

Fibre Broadband – It can kill your customer experience

With the growth of bandwidth hungry applications and increased penetration of internet enabled devices such as laptops, game boxes etc broadband service providers are under immense pressure to provide the fastest broadband speeds to retain their existing customers and attract new customers. In their quest to provide high data speeds, service providers across the globe have either already drawn up or are drawing up plans to lay fibre network which is theoretically capable to support infinite bandwidth.

Such high speed broadband products will definitely help service providers to check falling revenues but will also provide an opportunity to develop new sources of revenue by offering innovative services such as HD IPTV, high end gaming etc. This strategy will work very well if service providers are able to provide better than exiting broadband customer experience. If introduction of fibre service will have negative impact on customer experience than service providers will struggle to convince majority of existing or new customers to take up fibre services.

With the presently available technologies, superfast broadband using fibre can be provided by deploying either of the two network architectures; Fibre to the cabinet (FTTC) and Fibre to the Premises (FTTP). In this paper we will discuss some of the operational challenges that service provider will have to address to manage customer experience while transitioning towards fibre technologies. The challenges have been grouped as per service life cycle phases i.e. Ordering, Installation &, In-life:-

1. Service Ordering

1.1. Accuracy of technical availability results – checking the availability of broadband over copper access is a fairly simple process and is usually done using either telephone number, if available, or post code. As a block of postcodes are served by a copper exchange, checking the availability of broadband at the exchange level using post code is quite simple procedure with good accuracy. Service providers have been using this simple method of availability check as an effective sales method without exchanging much information with the end users. This simple method of availability check using postcode is unsuccessful for FTTC and FTTP because of following limitations:

- a. In FTTC, availability of broadband over fibre depends on whether the cabinet serving the premise is fibre enabled or not. Since a given postcode can be served by multiple cabinets with only few being fibre enabled, checking availability using postcode can lead to inaccurate results.
- b. In FTTP, the fibre access line is served from an optical exchange and not copper exchange. A given optical exchange may not serve all the premises in a given postcode due to various technical reasons. Due to this checking availability using postcode is not possible.

Because of the above limitations performing availability check for fibre requires service provider to perform address match; a complex process that leads to more information exchange with the customer and increase in call handling time.

1.2. No Flow-Through Provisioning – broadband over copper access is provisioned only after a premise has working PSTN service. This means all the engineer work related to line installation are completed and broadband can be provisioned without manual interventions i.e. flow-through provisioning. This is not true for provisioning broadband over fibre due to mandatory engineer activity required for installing “Optical Network Termination Point” for FTTP and “Face-Plate” for FTTC. Following are the typical downfalls of this new engineer activity:

- a. Increased broadband installation cost – either end user or service provider have to bear the cost of engineer activity. The situation is more difficult in FTTP as multiple engineer/planner visits are required to plan and install the fibre. These multiple visits are required to perform site survey and construction at the premises.
- b. Introduction of new jeopardy scenarios – since an engineer activity requires the customer presence, a new set of jeopardy scenarios related to customers/engineer missing appointments or requesting them to be changed need to be handled. This introduces delay of several days in service provisioning that impacts customer experience.

2. Service Installation

2.1. Complex Initial Set Up – providing broadband over FTTP in brownfield areas requires service providers to lay additional fibre to the end user premises. This may require construction work because of many potential reasons such as the original duct that is carrying copper wire is blocked or does not have spare capacity. There could be many other reasons to perform construction to lay fibre which increases the complexity of providing broadband over fibre. This also increases the cost of installation and time required to provision the service to several days.

2.2. Inflexible Home Network Environment – In broadband over copper access the ADSL filter to separate the broadband signal can be installed on any phone socket in the house depending on the location of computer. But in broadband over FTTC, the filter (i.e. faceplate) can be installed at only one location and require an engineer appointment to install it. It also requires an additional modem, other than the router to handle the VDSL protocol. This leads to inflexible home network as end user has to install long cables from the VDSL modem to the router so that computer can be connected. This also increases the need of additional electricity socket for the VDSL modem.

3. Service In-Life

3.1. Management of active Network Termination Equipment (NTE) at customer premises – In copper networks the NTE at customer premises is passive i.e. it does not require electricity to operate, whereas in FTTP, NTE is an optical network termination point(ONT) and requires power to operate. As a result to guarantee un-interrupted services (both broadband and voice) to end users, service providers will have to install a battery back-up. This additional but important component will require service providers to devise a robust strategy to handle replacements, recycling and legal requirements related to emergency services such as 911 to manage customer experience.

3.2. Need of new Service Identifier – one of the many factors that greatly affect customer experience is the service identifier that end users have to remember to refer the existing services at their premises. A service identifier that is easy to remember and can be keyed in using telephone keypad is usually preferred by end users. In case of copper access, end users can very easily refer to the

voice and broadband services by the telephone number of the voice service. This simple attribute becomes unusable as a service identifier for broadband over FTTP because of following reasons:

- a. Unlike copper access, where a single line can carry only one broadband and only on voice service, in FTTP a fibre access can carry multiple independent broadband and voice services. Because of this reason it is not possible to refer a broadband service over fibre using telephone number.
- b. Usually in copper access, both the voice and broadband services are rented by a single end user, where as in FTTP a broadband and a voice service can be rented by different users.

Service providers will have to develop capabilities to provide a single service reference to maintain customer experience.

3.3. Presence of expensive network equipment outside exchanges – in order to provide broadband service over fibre, service providers have to install & manage expensive active equipments such as DSLAM and ONT on either streets or customer premises, which is well outside the safe boundary of exchanges. As a result these equipments are more prone to damage by vandalism and accidents that can result in loss of service. Repair of these equipments is an expensive and complex procedure and can take several days, resulting in very poor customer experience.

3.4. Simultaneous Management of two networks – service providers who are contemplating to overlay fibre network over existing copper network will have to give an in-depth thought about their long term service delivery strategy because of below reasons:

- a. Existing voice customers – service providers will have two choices while providing broadband using FTTP to existing voice customers; retain the customer voice on copper access or migrate their voice to fibre access. Both the approaches have drawbacks - in first approach service providers will have to manage two networks and in second approach service providers will have to manage customer experience, which can be affected during migration and post migration to fibre network. Another issue with the second approach could be the quality and reliability of voice service over fibre may not be at par with the traditional voice over copper pair.

- b. High cost of fibre network – input cost of providing broadband over fibre is significantly higher than cost of providing broadband over copper. As a result service providers will need to consider two aspects while designing their service portfolio to manage customer experience–
 - i. How to provide ADSL2 speed broadband?
 - ii. What to do if an end user wishes to migrate from super fast broadband over fibre to ADSL2 speed broadband?

3.5. Managing customer experience in complex scenarios – service providers will have to redesign their existing operational processes to successfully manage customer experience in complex scenarios such as home moves – In a home move, an end user can move from a fibre enabled area to non fibre enabled area triggering him to change service provider. As a result managing customer experience becomes very important to reduce loss of revenue.

Conclusion

To beat tough competition in broadband market and open new revenue opportunities, service providers have to formulate a strategy to address customer experience challenges in providing broadband over fibre. If these challenges are not addressed proactively, a negative perception about the product will deter majority of potential customers to transition on to fibre. Since future services such as Internet TV, HD TV, Stream Gaming etc are heavily dependent on the success of fibre service due to the requirement of high bandwidth addressing these challenges is a must!