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# VHCNs and regulation in Switzerland

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# Switzerland is not Member of the EU

- Different legal framework

- **Specifics:**
  - Ex post regulation
    - Only on request, regulatory determination of past prices
  - Unbundling of the copper local loop: since 2007
    - Unbundling is limited to copper by the law
  - SMP-regulation of ducts and leased lines
  - No regulated bitstream
  - No symmetric access regulation
  - No state aid at federal level for broadband deployment

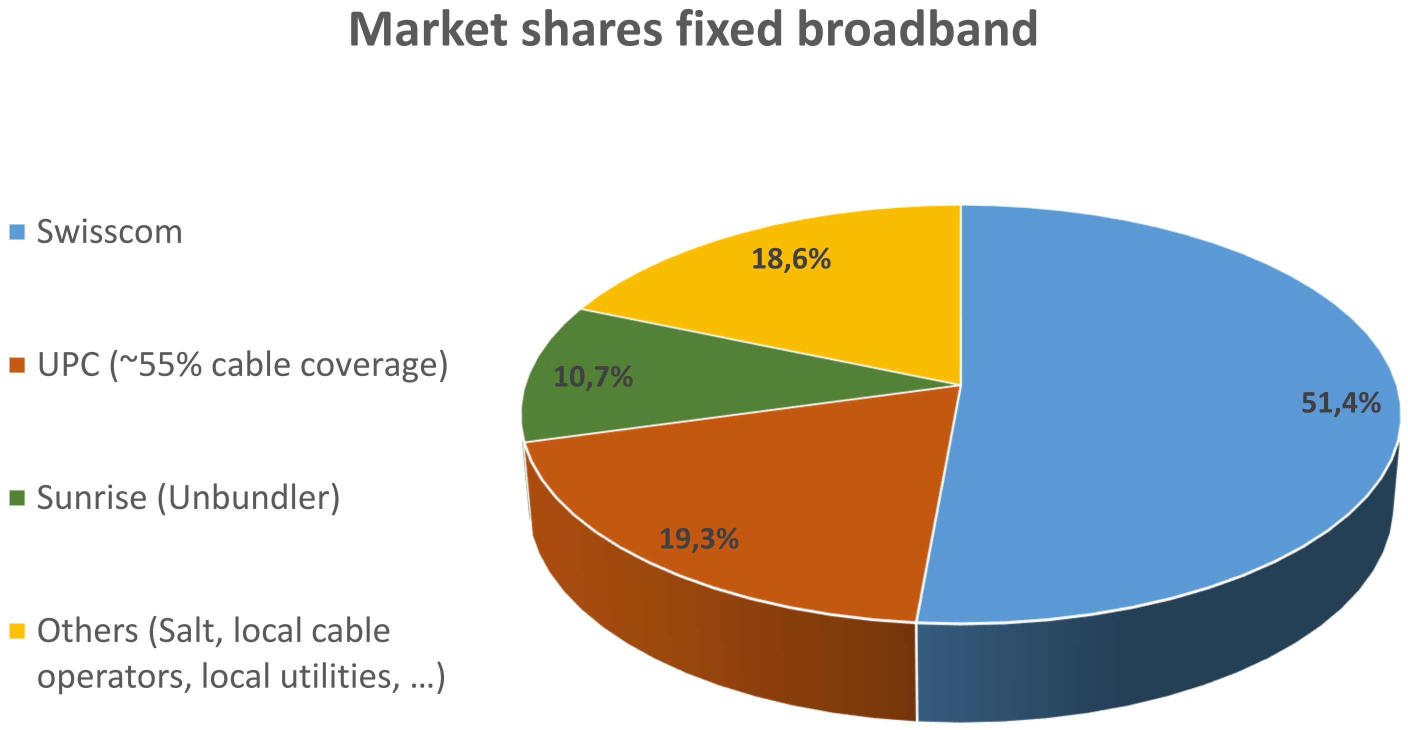
# Agenda

1. Market overview
2. Network deployment and adoption
3. Regulatory system
4. Focus on co-investment and co-deployment

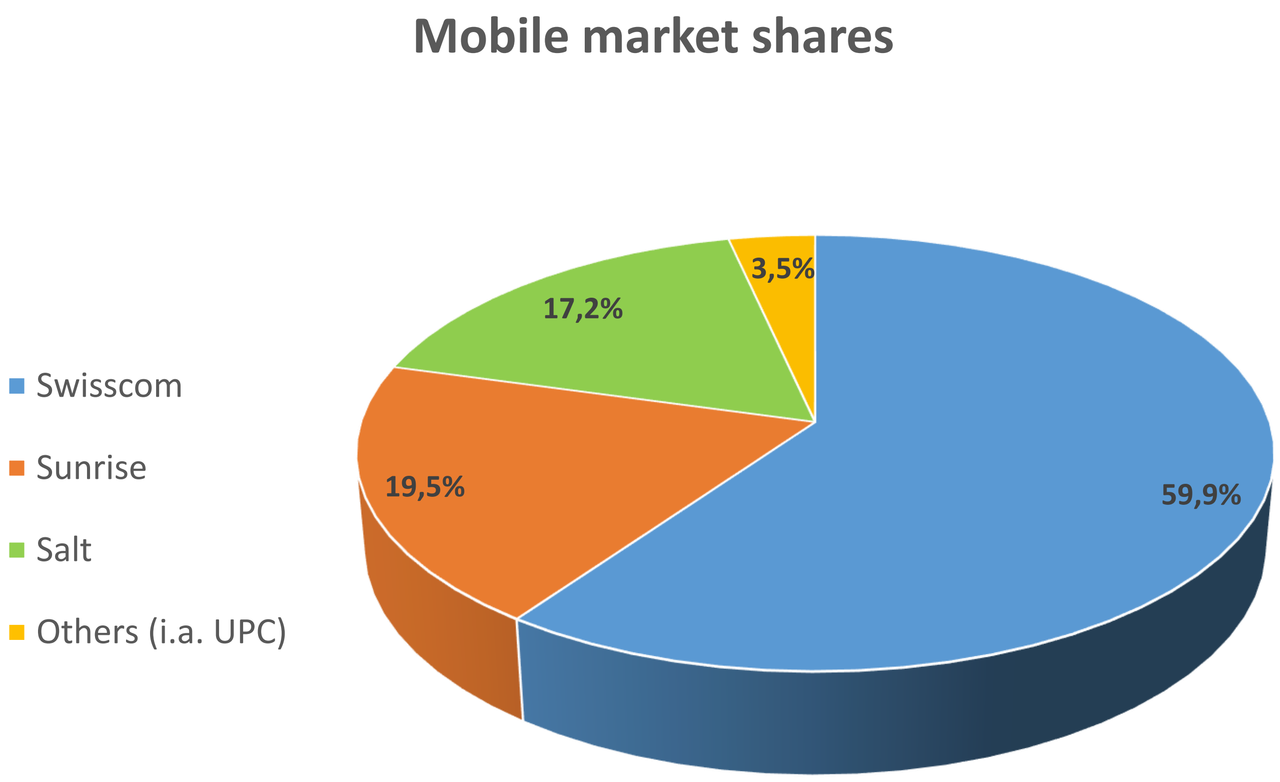
# Market overview

- Strong position of the **incumbent** in the fixed and in the mobile market
  - Stock company, 51% of the shares state-owned
- Relatively high **prices** for end customers
  - But high demand and high willingness to pay
- Relatively high **investments**
  - Mostly driven by infrastructure competition
    - Fixed market: high cable coverage (~84%), investments by utilities (in cooperation with the incumbent operator)
    - Mobile market: 3 network operators with high-quality networks

# Market shares



# Market shares



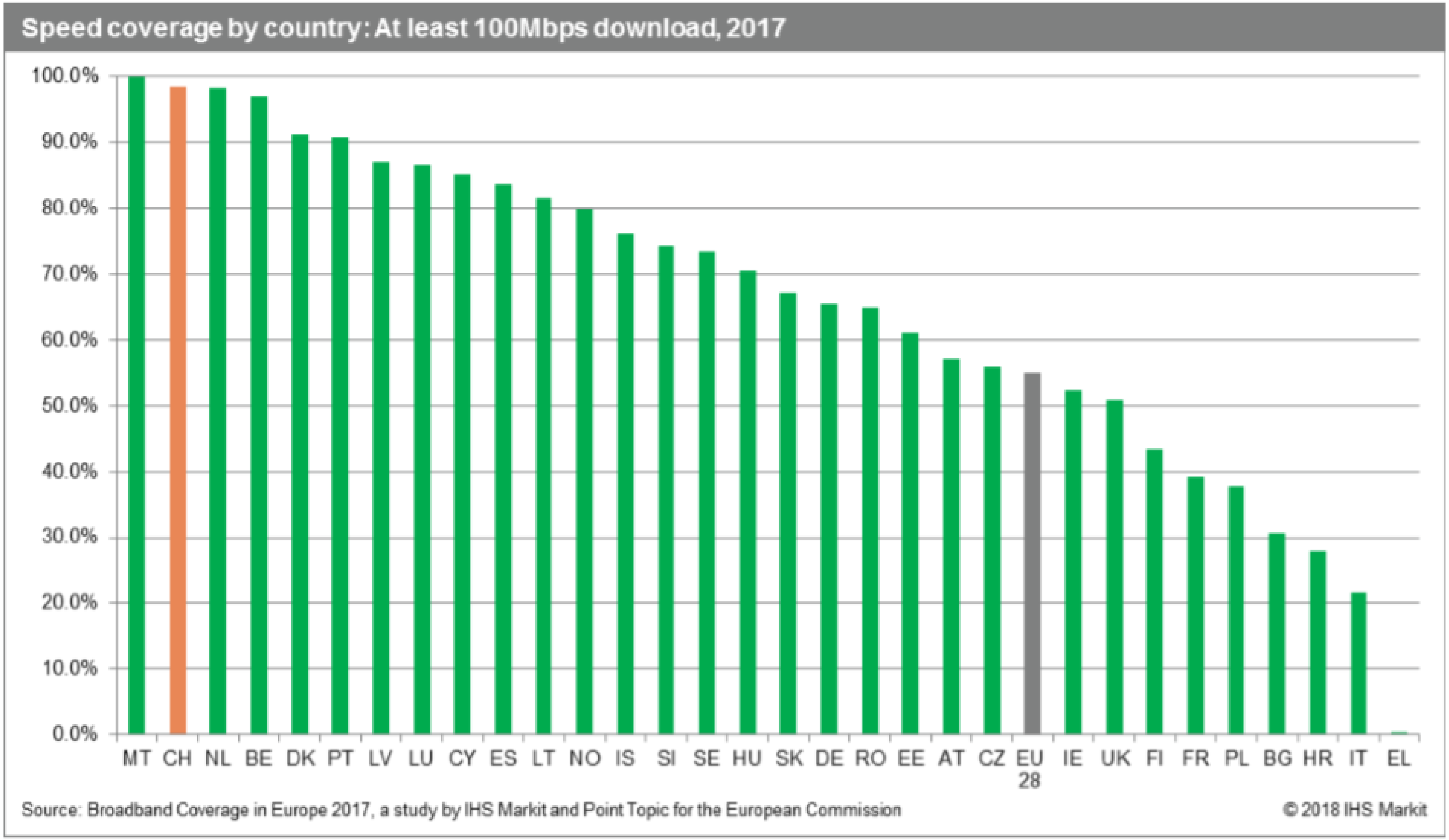
# Fixed broadband deployment

- **Incumbent:** swisscom
  - **FTTH (PtoP): ~30%**
  - **FTTC/FTTB** (Vectoring, G.fast): **~43%**
    - Announced goal:
      At least 80 Mbit/s for 90% until 2021
- **Cable operators:**
  - ~200 (local) cable operators with **DOCSIS 3.0/3.1,** covering **~84%**
    - One big cable operator upc (~55% coverage)
- **Electric utilities:**
  - ~40 (local) utilities covering **~25%** of all households with **FTTH**, most of all in cooperation with Swisscom
  - Mostly wholesale offers, but also retail offers

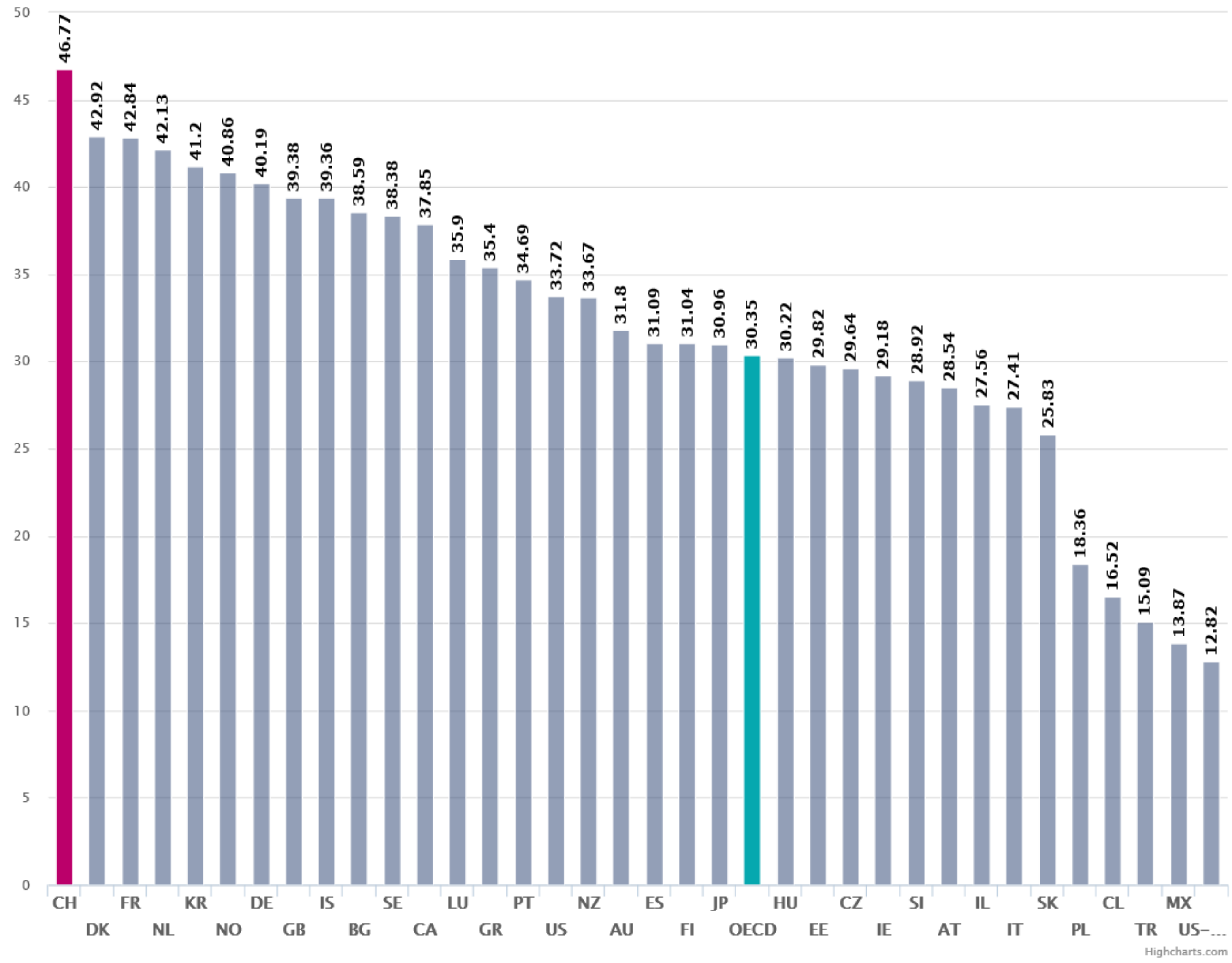
# Mobile broadband deployment

- **3 mobile network operators**
    - LTE: 99% of population
    - 5G deployment started
    - LTE: 99% of population
    - 5G deployment started
    - LTE: 98% of population
    - 5G deployment announced for 2nd half of 2019

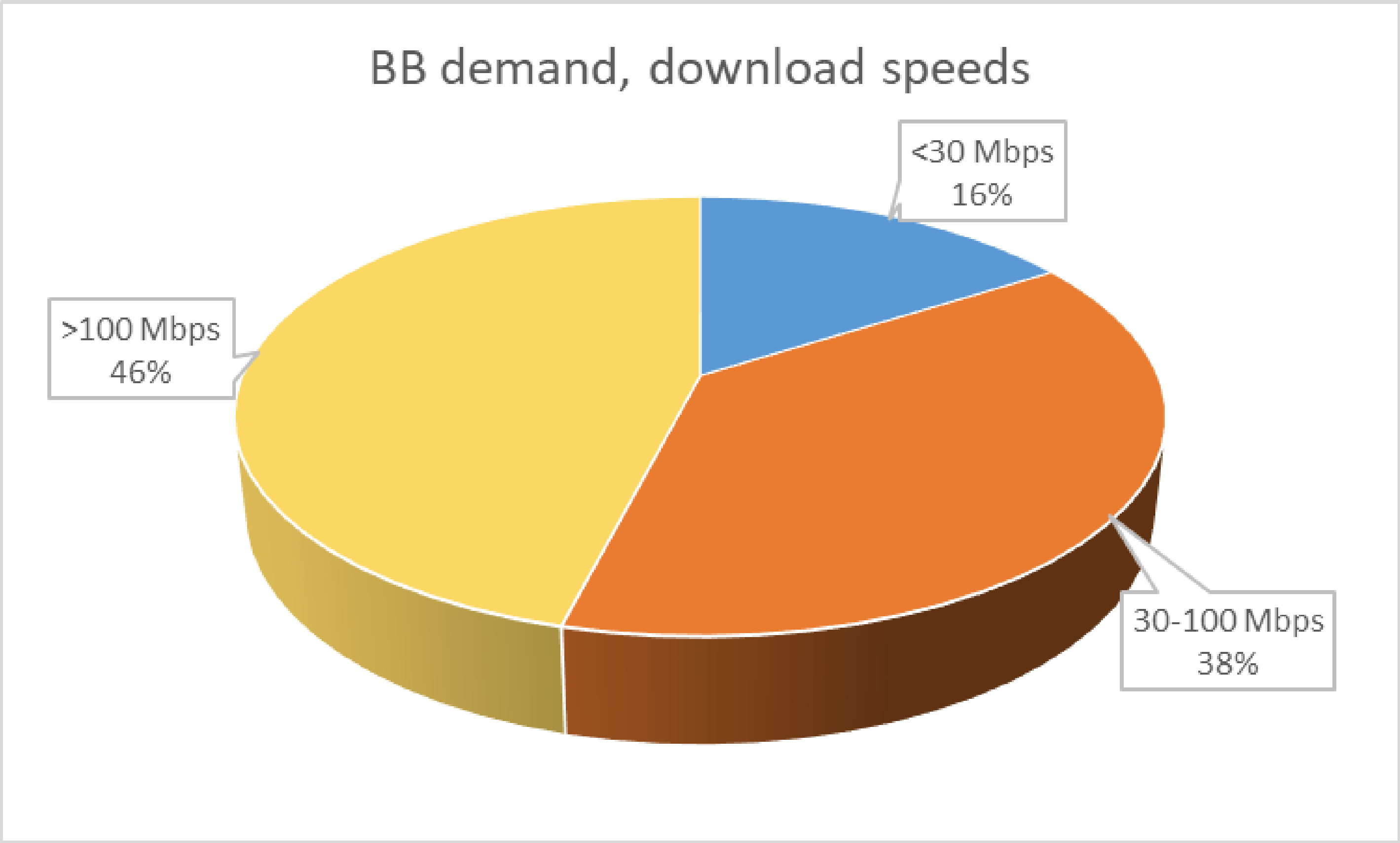
# Coverage with ≥100 Mbps (download)



# Fixed broadband penetration (OECD)



# Fixed broadband adoption



# Ex post regulation / limited unbundling

- Sector specific **ex-post regulation** of **SMP operators:**
  - The NRA may only decide at the **request** of a party
    - Incumbent provides cost evidence; NRA audits and adapts the costs/prices of the incumbent if necessary.

➢ Regulatory intervention is limited to access conditions under disagreement

➢ Regulated conditions/prices known after decision of the NRA
  - Pay-back by SMP operator after civil case

- **Unbundling** is limited to the copper local loop by law

# Drawbacks of ex-post regulation

- Long legal disputes and **uncertainty** in the market until the decision is taken by the NRA / the court
  - SMP operator may exercise market power during this period
  - Current access prices are not clear, price adaption ex-post by the NRA

- **Limited flexibility** for the NRA
  - Only requested access conditions may be adapted

- No direct regulatory intervention in the mobile market so far
  - No legal requests to regulate the interconnection prices
    - However, political pressure (threat of a stronger regulation) has disciplinary effects on mobile termination rates and on international roaming pricing

# Drawbacks of limited access regulation

- No possibility to unbundle fibre and to regulate bitstream in case of competition problems
  - Access regulation is phasing out (limited demand for low broadband speeds)
  - No ability for regulatory interventions related to
    - Vectoring
    - FTTH
- Parliament recently decided to remain the existing ex post and access regulation

# All in all

**Regulator**

**"Market"**

# FTTH roundtables

- In 2008, several local electric **utilities announced plans to deploy a FTTH network** in their coverage area
  - **Reaction of Swisscom**:
    announced plans to deploy a parallel FTTH network in those cities
    - regulator launched a **roundtable for moderated discussions** among markets players (on a voluntary basis)
- **Goals:**
  - avoid unnecessary duplication of investments
  - avoid local monopolies
  - create a framework for the roll out of FTTH
- **Results:**
  - Swisscom and many local utilities agreed on infrastructure sharing and co-investment based on multi-fibre-to-the-home (4 fibres per unit)
  - Wholesale access offers of Swisscom and utilities
  - uniform technical standards

# FTTH cooperations – Swisscom with local utilities

- Following FTTH roundtables, Swisscom concluded several **cooperation contracts with local utilities** (individual contracts, not uniform)
- **Similarities** of all cooperation:
  - infrastructure sharing / co-deployment
  - Co-investment (generally 60% by Swisscom and 40% by the utility - according to the expected long-term market shares)
  - four fibres per household, 2 for Swisscom and 2 for the utility
    - a four-fibre-network increases the rollout costs by 10 to 20 % compared to a single-fibre p2p network
      - two fibre networks, each with one spare fibre
- The **Competition Commission** has called the partnerships into question
  - individual clauses had to be deleted or amended
  - new, adapted agreements (in line with competition law) were reached in almost all of the cases

# FTTH roundtables – industry working groups

- **Aimed at creating uniform technical standards**
  - a negotiated agreement on a voluntary basis, moderated by BAKOM
- **Goals:**
  - uniform access to optical fibre for alternative providers
  - allow consumers to switch provider easily
  - ensure the co-use of in-house installations by two or more fibre networks
- **Standards for:**
  - installation of fibre (interfaces for the interconnection, in-house installations, e.g. socket type, etc.)
  - uniform access to services and layer 2 products
    - allowing a common platform for orders and customer migration (one stop-shop for access seekers demanding access in different areas)
  - a model contract for building owners and network operators for the legal and financial aspects of FTTH in-house installations

# FTTH roundtables – industry working groups

# FTTH cooperation - today

- FTTH deployment in ~60 municipalities through incumbent-utility cooperation
  - potential FTTH coverage of 30%
- FTTH deployment by the incumbent in additional ~30 municipalities
- Swisscom and all utilities offer wholesale access to their FTTH-network on L1 and L2 (on commercial terms)
- Single wholesale platform by several local utilities for alternative operators seeking access to L1 or L2 swiss fibre net the open choice
- Several service providers offer retail services over L1 and L2 FTTH access (including cable operators)
- Mobile operator Sunrise and Salt investing up-front for the usage of the second fibre of utilities
- FTTH deployment seems to reach a temporary end at a 1/3 of the country, Swisscom is know investing in FTTC/B

# Possible drivers of broadband deployment

- Infrastructure **competition**
  - High cable coverage
  - Market entry of utilities, FTTH cooperation
  - Industry standards
- Rather high population density (200/km$^2$), **urbanisation**
- High willingness to pay, quality-sensitive customers (high **arpus**)
- Light-touch **regulation**, threat of a stronger regulation (?)