GPON: Why is it worth to use small OLT instead of modular systems?

The driving forces of FTTH network are mainly developed Asian countries such as Japan or South Korea. Owing to this fact, vast majority of solutions designed for FTTH networks have been constantly designed for the operators' needs. Almost all operators provide their services in cities, where residential buildings are high-rise buildings, thus they meet with a large number of subscribers.

In aforementioned countries more than 90% of inhabitants have the access to the Internet. In comparison, at present, the percentage of people who have access to the net in Poland reaches 55-60%. Such great amount of customers cause that majority of Asian operators choose modular parts, which can be equipped with high number of ports. One question arises, despite 25% of customers can this solution be used in Poland? The number of customers is not the only problem which is come across by an enterprise, which operates in the scope of telecommunication industry. The other is the competition as only in Poland similar services are offered by more than 500 companies. However even more difficult is lack of interest concerning access to the net and a bit chaotic in majority of examples having 4 floors. One questions arises : " Is it worth constructing GPON network based on OLT modular units?"

This investment deals with connection of even a few thousands subscribers. It is worth mentioning that even high financial resources on passive part of a network. Therefore, there are some limitations concerning absence of sewage systems, lack of agreement for fiber optic cable construction close to low voltage pole. In this case, the operator lowers the costs by using cables with the smallest diameter possible and consequently smaller fiber amount. Then, it is difficult to connect a lot subscribers to only one point . Not to mention, that we cannot ignore those FTTx network which have been already constructed. If the operator has initiated the construction of FTTx network even a few years ago but did not take into account FTTH network construction, at present he will have limited number of fibers. Consequently, it is becoming more and more difficult to connect the fibers with only one place and the installation of few OLT systems of low capacity for example DASAN V5812G than the exchange of fiber optic fibers.

V8272 can connect up to 9216 subscribers

Other advantages of smaller OLT systems like V5812G:

- Small dimensions provide a possibility of placing these systems in subscriber's panel
- Can be powered with AC or DC (power supplies)
- They are equipped with practically the same functions as OLT unit (including PIM-SM Routing Multitask)
- Smaller OLT units are easily portable and can be moved to other location- longer durability and resistance

V5812G can connect up 512 subscribers in 1:128 splitter

Is it really worth using smaller OLT systems instead of bigger ones? Manufacturers and suppliers of modular GPON units pay close attention to service availability and lower failure frequency. Are they right? From my own point of view, not necessarily. Useless fines and cards with uplink interface only rise the price of OLT unit. Taking this into account a lot of operators do not choose such equipment. What is even worse, a lot of subscribers can be connected to modular OLT units, which significantly facilitate the risk of failure, in comparison to smaller units. As an example, in case of failure in one big OLT unit with 1024 subscribers, each user will suffer from a breakdown, in contrast, the same failure in 4 smaller non-modular units e.g. V5812G will affect max. 256 users.

A V5812G is 4-times cheaper than its modular counterpart with the same number of ports. According to a financial analysis which compares the prices of OLT and ONT units, the choice of V5812G gives even 60% of savings per each subscriber in comparison with even the cheapest solution offered by the competitive companies.

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