

○ FIBRE-TO-THE-HOME: TAKING THE PLUNGE

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This article comments on FTTH, stating that it is generally-accepted to be the “end-point” in access network transformation, although there is less consensus on exactly when and what path this journey to FTTH should take. FTTH is a complicated interplay of business, regulatory and technology considerations and these are briefly discussed in the article.

THE CURRENT ENVIRONMENT

‘Fibre-to-the-X’ (FTTx), has been getting a lot of press lately. Incumbents worldwide have announced ambitious plans to ‘fibre-up’ their legacy access networks and to bring fibre closer to the user. The results are broadband speed and bandwidth beyond that possible with xDSL, and with that, any imaginable media-rich, interactive services and applications, from remote surgery and team gaming, to movies on demand.

The ‘x’ in FTTx can stand for a variety of things including Node, Cabinet, Curb, Building, Premises and Home, and denotes how far along the access network that fibre is brought to the user. Fibre-to-the-home (FTTH), which is often used interchangeably with fibre-to-the-premises (FTTP), brings fibre all the way to the user’s premises and promises virtually unlimited bandwidth, both upstream and downstream. The current theoretical bandwidth of FTTH is 1000 Mbps although operators are seeking to achieve up to 100 Mbps for practical purposes – more than enough for two concurrent movies at full quality. FTTH is hence considered the most future-proof of access network architectures and is deemed the ultimate ‘end point’ of access network transformation for all incumbents.

The APAC region currently accounts for the majority of the world’s FTTH builds today. Ovum believes that at the end of 2009, there will be approximately 13.8 million FTTH subscribers globally, 82 percent of which will reside in the Asia-Pacific region. Operators in China, Hong Kong, Japan, Singapore, South Korea, Taiwan, and others are all involved in projects that take fibre to the home or at least closer to it. Currently, APAC FTTH activity is concentrated in Japan, South Korea, and Taiwan.

However, despite the exciting opportunities available, many Asian incumbents are still wary of jumping onto FTTH bandwagon, at least for now. Whilst there is general agreement that FTTx, and most likely FTTH, will be the ‘end point’, there is less consensus on exactly when and what path this journey to FTTH should take. These decisions require a detailed consideration of the business, regulatory and technology facets of FTTH and these are covered briefly below.

THE BUSINESS CASE

FTTH does not come cheap, and a modest rollout can often cost in the region of hundreds of millions of USD. The actual cost of a FTTH rollout will vary from country-to-country but current figures stand at about USD1500 per household. To provide a feel for the huge spend involved, Taiwan’s incumbent operator, Chunghwa Telecom, plans to spend NT\$60 billion (USD 1.83 billion), over the next five years, for an FTTH and FTTB (fibre-to-the-building) network that will initially connect about 25 percent of Taiwan’s 7.4 million residences and offices.

Often the justification for the massive upfront investment for FTTH is in the savings of on-going operational costs (opex) rather than the revenue opportunities that FTTH brings about, given the uncertainty of new revenues derived from FTTH and/or the willingness or propensity of users to pay for the additional bandwidth.

Longer-term opex savings on the other hand can be very significant – this is estimated to be in the region of 40-60% compared to legacy networks. These savings are expected to be achieved through rationalising multiple access networks and because fibre networks involve inherently less maintenance than copper.

Whilst FTTH advocates argue that the reduction in operational costs can in itself be sufficient justification for the migration to FTTH, public listed incumbents may not be quite as convinced or willing to put up with a large negative reaction on their share price resulting from such a risky investment.

Additionally if an operator is obliged to continue to operate legacy networks because of regulatory constraints, these operational cost savings will not be achievable.

REGULATORY CERTAINTY

The regulatory environment can be a big influence on the decision to rollout FTTH especially where the business case is relatively weak. Conversely, where the numbers add up and other factors such as supportive government policies, competitive pressures and mass user demand are in place, regulation becomes relatively less important. The USA, and Japan and South Korea, demonstrate these points.

The USA had a relatively slow start in the FTTH game, and until 2005 was significantly behind Europe and Asia in terms of subscriber numbers. This has now changed, and FTTH numbers are rapidly increasing due to the aggressive rollouts by Verizon and AT&T. Although intense cable competition has been a critical factor in encouraging FTTH deployment, Ovum is of the view that the FCC's decision to exempt the RBOCs' fibre networks from regulation has been a critical factor in catalysing growth. The FCC acknowledged the need to incentivise spending in fibre networks including the need to allow the RBOCs to recoup their massive investments. The FCC's current stance is an about turn from its previous one and reflects its preference for infrastructure-based competition after years of trying to push service-based competition rules that proved difficult to administer.

On the other hand, the regulators in Japan and South Korea have mandated that NTT and Korea Telecom (KT) respectively open up their next generation access networks either fully or partially to competitors. It is interesting to note that the relatively heavy regulation has had little effect in dampening the incumbents' FTTH plans and both are amongst the world's leaders in FTTH deployment. In the NTT and KT cases, other factors came into play such as the advantageous housing patterns (both Japan and Korea have a high percentage of multi-dwelling units), supportive government policies including low interest loans and tax incentives, and user and business cultural factors.

TECHNOLOGY CONSIDERATIONS

Without the financials backing a full-fibre investment, operators could instead decide to only partially substitute their legacy copper networks with fibre by rolling out fibre-to-the-cabinet

(FTTC) instead. FTTC can be a feasible and more cost-effective alternative for the interim given that it typically requires only half the investment required for FTTH for a rollout of the same scale and scope. FTTC utilises existing infrastructure and involves significantly less civil works compared to FTTH – the civil works component is usually the largest cost item in an FTTH rollout. FTTC can also be rolled out more quickly than FTTH and is advantageous when time-to-market is critical to gain a competitive advantage.

GOING FORWARD...

The next few years will be interesting and we expect the global FTTH landscape to start to take shape. Among others, we expect:

- Greater clarity on the FTTH business case for application through the study of leadhouse operations
- Improved regulatory certainty, especially in relation to legacy network obligations
- Resolution of governments to promote rollout through clear industry policy and financial incentives as appropriate (such as grants, low interest loans and tax relief)
- Aggregation of sustainable demand through rollout to new housing estates and government's own businesses

The FTTH space will certainly be one to watch.

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