



DSM "Designed for the Future" Executive Roundtable Summary  
FTTH 2011  
September 28, 2011, Orlando, FL

## *Realizing Fiber's Potential*

This year's US Fiber-to-the-Home Conference and Expo, "Lighting the Economy," held in Orlando, Florida on September 26-30<sup>th</sup> 2011, drew a critical mass of leading fiber optics industry experts from the United States and beyond. Focusing on the role of optical fiber networks in driving economic growth, the conference explored in depth the theme of universal broadband, and sought answers to the question on most attendees' lips: how to turn stimulus cents into FTTH dollars.

The theme was explored further at the "Designed for the Future" executive roundtable, an invitation-only dinner event hosted by DSM Functional Materials. Attended by senior executives from telecoms, equipment and systems providers, as well as analysts and policymakers from the US, Europe and Latin America, the session generated thoughtful discussion on this and many other major issues facing the industry today.

Topics for discussion at this year's roundtable event included how innovative public and private initiatives such as Google's Kansas City experiment and the GigU project to bring FTTH to university campuses could help FTTH realize its potential. Technological evolutions such as Cloud Computing, and their role in driving FTTH deployment, were also covered.

The course of the discussion evolved into the following four major themes:

- Government's role in FTTH deployment
- Drivers of bandwidth demand
- The economics of FTTH deployment and penetration
- Technology and Quality requirements to accelerate network deployment and future-proof networks

### Government's Role in FTTH Deployment

With stimulus budgets now allocated in the US, the conversation around the role of government in FTTH deployment was bound to be energetic. The general consensus, not surprisingly, was that those countries, for example Australia, where government had prioritized development of a national FTTH network, were the ones that were enjoying the most success in transitioning to high speed services.

But while there was agreement that governments should treat FTTH as a national strategic asset in much the same way as roads and utilities, there was a divergence of opinion as to how to help realize fiber's potential. With the likes of Google and Verizon forging ahead with efforts to build viable FTTH business models (in the case of Verizon, as far back as 2003), a number of positive thoughts were proffered on what government must do next.

One obvious benefit government could deliver, suggested one participant, would be a loosening of the planning laws. This echoed recent comments from Google that resolving right of way issues was time consuming, needlessly complicated and threatened innovation.

Another opinion put forward was that government should opt for a lighter touch in other regulation, citing unbundling as another threat to investment and innovation.

But participants also felt that industry could do more to convince government of FTTH's potential. The point was well made that the current driver of FTTH is entertainment, the delivery of which is far outside the remit of government. And while it is clear to industry that FTTH will one day be critically important in delivering vital public services related to defense, education and healthcare, this point could be made more robustly to policymakers.

International representations proved valuable in this discussion, with roundtable participants from Latin America calling for greater investment in FTTH along the lines of Australia's National Broadband Network. Those from Europe, another region where capital investment by the state has lagged that of emerging economies, meanwhile expressed more confidence that governments and telecom operators on that side of the Atlantic were belatedly waking up to the need for investment in next generation networks.

#### Drivers of Bandwidth Demand: Beyond Entertainment

One issue that united participants was the fact that content remains king when it comes to drivers of bandwidth demand. And while consumers don't necessarily care about the medium through which that content is delivered, it was widely acknowledged that they soon will care if it isn't up to the job. With the US owning more TVs per household than any other country in the world, and the seemingly inexorable growth of on-demand video such as pay-per-view movies and over the top TV services such as Google TV, it was agreed that this thirst for bandwidth would be the major driver of FTTH in the US and beyond for some time to come.

But it was also heeded that entertainment will soon be joined by other applications. This should certainly be regarded as a positive for the industry when it is considered that often the largest consumers of entertainment content through fiber - younger generations - are not usually the ones that pay the bill every month.

Instead, as one participant put it, once the "highway is built," it will be used by a whole universe of new applications. One such application mentioned was Smart Grid, with respect to managing and optimizing power and electricity through advanced networks. Others included e-health, e-learning and machine-to-machine communications that would join defense, mobile backhauling and a whole range of business and consumer applications in a broader FTTH ecosystem. A comparison was made to electricity, which was initially viewed as simply an alternative to gas lighting before its wider value was soon realised.

The only debate in this respect was over when this day will actually come, though participants agreed that the power of major televised global events such as the Olympic Games and the FIFA World Cup help bring it closer by providing a platform for broadcasters to showcase bandwidth-rich applications, providing operators with a reference point for marketing and consumers a reason to bite the bullet and upgrade.

In the fields of business services, it was noted that the low latency of FTTH was a real driver in helping Cloud services reach critical mass and that this could be an exciting and dynamic area of growth for FTTH in the future.

#### The economics of FTTH deployment and penetration

With the odds of further fiscal stimulus packages being unlikely in the US, and the jury still out on the effectiveness of the current package, the importance of validating a viable business model was not lost on participants. Here, Verizon received widespread applause for its long term vision with FiOS, as did Google for its pioneering spirit in Kansas City, where the 1Gb-s far surpasses the 100Mb-p outlined in the national broadband plan.

Google's high profile case study in Kansas City is generally regarded as having a significant impact on the direction of FTTH in the coming years worldwide. This led to another question: what else, beside receiving further incentivization and encouragement from government, or developing new killer apps, could operators do to improve the business case for FTTH?

A popular response to this question was to get the marketing right. It was argued that FTTH in the US was under-appreciated, largely because operators had failed to market it as a premium product. Alternatively, consumers in other countries routinely recognize fiber services as being superior to cable or other telco packages.

Another point made was that current marketing was too geared towards high end customers rather than mid to low end users, who could potentially be persuaded to part with a greater proportion of their disposable income than their better off peers. On a similar note, it was suggested by one guest that telcos should consider switching away from all-you-can-eat payment plans to a pay-per-megabyte model in order to unlock new demand.

Participants also considered other innovative pay structures that are being tested in the market. Here, models operated by some universities, including the University of Louisiana and Georgetown University, caught attention by offering free fiber connectivity on campus while off campus it remained very expensive. Such polarisation, it was agreed, could serve to build demand and also create a market for private sector operators to offer affordable connectivity off campus.

#### Technology and Quality requirements to accelerate network deployment and future-proof networks

While the business case for FTTH in the US is undeniably growing, roundtable participants also considered the validity of other, competing technologies. Here, the biggest dilemma facing operators considering large scale broadband investments was the question of whether existing legacy infrastructure could be upgraded to meet future demand. This strategy has been embodied in the US by AT&T, which has to date resolutely declined to follow the lead set by Verizon's FiOS.

But with legacy systems struggling to meet bandwidth demand, the question as to whether they will be able to meet exponential future demand remains unknown and this, agreed participants, remains a key differentiator for FTTH. This differentiation, participants argued, will become all the more important considering that today's entertainment-led broadband market is a precursor for a much larger ecosystem of advanced services whose needs will never be met by current infrastructure.

Participants cited that the needs of such advanced connectivity are already being seen in cloud computing, where low latency is helping providers achieve blistering growth rates.

Likewise, the explosion of smart phones is made possible by fiber backhaul. It was noted that advances in technology improved the business case for fiber networks across all applications, in particular overcoming infrastructure barriers through novel installation techniques such as cable for sewer systems or utilization of advanced compact optical fiber and cable designs, and that the pace of such innovation was accelerating.

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#### DSM Functional Materials

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