/newly available G.fast capabilities are most important to the deployment of G.fast?*
- *Which vendors are perceived as leaders for G.fast Product Performance, G.fast Deployment Experience, Product Roadmap, Pricing, and Service & Support?*

Vendors evaluated included: ADTRAN, Calix, DASANZhone, Huawei, Iskratel, KEYMILE, Nokia, ZTE, and ZyXEL.

This Report is 33-pages in length with (23) Figures and (3) Tables is available for purchase for $**2495(USD)**. To order this report, please contact us at 540.725.9774 or via email at mailto:sales@broadbandtrends.com. Additionally this report may be purchased online at www.broadbandtrends.com/reports

Table of Contents

- Executive Summary
- Key Findings
- Introduction
  - G.fast Overview
  - G.fast Standards Timeline
- Methodology and Demographics Overview
  - Regional Distribution
  - Level of Influence
- Survey Results- Deployment Strategies
  - Timing of Deployment
  - Key Objectives to G.fast Deployment
  - Key Challenges to G.fast Deployment
    - Reverse Power
    - Quality of Copper Plant
    - Longer Reach Capabilities
  - Top Use Cases for G.fast Deployment
  - Percent of Deployment by G.fast Use Case
  - Average G.fast DPU Node Size by Use Case
  - Average Loop Lengths for G.fast
  - G.fast DPU Backhaul
  - Average Downstream/Upstream Speed Offerings for G.fast
  - Symmetrical Speeds
  - Plans for Reverse Power
  - Importance of Emerging/Newly Available G.fast Capabilities
    - 212MHz Profile
    - Dynamic Timeslot Assignment (DTA)
    - G.mgfast
  - % of Network Capable to Support G.fast – 2018, 2019
- Survey Results – Vendor Leadership
  - G.fast DSLAM Vendor Familiarity
  - Top G.fast Vendors for Selected Criteria
    - EMEA Vendor Rankings
    - North America Vendor Rankings
- Conclusions

List of Figures & Tables

Figure 1: Ultra-Broadband Copper Speeds vs. Distance
Figure 2: Regional Distribution of Survey Participants
Figure 3: Level of Influence of Survey Participants
Figure 4: Timing of G.fast Deployment
Figure 5: Key Drivers for G.fast Deployment
Figure 6: Key Challenges/Concerns for G.fast Deployment
Figure 7: ETSI Generic Architecture for Reverse Power Feed
Figure 8: Use Cases for G.fast Deployment
Figure 9: Percent of Deployments by Use Case
Figure 10: Average DPU Size by G.fast Use Case
Figure 11: Average Loop Lengths for G.fast Deployment
Figure 12: G.fast DPU Backhaul
Figure 13: Average G.fast Downstream/Upstream Speed Offerings
Figure 14: Support for Symmetrical Service
Figure 15: Reverse Power for G.fast Deployments
Figure 16: Persistent Management Agent (PMA) Implementation
Figure 17: % of Network Capable of Supporting G.fast in 2017, 2018
Figure 18: Importance of Emerging Capabilities of G.fast
Figure 19: Rate/Reach Characteristics of G.fast over Coax and Twisted Pair
Figure 20: G.fast DSLAM Vendor Familiarity
Figure 21: Top G.fast DSLAM Vendors for All Criteria
Figure 22: EMEA Top G.fast Vendors for All Criteria
Figure 23: North America Top G.fast Vendors for All Criteria

Table 1: G.fast Standards Timeline
Table 2: iDTA vs. cDTA
Table 3: G.fast Vendor Rankings across All Criteria

About Broadbandtrends LLC

Broadbandtrends LLC is an independent market analysis and consulting firm specializing in the coverage of service provider transformation activity across the network, business and services segments. In addition, Broadbandtrends offers unparalleled coverage on the growing impact of broadband on the digital economy.

Broadband specific coverage is focused on the ubiquitous connectivity of ultra-broadband (both fixed and mobile) infrastructure, services and regulation; Connected Home, Multiscreen/OTT video, Smart Cities and IoT. Our goal is to provide unbiased, accurate and dependable research that will help drive tangible results for our clients.

For more information about our services and experience, please visit www.broadbandtrends.com.

About the Author

Principal Analyst - Teresa Mastrangelo

Teresa Mastrangelo, Founder, brings 31 years of telecommunications experience to Broadbandtrends LLC. She is regarded as one of the leading analysts covering fixed and mobile broadband infrastructure and services along with network transformation strategies.

In her role, Teresa works in an advisory position to equipment manufacturers, service providers, financial analysts and venture capital firms to identify emerging trends, new market opportunities and advise on product positioning, market development, and business plans. Her custom work includes Competitive Assessments and Market Entry Strategies, Product Portfolio Assessments, Market Validation Studies, Webinars and White Papers.

She has been able to successfully leverage her extensive product management, product marketing and strategic planning background to bring an unmatched level of expertise to her market research and analysis.

She is an invited speaker at industry events around the world, including the Broadband World Forum in Europe and Asia, and is frequently quoted in trade and business publications such as Washington Post, San Jose Mercury, BusinessWeek, Smart Money, New York Times, Wall Street Journal, Network World, and Lightwave. In addition, she contributes blogs and articles for many publications and sites.

Prior to founding Broadbandtrends LLC, Teresa worked for RHK as the Program Director for RHK's Broadband Network Strategies program, where she had responsibility for the development of global market research and analysis of broadband infrastructure and services; as well as circuit to packet migration and VoIP. Prior to RHK, Teresa held senior level product marketing and product management with Cisco Systems, Advanced Fibre Communications (now part of Tellabs) and NEC America, and Appalachian Power as a communications engineer.

Teresa was awarded her BS in Electrical Engineering from Virginia Polytechnic Institute in 1987. Post graduate work includes The Management Institute at Roanoke College as well as executive programs at Penn State University.