

Expected Developments in the “Fibre Revolution”

Fibre has become a necessity to those who have it, and is coveted by those who don't. While fibre has been available in South Africa to varying degrees for more than a decade, the last five years have seen an exponential rise. Rufus Andrew, Director of Business Development for Corning International in Africa, answers the questions on “What's next in the fibre revolution”



Rufus Andrew, Director - Business Development, Corning International, Africa

Rufus Andrew is currently the Director of Business Development for Corning International, covering the African Continent. Corning is a world-leading innovator in materials science with more than a 165 year track record of developing products and processes. Among the many developments, is the invention of the world's first low-loss optical fiber more than four decades ago. Corning has also played both pioneering and active roles in the various FTTX Councils around the world including the Americas, Europe, LATAM and MENA.

Prior to joining Corning, Rufus has held several positions in large multinational companies within the ICT Sector over the last 30 years, including Telecommunications, Information Technology and Broadcast Signal Distribution. He has held positions in Engineering, Project Management, General Management, C-level, including roles of Managing Director, and Board of Directors. In addition to the company

roles, Rufus has served in various Industry Associations and Government Policy Initiatives. He is an Electronics Engineer, a Chartered Marketer and holds a MBA Degree.

Rufus is passionate about advancing broadband connectivity across the African continent, which can serve as a base for enabling applications and services. Broadband connectivity has changed from a luxury perk to a utility alongside water and electricity. He firmly believes that the development and deployment of fibre-based broadband networks will enhance the quality of life for ordinary citizens in Africa.

Q: With fibre becoming increasingly accessible, what changes in pricing can consumers expect to see in 2018?

A: With new technologies becoming available and more people embracing those (often to enable the faster speeds that future applications and services are going to require), companies that want to hold customers with older technologies will likely have to compete on price and service. In the next three to five years, the popularity of fibre will force operators to rethink their ADSL pricing structure, which requires a deposit and an installation and connection fee, as well as a monthly phone line and ADSL rental cost. Pricing structures for fibre optic services have, however, no monthly rental fee or deposit. The mass roll-out of fibre will place pressure on other internet technologies such as ADSL, which could result in these technologies becoming accessible to more people, who then become potential fiber customers in the future.

Q: What will the fibre landscape look like by the end of 2018?

A: Demand for fibre optic cable is on the rise as operators look to expand existing networks, overbuild existing copper networks, or simply create infrastructure into previously



unconnected regions. In 2015, BMI-TechKnowledge released a report titled *The Fibre Land Grab: The Status of FTTx in South Africa*. The report stated that fibre to the home (FTTH) could potentially hit the 360,000 active subscription milestone by 2019, based on the level of fibre investment that had taken place that year.

Future growth was predominantly identified as being driven by residential suburbs, a shift away from the previous gated estate-led growth. The key service expected to fuel the take-up was video-on-demand.

To enable operators to achieve aggressive deployment targets, innovations are required that allow installation to be achieved as simply and quickly as possible in an environment where skilled labour can be in short supply. With innovations such as Corning's FastAccess™ technology, which allows for significant time saving in cable preparation processes, our goal is to help ensure that installations can be achieved more rapidly in the targeted districts so that customers can be connected and revenues begin to be realized sooner.

Q: What are the threats to a stable fibre connection and what redundancy measures can be put in place to secure this connection?

A: Fibre is inherently a more secure medium than copper from a network interference/hacking perspective. Active monitoring of signals is used to detect outages as soon as they occur (using the 1610-1650 nm wavelength range), allowing operators to dispatch repair crews immediately to decrease network downtime.

Optical cable networks are naturally very resilient. In natural disasters around the world, Corning's customers' networks have experienced debilitating events such as ice storms, floods, hurricanes, and tornadoes. During these events, the passive infrastructure has typically continued to operate successfully as long as the active electronics remained powered.

In cases of network outages related to physical damage to the cable infrastructure, ring architectures that enable redundancy are often installed to serve large businesses and anchor institutions such as hospitals, government and emergency fire/rescue/police facilities. This level of ring redundancy is less likely to be installed in residential communities where outages, although inconvenient, don't carry any service agreement penalties from subscribers.

Q: What restoration times can be expected when GPON cuts out?

A: Restoration repair times depend on the nature of the outage. In the case of physical cable cuts, the time

to repair can depend on a number of factors, including available labor to locate the cut, access to splice labor, and availability of slack cable or restoration cable to repair the cut (which requires twice as much splicing if slack loops are not available). The time to conduct this type of repair is incredibly variable.

An advantage of preconnectorized drop cables that simply connect to network access points is that if an individual subscriber's drop cable is damaged, a new drop is simply installed as a replacement or a substitute until the old drop can be repaired. This is also true for more advanced systems where even the terminals are plug and play into the passing distribution cable. If the damage is at the terminal, it can simply be replaced without dispatching a splice crew.

Q: With suburban areas becoming increasingly connected, this increases the already prominent digital divide in South Africa. What measures can be taken to mitigate this divide?

A: The difference in access to digital services is a concern, considering both the less affluent districts within large cities and also the remote, rural provinces that are poorly served by existing telecom infrastructures. In other countries, where an economic case for serving outlying regions with adequate data rates has proved difficult, regional or national government subsidy has been part of the solution, as well as looking at more extended payback periods that better reflect the expected lifetime of the network (which is more likely to be measured in decades than in years). With respect to serving the townships, innovative projects that provide cheap access to uncapped data from aerially deployed cables are to be encouraged and it is hoped that further initiatives and roll-out of such schemes will follow.

Q: Please provide any further comments on the topic.

A: Access to fast, reliable digital services based on connectivity from optical fibre has been shown to be an important enabler in developing a nation's economy and increasing GDP. The roll-out of installations currently happening in South Africa will be a vital contributor to increasing prosperity in the near future. Any initiatives that allow installations to happen more quickly or more widely benefit both the industry and the country as a whole. Corning brings its experience of having supplied more than a billion kilometers of fiber to the telecom industry around the world and is excited to play a part in delivering advanced and robust networks to the people of South Africa.