

THE LIGHT AGE

SEPTEMBER 2013 ° VOLUME 3

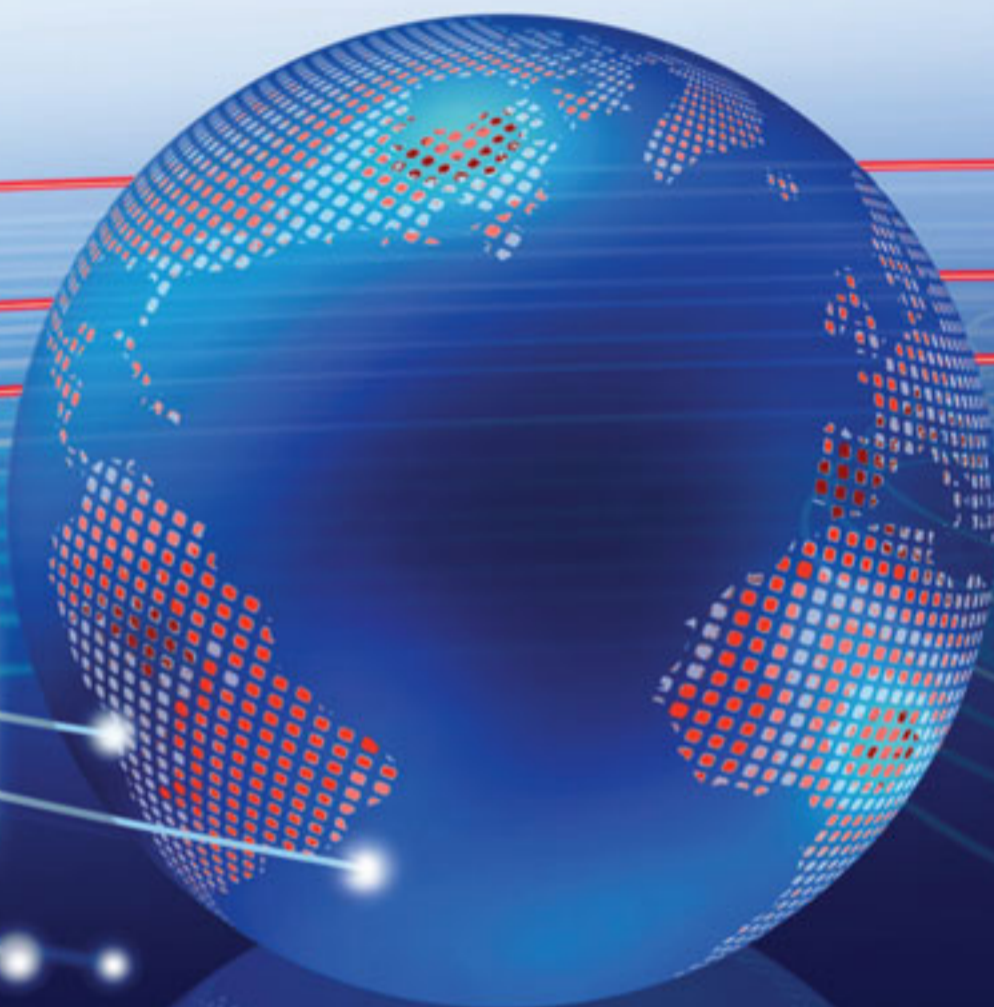
COMMUNICATING AT THE SPEED OF LIGHT



CONNECTING COMMUNITIES
Transforming The World Through Fiber



Your Best Partner in FTTH Solutions



FTTH

We Make It Happen!

Service and Material Solutions for FTTH Networks

Engineering and Consulting
Construction and Installation
Operation and Maintenance
Materials and Equipment
Full Turn-Key Solutions

The digital future is relying more and more on fibre optics networks and CBE is present in all the Implementation steps.

Meet us at www.cbe.pt

02 Editorial Page

06 Cover Story

Celebrating Fiber

FTTH Councils around the world reveal their strategies to promote fiber connectivity for the first International Gimme Fiber Day on the 4th of November.

22 Europe Updates

The Nordic Way

FTTH Council Europe's Communications Director Nadia Babaali explains how rural neighbourhoods are reaping the benefits of fiber optics.

24 Smart Cities, Smart Future

The Light Age shines the spotlight on how FTTH is helping to enhance cities in Europe.

26 Broadband Transparency

Hartwig Tauber, the Director-General of the FTTH Council Europe, calls for more honesty by service providers advertising connectivity speeds.

28 Asia Pacific Updates

Inside a Smart City

Named as one of the Smart21 Communities of the Year in 2012, Wanganui is flying the flag for FTTH in New Zealand.

30 Singapore's Next Generation

A look at how Singapore's Next Generation Nationwide Broadband Network is driving the city-state to the next level of growth.

38 Comprehensive Discussion

The FTTH Asia Pacific Conference & Exhibition 2013

Americas Updates

14 Bell Aliant Changes Communities

Dan McKeen, Senior Vice-President, Customer Solutions of Bell Aliant, reveals how North America's second largest FTTH provider has enhanced communities where it has deployed fiber optics.

18 Connecting Communities

FTTH Council America's President, Heather Burnett Gold, speaks on how the council is helping communities become fiber ready.

20 Bogota Banks On Fiber

Empresa de Telecomunicaciones de Bogota (ETB)'s Vice President of Service Assurance – Hugo Eslava Eljaiek – and Vice President of Strategic Planning – Sergio González Guzmán – speak on their FTTH plans for Colombia's capital city.

34 MENA Updates

Qatar on the Right Path

A study by Arthur D Little and the FTTH Council MENA shows how fiber deployment in Qatar is benefitting from it adopting a hybrid approach.

36 Africa Updates

Snapshots of Africa

Highlights of the top news and developments affecting the FTTH industry in Africa.

40 FCGA Updates

Global Updates

The CommunicAsia 2013 Summit

46 Academia

Enhancing Through Training

Gilberto 'GG' Guitarte, the Chairman of the FTTH LATAM Chapter, talks on how the focus on training is enhancing skills among providers and carriers in the region.



All across the world, communities are enjoying rapid socio-economic development as they reap the benefits of technological advances. Thanks to improvements in healthcare delivery systems, public infrastructure and transportation, education and information services, the lives of people have been greatly enhanced.

The platform for this transformation is FTTH. Fiber optics connectivity is without doubt the most important game changer in the world of communications for the past 30 years, and it is driving development in both urban and rural landscapes. In fact, FTTH can be considered to be the most effective equaliser of the gap between city and country.

This is because with FTTH, factors which are considered disadvantages for rural communities such as distance from urban centres, the lack of physical infrastructure, and the absence of a pull factor that will attract human capital inflow, are rendered moot. Through fiber optics, the resident of a remote village in Peru can enjoy the same benefits as someone living in modern metropolises like New York City, Tokyo or Singapore.



Thanks to ultra-high-speed connectivity which enables real time transfer of information, physical presence is no longer a necessity. For example, instead of having to travel to the city to see a specialist, a patient in a rural area can receive real-time diagnosis and treatment in the comfort of his own home, while his doctor and the specialist can consult with one another.

In addition, elderly folk who need monitoring can have it done in their own homes at their own convenience, as caregivers can reach out to them through high-definition, real-time video conferencing.

FTTH also enables a more effective delivery of education, as students can use technology such as live video streaming, and tele-conferencing to learn from experts the world over. In addition, high bandwidth results in more data and information being made available.

“Fiber optics connectivity is without a doubt the most important game changer in the world of communications for the past 30 years, and it is driving development in both urban and rural landscapes.”

In a nutshell, FTTH is all about enhancing lives and creating opportunities. Municipal officials can reach out to people instantaneously – letting people know of situations of public interest such as reports of crime. It allows for effective monitoring of traffic conditions by enabling the authorities to control the speed of traffic lights. At the same time they can ensure that emergency services move without hindrance.

A fiber connected community is one that enables its residents to reach out to the world. For businesses, FTTH offers one of the greatest opportunities in the world of commerce, which is the chance to reach a wider audience. Furthermore, it creates more prospects of jobs in areas which require large amount of bandwidth such as animation, industrial design, and 3D modelling.

FTTH is no longer a luxury but a necessity. This issue of *The Light Age* highlights that fiber is connecting communities in entirely new ways, and that fiber optics connectivity is not just a vision of the future, but a need of the present. The world needs fiber today.

Heather Burnett Gold

President, FTTH Council Americas



Left: The founding members of the FTTH Council Global Alliance (FCGA). From left to right: Ishibashi Yoshihiro (FTTH Council Asia-Pacific), Johan Kleynhans (FTTH Council Africa), Carlos Barroqueira (FTTH Council Europe), Frank Jaffer (FTTH Council Asia-Pacific), H. Munasir Choudhury (FTTH Council Asia-Pacific), Juanita Clark (FTTH Council Africa), Edgar Aker (FTTH Council Europe), Gilbero Guitarte (FTTH Council Americas LATAM Chapter), Hartwig Tauber (FTTH Council Europe), Heather B. Gold (FTTH Council Americas), Storaasli Olaf (FTTH Council Europe), Nadia Genis (FTTH Council Africa), and Christine Beylouni (FTTH Council MENA).

Directory



FTTH Council Contacts

FTTH Council Americas

6841 Elm Street, #843
McLean, VA 22101-0843
USA

Tel: +1 202-524-9550

Email: info@ftthcouncil.org

President: Heather Burnett Gold

Chairman: Kevin Bourg

For Latin American Inquiries:

Tel: +1-919-557-8616

Email: latamchapter@ftthcouncil.org

Chairman: Gilberto Guitarte

FTTH Council Europe

Rue des Colonies 11
B-1000 Brussels
Belgium

Tel: +32 2 517 6103

Fax: +43 2855 71142

Email: info@ftthcouncil.eu

President: Karin Ahl

Director-General: Prof (FH) Hartwig Tauber

FTTH Council Asia-Pacific

Email: secretary@ftthcouncilap.org

President: Monique Morrow

General Manager: H. Munasir Choudhury

FTTH Council Middle East/North Africa (MENA)

Wadi Saqra Street

Building no.46

Amman Jordan

Tel: +962 6 4621621

Fax: +962 6 4625285

Email: info@ftthcouncilmena.org

President: Faris Awartani

Director General: Christine Beylouni

FTTH Council Africa

Postnet Suite #477

PrivateBag X1007

Lyttelton 0140

South Africa

Telephone: +27 12 661 1592

Fax: +27 (0) 86 579 2606

Email: admin@ftthcouncilafrica.com

President: Richard Came

CEO: Juanita Clark

Configure your network

SENKO Advanced Components provides a selection of cost effective passive devices that enable high performance solutions for Fiber to the Home networks.

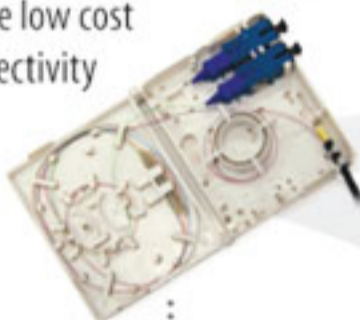
XP FIT PLUS

Quick assembly
in under
2 minutes



MINI WALL BOX

An effective low cost
FTTH Connectivity
Solution



Single Dwelling Unit

IP-SERIES

Weatherproof
Connectors



CTJ-BOX

Junction
Box®



PLC SPLITTERS

Highest
quality and
performance
Splitters



Multi Dwelling Unit

CTJ-BOX

Patch/Splice
Closure



IP-PLC

IP-68 rated
Break Out Kit



SENKO ADVANCED COMPONENTS, INC.

Americas

USA EAST 1-888-32-SENKO
USA WEST 1-858-623-3300
TEXAS 1-972-661-9080
Sales-Americas@senko.com

Asia

HONG KONG +852-2121-0516
SHANGHAI +86-21-5830-4513
SHENZHEN +86-755-2533-4893
Sales-Asia@senko.com

Europe

UK +44 (0) 118 982 1600
ITALY +39 011 839 98 28
POLAND +48 71 776 0737
Sales-Europe@senko.com

Asia Pacific

AUSTRALIA +61 (0) 3 9755-7922
Sales-Asia-Pacific@senko.com
Middle East North Africa
DUBAI +971 4 8865160
Sales-MENA@senko.co

Japan

TOKYO +81 (0) 3 5825-0911
Sales-Japan@senko.com

www.senko.com

CALL 1-888-32-SENKO

Celebrating Connectivity

FTTH Councils Plan For Gimme Fiber Day





Fiber optics has opened a whole new world of possibilities in the world of tele-medicine, e-learning, and voice-over internet protocol (VOIP). Communities which had hitherto been lagging behind others in terms of socio-economic development have sped ahead after adopting fiber-optics connectivity.

All these are made possible owing to the contributions of one man – Professor Charles Kao – who is widely considered to be the ‘Father of fiber optics communications’. The 2009 Nobel Laureate in Physics, which he received for “groundbreaking achievements concerning the transmission of light in fibers for optical communication”, Prof Kao celebrates his 80th birthday on the 4th of November this year.

Gimme Fiber!

The decision to hold an international ‘Gimme Fiber’ Day was reached in June at the annual meeting of the FTTH Councils Global Alliance (FCGA) in Singapore. This incidentally was an initiative by the FTTH Council Asia-Pacific, and the aim of this event is to showcase how fiber has positively impacted communities and what policymakers around the globe can do to help advance the roll-out of fiber optics.

The FCGA picked the 4th of November as the date for the annual celebration of fiber optics as it corresponds with the birthday of the man who changed the way the world communicates, Prof Charles Kao.

Comprised of the five FTTH Councils from different global regions as well as the Latin American (LATAM) Chapter of the FTTH Council Americas, the FCGA brings together the people and organisations that are spearheading fiber connectivity around the world. To commemorate the inaugural ‘Gimme Fiber’ Day, each council is organising a series of activities to be held in their respective region.



“Optical communication is not just a technical advance, but has also caused major changes in society.”

Prof Charles Kao,
Father of Fiber Optics



A screenshot of the FTTH Council Europe's Twitter page, where live updates of activities for Gimme Fiber Day on the 4th of November will be broadcast.

Fiber Around The World

These events range in size and scope, but the idea behind them is the same – to show the public why FTTH is a must for communities and society to progress.

In the MENA region, the FTTH Council there is launching a media campaign to raise awareness about 'Gimme Fiber' and create excitement for the event. Over in Europe, interviews and panel discussions by distinguished leaders in the FTTH industry will be streamed on a dedicated video channel on the day. No doubt it will be available in high-definition.

Aside from that, the FTTH Council Europe is encouraging European organisations and individuals to participate in 'Gimme Fiber' Day by making promotional materials available on its website. Furthermore, partner companies can inform the Council of any activities they have to promote FTTH on that day, with the details being published on Council's website.

The aim of Gimme Fiber Day is to showcase how fiber has positively impacted communities and what policy makers can do to help advance the roll-out and take-up of fiber optics.

The European Council is also utilising the power of social media by adding special content for 'Gimme Fiber' Day to its LinkedIn and Facebook pages, as well as relaying news in real-time via Twitter.

It is not all technology-related activities though. Over in Africa, the FTTH Council has plans to spread the news in a traditional and fun way through printed t-shirts. These garments will be emblazoned with the message 'Keep Calm and Lay Fibre', and the idea is to have members wear them for the duration of 'Gimme Fiber' Day.

Over in the Far East, the FTTH Council Asia-Pacific would be appointing ambassadors in member countries to spread the news of the benefits of Fiber-to-the-Home.

Continued on page 10



Components and accessories for fibre optic telecommunications networks

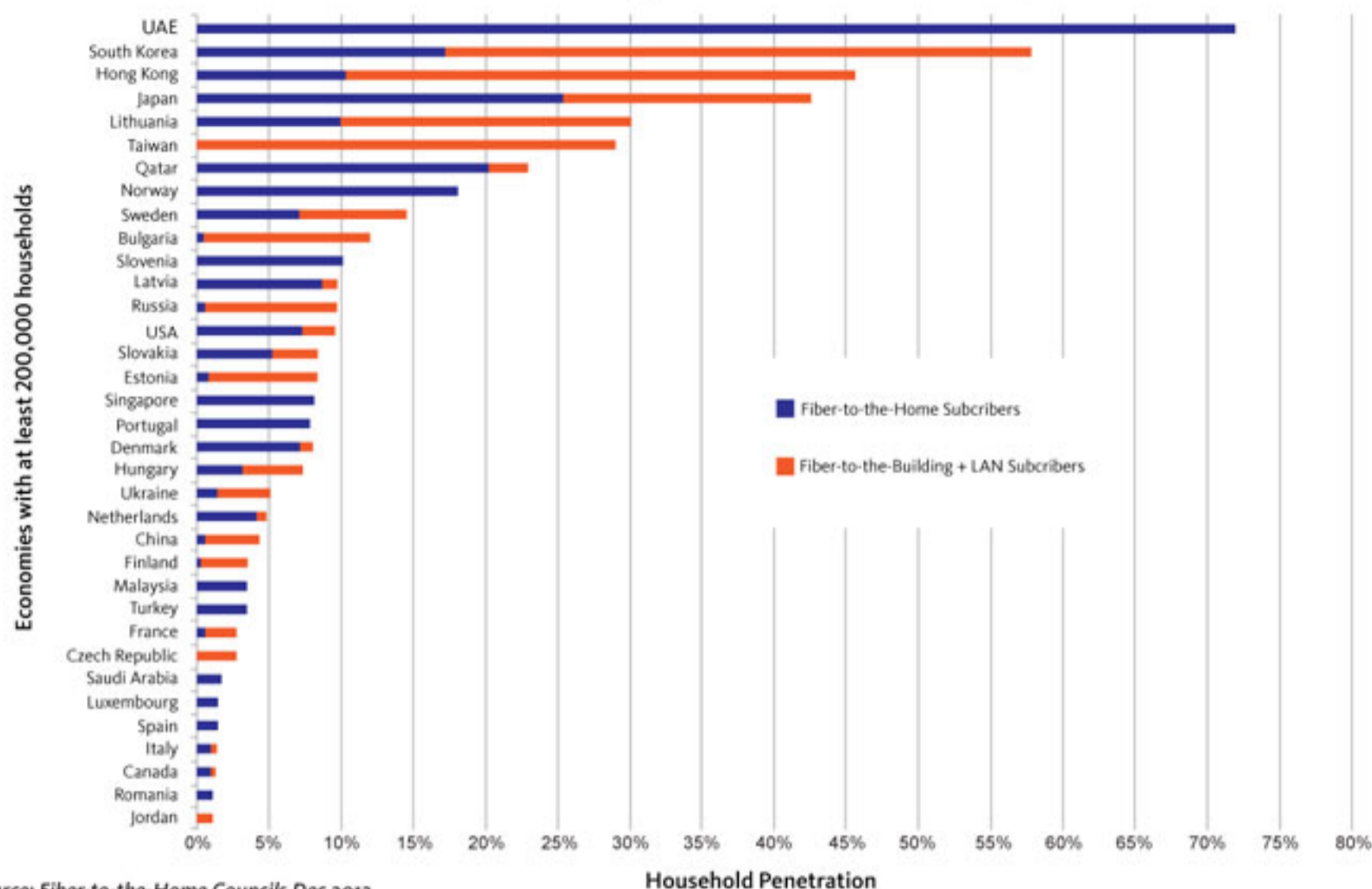
Telecommunications networks are evolving throughout the world in order to satisfy the increasing demand for high speed data services. Components and accessories for fibre optic telecommunications networks are now being produced by the new C_FTTS division of the Camozzi Group.

- ▶ No Metal Parts
- ▶ Transparent Body
- ▶ Easy "Push-In" Connection
- ▶ Direct Buried (DB) Applications
- ▶ CEI EN50411-2-8



Continued from page 8

Fiber-to-the-Home/Building Penetration Rates as at June 2012



Source: Fiber-to-the-Home Councils Dec 2012

In North America, the FTTH Council has a series of activities planned including in-person events and interactive social media campaigns that will highlight the role fiber deployment has made in bringing countless communities into the 21st century. It plans to host an event in a city that has deployed a fiber network in order to showcase the many benefits of the network. The venue will be announced at the FTTH Council Americas Annual Conference in Tampa from the 30th of September to 2nd of October.

In order to create additional excitement, the FTTH Council Americas is encouraging people to submit videos on why they want to have fiber in their communities, which will then be posted on the Council's website and YouTube account.

Further south in Latin America, the LATAM Chapter will be releasing recommendations

for FTTH design to its members. This will be made available as document files on the LATAM website, and based on internationally recognised standards.

Whether the activity is large or small, tech-focused or not, there is no doubting the sincerity of each FTTH Council as they prepare to commemorate the first ever 'Gimme Fiber' Day.

In his Nobel Prize acceptance lecture, Prof Charles Kao noted how fiber optics communication has "shrunk the world and brought human beings closer together." Speed by itself though is not the end product, he admits, but rather it allows for the development of technologies to best utilise the opportunities provided by extra bandwidth. As he said, "Optical communication is not just a technical advance, but has also caused major changes in society. It will continue to change the way people learn, the way they live and relate to each other, as well as the way they work." 'Gimme Fiber' Day celebrates the possibilities that have opened up thanks to the convergence of fiber optics and modern technology, and the man who made it possible.

The Cradle of Mankind, on the outskirts of Johannesburg, South Africa, plays host to the 2nd Annual FTTH Council Africa Conference.



FTTH COUNCIL CONFERENCE 2013

MAROPENG: 29-30 OCTOBER

Speakers

- **Andile Ncgaba** – Chairman, Dimension Data and President of the FOA Africa
- **Jabulani Dhlwayo** – Africa Market Development Manager for Corning Optical Fibre
- **Dobek Pater** – Telecommunications Analyst with Africa Analysis
- **Dr Adrian Tiplady** – SKA Bid Manager and scientific, technical and strategic consultant to the SKA Project Director
- **Arif Hussain** – Chief Executive Officer, FibreCo Telecommunications

Topics

- The impact of Fibre Optic technology on bandwidth intensive applications
- Fibre – The true enabler of LTE
- The role of Fibre Optics for the SKA
- Fibre Optic infrastructure deployment in South Africa and its impact on the competitive market environment
- Fibre for Africa – latest developments across the continent

Delegate Registration @ US\$299.00 excl. SA VAT

For a full programme and further information, please visit

www.ftthcouncilafrica.com/conference

Email: admin@ftthcouncilafrica.com | Web: www.ftthcouncilafrica.com



Fiber Round The World

Americas

FTTH Council Americas calls on the Federal Communications Commission to establish funds for Gigabit Communities Race to the Top program.

Americas

400 community leaders attend Community Toolkit Conference themed 'From Gigabit Envy to Gigabit Deployed' organised by the FTTH Council Americas.

MENA

Qatar is successful in implementing hybrid approach to fiber investment.

USA
9.62%

LATAM
4.5%

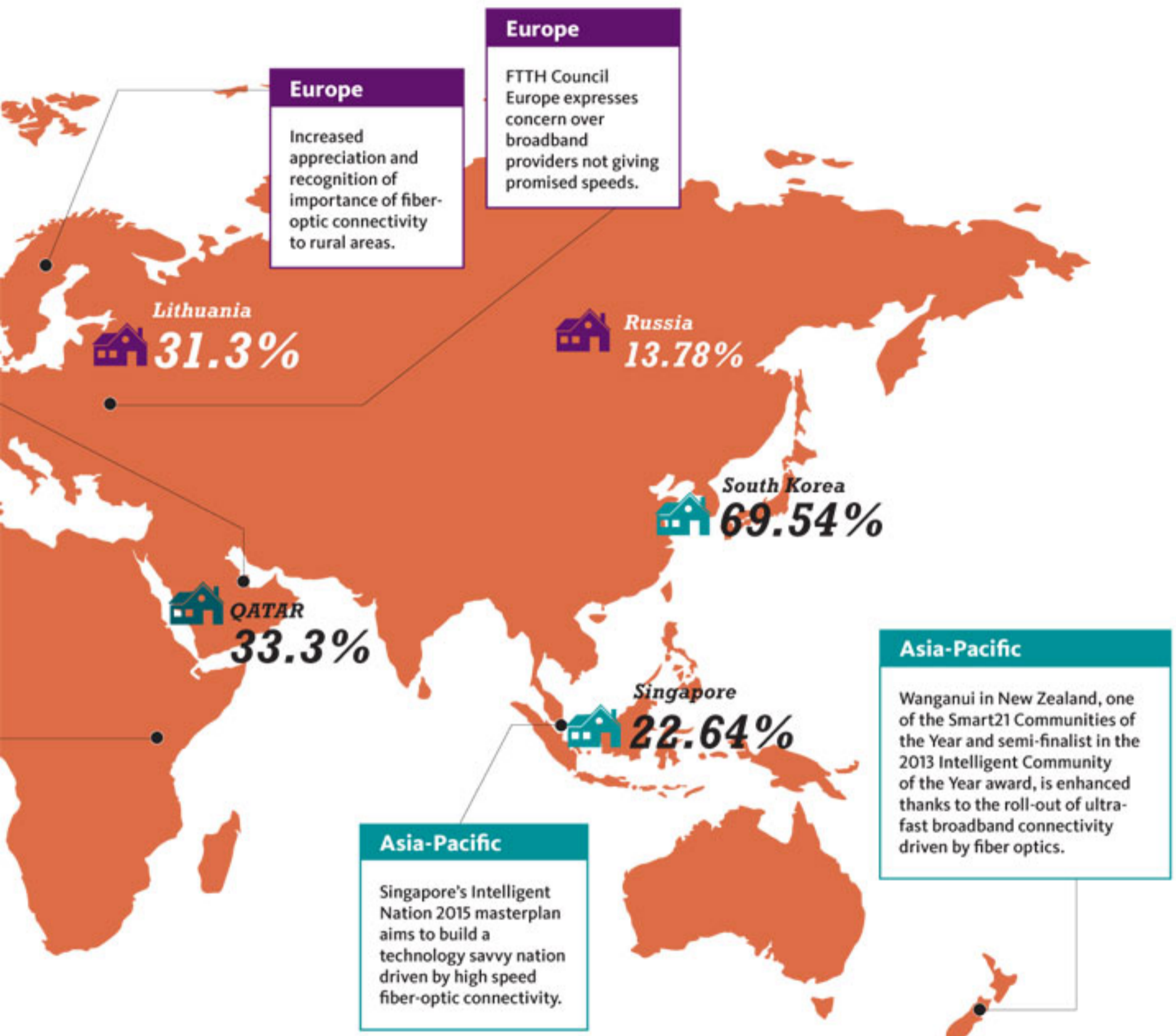
Americas - LATAM


Overall regional household penetration is less than 1%; however Uruguay leads with a 4.5% penetration rate.

Africa

Kenya Data Networks (KDN) becomes first operator to connect the capital cities of Kenya, Tanzania, Rwanda and Uganda through a fiber-optic network.

An overview of the news and breakthroughs taking place in fiber optics across the five FTTH Council Regions.



 Household Penetration at December 2012

Bell Aliant Changes Communities

A member company of the FTTH Council Americas – Bell Aliant is the largest FTTH provider in Canada covering Atlantic Canada and parts of Ontario and Quebec. It is also the second largest in North America after Verizon. **The Light Age** speaks with Dan McKeen, Senior Vice-President, Customer Solutions, on the effects that FTTH has made on the communities where Bell Aliant has rolled out its services.



***The Light Age:* Currently, over a third of your revenue comes from internet and data. What is the percentage of revenue coming from Fiber?**

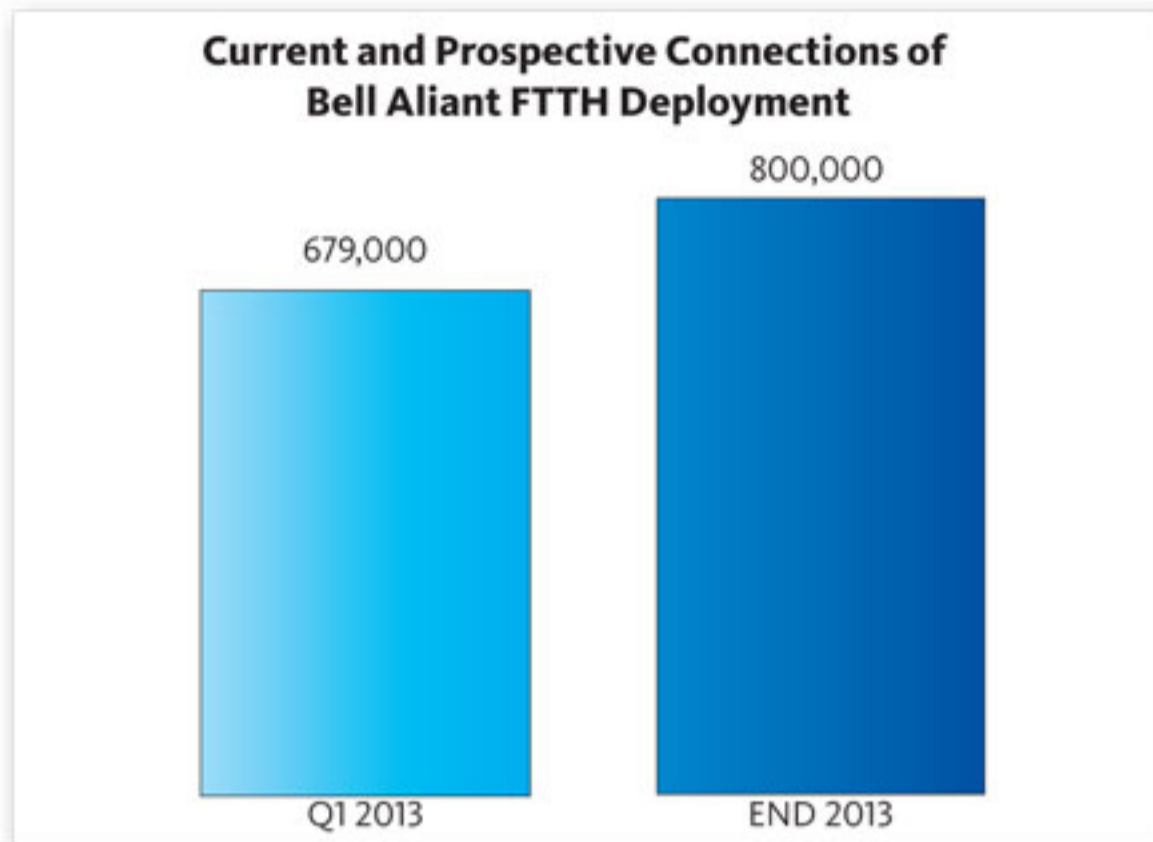
Dan McKeen: There is no question that declining traditional revenues are being topped up by new Internet and TV revenues. In fact, in Q2 of this year, our revenues were up C\$4 million – driven in large part by the benefits of FibreOP. We are growing exponentially each year as we expand our coverage area and enhance our services.

Furthermore, thanks to FTTH, we have transformed from being a traditional telco to a competitive TV and Internet company.

***The Light Age:* What improvements has Bell Aliant brought to cities through the deployment of FTTH?**

Dan McKeen: Since we launched our first city in 2009, our FTTH deployment has benefited communities both socially and economically.

Dan McKeen, Senior Vice-President, Customer Solutions of Bell Aliant.



It allows faster downloads, faster uploads, less congestion and more bandwidth.

We have always believed that a key part of building strong communities and economies is ensuring that people have access to the latest and best when it comes to technology. It's about making sure that people have the best tools to compete with the world, and that our communities retain and attract good, talented people, and have the best infrastructure possible – on all fronts.

Fiber-to-the-home delivers that. Our strategy has always been to start with the bigger centres and build out. We cover urban areas like Halifax, Nova Scotia and Sudbury, Ontario and smaller communities like Miramichi, New Brunswick, Summerside, Prince Edward Island, Bishop's Falls, Newfoundland & Labrador, and Amherst in Nova Scotia. We enable communities to become even more thriving, connected places to live and work.

According to Brian Small – the Mayor of Amherst, Nova Scotia – “Bell Aliant's FibreOP connects right to homes and businesses

and gives consumers and local industry access to the speed and data capabilities they need to remain competitive.”

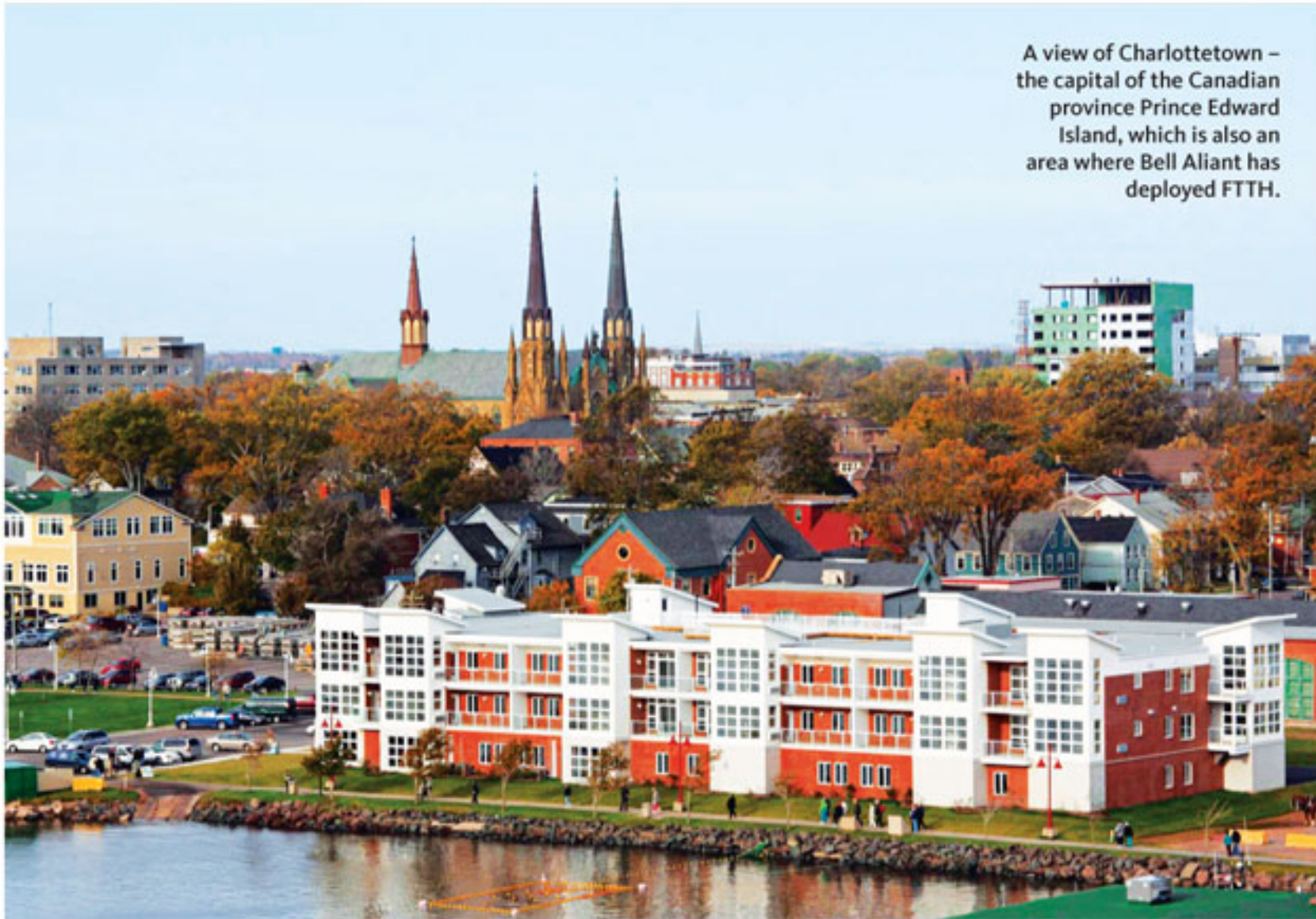
The Light Age: Your territory covers approximately 2.5 million Canadian households. What has the feedback been like since the deployment of FibreOP?

Dan McKeen: Customer demand and customer feedback have been very strong. As of Q2 2013, FibreOP is available to 725,000 homes and businesses. That's more than 70% of our competitive footprint in Atlantic Canada and more than one third of our footprint overall. By the end of 2013, we will have extended our fibre-optic technology to approximately 800,000 premises in our territory.

Our customers have told us they want – and need – faster Internet service. File sharing, uploading and video streaming have become commonplace and demand for speed and bandwidth is “exploding” as households have more than one person on devices at one time. And our FTTH network is “future proof” – meaning it can continue to expand to meet the growing communications needs of our customers.

We've been rated number one in customer satisfaction with FibreOP products and services, and local community and business leaders consider our investment in FibreOP to be an investment in their communities. It is as much a part of the infrastructure as the local roads, and it's creating opportunities for success.

“We have always believed that a key part of building strong communities and economies is ensuring that people have access to the latest and best when it comes to technology.”



A view of Charlottetown – the capital of the Canadian province Prince Edward Island, which is also an area where Bell Aliant has deployed FTTH.

What people are saying about FibreOP

“New Brunswick’s growing knowledge economy is driven by smart infrastructure like FibreOP. By extending FibreOP’s world-class reach to Woodstock, Bell Aliant is bringing local homes and businesses closer to global opportunities, and further positioning New Brunswick among North America’s fibre-optic leaders.”

Premier David Alward, New Brunswick

“Access to high-speed Internet service is an ingredient of economic and social development across the Island community. We’re happy that Bell Aliant will make this fibre-to-the-home network available to business, educators and homes on Prince Edward Island.”

Premier Robert Ghiz, Prince Edward Island

“Bell Aliant’s FibreOP network gives our city a competitive edge. It gives our residents access to state-of-the-art technology – on par with any place in the world.”

Mayor Debbie Amaroso, Sault Ste. Marie, Ontario

“Gander’s culture is deeply rooted in a tradition of innovation – and fibre-optic technology is like jet fuel for economic growth. This infrastructure enables the global connectivity essential for drawing smart businesses, attracting investment and fostering Gander’s reputation as a regional technology hub.”

Mayor Claude Elliott, Gander, Newfoundland

Team with the experts at selling spots.



Viamedia can become an extension of your sales force, generating advertising revenue with no overhead. Focus on running your business, and let the leading independent provider of full-service DMA-based TV advertising drive your revenue with the power of media. Otherwise, you're barking up the wrong tree.


viamedia
viamediatv.com

Connecting Communities

Once thought of as a convenient luxury, internet connectivity has become almost a necessity. Illustrating the speed of its growth is the fact that at end 2000, there were more than 360 million subscribers, whereas by the 30th of June 2012, that number had increased to more than 2.4 billion – a jump of 566.4%. More than just quantity, quality has improved as well. Today, internet users enjoy greater bandwidths and faster connectivity speeds which allow more data to be transferred in less time than before. All this has been made possible thanks to the power of optical fiber.



In view of the potential of ultra high speed connectivity, many communities in the United States are looking to secure all fiber to the home investment. Speaking to *The Light Age*, Heather Burnett Gold – the President of the FTTH Council Americas – revealed that one such initiative to enable them to do so is found in the paper – *Becoming a Fiber-Friendly Community*. This paper was created as part of the FTTH Council Americas Community Toolkit.

Elaborating on the paper, Gold said, “We have outlined a series of steps that communities should consider in order to become more fiber-friendly and enable the deployment of ultra high-speed broadband infrastructure.”

Becoming a Fiber-Friendly Community lists down the key elements communities in the United States need in order to create an environment that is ready for fiber investment. These factors include a strong and organised community which enjoys leadership and support from the local government, construction policies that are reasonable and expeditious, and the availability of existing infrastructure – which is proactively improved – to support fiber deployment. Incidentally, these provisions are not exclusive to the United States, and may be applicable to other communities around the world.

The Benefits of Fiber

Thanks to all fiber connectivity, now being deployed at gigabit speed, these communities enjoy speeds up to 200 times faster than the US average of 5 mbps, thus opening up opportunities to revolutionise how residents live, work, and interact. They are able to harness the full potential of technology to enhance health services, education, business, and retail. Even city management experiences a paradigm shift as services such as public transportation and utilities are boosted by the improved capacity and capabilities.

One example of this in action can be found in Cleveland, Ohio where Case Western University’s Case Connection Zone has enabled the development of revolutionary applications thanks to availability of the gigabit network. For instance, in the field of healthcare Case Connection has worked with the hospital in Cleveland to provide in-home healthcare via high-resolution 1080p video and feedback from doctors.

Taking into consideration that a third of women in Cleveland have diabetes, this allows them to receive care without having to be physically present at the hospital. Another medical breakthrough that has been made possible as a result of fiber-optic connectivity is ‘Surgical Theater’ which allows for interactive and realistic simulation of brain surgery.

According to the FTTH Council America’s President, “Our job is to enable all communities to reap the benefits of FTTH and to understand what steps they can take to impact the business case to attract this critical infrastructure investment.

Testament to the pent-up demand for all fiber was the response to the Community Toolkit Conference which was organised by the FTTH Council Americas. Held late May 2013 in Kansas City, the Conference – which was themed ‘From Gigabit Envy to Gigabit Deployed’ – attracted 400 community leaders, comprising elected officials, economic development officers and civic leaders. The future is definitely fiber.

Becoming a Fiber-Friendly Community

Community and Local Government Leadership and Support

- 1** Develop a clear broadband plan
- 2** Ensure commitment of community stakeholders, including local government personnel

Approval Requirements and Permitting

- 3** Define an expeditious process for on-going permitting and inspections
- 4** Permit innovative construction techniques
- 5** Build out requirements have been proven counterproductive

Use of Existing Infrastructure

- 6** Publish data about existing infrastructure
- 7** Make all rights-of-way available on clearly defined, reasonable terms through a rapid approval process
- 8** Make poles available on clearly defined, reasonable terms through a rapid approval process
- 9** Ensure make-ready work is performed expeditiously
- 10** Coordinate all pole maintenance and make-ready work with the new provider to save costs
- 11** Allow prospective attachers to perform all make-ready work themselves through contractors

Proactively Improving Existing Infrastructure

- 12** Provide space on all poles for new attachers
- 13** Install ubiquitous fiber conduit
- 14** Use building codes and community development plans to drive fiber deployments

Source: FTTH Council Americas

Bogota Banks On Fiber

Colombia's state-owned broadband provider, Empresa de Telecomunicaciones de Bogota (ETB) has ambitious plans to roll-out a fiber optics network to 75% of the Colombian capital Bogota by the year 2015. On behalf of **The Light Age**, Gilberto 'GG' Guitarte – Chairman of the LATAM Chapter of the FTTH Council Americas – speaks to Hugo Eslava Eljaiek – Vice President of Service Assurance, and Sergio González Guzmán – Vice President of Strategic Planning at ETB, on the company's plans as well as its experience of being a member of the LATAM Chapter.



Gilberto 'GG' Guitarte – Chairman of the LATAM Chapter of the FTTH Council Americas (left) with Hugo Eslava Eljaiek – ETB's Vice President of Service Assurance (centre) and Sergio González Guzmán – ETB's Vice President of Strategic Planning (right) at the ETB office in Bogota, Colombia.

ETB has adopted FTTH technology as part of your ambitious transformation plans in 'n-play' service areas. What led you to that decision?

Colombia is a fast-developing country, and in the next 10 years, our per capita GDP, particularly in the capital city Bogota, is expected to be higher than in emerging countries. Also, we have a growing middle class. This will increase the demand for better connectivity, and after looking at the options, we decided that FTTH was the right platform to adopt.

This is because when it comes to connection capacity and speed, fiber – especially FTTH – is superior to any form of access technology. In other words, it is an option that is not only able to meet current but also future market demands. Furthermore, for our customers, FTTH will give them the ideal Quality of Experience in terms of convergence and interactivity.

At the same time, we also took into account how FTTH is the choice of many other broadband players around the world. World-wide growth of services delivered through FTTx is expected to grow from 80 million in 2012 to 175 million in 2016, which is a 20% compounded average growth rate (CAGR). So in the long run, the costs will be lowered.

How are you training your personnel to design, build and operate the new FTTH platform?

Human capital development is an important part of our transformation programme. To achieve this we have developed a training programme for FTTH deployment that covers knowledge, skills, and practical methodology when they acquire knowledge in the field.

Aside from that, we also focus on soft skills or competencies such as communication, proactive

listening, learning predisposition, discipline and respect. Therefore, our personnel are not only knowledgeable and skilful, they also have the right attitude as well as aptitude. With this in place, the migration from copper to fiber is easier for our people, and we can secure FTTH as quickly and as efficiently as possible.

Have you worked with other carriers to obtain know-how and experience regarding FTTH?

Yes, we have. We have visited FTTH operations in Europe, North America, and Latin America, and we have learned a lot from the lessons which they shared with us. So, our planning process has definitely been enriched, and although each operation is unique, we have identified common themes which have allowed us to be more efficient in our deployment.

We have also engaged firms which are experienced in deploying FTTH networks, and they have been transferring knowledge to our personnel. This has helped in the development of hard competencies.

“When it comes to connection capacity and speed, fiber – especially FTTH – is superior to any form of access technology. It is an option that is not only able to meet current but also future market demands.”

Tell us more about your 'n-play' services over FTTH. Will they be limited to Voice and High Speed Internet Access?

Internet will be there of course. However we will offer more than that through our FTTH network, such as entertainment and TV services. For instance,

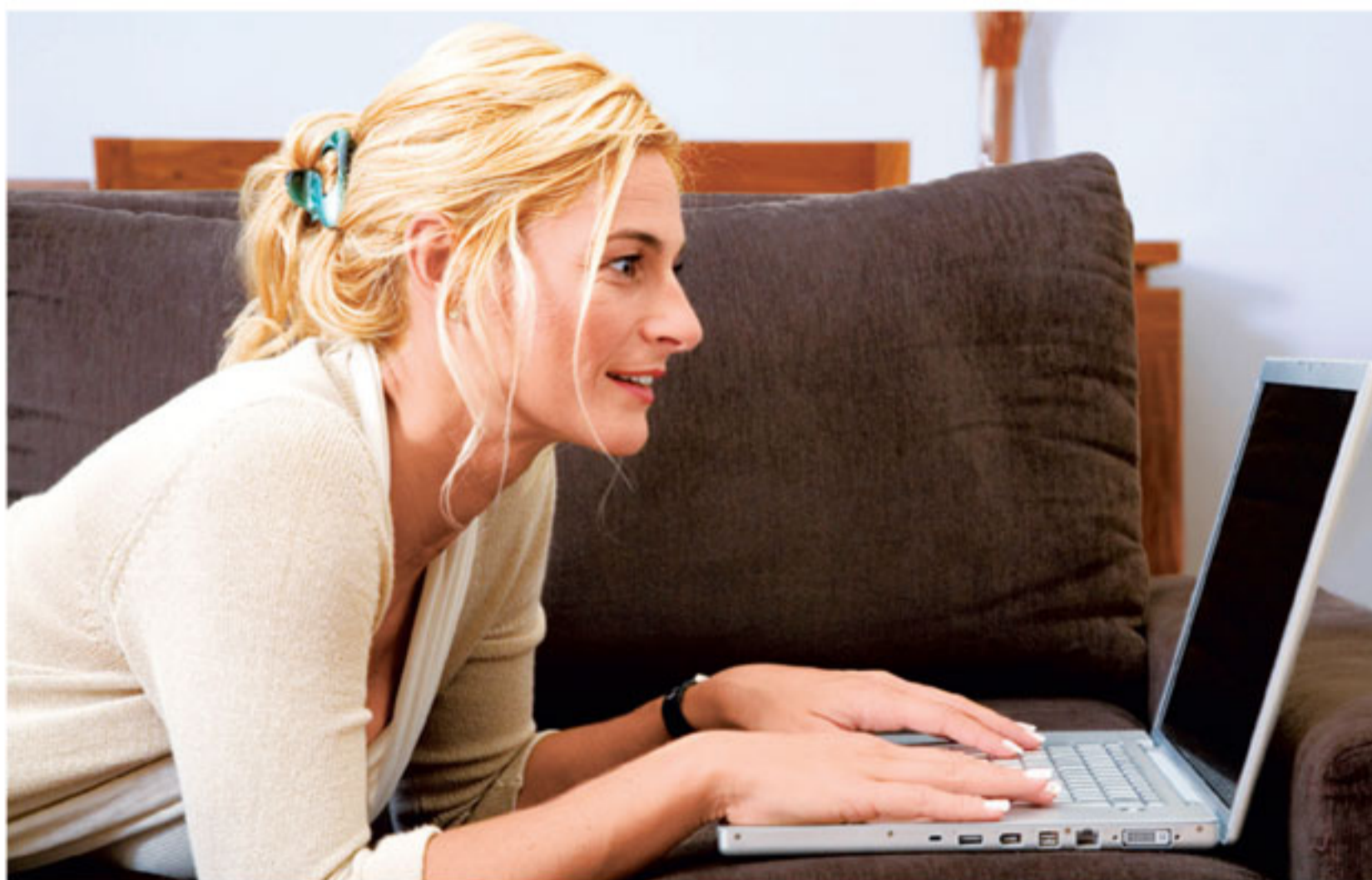
we are currently deploying an IPTV platform to reach our customers in Bogota, and this platform can be upgraded with extra multimedia services as per market demand.

How much of an advantage or value have you found in being a member of the LATAM Chapter of the FTTH Council Americas?

Membership is extremely important to us at ETB, especially since our strategic focus is on FTTH. Thanks to being part of the FTTH Council Americas, we have access to information on the best practices in the industry from both carriers and vendors. Furthermore, we have also benefitted from the training sessions conducted by experts and in turn this has allowed us to enhance the training process for our own planning, design and operational teams.

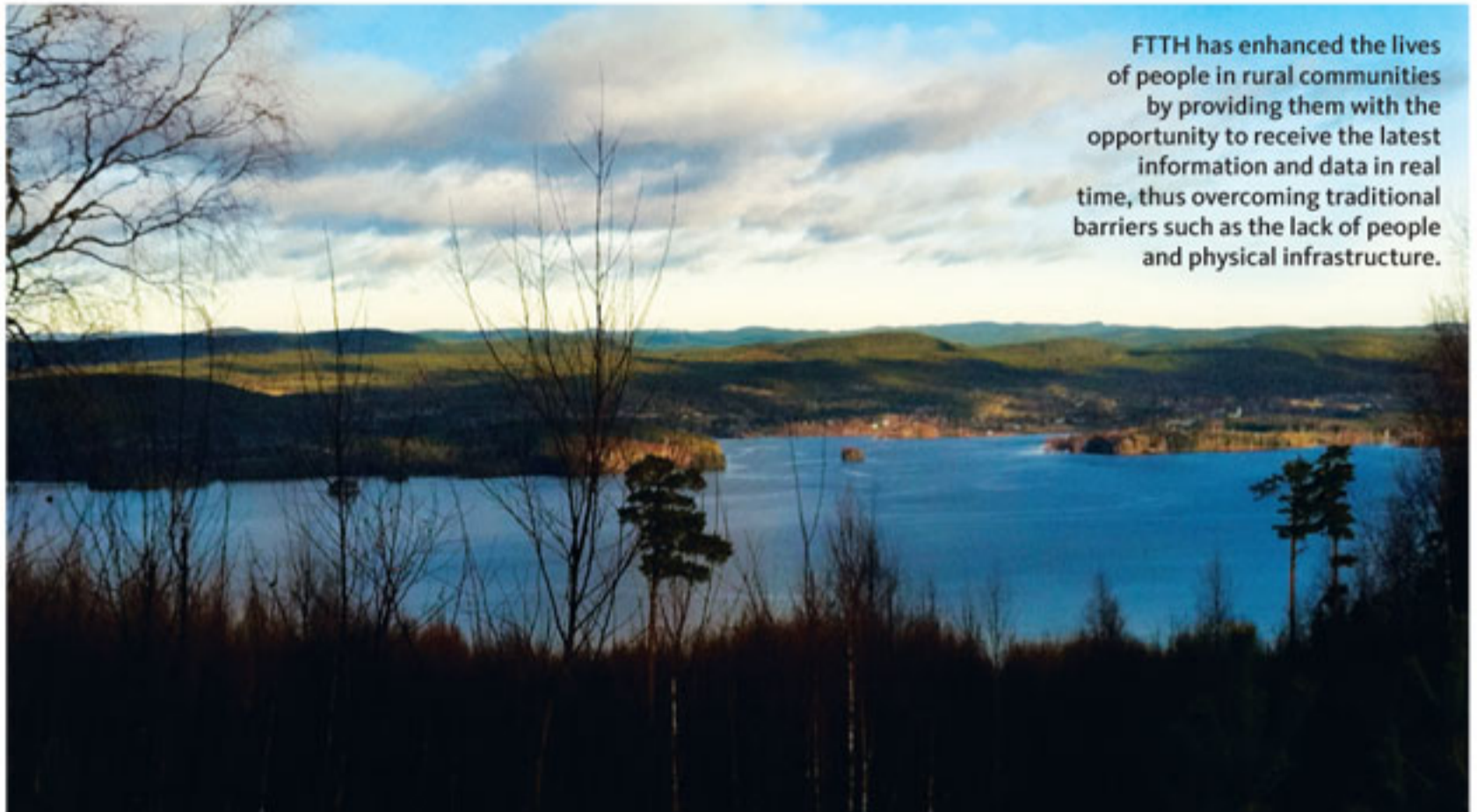
The Nordic Way

Fibre to the home (FTTH) brings huge benefits to all connected households. But rural areas especially benefit from the roll-out of fibre optics. FTTH Council Europe Communications Director Nadia Babaali turns her eyes to the Nordics and highlights how Sweden has managed to enhance rural neighbourhoods thanks to one of most advanced FTTH networks in Europe.



Facilities available to urban dwellers can now be accessed in rural areas thanks to FTTH.

Babaali pointed out that one of the challenges of building physical communication networks infrastructure in rural areas is its sparse population. Sweden has a population density of 21 inhabitants per square kilometre – in comparison, Germany has a density of 230. Given that 85% of the population live in urban areas, this means that rural Sweden is even less populated.



FTTH has enhanced the lives of people in rural communities by providing them with the opportunity to receive the latest information and data in real time, thus overcoming traditional barriers such as the lack of people and physical infrastructure.

Rural FTTH penetration is an important part of Sweden's broadband policy, which incidentally was the first in Europe when it was introduced in the late 1990s. The goal is to make Sweden "an information society for all," and the focus was to build a physical infrastructure as a foundation. To bring that about, dark fibre networks were set up across the 298 counties in Sweden, with the Swedish government subsidising the roll-out in areas which were commercially unattractive to private companies, such as those with less than 3,000 inhabitants.

Nadia Babaali gave kudos to the Swedish government for being farsighted in seeing the real potential of broadband, given that the technology was relatively new at the time of the policy's launch. In addition, the policy also highlighted the fact that "the information society cannot afford to leave rural areas behind."

Elaborating on this, Babaali noted that broadband increases commercial opportunities as it allows businesses to be set up in everywhere – even in remote places. Owing to FTTH and the capabilities made possible through fibre optics connectivity, libraries, schools, universities and hospitals are able to provide information, education, and even health care online. These are not static data, but also interactive through the use of real time videos and

teleconferencing. Thanks to FTTH, living in a rural area will no longer preclude one from the facilities available to urban dwellers.

The decision to invest in broadband and FTTH has also paid dividends. For instance, the roll out of FTTH in the town of Hudiksvall saw the number of companies increase by 6% and 14% year-on-year from 2004 and 2009. Furthermore, a survey by ICT research organisation Acreo revealed that the estimated cost of investment of SEK39 billion (US\$5.98 billion) will rake in returns of SEK59 billion (US\$9.05 billion)

Other Nordic nations are also investing heavily in FTTH, inspired by Sweden's example. Next February, the FTTH Conference 2014 will take place in the Swedish capital Stockholm. Carrying the theme "Showcasing a brighter future", it is an opportunity for stakeholders and interested parties to see why the Nordics and Sweden in particular are examples to be emulated.

Smart Cities, Smart Future

One of the advantages of high-speed internet connectivity which has been brought about by fibre optics is that cities can integrate essential services together. Owing to the split-second transfer of data, essentials such as transportation, energy, security, and others can be coordinated with one another. For residents in such smart cities, this seamless transfer of information enables the smoother running of such services and improves life in the city.



High-speed fibre internet connectivity makes it easier for families to connect and share from anywhere in the world using real-time video conferencing.

According to the FTTH Council Europe, becoming smart is a must regardless of the size of the city. This is because smaller communities need to be smart in order to enhance and create lifestyle and economic opportunities, which in turn will boost the attractiveness of the city for current and would-be residents. At the same time, rapid growth has resulted in larger cities becoming increasingly difficult to manage. Being a smart city will allow such cities to better manage development and its effects.

The FTTH Council Europe notes that "Governments in smart cities can use data to discover early, small inefficiencies in infrastructure such as like sewers, power network, water supply, etc. that would have otherwise escaped notice, and to schedule maintenance and staffing with minimum inconvenience and cost."

Furthermore, in a smart city, different government agencies can enjoy seamless, instantaneous interaction with one another. This includes real-time video conferencing which reduces the need for face-to-face meetings, thus giving the opportunity for faster decision-making.



Amsterdam in the Netherlands aims to be a smart city and has introduced measures to help it reach that goal.

In order to create a smart city, getting the right infrastructure installed is needed. Only fibre-to-the-home (FTTH) fits the bill, because only optical fibres have “the reliability and the scalable capacity to supply data when and where it is needed.” For instance, emergency services can find the least congested route when responding to a call. Students need no longer miss lessons owing to illness or disability because classes can be delivered via high-definition video.

These are just some of the advantages of being a smart city. The FTTH Council Europe emphasises that it is important for everyone to ‘buy in’ to the concept of the smart city in order for it to succeed. It should be noted that almost all stakeholders will benefit from the roll-out of fibre optics – these include residents, city councils, utilities, transportation services, and of course the business community.

Progress has been encouraging. For instance, Manchester in the UK is a founder member of the EuroCities network, which aims to promote the idea that, “by making a conscious effort to use innovative digital technologies to improve living and working conditions, we can develop a more inclusive and sustainable urban environment.”

The work includes a variety of initiatives: for example, involving citizens in testing energy management systems through smart meters, working with government agencies to open up data, developing a next-generation access fibre based digital infrastructure and working with local residents to equip them with the skills to support the co-production of new community services.

Amsterdam in the Netherlands also has smart city ambitions. The goal is to develop innovative technologies and approaches to sustainable economic development, while also encouraging Amsterdam’s citizens and businesses to modify their behaviour in ways that promote this goal. By setting up small-scale local projects, Amsterdam Smart City makes it possible to test new initiatives that

can subsequently be implemented on a larger scale.

Then there is the city of Sankt Gallen in Switzerland which intends to become a smart user of energy for transport, heating and electricity, hoping to cut the current consumption of 1490 GWh to 1060 GWh by the year 2050, and to generate all the energy used by the city from renewable sources. To reach the targets about 140 tasks have to be implemented. As a foundation for these tasks, the city has deployed FTTH through the municipal power utility company.

In the past, cities become almost unmanageable as they grow in size and population owing to the deluge of information and data needed to run the various municipal services. Thanks to the connectivity afforded by fibre optics, coordination is made easier, faster and more reliable. Becoming a smart city is not just a need – it is a must for any conurbation that wishes to not just survive but also thrive.

Broadband Transparency



One of the more commonly used phrases by broadband service providers is “up to”, which is used to advertise connectivity speeds. The problem though is that actual speeds are usually not as promised, with providers using the term “up to” as an explanation. For FTTH Council Europe Director General Hartwig Tauber, this is tantamount to charging people for full service and yet only delivering half.



Hartwig Tauber – Director-General of the FTTH Council Europe

Tauber notes that technical constraints are often used to explain why promised speeds could not be delivered. He highlights, however, that it is possible to deliver on the promise through fibre to the home (FTTH) and notes that unlike telephone cables, the quality of the signal in fibre optics does

not diminish with distance in a local broadband access network. In addition, not only does FTTH deliver, it can also exceed the advertised speeds.

The discrepancy between advertised and actual broadband speeds has also resulted in new legislation being introduced. One example he gave is that of the UK where the Advertising Standards Agency ruled that at least 10% of customers must be able to access the promised speeds. Tauber observes that this incidentally has led to the reduction of advertised speeds, and in some cases to the removal of references to speed.

Similarly a breakthrough has also occurred in Denmark where consumer associations work with the telecoms and energy industries to ensure that all consumers receive at least 50% of the advertised speed. For Hartwig Tauber, although the progress in Denmark is commendable, he notes that “the lack of transparency in broadband marketing remains a concern across the rest of Europe.”

He recalls a pledge by Neelie Kroes, Vice-President of the Digital Agenda at the European Commission, to help improve broadband advertising in Europe by preparing a Recommendation or guidance document for regulators). For Kroes, one of the biggest bugbears is the lack of transparency and clarity in contracts.

Tauber concurs and states that another concern is the tendency of telecom operators to misuse the word fibre. Telekom Austria, the incumbent in Austria, even markets its outdated 16 Mbps DSL products as “fibre-optic powered.” Therefore, as he said, “consumers cannot even be sure that they are purchasing a genuine optical fibre connection.” For him, what is important is that “consumers get clear and accurate information about broadband services so they can make an informed choice.”

FTTH COMMUNITIES:

**FASTER.
BETTER.**

NOW.



FTTH 2014
CONFERENCE & EXPO

June 22–25, 2014

Greater Fort Lauderdale Convention Center
Fort Lauderdale, Florida, USA

Inside A Smart City

For many, New Zealand is perhaps best known for its beautiful natural scenery and also as the setting for the popular movie trilogy *The Lord of the Rings*, among other attractions. The district of Wanganui on the west coast of North Island is adding another feather to the country's cap, having been named as one of the world's Smart21 Intelligent Communities in October 2012. One of the first in New Zealand to roll-out ultra fast broadband (UFB), Wanganui has been showcasing the advantages of this technology. **The Light Age** takes a closer look at these achievements.



As one of the Smart21 Communities of the Year, Wanganui was named one of the semi-finalists of the '2013 Intelligent Community of the Year' award. Organised by the Intelligent Communities Forum, which shares best practices for communities to adapt to the demands of the broadband economy, the 'Intelligent Community of the Year' celebrates those communities that have most effectively utilised broadband to enhance their lives, and businesses.

Wanganui's achievement though is not surprising to anyone who has followed the progress of this district with its population of 43,000 people. Not only was it one of the first in New Zealand to roll-out UFB, but also one

of the first in the country to offer free Wi-Fi in public areas, and presently the District Council is looking to widen accessibility.

Further credence to Wanganui's reputation as a high-tech hub can be gleaned from the fact that popular technology expo – TechEx – has been held there for the last two years. Among the speakers at the latest event were representatives from Google NZ, Internet NZ, and NZ Federated Farmers – the latter representing a crucial





Previous page:
The scenic city of Wanganui is also one of the world's Smart21 Intelligent Communities, the first in New Zealand to roll-out ultra fast broadband and offer free public Wi-Fi.

Left: The Awa City Computer Clubhouse where technological and design skills are developed, helping children and young adults increase their digital awareness.

demographic for the wireless broadband market in the country.

For Mayor Annette Main – who is also the chair of the Wanganui Digital Leaders Forum – UFB is a game changer. She said, “The flow-on effects from the use of this new technology will see changes we could never have imagined... Access to ultrafast broadband will create opportunities that will change the way we live our lives.”

One such initiative, which is also one of Wanganui's crowning glories, is how it is using technology to bridge the digital divide between the urban and rural areas. This is made possible thanks to UFB, through the installation of fiber optics.

Another initiative is Computers in Homes – a programme which gives families without a computer the chance to become digital

citizens. This is achieved by providing them with 20 hours of training, a refurbished computer, a subsidised internet connection and technical support.

Then there is Awa City Computer Clubhouse, which caters for 10 to 18-year-olds. Members develop their skills in technology and design and increase digital awareness while building confidence. The Clubhouse is part of the 100-strong Computer Clubhouse Network, based at MIT in Boston.

Although Wanganui did not manage to make it to the final shortlist of seven communities when the next-stage of the '2013 Intelligent Community of the Year' award was announced in January 2013, the disappointment did not dampen the overall mood of optimism.

According to Annette Main, “Wanganui is the first New Zealand district to be short-listed in this international initiative and we have shown we are leaders in the digital world.” Its progress has encouraged the city to try again for the prize in 2014, and definitely the people of Wanganui can feel proud of what they have managed to achieve thanks to the power of ultra-fast broadband and fiber optics.

Singapore's Next Generation

The Future Starts Now



Singapore, one of the most competitive, highly-connected, and infocomm-savvy countries in the region, has achieved ultra high-speed broadband with the Next Generation Nationwide Broadband Network (Next Gen NBN). The Infocomm Development Authority of Singapore (IDA) has led the creation of the Intelligent Nation 2015, or iN2015 – a 10-year plan to build a technology-savvy and well-connected society competitive in many different sectors in the economy.

Part of the iN2015 masterplan is the Next Generation National Infocomm Infrastructure (Next Gen NII), which ensures the country's connectedness. One component of this infrastructure is the wired broadband network Next Gen NBN, an open access network that delivers ultra-high speed broadband of up to 1Gbps to all homes, schools and offices. This open network will allow service providers to maintain a competitive stance in the nation's growing digital economy. Next Gen NBN will ultimately turn Singapore into an intelligent, global city.

Progress has been impressive. By mid-2012, Fiber-to-the-Home (FTTH) had been deployed to more than 95% of businesses and homes in the country, with the rest completed by mid-2013. With 26 Retail Service Providers (RSPs) and over 400,000 Next Gen NBN subscribers, growing competition and continuing strong demand for fiber services have encouraged these RSPs to offer the best customised access plans to end-users. Delivering on the vision of Next Gen NBN, OpenNet, a joint venture between Axia NetMedia, Singapore Telecommunications, Singapore Press Holdings and Singapore Power Telecommunications, has taken the responsibility of building, managing and operating a high-

quality fiber optic platform while Nucleus Connect, wholly owned by StarHub, offers wholesale network services over the active infrastructure.

Getting Fiber-ready

To further support the Next Gen NBN, the IDA made changes to the Code of Practice for Info-communication Facilities in Buildings (COPIF), requiring that all new homes and buildings be pre-wired with optical fiber, and pre-installed with an optical fiber termination point. In addition, the COPIF called for developers of buildings to provide space for the infrastructure's deployment to enhance mobile coverage. This applies to both existing and new developments.

"The changes in this COPIF are to ensure that homes are built for future infocomm

"By mid-2012, Fiber-to-the-Home (FTTH) had been deployed to 95% of businesses and homes in Singapore, with the rest to be completed in 2013."

Fiber In Singapore By Numbers



Singapore's e-Government have been ranked 1st in Waseda University's "international e-Government Ranking" for five consecutive years since 2009.



More than 95% of homes and businesses can enjoy ultra-fast connectivity with the Next Generation Nationwide Broadband Network.



86% of resident households in Singapore have access to a computer. 97% of households with school-going children own a computer.



In-building mobile coverage to be enhanced to more than 85%.



All newly built homes will be fiber-ready.



Personal Data Protection Act introduced to strengthen Singapore's position as a trusted hub for data management and data processing activities.



Free Wi-Fi via Wireless@SG; with access speed up to 2Mbps.

Source: IDA

needs brought about by development. These changes will benefit consumers and improve their mobile and broadband experiences," said Leong Keng Thai, Deputy Chief Executive and Director-General (Telecoms & Post) of the IDA.

Enjoying the Benefits

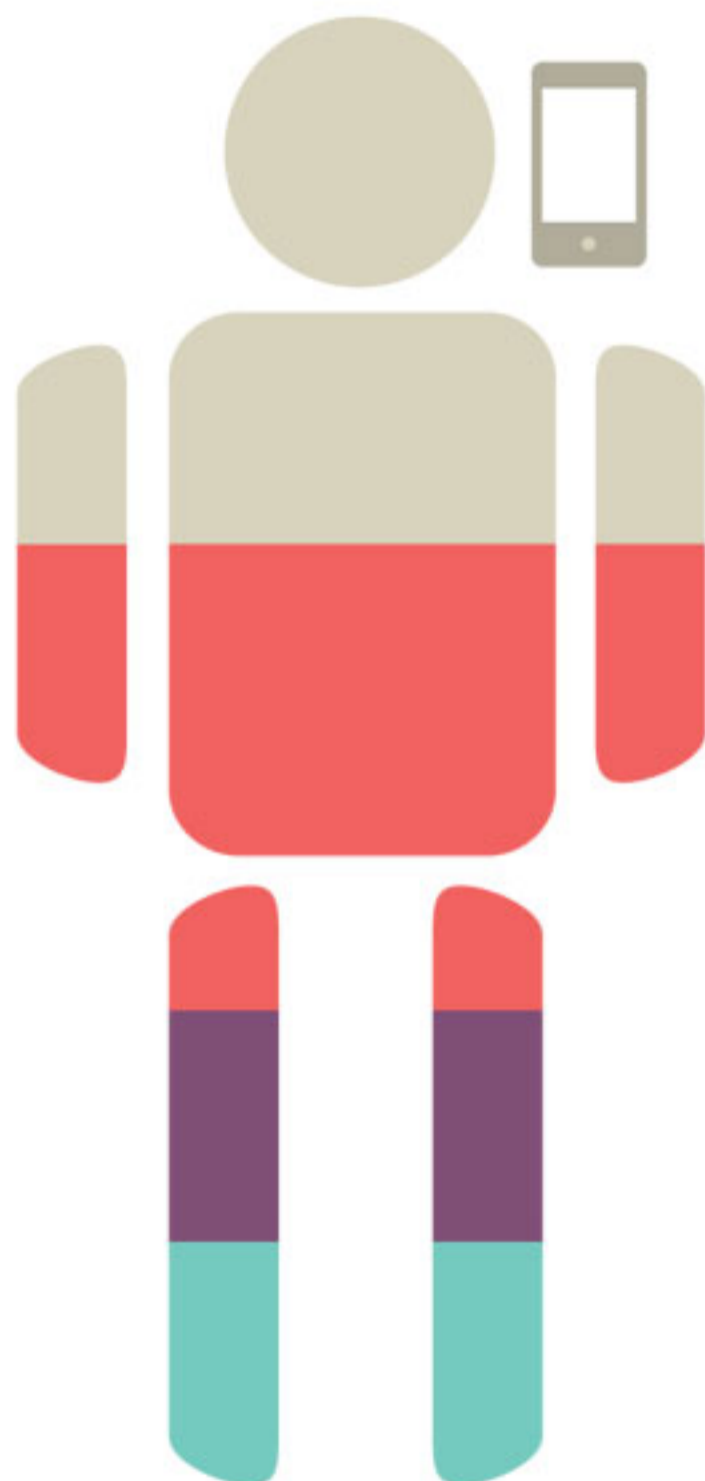
Some innovative Next Gen NBN services for consumers are already available to end-users in homes, offices, schools and outdoor locations thanks largely to high broadband speed and large bandwidth. Singaporeans can enjoy fast upload and download speeds, real-time gaming, and cloud computing services, among many other services.

This will in turn help the nation explore opportunities in the digital plane, to enhance both the economy and the infocomm sector. Individuals, small businesses, and communities may also take advantage of these services as they cut costs, save time, and offer the efficiency and enhanced productivity that high broadband speed brings.

Trying Out the Future

Interactive exhibits to educate the public on the technologies and services from the Next Gen NBN project were launched in 2010. "iExperience" aims to demonstrate and promulgate the benefits of technology via hands-on experience in guided or self-discovery tours. Catering to different visitors' interests and backgrounds, the tours provide information on how to use Next Gen NBN services in business or in daily life.

How Singapore Is Benefitting From Fiber



Healthcare: Telehealth enables medical caregivers to remotely monitor chronic disease patients at NUHS.



SMEs: iSPRINT has helped over 5,000 SMEs use infocomm solutions in their business. Over 3,000 enterprises are being supported in the adoption of SaaS solutions.



eGov: eCitizen portal provides first-stop access to cross-agency content and over 400 government e-services.



Mobile Government: More than 100 unique mobile services from government agencies, non-government entities such as restructured hospitals and universities, as well as apps co-created with the private sectors that utilise government data, are available on mGov@SG.



Education: Eight FutureSchools have been established, focusing on creating diverse learning environments.



Finance: Launch of nationwide NFC payment, accepted at over 30,000 payment points.



Logistics and Supply Chain: e-Freight@Singapore will enhance competitiveness and increase productivity in the air cargo logistics sector through infocomm.



Hospitality, Tourism, & Retail: Transformed via the Digital Concierge programme, catalysing the adoption of mobile commerce and services.

The reality of FTTH being a future-proof solution has never been as clear as it is in Singapore, a nation with a high level of adoption and a competitive infrastructure. Putting a premium on creating awareness nationwide is helping move the Next Gen NBN project forward, opening new possibilities and developments in the way Singaporeans live, learn, work and interact.



CONNECT YOUR NETWORK TO THE FUTURE.



Scan and see how TE can make fiber come alive in your building.

TE Connectivity is connecting the world, one network at a time.

Designing technology-ready networks requires a smarter approach to connectivity. Contact TE to learn how to future-proof your network with our leading-edge fiber connectivity solutions.

www.te.com/telecomnetworks

National Fiber Strategies

Qatar on the Right Path

In a recent study, the management consultancy firm, Arthur D Little (ADL) and FTTH Council MENA, concluded that the telecom industry, governments and regulators need to move decisively to fiber in order to support future economic growth. Qatar is an example of a country that has successfully implemented a hybrid approach to hasten the investment into fiber.



There are clear socio-economic benefits from investment into advanced telecommunication networks, as high-speed broadband contributes to the diversity and strength of economies. Advanced high-speed telecommunication networks have long been considered a key foundation of healthy economies. With the explosion of internet-based business and an increasing reliance on real-time remote communication, social network marketing and Cloud services, the digital economy has become fundamental to economic growth in every country.

However, significant investment into fiber is now necessary as it is no longer possible to modernize and upgrade the fundamental copper-based networks. The investment needed is vast, and many countries have yet to come up with an approach that balances national economic interest, free-market economics and a healthy telecommunications industry.

Qatar's hybrid approach has brought results

Based on the ADL global market survey Qatar is an example of a country that has taken a hybrid approach, one, which has been actively supported by the government. Qatar's rollout of a nationwide fiber network is a major success story and positions the country as a leading fiber nation.

Based on the yearly 2012 FTTH Market Panorama study by FTTH Council MENA, four MENA countries have entered the FTTH Global ranking in terms of highest penetration rates, namely, UAE, Qatar, Saudi Arabia, and Jordan. UAE was ranked number one among 32 countries with 64.8% FTTH home penetration rate, while Qatar enjoyed one of the fastest FTTH deployments with 33.3% penetration rate in less than two years.

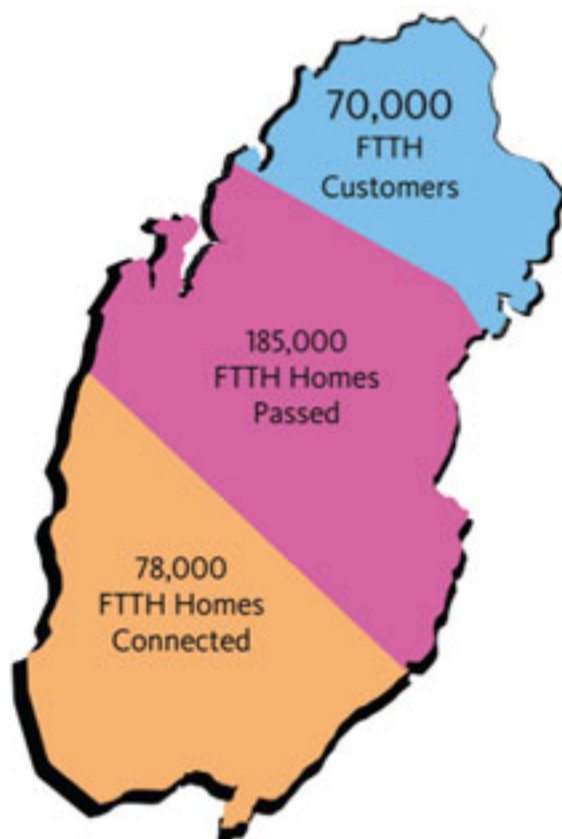
"The fact that Qatar has developed its National Broadband Plan is a step on the right track with its ICT policies and implementation of a nationwide fiber-based network. Qatar plans to pass all households by the end of 2014 and to connect 95% of homes with Fiber by 2015. This marks an unprecedented cornerstone to drive a nation into a new era of digital transformation in such a short period of time," said Dr Suleiman Al-Hedaithy, Chair of Market Intelligence & Development Committee and Board Member of FTTH Council MENA.

Two companies are leading the deployment of fiber in Qatar: Ooredoo, the incumbent operator, and Q.NBN, a 100% government-owned company set up to deploy the passive network for FTTH infrastructure.

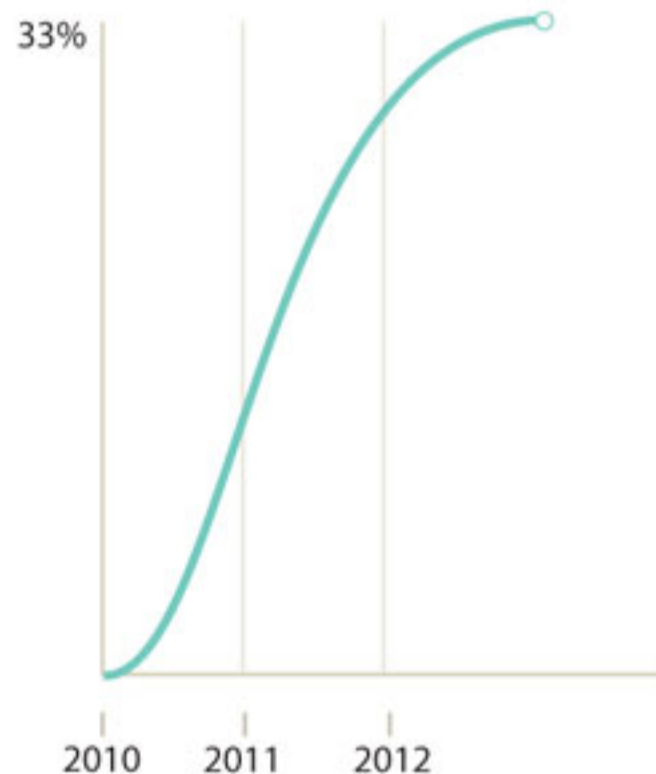
Ooredoo

Ooredoo, which began its move to fiber in late 2011, has recently passed a major milestone – more than 70,000 customers are now connected to Ooredoo Fiber. The operator is committed to launch Ooredoo Business Fiber, with a special emphasis on the country's small- and medium-sized businesses, which form the backbone of Qatar's rapidly growing knowledge-based economy. Ooredoo firmly

Ooredoo FTTH Achievement in Qatar



Deployment of Qatar FTTH from 2010 to 2012



believes in the benefits of fiber optic networks for its customers and hence has committed to spending capital of more than QAR 1 billion to have Ooredoo Fiber pass by all households in Qatar by the end of 2014.

Qatar National Broadband Network Company (Q.NBN)

Q.NBN is a fully independent company, which received a 25-year national wholesale service-operating license from the Supreme Council of Information & Communication Technology. Q.NBN has budgeted an approximate initial CAPEX of QAR1.82 billion (US\$500 million). Vodafone Qatar, the country's second operator and Q.NBN signed an agreement to support the government's plan to

build a shared nationwide direct fiber broadband network in July 2011. Vodafone Qatar is using QNBN's network to provide FTTH services in Qatar.

Decisive steps needed to support economic growth

Although positive steps, like those in Qatar, are bringing increased visibility to the region in terms of high-speed broadband infrastructure deployment, the Middle East still has significant challenges to overcome that require intensive government participation. More regional governments are starting to appreciate the role of fiber infrastructure in national socio-economic development.

"Governments should ensure the right regulation and control so that funding can maximise the economic impact," said Dr Karim Taga, managing partner and global practice leader at ADL TIME. "Ultra-broadband is an essential infrastructure for national competitiveness, and public policy must encourage an investment-friendly environment to ensure that fiber is deployed nationwide."

Fiber Updates

Highlights From Africa

The Light Age shines the spotlight on some of the top news that is affecting the FTTH industry in Africa – one of the most promising regions for fiber penetration and connectivity.

Fiber Friendly Facility Launch

Launched in May 2013 by the FTTH Council Africa, the 'Fiber Friendly Facility' is an initiative aimed at stimulating uptake with end-users. It involves providing, for order, a decal of the Fiber Friendly Facility (FFF) logo to businesses and residential premises which offer fiber optic connectivity and network access. The decal measures 20mm X 20mm and the Council hopes that it will draw attention to fiber connection and create an end-user demand which developers cannot afford to ignore.

This is the first step in a campaign to assist end-users in gaining understanding and awareness of the benefits of broadband access through a fiber-optic network. Property Management companies have been approached and local operators are assisting and supporting the roll-out of this initiative.

Call For Cooperation

A panel discussion of FTTH industry leaders on the future of fiber in South Africa concluded that local governments in the country should cooperate with the private sector. This is in order to avoid the duplication of costly fiber-optic infrastructure where open-access networks already exist.

Among the speakers were Conduct Telecoms CEO Johan Pretorius who spoke on how his company is trying to create a growth-stimulating environment through setting up a fiber infrastructure. Another speaker, DFA chief strategy officer Reshaad Sham, opined that fiber access into buildings remains one of the biggest obstacles in getting businesses onto a fiber-based network service.

Vodacom's executive head for enterprise access services – Janine Robelo – also spoke, as did Internet Solutions Connectivity Executive – Sean Nourse. Jasco ICT Solutions general manager for business

development – Eckart Zollner – opined that businesses should look at the cost of not adopting fiber, saying, "Fiber technology enables many IT services that are business game changers such as video conferencing and cloud-based solutions. It brings with it tremendous savings such as reduced travel costs and lower software licensing costs."

KDN's Network To Tanzania

Kenya Data Networks (KDN) has become the first operator to connect Nairobi in Kenya, Dar es Salaam in Tanzania, Kampala in Uganda and Kigali in Rwanda on a single fiber network when it extended its fiber link to Tanzania. Measuring 120km, the new link stretches from Nairobi to Namanga on the Kenyan-Tanzanian border.

This will increase capacity and reduce latency for KDN's customers such as ISPs, carriers, homes, government organisations and businesses of all sizes. Incidentally, KDN's parent company Liquid Telecom has built Africa's largest fiber network, spanning over 13,000km from the north of Uganda to Cape Town in South Africa on a single thread. This new section of the network carries the capacity of multiple STM 64s and will be operational and available to KDN and Liquid Telecom customers in August this year.



Vodacom's Fiber Broadband Plans

Mobile operator Vodacom has released details of its plans to offer fixed-line, fiber-based broadband to both business parks and home users in South Africa, at speeds of up to 100Mbit/s. This comes nine months after Vodacom CEO Shameel Joosub hinted that the mobile operator was keen to build fiber-to-the-home broadband networks in South Africa.

Vodacom's executive head of access solutions, Janine Rebelo, revealed in an interview with South African website TechCentral that the company plans to roll out fiber access to selected business parks in Johannesburg, Pretoria, Cape Town and Durban in Vodacom's financial year to March 2014.

She also said that, assuming the deployments have met the company's expectations, the plan is to accelerate the building of networks to more business parks. There is also a plan to include in the mix, private homes in residential estates.

MFN's Fiber Footprint Expanded

South Africa's Metrofibre Network (MFN) is expanding its fiber footprint by building a certified Metro Ethernet Forum (MEF) Carrier Class, fiber-optic Open Access infrastructure. It will be based on MEF9 and MEF14 and will provide managed broadband bandwidth over the 'Last Mile', connecting Service and Application Providers to their customers, specifically the Small and Medium Enterprise (SME) market.

Speaking on the infrastructure, CEO Malcolm Kirby said, "As soon as a building is linked onto the MFN infrastructure, any number of service providers may deliver high speed services to tenants. In each highly populated commercial area, 'Access Rings' will saturate the area delivering fiber to the premises."

The Metrofibre Network solution will enable Managed Bandwidth Services of 2Mbps up to 1Gbps between the end customer and their preferred service provider. Furthermore, it will also interconnect all services, be they Internet Access, E-mail, hosting, voice or even disaster recovery type data, passing through all the major commercial areas.

FibreCo's National Long Distance Fiber Optic Network.

FibreCo is responding to growing demand for broadband services in South Africa, by building what will be South Africa's largest open-access long-haul fiber optic network. This follows the Department of Communications announcement to provide ubiquitous access by 2020.

FibreCo has pledged investment of up to Rand5 billion (US\$507 million) in fiber optic infrastructure which will help transform the country's telecommunications landscape, and also contribute towards realising the government's objective.

The construction and future operation and maintenance of the FibreCo network will ultimately result in the creation of over 2,500 direct and indirect job opportunities across the country. To date, the company has deployed in excess of 1,000km of fiber optic cables.



Raising Rollout Standards



The FTTH Asia Pacific Conference & Exhibition 2013, Auckland, New Zealand

Held in the luxurious Langham Hotel in Auckland, New Zealand from the 19th to the 21st of May, the FTTH Asia Pacific Conference & Exhibition was well attended by the FTTH community. The conference was the eighth organised by the FTTH Council Asia Pacific and was sponsored by illustrious companies involved in the fiber business such as TE Connectivity, Cisco, Fujikura, JDSU, Chorus, and Sumitomo Electric.

The three-day conference opened with a series of FTTH-themed workshops covering a broad range of subjects, reflecting real-life issues such as professional development, technical project management and independent contracting. On the second day, Conference Chair Frank Jaffer and FTTH Council APAC President Monique Morrow gave the welcome and opening remarks respectively, while informative keynote sessions and afternoon track sessions were held after the opening ceremony.

Keynote Speakers included Amy Adams – New Zealand's Minister for Communications and Information Technology, and senior personnel from fiber-related companies such as Crown Fibre Holdings, Chorus, Ultrafast Fibre, Enable Networks and Northpower Fibre. FTTH Council members from the Americas, Europe, Africa and MENA were also present to share their experiences and bring global knowledge to the local industry.

Among the topics raised during the conference were the need for retailers and service providers to raise standards as the access network becomes a level playing field, by differentiating their services in real time while providing consistent quality, and the role of local councils in accelerating FTTH take-up. Other sessions focused on e-health, rural applications, entertainment and Multiple Dwelling Unit (MDU) innovations.

Council members from the Asia Pacific, including Japan, India, China, South Korea, Indonesia, Malaysia, Thailand, Australia, Taiwan and the Philippines were in attendance, as well as vendors from



North America, Europe and the Middle East. There were also 464 delegates from all over the world, eager to learn more about fiber deployment through the exhibits from companies such as BKTel, Plumettaz, Senko Advanced Components, and YOFC (Yangtze Optical Fibre and Cable Company). These displayed the latest technology while offering opportunities to network with other key



Previous Page:
Yoshiaki Miyajima, Chair of the Membership Committee of the FTTH Council Asia-Pacific was the programme chair at the conference in Auckland.

1. During the annual conference, members of the FTTH Council received awards acknowledging their contribution to the progress of FTTH.

2. For going beyond what is expected in the advancement of fibre-to-the-home, Director General of FTTH Council Europe Professor Hartwig Tauber (right) was presented with the FTTH Council Global Alliance Star Performer award by Conference Chair Frank Jaffer.



3. New Zealand's Minister for Communications and Information, Amy Adams giving her keynote address during the Gala Dinner.

players in the field and acquire information from the speakers, who are leaders of fiber deployment from both the industry and the government.

The event also saw awards being given to people and companies that have contributed to the FTTH industry. The President's Award went to Senko Australia for its efforts in promoting, educating and accelerating FTTH take-up, while the FTTH Council Global Alliance (FCGA) Star performer was Prof Hartwig Tauber – Director General of FTTH Council Europe. Committee members also received recognition through the Committee "Milestone" Awards, with Marc Teichtahl, Joe Wong and Fouad (Frank) Jaffer receiving accolades for their hard work in 'Cloud Computing & Gigabit Applications', 'Education & Training' and 'Planning, Communications & Events and FCGA' committees, respectively.

A very successful conference concluded with a technical site tour, when delegates visited a FTTH deployment site in New Zealand. Together with Australia, the region's overall investment in broadband is valued at over US\$40 billion. The next FTTH Council conference will be held in Bangkok, Thailand in April 2014.

Global Updates

The CommunicAsia 2013 Summit



From the 18th to the 21st of June 2013, the CommunicAsia Summit was held at Marina Sands Bay, Singapore, alongside the CommunicAsia 2013 exhibition. Asia's largest integrated information technology event connects ICT industry professionals from around the world, allowing them to obtain industry updates, witness product and service launches, optimise business opportunities and gain insightful knowledge from industry experts.

FCGA Chair Fouad (Frank) Jaffer (right) explains fiber's advantages during the CommunicAsia 2013 Summit, as other members of the FTTH Council (from left) Gilberto Guitarte, Prof Hartwig Tauber, Heather Burnett Gold, Dr Bernard Lee and Juanita Clark look on.

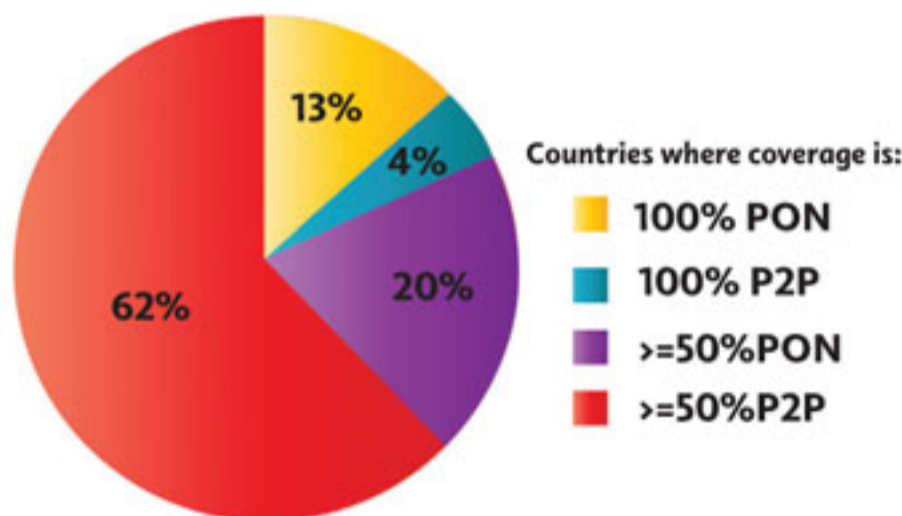


Fiber Deployment in Europe

EU39: 70% FTTB vs 30% FTTH - 27% PON vs 73% P2P

EU27: 51% FTTB vs 49% FTTH - 41% PON vs 59% P2P (Homed Passed Segmentation)

% Of Homes Passed Technology in EU27



Source: IDATE for FTTH Council Europe, February 2013.

An Opportunity to Learn

With a theme of "The Next Wave: The Future is the Empowered Customer", the summit highlighted two important areas – customer focus and harnessing disruptive trends – factors which play a major part in the sustainability of a company.

Exhibitors featured a comprehensive range of key and emerging technology, including Fiber-to-the-x (FTTx) related components and equipment. Customised events and showcases were held, giving vendors the opportunity to promote their brands to visitors attending the summit.

Panel Discussion on FTTH

The FTTH Councils from around the world, under the auspices of the FTTH Council Global Alliance (FCGA) took the opportunity to share recent progress, experiences and achievements, such as successful applications and global performance, to exhibitors and visitors of CommunicAsia 2013.

Speaking at the panel session, FCGA Chair Fouad (Frank) Jaffer first gave a detailed explanation of fiber and its

advantages. He emphasised that fields such as e-learning, e-surveillance, e-health and e-entertainment are becoming very prominent in today's world, all enhanced by high-speed data transfer – one of the benefits offered by FTTH. He also stressed how FTTH can help in the push for virtualisation and a paperless environment.

America's Growth Continues

Next on the podium was Heather Burnett Gold, President of the FTTH Council Americas, who declared to applause and widespread grins that "FIBER IS SEXY". She informed the audience of the achievements of FTTH in America, such as the organisation of the FTTH Council's Communities Toolkit Conference in May 2013, which attracted nearly 400 attendees.

She also revealed that gigabit networks in the US are growing quite rapidly, with more than 20 such networks currently operating in the country. While Google's deployment in Kansas City has brought greater visibility to these gigabit networks, many Americas Council members such as BTES in Bristol TN, have had gigabit capability for years.

Gold concluded by stating that North American FTTH connections grew by 20% over the past year, and the US now ranks fourth among countries in the number of FTTH/B connections, behind China, South Korea and Japan, while Canada's growth increased fivefold over the past three years. The US now has over 540,000 FTTH connections.

Latin America, represented by Gilberto Guitarte – Chairman of the LATAM Chapter, had an average penetration rate of 13.4%, with 741,400 FTTx subscribers and more than 5 million homes passed with fibre by the end of 2012. According to Guitarte, the LATAM Chapter will continue to promote the adoption of quality FTTH networks through training and certification programmes, standardisation recommendations and annual conferences.

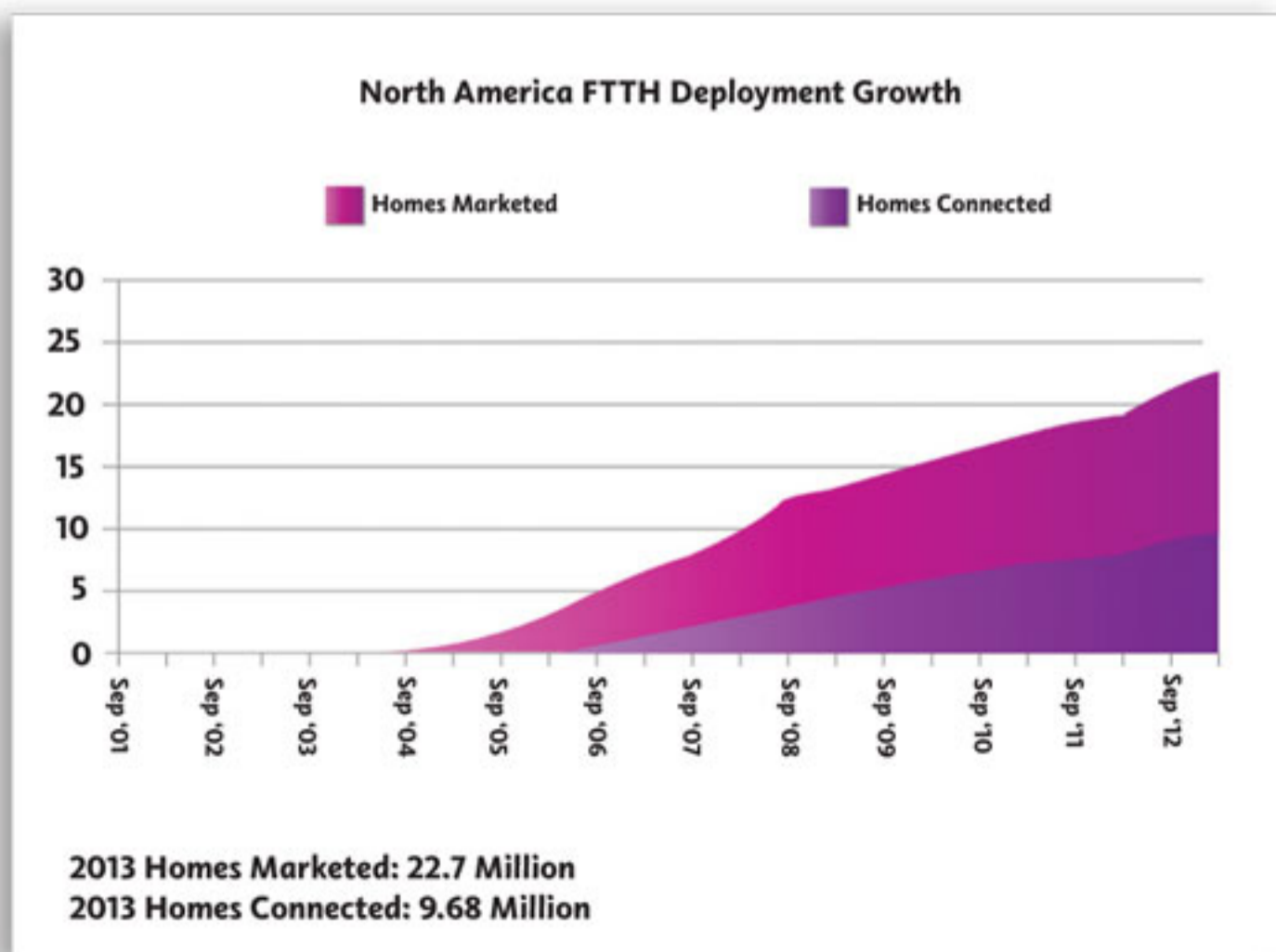
Steady Progress

The Director General of FTTH Council Europe, Prof Hartwig Tauber focused on the investment in fiber infrastructure in Europe. He revealed that EU operators invested Euro24.8 billion (US\$32.93 billion) on fixed fiber infrastructure in 2011 alone. This is no small amount, considering that the FTTH Council Europe estimates the cost of deploying FTTH to be Euro202 billion (US\$268.22 billion). Tauber concluded that Europe could reach the "Digital Agenda" targets of the European Union by 2020 – if the right decisions are made to invest into fiber networks.

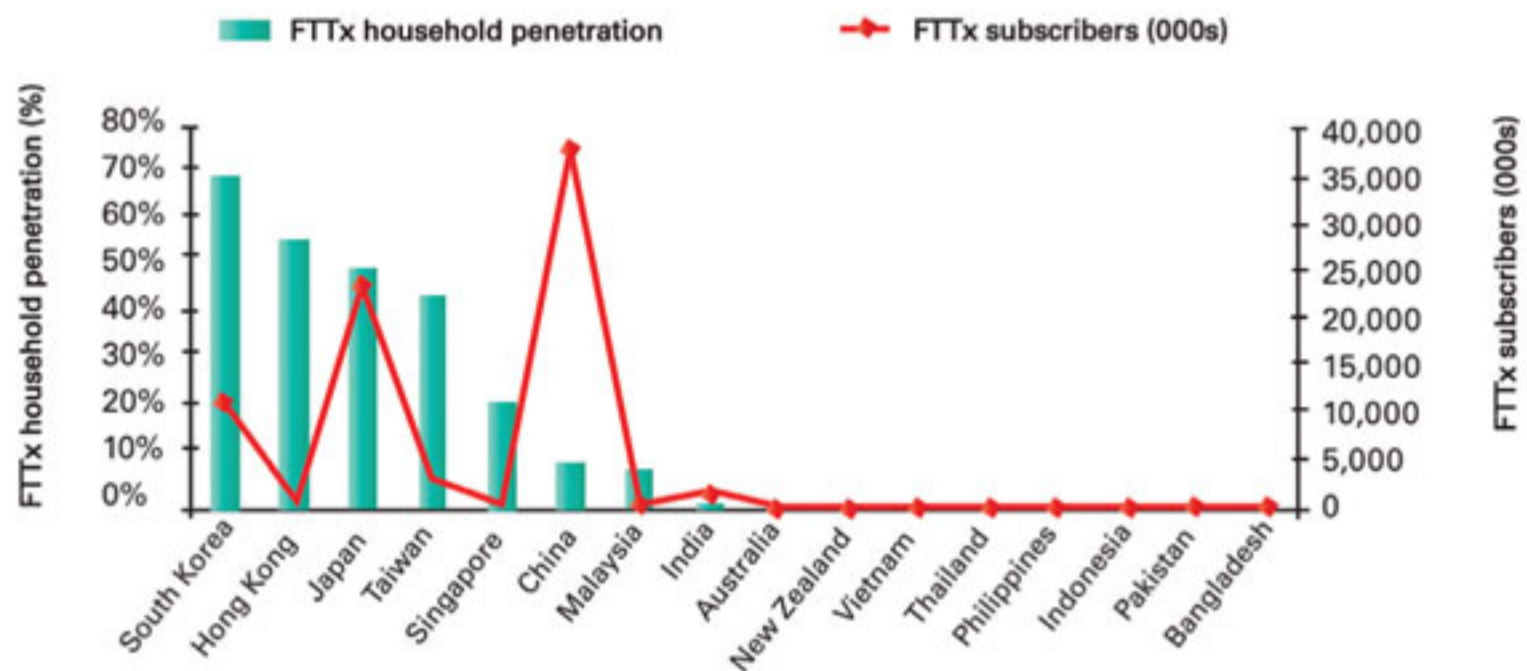
Tauber also gave the updates for the Middle East and North Africa (MENA) region. He reported that there was an average take-up rate of 41.1% by September 2012, with 740,700 FTTH/B subscribers and 1.8 million homes passed. Tauber also added that four MENA states – United Arab Emirates (UAE), Jordan, Saudi Arabia and Qatar – were in the Global Ranking. Growth in the region has also been strong, with 257,000 FTTx subscribers and 900,000 homes passed between 2010 and 2012, mostly thanks to the UAE, which has a household penetration rate of 70%.

Fast Growing Region

The FTTH Council Asia Pacific was represented by its Vice President Dr Bernard Lee. In his presentation, Lee mentioned that FTTH/B is a major growth segment in Asia-Pacific, with wire-line broadband subscribers expected to exceed 145 million in 2016. As of December 2012, there were



Progress of FTTH in Asia Pacific 2012



79 million users of FTTx, with an average 1700 new users per hour. He also said that seven economies in the region exceeded 8% household penetration – South Korea, Hong Kong, Japan, Taiwan, Singapore, China and Malaysia. FTTH will continue to grow, as there are still many potential markets to tap into

Promoting FTTH

The development of FTTH in Africa was presented by the CEO of FTTH Council Africa Juanita Clark, who said the size of the continent, with its cross-border delays and lack of standards and effective legislation are the main challenges the council faces. She stressed that FTTH Council Africa was pushing for the improvement of education and deployment of standards and guidelines, and was also encouraging governments to work together in helping fiber in the continent.

“One advantage Africa has over other regions is the lack of established copper infrastructure, which makes it easier to promote FTTH here, as fiber is the first choice of many telecommunication networks,” Juanita Clark says.

In the question and answer session concluding the event, the FTTH Council was asked when LATAM will be fully ‘fiberized’. Guitarte reiterated the conviction and determination of the FTTH councils by stating, “In my lifetime, definitely,” drawing approval and laughter from the audience. Rounding up, Tauber told the attendees, “Telecommunication connects the world, and if you look at the stage, the world is well represented, from all five continents: South America, North America, Australia, Asia, Africa and Europe. Fiber-to-the-home connects the world, and brings everybody closer, faster.”

Enhancing Through Training

Set up in April 2009, during a meeting in Sao Paulo, Brazil by a group of approximately 30 representatives from 14 member companies of what was then known as the FTTH Council North America, the FTTH LATAM Chapter aims to drive the growth of fiber optics in the Latin America region. In order to realise its goals, the LATAM Chapter focuses on training and enhancing practical knowledge of FTTH among member organisations. Gilberto 'GG' Guitarte – the Chairman of the FTTH LATAM Chapter, speaks of these efforts with **The Light Age**.

"Our mission at the FTTH LATAM Chapter has not changed since the beginning. 'Promote the adoption of FTTH high quality networks as the bi-directional Universal Broadband Access Platform, and the result of quality of life improvement across Latin America, consequence of derived benefits for its population coming from better Health, Education, Security, and Economic Development, all enabled by FTTH networks.'

Given the fact that FTTH is just starting and still at a young age here – compared to some Asian countries and the USA – we use three tools to get the desired effects. The first is Training, followed by Standards and Best Practice Recommendations, and finally there is our Annual Conference which each year is held in different countries across LATAM.

Today we have just over 60 members of which 25% are LATAM Carriers. They use their membership to benefit from the abundance of knowledge and experience from our roster of master trainers and their interchange across the region. Because of this, we have focused on training aspects tailored to meet our regional needs, based on

UNDER THE PATRONAGE OF THE MINISTRY OF INDUSTRY,
TRADE AND NEW TECHNOLOGIES OF MOROCCO

FTTH, The New Era of Digital Transformation

The 5th edition of FTTH Council MENA Conference

Register NOW!

27-28 November 2013

**The Palmeraie Congress Center
Marrakech, Morocco**

FTTH Council MENA is pleased to invite you to the 5th edition of its annual Conference and Exhibition which will be held **under the Patronage of the Ministry of Industry, Trade and New Technologies** on 27 and 28 November 2013 in Marrakech, Morocco.

Following the previous conferences and with the collaboration of ANRT, FTTH Council MENA will increase this success with high-quality conference program under the theme **"FTTH, the New Era of Digital Transformation"** which will highlight the benefits of the FTTH deployment for operators, governments and consumers.

Same as every year high level speakers and exhibitors will be participating in the event attracting visitors from the regions worldwide and ensure large networking and business opportunities.

Royaume du Maroc
Ministère de l'Industrie,
du Commerce et des
Nouvelles Technologies



المملكة المغربية
وزارة الصناعة
والتجارة
والتكنولوجيات الحديثة



For online Registration visit:
www.ftthcouncilmena.org

For Exhibiting and Sponsoring contact us at:
info@ftthcouncilmena.org

For speaking opportunities check our program at the following link:
<http://www.ftthcouncilmena.org/ftthconference/welcome/program>
and submit your abstract Now at **info@ftthcouncilmena.org**

Platinum Sponsor



Gold Sponsors



A Furukawa Company

Prysmian
Group

Sliver Sponsors

CORNING

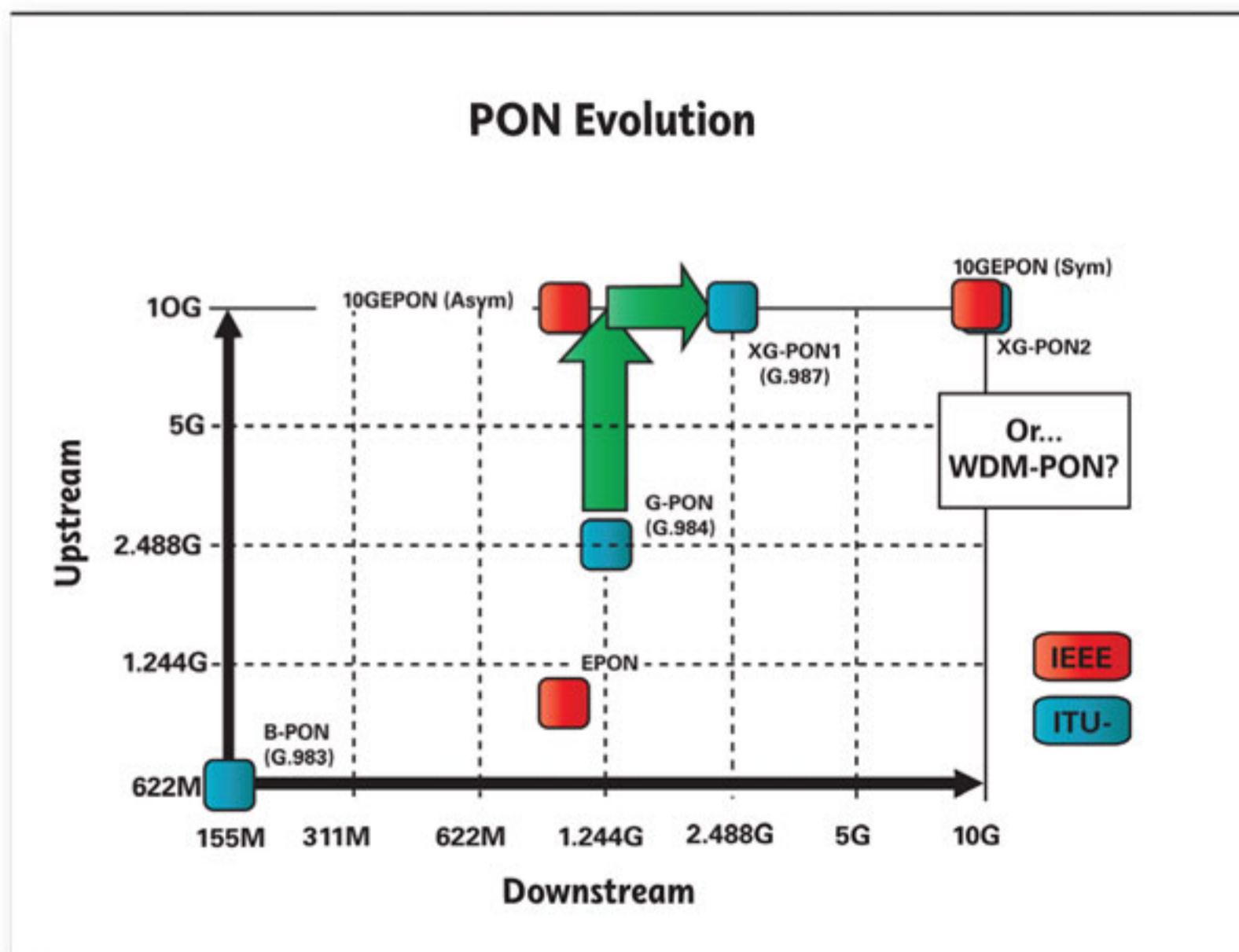
FOLAN
NETWORK & TELECOM INFRASTRUCTURE

R&M

Convincing cabling solutions

Bronze Sponsors





Continued from page 44

the requirements expressed by our regional carrier members.

Meeting The Needs

A look at our FTTH LATAM market numbers will reveal that FTTH in our geographical region is made of PON topology. Within it, the most commonly deployed and adopted to date is ITU-T-G.984 or G-PON. Because of this we focus our training programs on such topology and its natural evolution to ITU-T-G.987 or 10 G-PON1, which has four times the downstream speed and twice the upstream speed of G-PON.

We offer two types of back-to-back courses that have been very successful to-date. First is the 'FTTH Professional Course and Certification' consisting of two full days of theory and standards involved in FTTH Design, Construction, and Operation. This is then followed by the 'FTTH Technician Course and Certification' which comprises two full days of hands-on practice with all elements and components of the FTTH access network.

Those with theoretical knowledge can skip the first course and go straight into the second one. However, all attendees normally opt to take the back-to-back courses, as they receive four days of full immersion in FTTH. This includes starting at the CO OLT and associated ODFs and cabling, Outside Plant Feeder and Distribution Cables, Closures, Fiber Distribution Hubs, Centralised and Cascaded Splitters, NAPs, Drop cables, Customer premises

cabling in SFUs and MDUs, mechanical and fusion splicing, field terminated connectors and factory terminated hardened connectors, and of course last but not last, the subscriber premises wall outlet, the ONT and the Residential Gateway. PON testing is also covered in this course.

Those who take the two courses back-to-back will become all-round professionals in overall and general FTTH knowledge. They will know how to pick any type of element or tool required in a fiber access network. They will also be able to fully interpret and understand the manuals, installation instructions and procedures which are required for design, construction and operational tasks related to such a network. We prime people to be able to keep on learning and evolving in their own area or specialty of FTTH.

Industry Driven

These two courses were launched in November 2011 in Quito, Ecuador at the request of one of our Carrier members – CNT (Corporación Nacional de Telecomunicaciones) – the national carrier of Ecuador. Since then we have trained and certified well over 250 people in both courses in Ecuador, Uruguay, Colombia, Argentina, Chile and Costa Rica, all in the Spanish language. We are launching the first Portuguese language courses in Brazil before the end of this year.

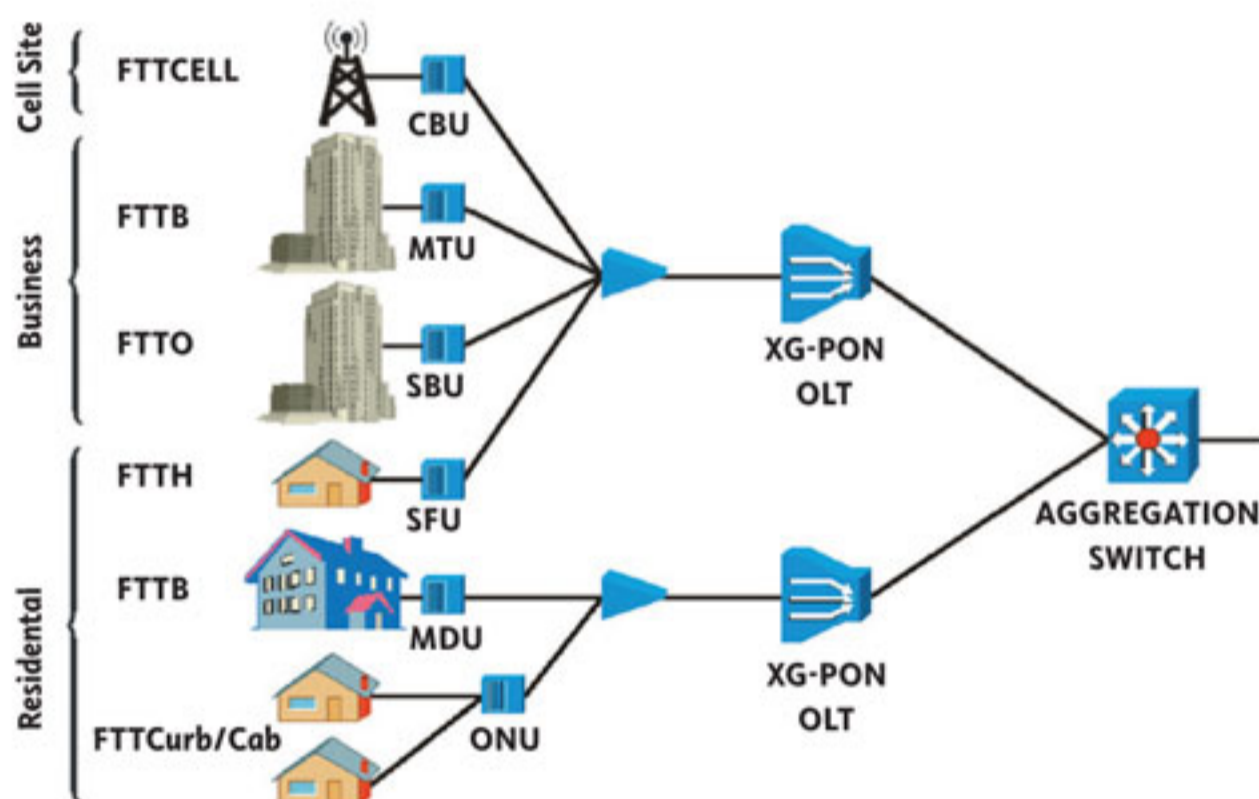
The efficacy of these courses is thanks to the LATAM Chapter Master Trainers who are all volunteers, qualified by members and recognised by the industry. These Master Trainers contribute their time to help the LATAM Chapter realise our mission.

In addition, companies are sponsoring their effort by providing the latest state-



Gilberto 'GG' Guitarte – the Chairman of the FTTH LATAM Chapter

Summary of Some XG-PON Scenarios



of-the-art materials to cover all elements of the FTTH Access Network, in order to enable the hands-on portion of the training to be carried out within the standards supported by the industry. The sponsoring members of the LATAM Chapter include TE Connectivity, Furukawa, Corning, Prysmian Group, Sumitomo, Exfo, Calix, 3M, and Genexis.

The last batch of training courses was put together for 50 Professionals and Technicians in ICE (Instituto Costarricense de Electricidad) in San José in Costa Rica, where we brought in 16 Master Trainers for the course. Margarita Mata Araya – the Director of the CADE, which is the ICE owned and run training institute, praised the session in her closing speech.

‘After experiencing what I saw over the last four days, ICE will never again buy a canned training course,’ she said. ‘From now on all of our training courses will be like the one delivered by the FTTH LATAM Chapter, which is tailored to meet our needs, delivered by experts who have the knowledge and materials required for our developing networks, and which will help transform the skill sets of our people as they continue to evolve from copper to fiber technology.’

There is a great team spirit within all the companies that provide Master Trainers and we all enjoy and are passionate about working together to achieve our mission, and helping to promote FTTH networks in our beloved region of Latin America.”



What's on your fiber?

Video-streaming, cloud computing and mobile connected devices are fueling a global surge of band demand for content anytime anywhere. Can your network deliver?

Optical fiber is critical to the performance of high-speed fiber networks. DSM's newest generation of materials, DeSolite® Supercoatings, are the industry's leading solution for fiber protection worldwide.

What's on your fiber?

www.supercoatings.com

FTTH Council Global Alliance



www.ftthcouncil.org



Fibre to the Home
Council **Europe**

www.ftthcouncil.eu



www.ftthcouncilap.org



Fibre to the Home
Council **Middle East**
& **North Africa**

www.ftthcouncilmena.org



www.ftthcouncilafrica.com



www.ftthcouncil.org

Global Power with Regional Strength

The FTTH Council Global Alliance (FCGA) is the platform for cooperation of the five global FTTH Councils. All FTTH Councils share a common goal: the acceleration of fiber to the home adoption. They all act as powerful and independent organizations in their specific market. This regional focus gives the FTTH Councils a special strength to adapt their activities to the particular market situation in their area.

The FTTH Council Global Alliance ensures that those regional efforts are combined with the power of global cooperation. Within the FCGA the FTTH Councils exchange studies, information and latest market developments. Joint projects – like this magazine – allow global activities and intercontinental networking.

Join the Conferences of the FTTH Councils around the Globe:

- **FTTH Council Americas Conference:**
30 September – 2 October 2013, Tampa, Florida
- **FTTH Council Africa Conference:**
29-30 October 2013, Maropeng, Cradle of Humankind, South Africa
- **FTTH Council MENA Conference:**
26-28 November 2013, Morocco
- **FTTH Council Europe Conference:**
18-20 February 2014, Stockholm, Sweden
- **FTTH LATAM Conference:**
March 2014, Bogota, Columbia
- **FTTH Council APAC Conference:**
May 2014, Bangkok, Thailand