A Business Perspective to Networking

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Key figures Swisscom

As of December 2017

1.5 million Swisscom TV customers

3.4 million Ultra-fast broadband connections

1.3 million inOne customers

6.6 million mobile communications customers

2 million All IP customers

As of December 2017
Current Network

W+ network update

- Technology mix key in bandwidth expansion
- UBB coverage
  - 27% in FY 2017, 30% in Q2 2018, 59% by 2021, 90% by 2021
  - > 80 Mbps
  - > 200 Mbps

- Currently ~3.37mn fibre connections o/w 1.39mn FTTH, enabling strong HD (>96%) and UHD (>83%) coverage for Swisscom TV

W- network update

- 4G+ with speed up to 1 Gbps
- Download speeds over 800 Mbps are now possible for the 1st time
- Extending technical lead of Switzerland’s best network to offer the best experience with high-definition videos, gaming, virtual reality and lightning-fast surfing
- Pop coverage: 99% 4G and >80% 4G+
Issues

- CAPEX
- Market Penetration
- 5G from initial deployment to new business
- Customers
- Simplification and Automation
Large CAPEX -> how to reduce?

CAPEX H1 2018

<table>
<thead>
<tr>
<th></th>
<th>H1 2017</th>
<th>H1 2018</th>
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<tr>
<td>Swisscom Switzerland</td>
<td>719</td>
<td>711</td>
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<tr>
<td>Fastweb**</td>
<td>326</td>
<td>347</td>
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<tr>
<td>Other*</td>
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<td>1,069</td>
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CAPEX split – Swisscom Switzerland H1 2018

- Wireless network, 18%
- Fibre (FTTx), 32%
- Fixed network & copper access, backbone & transport infrastructure, 32%
- CP equipment, 5%
- IT systems, All-IP & other, 13%

Capex/Sales Ratio

- H1 2017: 18.6%
- H1 2018: 18.4%
CAPEX reduction through Open Source for collaborative development
Incl. white box hardware

Market full penetration -> how to grow?
Initial 5G

- More of the same
- Tackling the traffic growth
- IoT through LTE or other technologies

Swisscom Mobile Traffic Increase

https://www.swisscom.ch/de/about/unternehmen/portraet/netz/5g.html
New Businesses

- B2B and B2B2C services
  - Reliability as a Service
  - Operation as a Service
  - ICT as a Service
  - Solutions stitched from various components

- Leverage new 5G capabilities
  - Radio features for ultra-reliable and low latency
  - Slicing for resource separation and service isolation

- Willingness to pay extra?
Development of Digital Services

Today

5G
Example: Enterprise Connect
Virtual Connectivity Services: self-care and on-demand

Operational Challenges of 5G

> Initial 5G
  – Indoor coverage
  – Measurement of electromagnetic radiation for new technologies, e.g. beamforming
  – Benefits of higher-degree MIMO is deployment scenarios dependent (reflection)
  – Regulation for Electro-Magnetic Emissions

> Reliable 5G network deployments
  – Reliability being part of an SLA
  – Large amount of different software components make management difficult
  – Managing the Edge
How to keep the Consumers happy?
Decision making for Mobile contract in Switzerland

• Coverage
• Network Quality
• Voice Quality
• Cost
OPEX reduction through Simplification and Automation

- No POTS anymore
- Converged Offers
- Automation
- Lonely phone booth (makes 1.4 CHF per year)
Thank you

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