

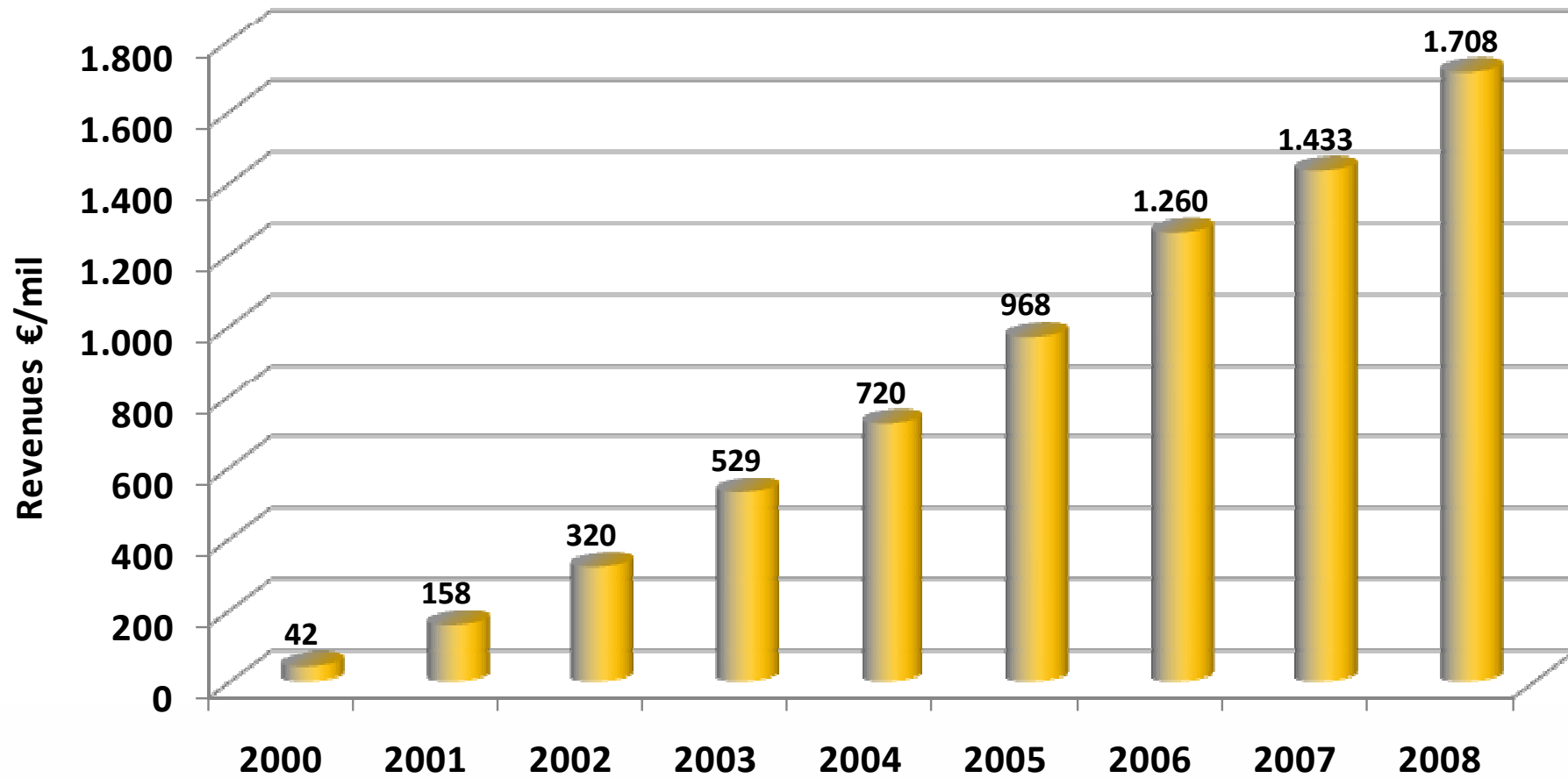
Fastweb FTTH

A 10-years success story



The 2nd wireline network in Italy	<ul style="list-style-type: none">■ Founded in September 1999, FASTWEB is the leading alternative operator of fixed broadband telecommunications services in Italy■ FASTWEB created a fully IP-based network totally independent from the incumbent's infrastructure
Technological leadership	<ul style="list-style-type: none">■ Recognised pioneer in broadband and triple-play■ World first fully IP based network■ Trusted supplier for mission critical application
Integrated triple play offer	<ul style="list-style-type: none">■ FASTWEB provides voice, Internet connectivity, data transmission and TV services over a single connection by using Fiber-to-the-Home/Office and DSL access technologies■ The company offers its services to both companies and families
Highly attractive market	<ul style="list-style-type: none">■ Italy broadband penetration lags its European peers but is now among the fastest growing in EU■ No cable operators in Italy, weak infrastructure-based competition
Successful business model	<ul style="list-style-type: none">■ Leader or co-leader with the incumbent in the covered areas■ Highest residential ARPU in the sector■ Impressive revenue and margin growth since inception

Fastweb revenue growth



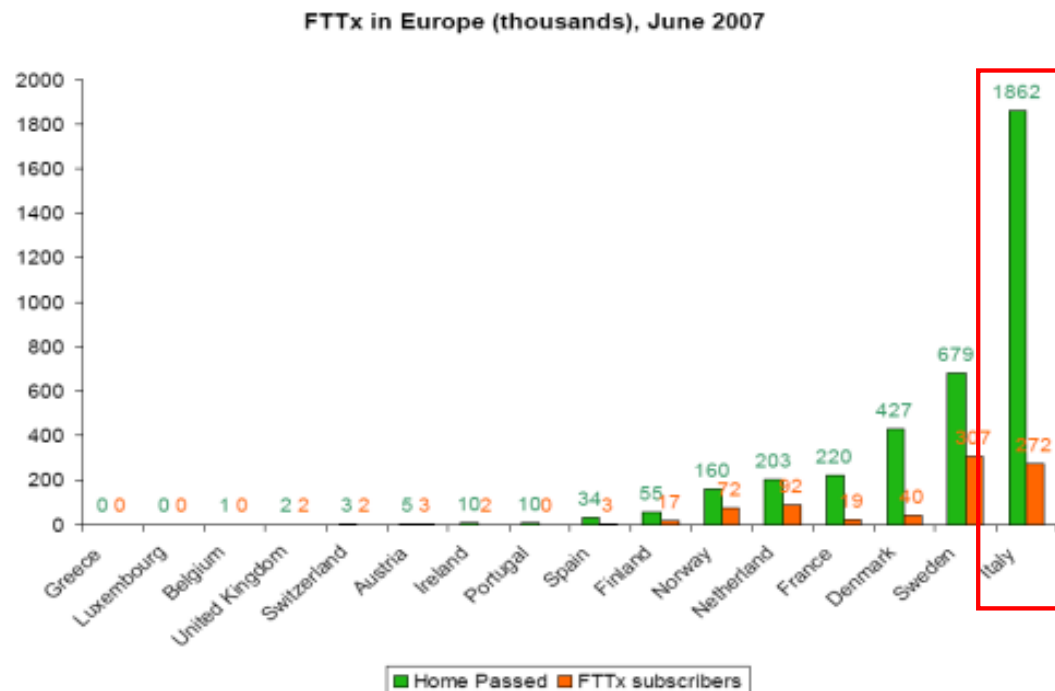
Fastweb milestones



FTTH: Italy vs EU



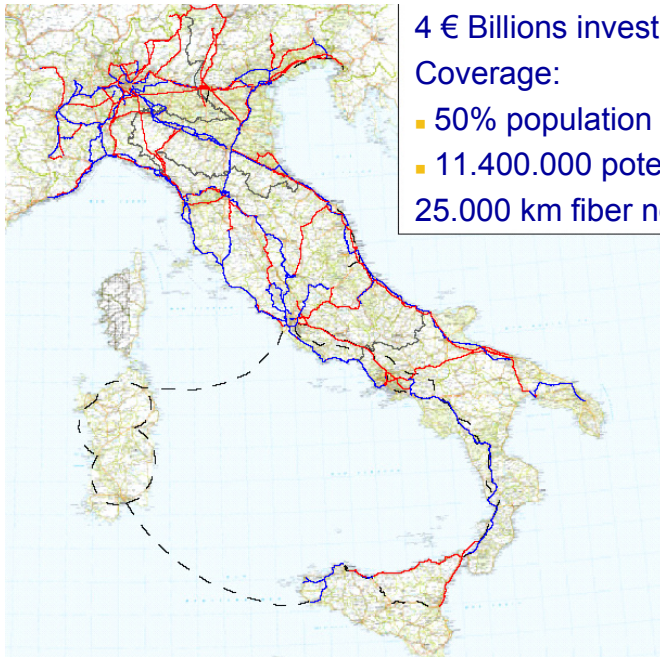
- Fastweb is the Italian telco operator that offers FTTH accesses to Residential and Business customer
- Thanks to Fastweb's huge investments, Italy is the UE "best in class" country for FTTH access diffusion



FTTH in Italy:

- 50% of overall UE home passed
- 32% of overall UE customers

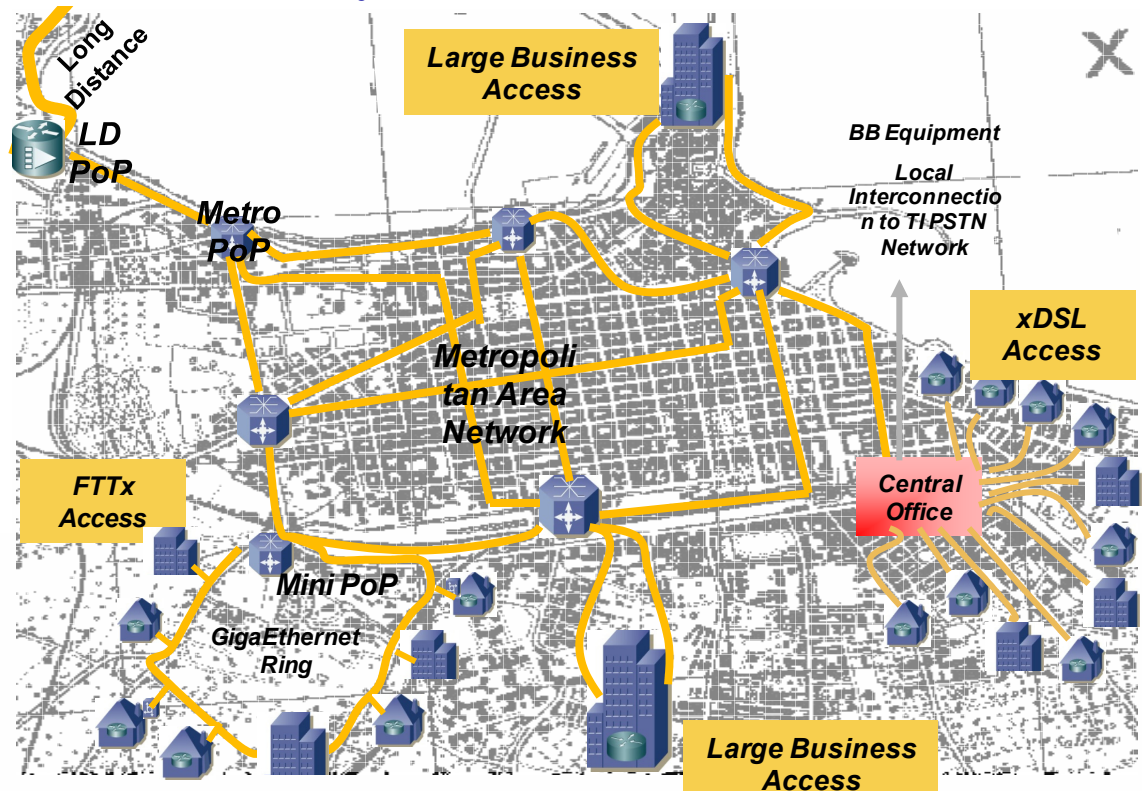
Network overview



4 € Billions invested since 1999
Coverage:
■ 50% population
■ 11.400.000 potential Customers
25.000 km fiber network

- Fastweb network is based on a national fiber backbone across the country and metropolitan area networks in the main cities
- Access technology depends on fiber/xDSL coverage and Customer type (Business, Residential)

- Fastweb network enables different services to all Customer segments:
 - Residential
 - SME
 - Executive

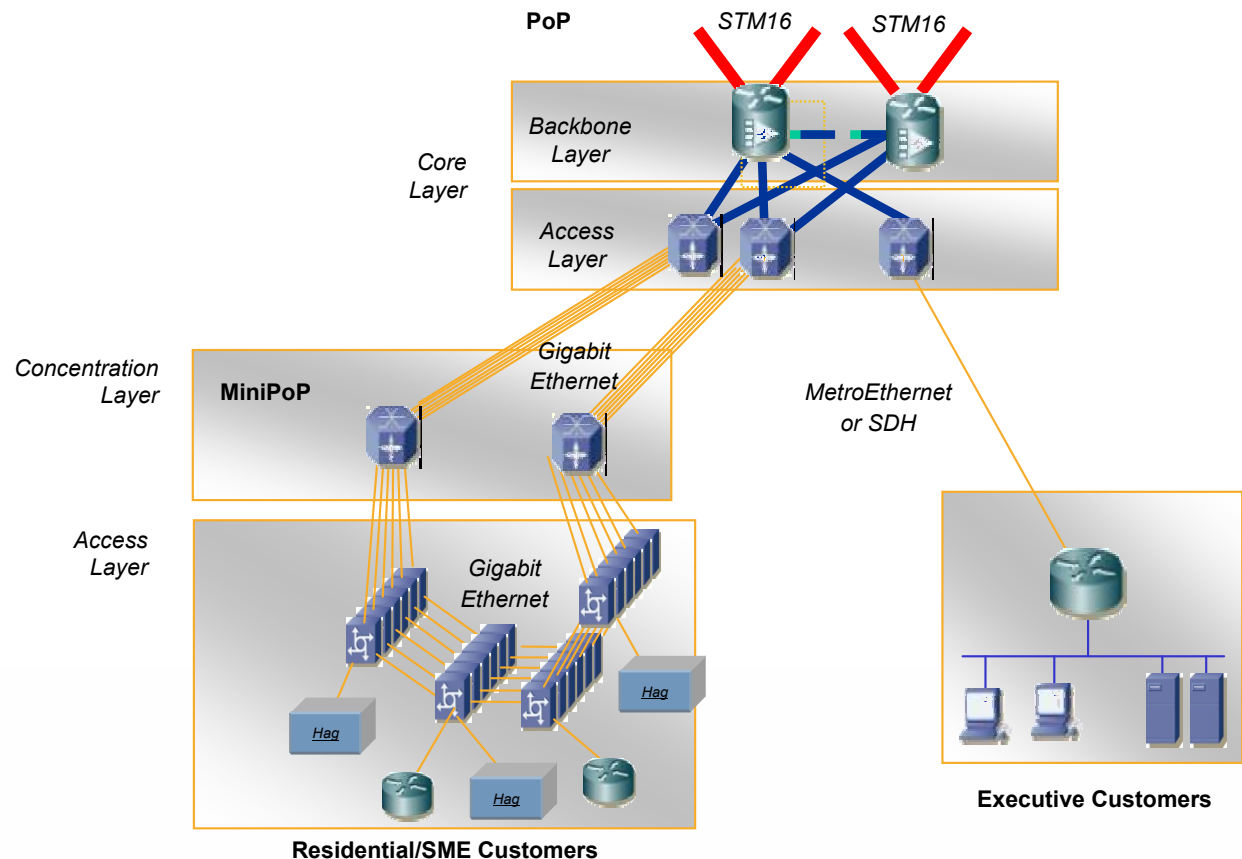


FTTH access

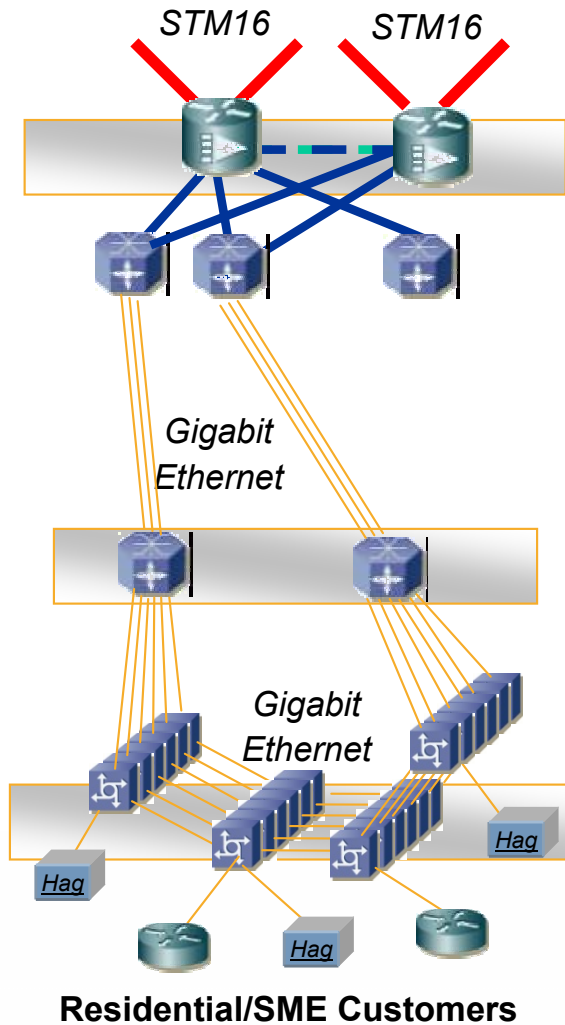


- FTTH network architecture is different for Residential/SME Customers and Executive Customers
- **Executive** Customers are **directly** connected to core network (PoP) through a fiber or SDH link
- **Residential/SME** Customers are connected to core network (PoP) through a **concentration layer** (MiniPoP)

Metro Ethernet solution



FTTH access – Residential/SME



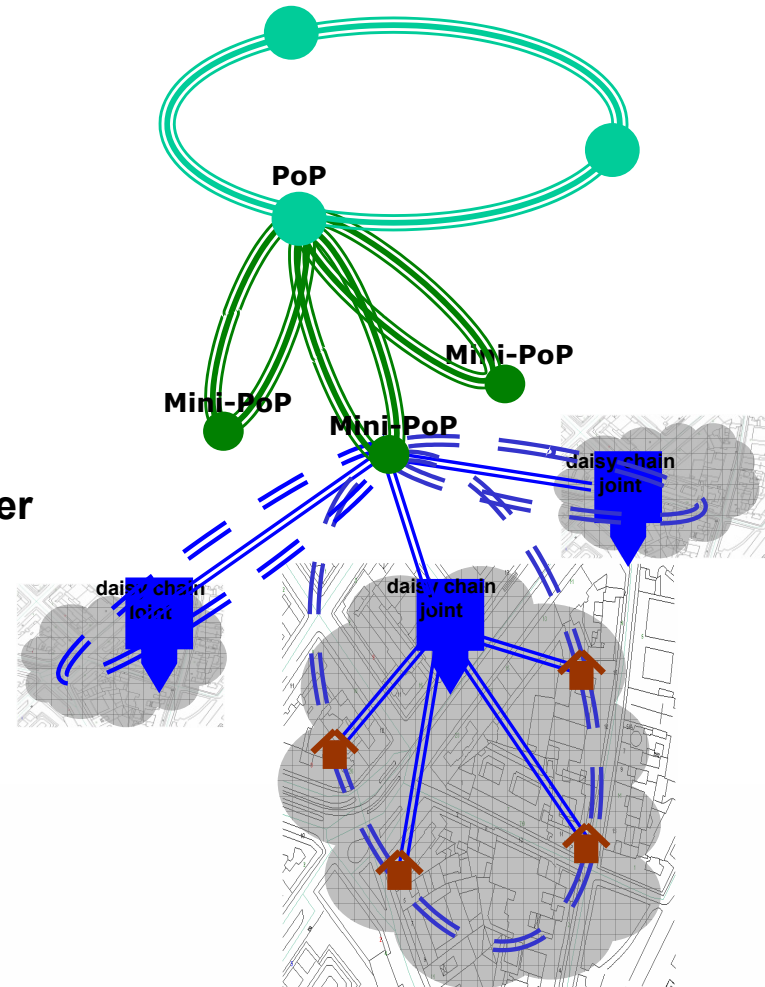
Core Layer
PoP

physical ring

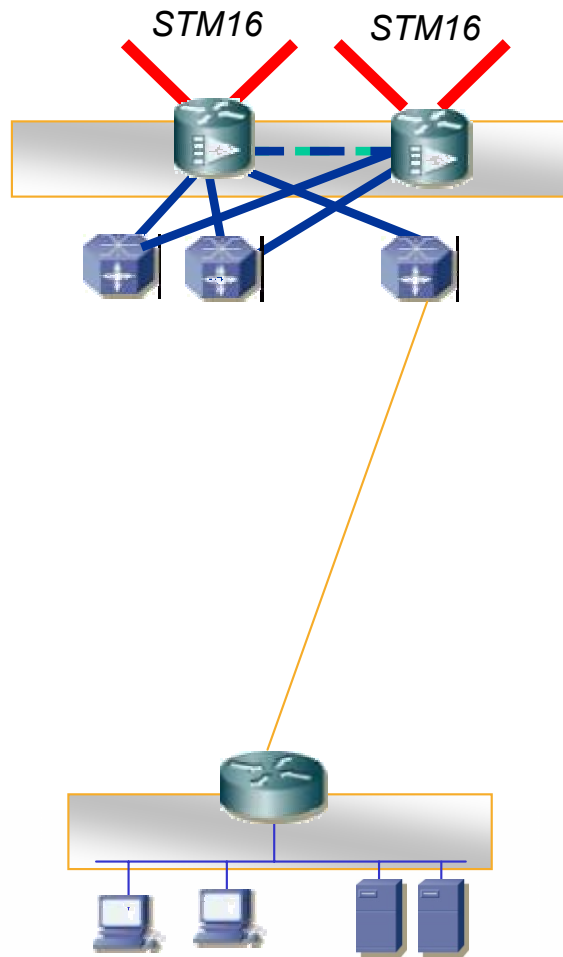
Concentration Layer
Mini-PoP

collapsed
logical ring
physical ring

Access Layer
Cluster Area



FTTH access – Executive



Core Layer
PoP

physical
ring/collapsed
physical ring

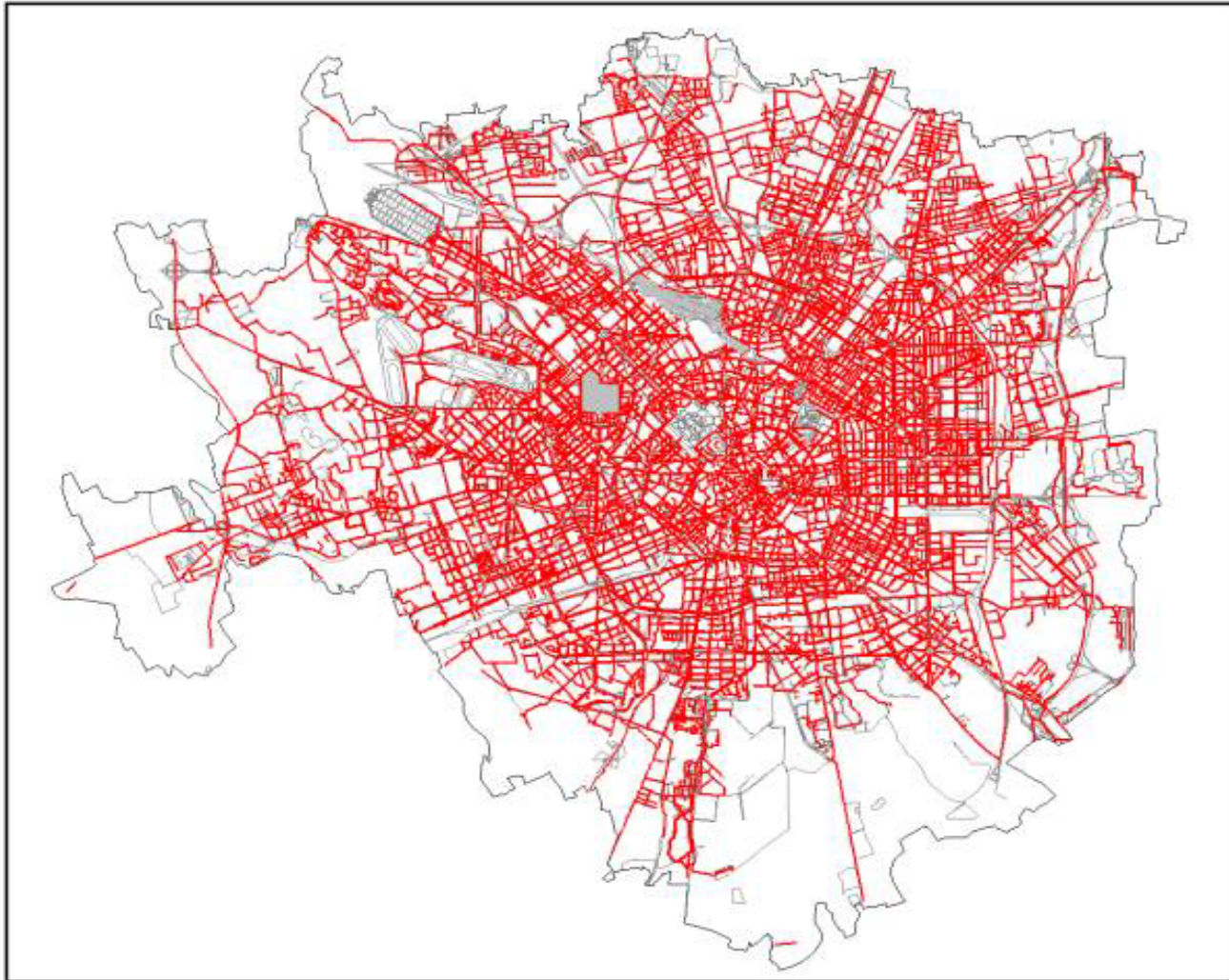
Access Layer



FTTH network creation



- Fastweb's first MAN deployed: Milano



Infrastructure: 2.350 km

Cable: 4.300 km

Fiber: 197.000 km

Building passed: 57.000

Home passed: 760.000

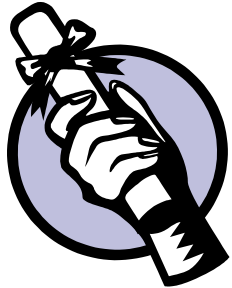
Building conn.: 42.000

Operational issues



Local PA permission

=> time needed to obtain permission for digging



Actions

- Cooperation with PA through specific procedures (board for civil works)

Digging coordination

=> constraints by PA in order to minimize impacts of civil works



Actions

- Strict control of timing
- Sub-contractors operational management

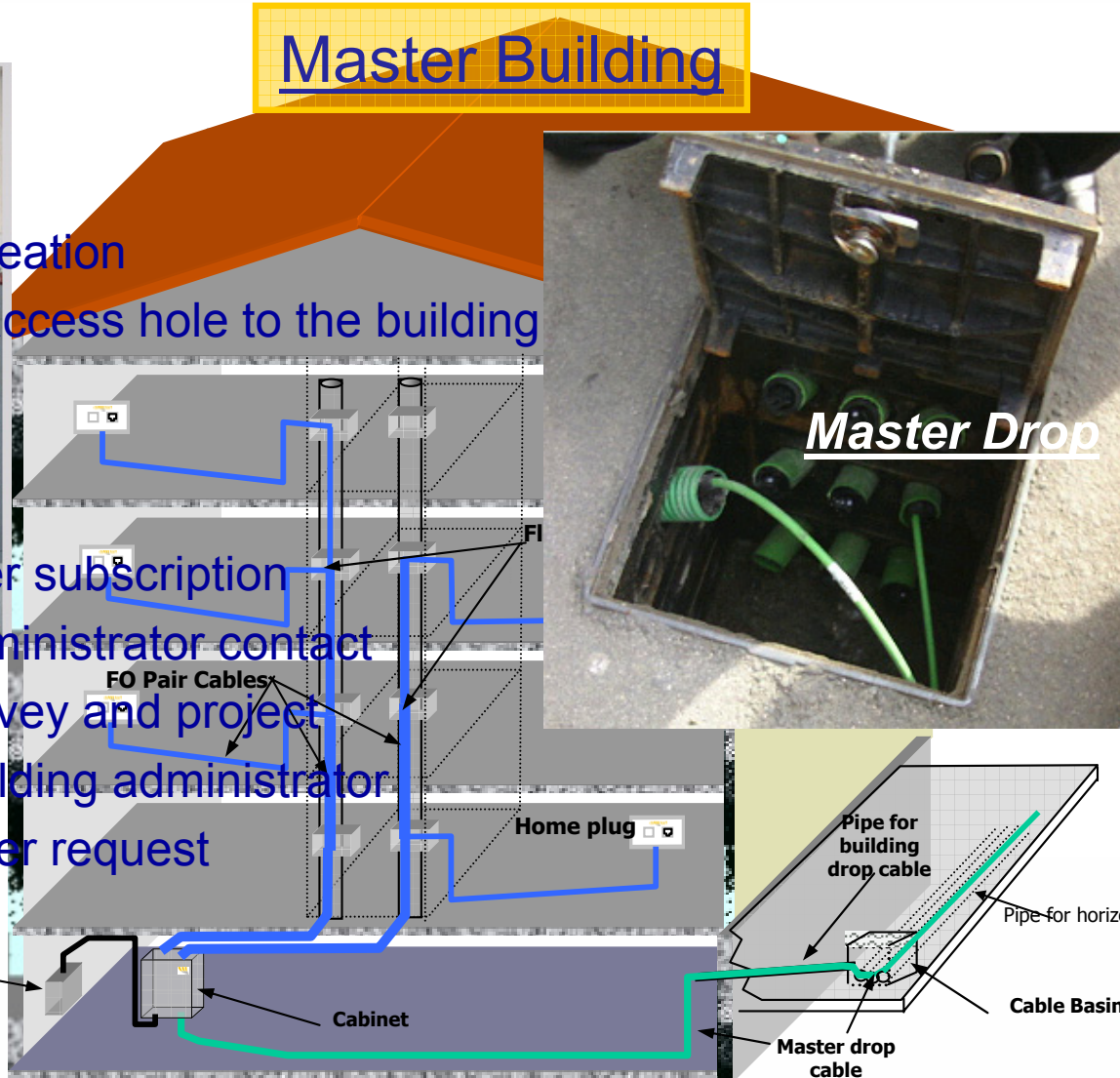
FTTH building connection process



Master Building

Cabinet

- During network creation
 - Project for access hole to the building
- After 1st Customer subscription
 - Building administrator contact
 - Building survey and project
 - Letter to building administrator
 - Electric meter request





■ Building administrator opposition

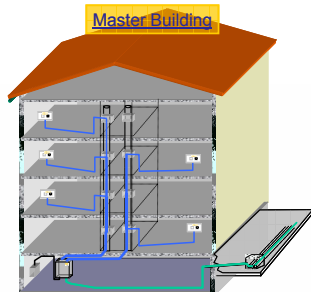
=> time needed to connect Customer causes churn



Actions

- Formal letter with start date of civil works
Reference to law: telecommunication service is an essential right
- Legal action if needed

■ Vertical cabling

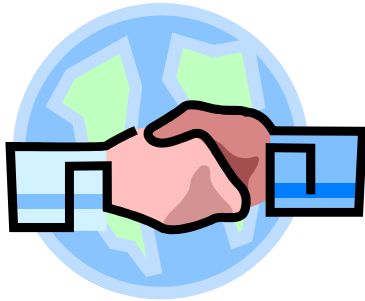


Actions

- Use of existing ducts
- New pipes only if strictly needed

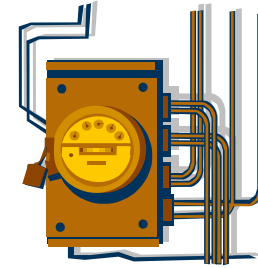


■ Electric meter request.



Actions

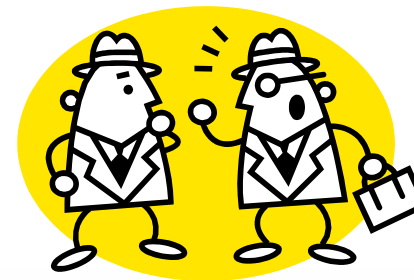
- Specific agreement with providers

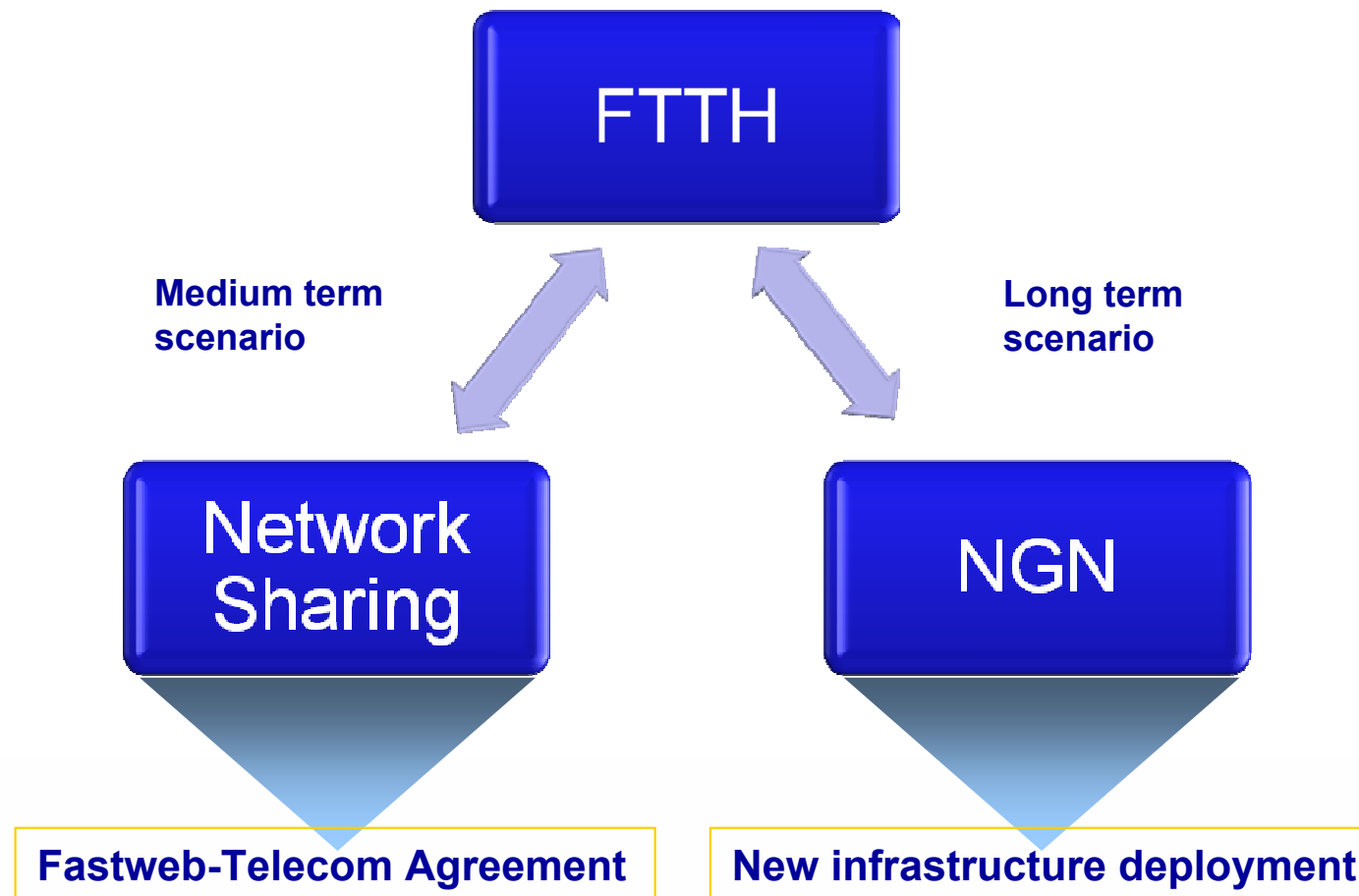


■ Damage claim due to civil works

Actions

- Site survey with company responsible for civil works





Fastweb-Telecom agreement



Agreement: cooperation for network sharing & development

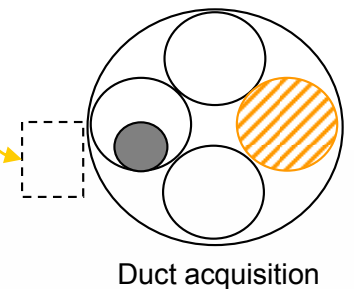
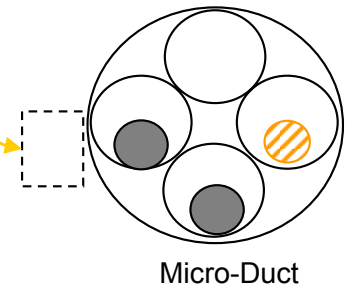
- exchange, under reciprocal conditions, of the rights to use infrastructure
- joint planning for realization of civil infrastructure

Increased use of available infrastructure by means of new technical solutions

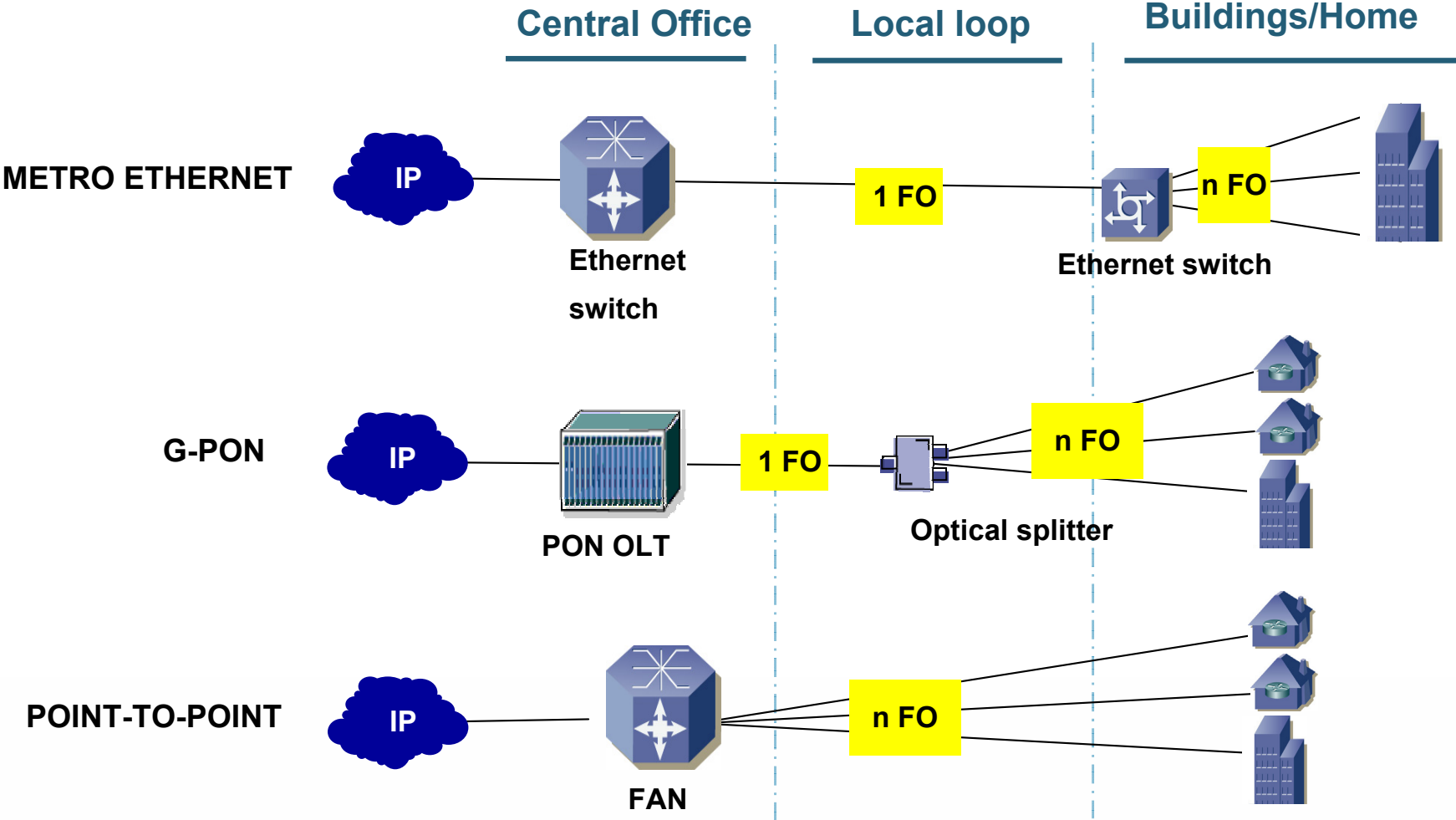
Opportunity for Fastweb to exploit **additional network portion**

Cost reduction for implementation up to 70%

Customers “get closer” to network



FTTH: which architecture?



FTTH: architectures comparison



	Metro Ethernet	GPON	Point-to-Point
Available Bandwidth	Up to 100Mb/s	Up to 1Gb/s	No limits
"Bitstream" Service	YES	YES	YES
Full ULL	NO	NO	YES
Network Architecture	Closed	Closed	Open
OF Consumption	Low	Low	High
Optical Technology	Active	Passive	Passive
Scalability	Limited	Limited	No limits
Operational Complexity and costs	High	High	Low
Standardization	Low	Low	Complete

Metro Ethernet and GPON are closed solution and do NOT allow Full ULL

Open technology for NGN accesses



„Swiss fibre“ develops network competition:

Have competition wherever the customer can benefit from it!

Principles:

- Have competition, where market- or customer value can be generated
- No unnecessary duplication of ducts or infrastructure without customer benefit
- Open to partners with or without own duct infrastructure; we expect the same from our partners.

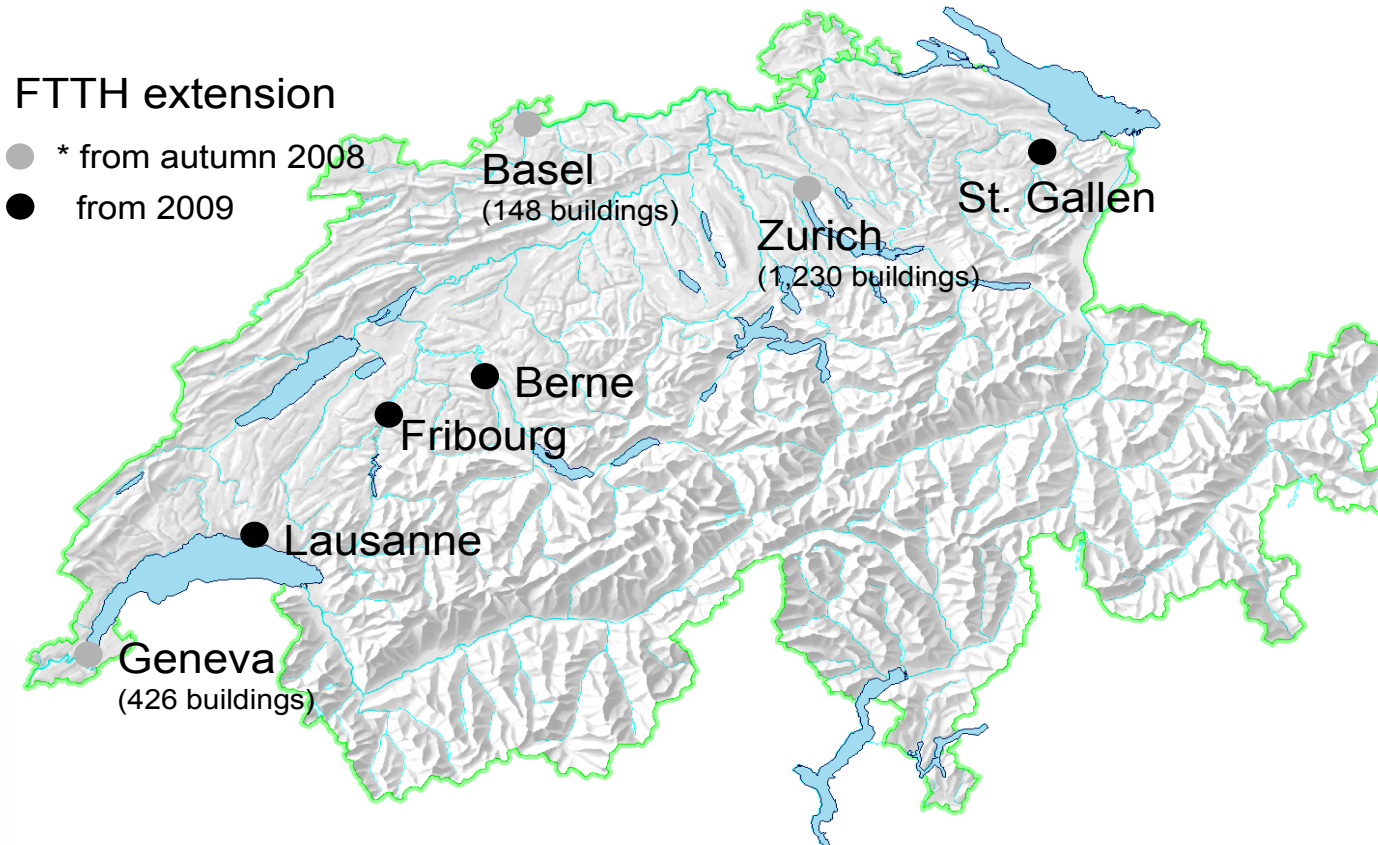
Implementation:

- Cooperation with partners with duct infrastructure
- Deploy one multi-fiber cable and subsequently share/split the fibers
- Offerings for Co-investors and service providers

Swisscom FTTH plan

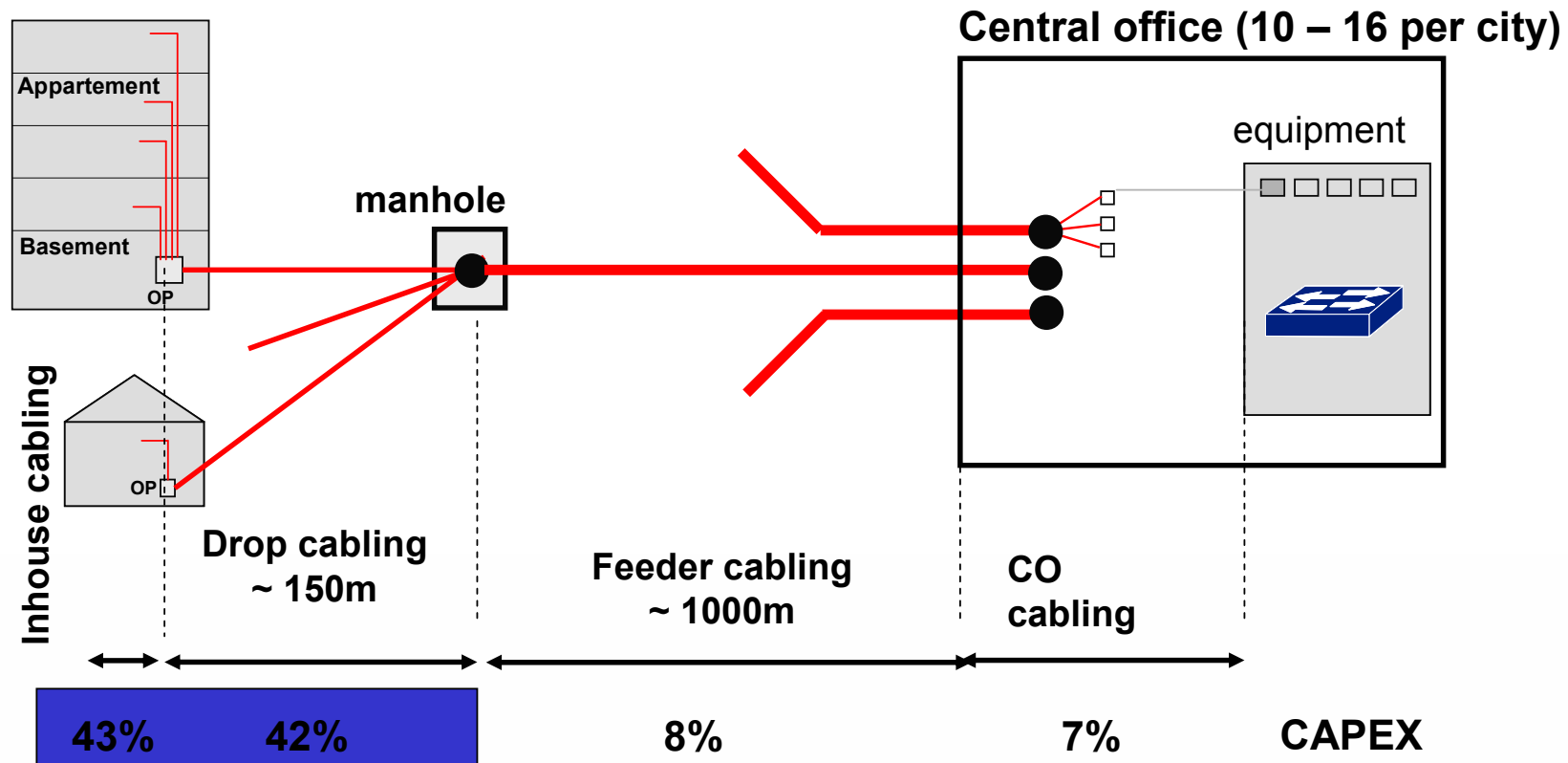


- 2009: about 14'000 building connected (100'000 potential households)
- 2015: 1/3 of the population (over 1 million households connected)





Investments for fiber dominated by civil works in last meters and in in-house cabling. Overall investments until 2015 likely to amount to 1,5 to 2 blnEuro



Swisscom as a Market Maker



- Publish a clear & transparent collaboration proposal with multiple options for bigger and smaller players
- Liaise with Authorities and present them first hand the collaboration portfolio
- Discuss individually with EWs, tuning our collaboration offerings to their individual situation
- The multifiber model promoted by Swisscom is even ported in the European community.
- COMCOM called three working groups
 - Technical standardization of in-house wiring
 - Service harmonization of layer 2 services (wholesale offering), offering
 - Legal aspects on customer binding clauses
- The major battle still to win is the landlords, who are currently not keen to invest in a costly in house infrastructure as long as a) no standards are available and
b) the access to their buildings is not properly settled (EWZ / Swisscom)



Thanks for your attention

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