

The status of bidirectional network transformation in China MSOs

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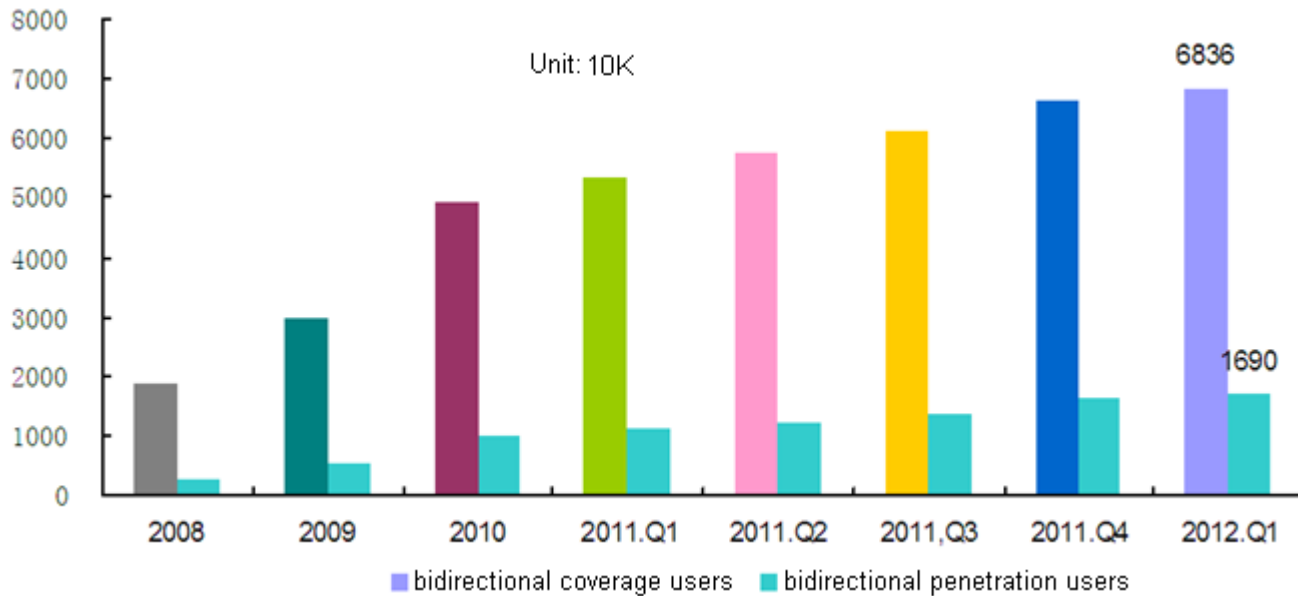
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The growth of China bidirectional CATV users

- According to a survey conducted by Guideline Research, China bi-directional CATV coverage users had reached 68.36 million by the end of Q1 2012, among which the penetrated bi-directional cable subscribers were about 16.9 million.
- With a total of 201.5 million CATV subscribers in China, we can calculate that the bi-directional coverage ratio is 33.92% and the penetration ratio is 8.39%.
- China MSOs are steadily pushing ahead the bi-directional network transformation in their local cable networks.

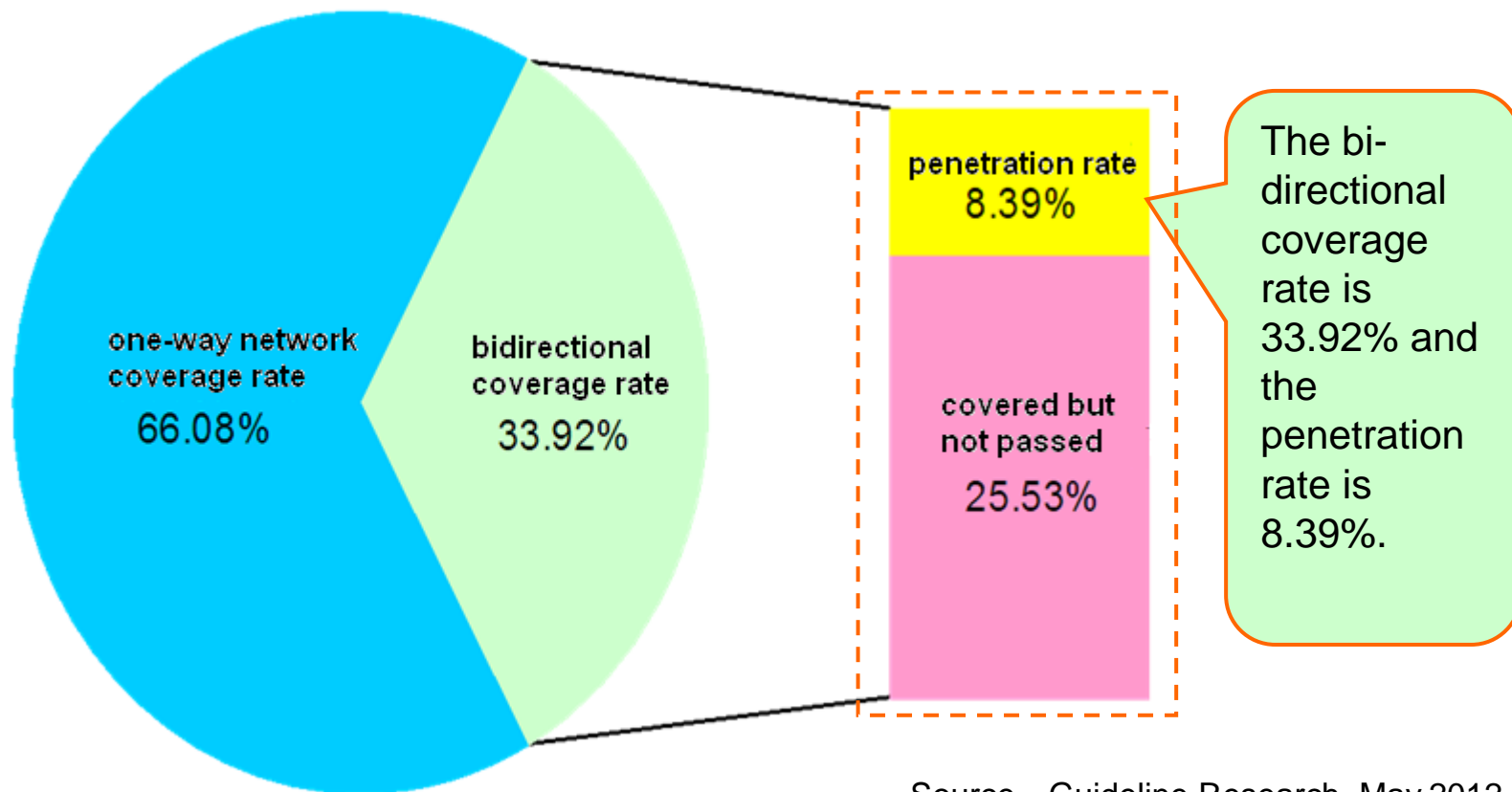
Fig.1 Growth of bidirectional users 2008~2012



1. Bi-directional coverage users refer to the total number of users that can access to the bi-directional head-ends.
2. Bi-directional penetration users refer to the number of active users that have already bought bi-directional services from MSOs.

Source: Guideline Research, May, 2012

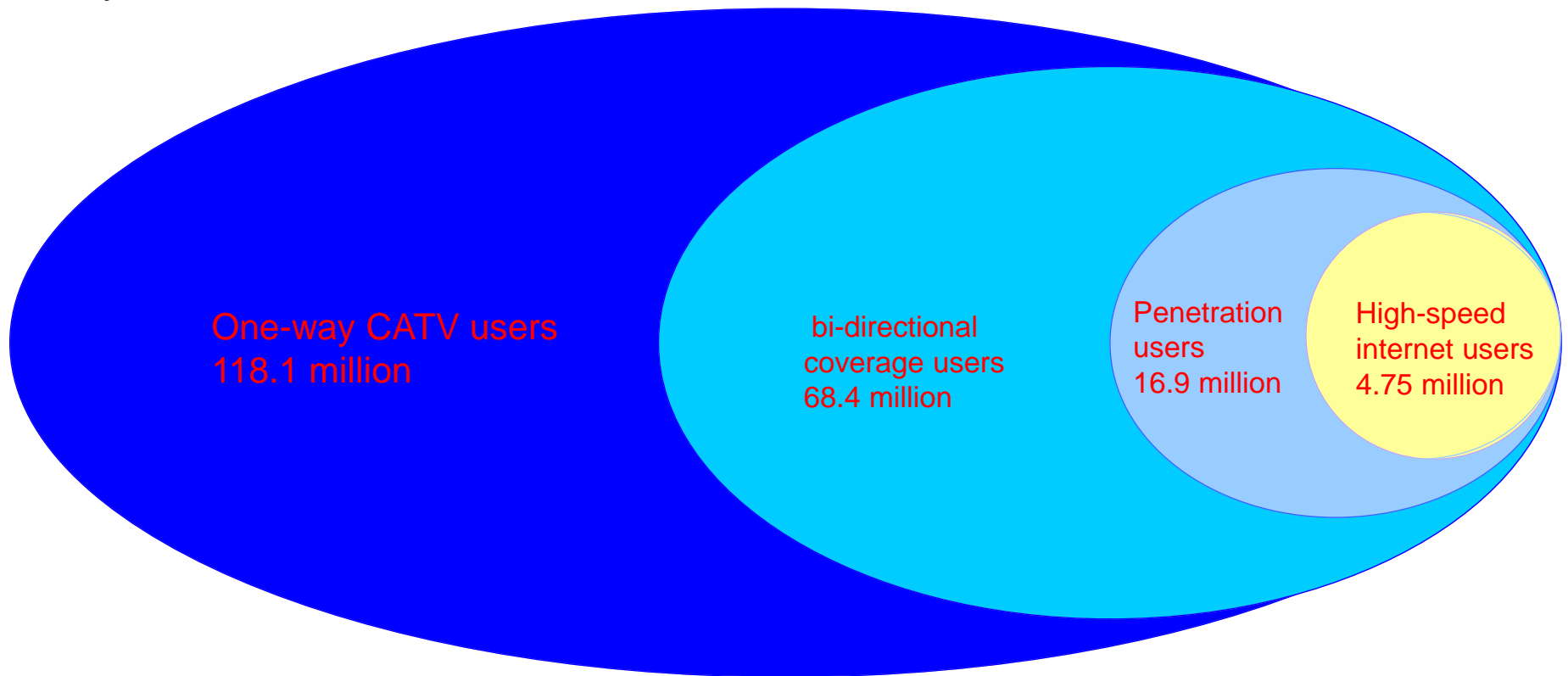
Fig.2 An overview of China bidirectional network transformation process by the end of Q1,2012 (The total CATV users of China MSOs: 201.5M)



Source: Guideline Research, May.2012

Fig.3 Comparison chart of one-way users, bi-directional coverage users and penetration users.

By the end of Q1,2012



Source: Guideline Research,May.2012

Market share of different solution in China MSOs

- 1. DOCSIS is still with the largest ratio of coverage users
- 2. EPON+EoC solution gets widespread attention
- 3. EPON+LAN solution gradually increasing

Fig.4 Market share of different solution by the end of Q1, 2012

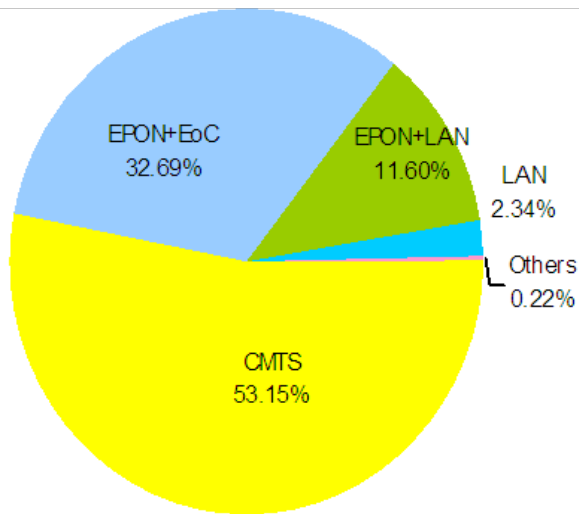
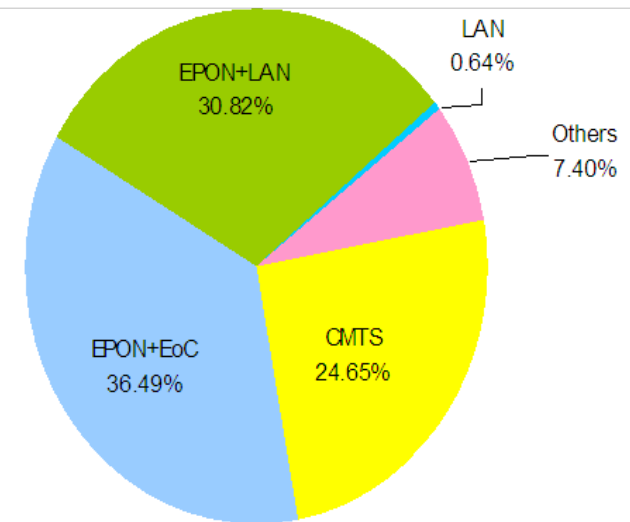


Fig.5 Market share comparison chart of new users 2012



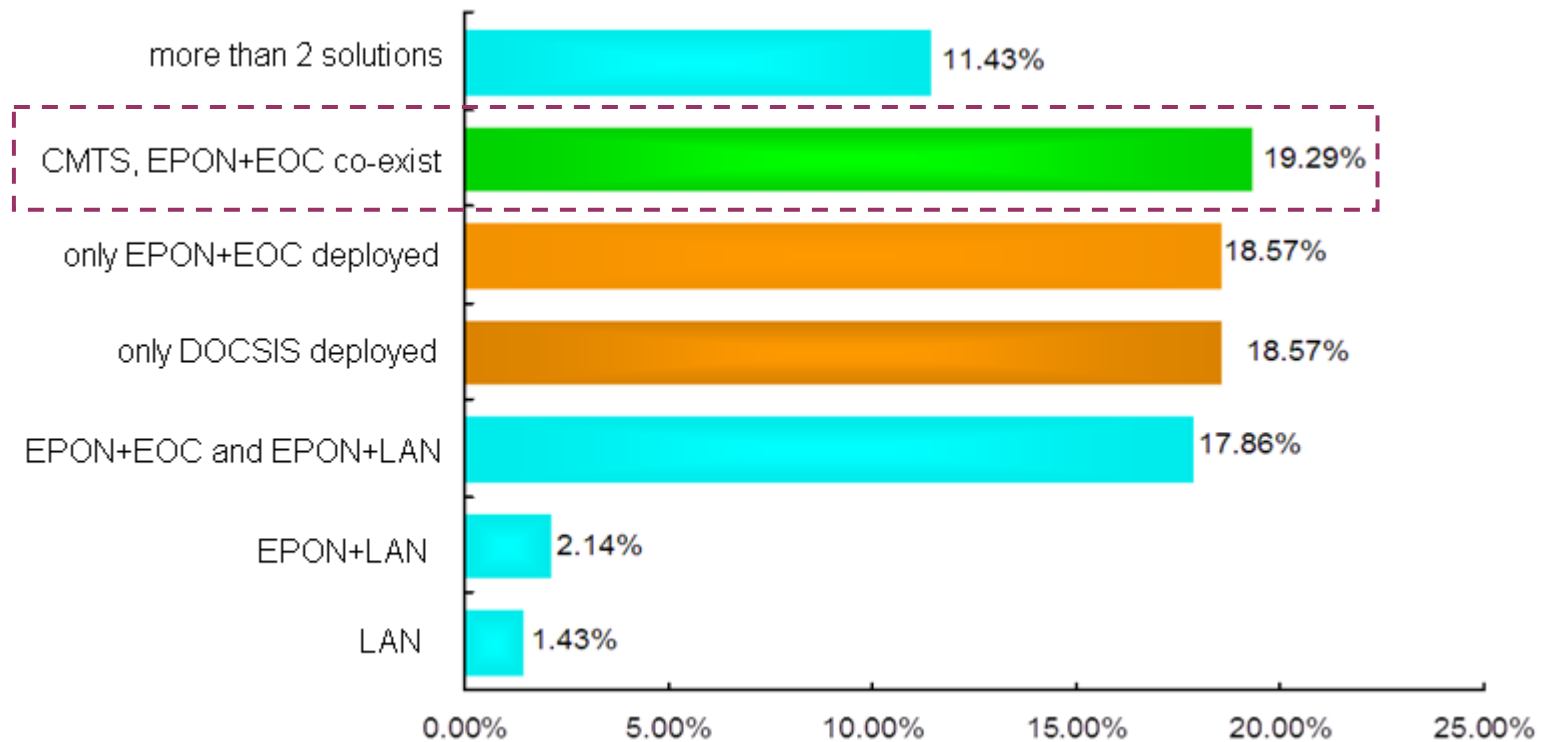
Source: GuidelineResearch, May.2012

Market share of different solution in China MSOs

- 4. EPON+EOC and DOCSIS solution will co-exist from a long-term view.

The report by Guideline Research shows that more than 50% of China MSOs will choose 2 solutions or even more than 2 solutions in their network transformation.

Fig.6 The comparison chart of different solutions deployment among 140 major MSOs in China by the end of Q1, 2012



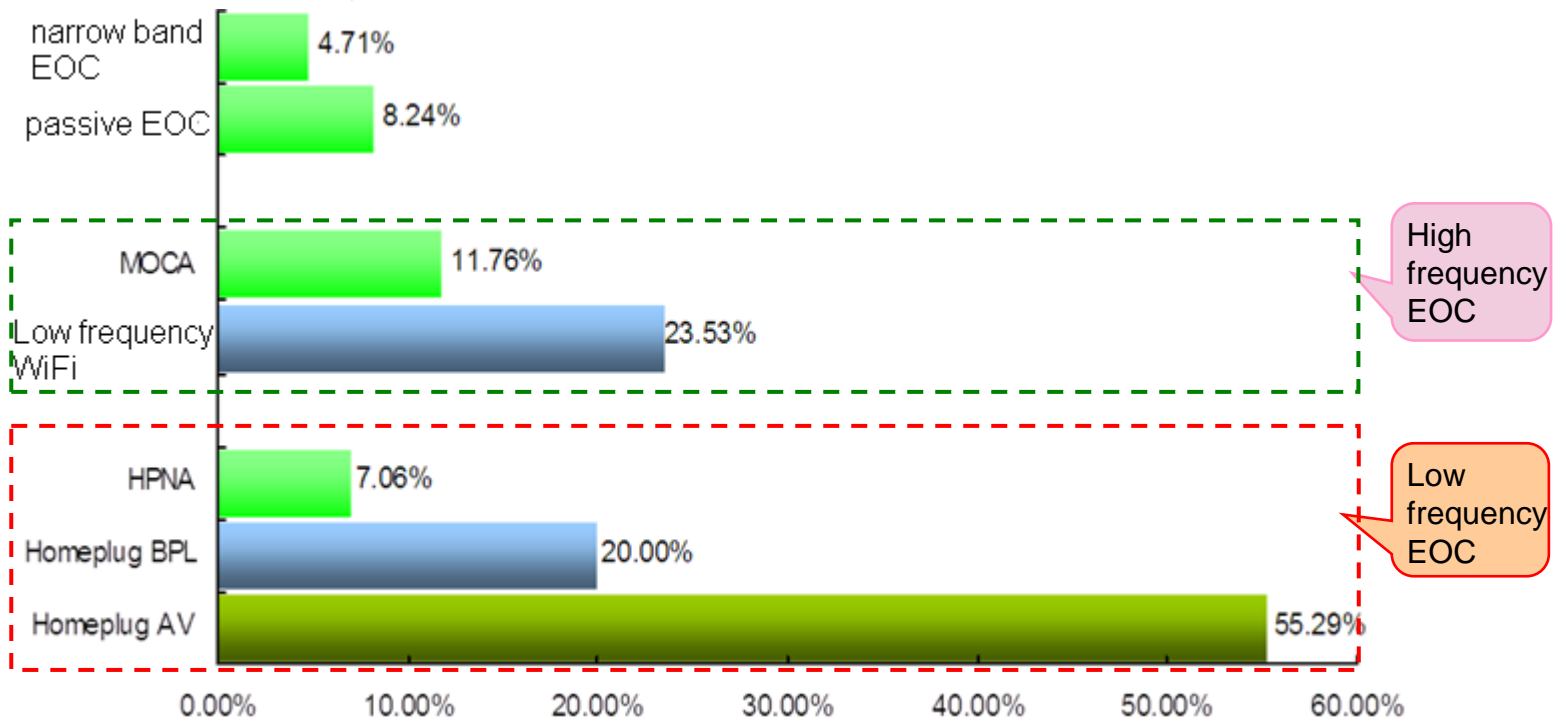
Source: Guideline Research, May.2012

Market share of different solution in China MSOs

- 5. HomePlug AV is the most widely deployed technology among varieties of EOC solutions.

The report by Guideline Research shows that EPON+EOC coverage users grow rapidly and have reached 22.35 million by the end of Q1, 2012.

Fig.7 The comparison chart of different EOC solutions selected by major 85 MSOs in China by the end of Q1, 2012



Source: Guideline Research, May, 2012

China MSOs facing new opportunities and challenges

■ Challenges

China governments are studying broadband China strategy. The competitive environment will become even more severe for China MSOs because MSOs are usually with poor network infrastructure compared with Telecoms.

• **Network upgrade is behind Telecoms**

• **Video services face competition**

• **High-speed internet service is weak**

China plans to invest heavily in broadband network infrastructure in the next five years, with roughly 1/3 of the investment in the broadband access network

■ Opportunities

Although China MSOs are at a disadvantage situation, but the triple-play strategy and broadband China strategy will also bring some opportunities for MSOs.

The total bi-directional coverage users will exceed 80 million and penetration users will exceed 20 million by the end of 2012

MSOs can accelerate network transformation with policy help.

To break the monopoly of the 'qualification', and to lay the foundation for future development

More market opportunities for MSOs

Bi-directional network transformation trends in China

■ Problems

There is a large deviation between the coverage and penetration rate. The proportion of interactive users is still very low and without a big breakthrough in recent years.

Below is the main problems summarized by Guideline Research:

Most of provincial network companies have been established, but the local MSOs in cities are still waiting for policies.

Value-added services are lack of plan

Related industrial chain needs to be enriched

Network management and maintenance needs to be improved

Bi-directional network transformation trends in China

■ Trends

China MSOs network transformation is in 'a mixed bag'.

Below is the trends summarized by Guideline Research:

• **Bi-directional network coverage rate will increase rapidly.**

• **The growth of bi-directional penetration users will be slower than the coverage subscriber growth, and the gap is still evident.**

• **New solutions are emerging and will enter into the experimental stage.**

• **The average cost of household passed is expected to decline further**

China Market Demand on EPoC

Yong Yao

Technical Working Committee, China Radio & TV
Association

China market demand on EPoC

■ Why EPoC?

- There are difficulties in FTTH engineering such as fiber routing and cost. And also, the low penetration rate is the biggest problem.

- The coaxial cable has access to almost all households. And the coaxial cable has the advantage of high-bandwidth transmission.

- With coaxial cable to the home, EPoC can realize FTTH-like effect without the need of re-routing in the room. The users can access to the network when needed.

- With EPoC, MSOs can reduce the investment, and quickly create high-bandwidth bi-directional cable networks.

China market demand on EPoC

■ Technical feasibility

- system feasibility

- system reliability

EPoC

Compared with EPON+EOC solution, EPOC is an end-to-end system. EPOC will have much more progress on service provisioning, scheduling, QoS guarantee, management, etc.,

Compared with DOCSIS, the EPOC architecture and protocol is relatively simple.

- EPOC is an end-to-end Ethernet, and complies with the network evolution trend.

China market demand on EPoC

■ Economic feasibility

- components and system cost analysis

- reasonable cost

- Compared with FTTH, EPOC can save a lot of ODN investment and maintenance, but will add the cost of OCU/CLT.

- Engineering, maintenance cost considerations

Cable plant construction

system installation and maintenance

China market demand on EPoC

■ Compatibility

EPOC can be compatible with EPON, and can co-exist with EPON + EoC and DOCSIS.

Thanks!

