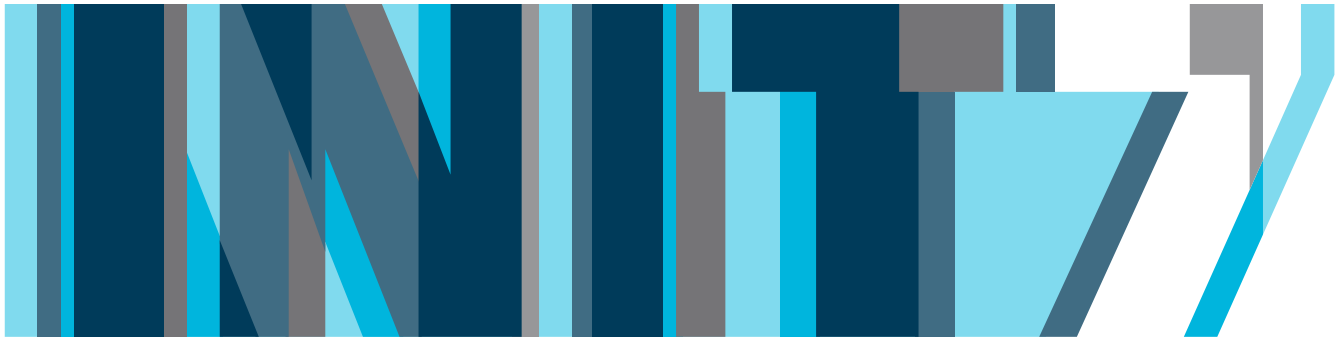

Fiber7. No Limits.

DENOG #6 – November 20, 2014

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DISCLAIMER

Inhaltsverzeichnis

Init7

Über Init7 #1

Init7 ist ein namhafter Business- und Wholesale Internet Service Provider

- Init7 entstand im im Jahr 2000 aus einem Spin-off der Künzler Communications GmbH, welche Internet-Dienstleistungen ab 1996 angeboten hat
- Init7 (Schweiz) AG gehört zu 100% der Init7 Holding AG, beide mit Sitz in Winterthur
- Init7 Holding AG befindet sich in Privatbesitz von 4 Aktionären

Über Init7 #2

Init7 ist ein namhafter Business- und Wholesale Internet Service Provider

- Init7 fokussiert auf Business- und Wholesale-Dienstleistungen: Init7 ist der Provider für andere Provider, insbesondere im CH-Hosting-Markt
- Init7 betreibt einen internationalen Backbone mit einer gebauten Kapazität von über 5 Terabit/Sek.
- Die Kernkompetenz von Init7 ist Routing: der effiziente Datenpaket-Transport von A nach N

Über Init7 #3

Init7 ist ein namhafter Business- und Wholesale Internet Service Provider

- Das Privatkundengeschäft war bisher eine Nische: xDSL (Layer 2 Reselling) und FTTH (Layer 2 Reselling) ermöglicht nur margenschwache „me-too“ Produkte, die technisch zudem limitiert sind (ca. 12% vom Umsatz)

- **Fiber7 bedeutet Paradigma-Wechsel: Das Privatkundengeschäft soll ein relevanter Umsatzträger von Init7 werden**

Init7 Backbone: AS13030 #1

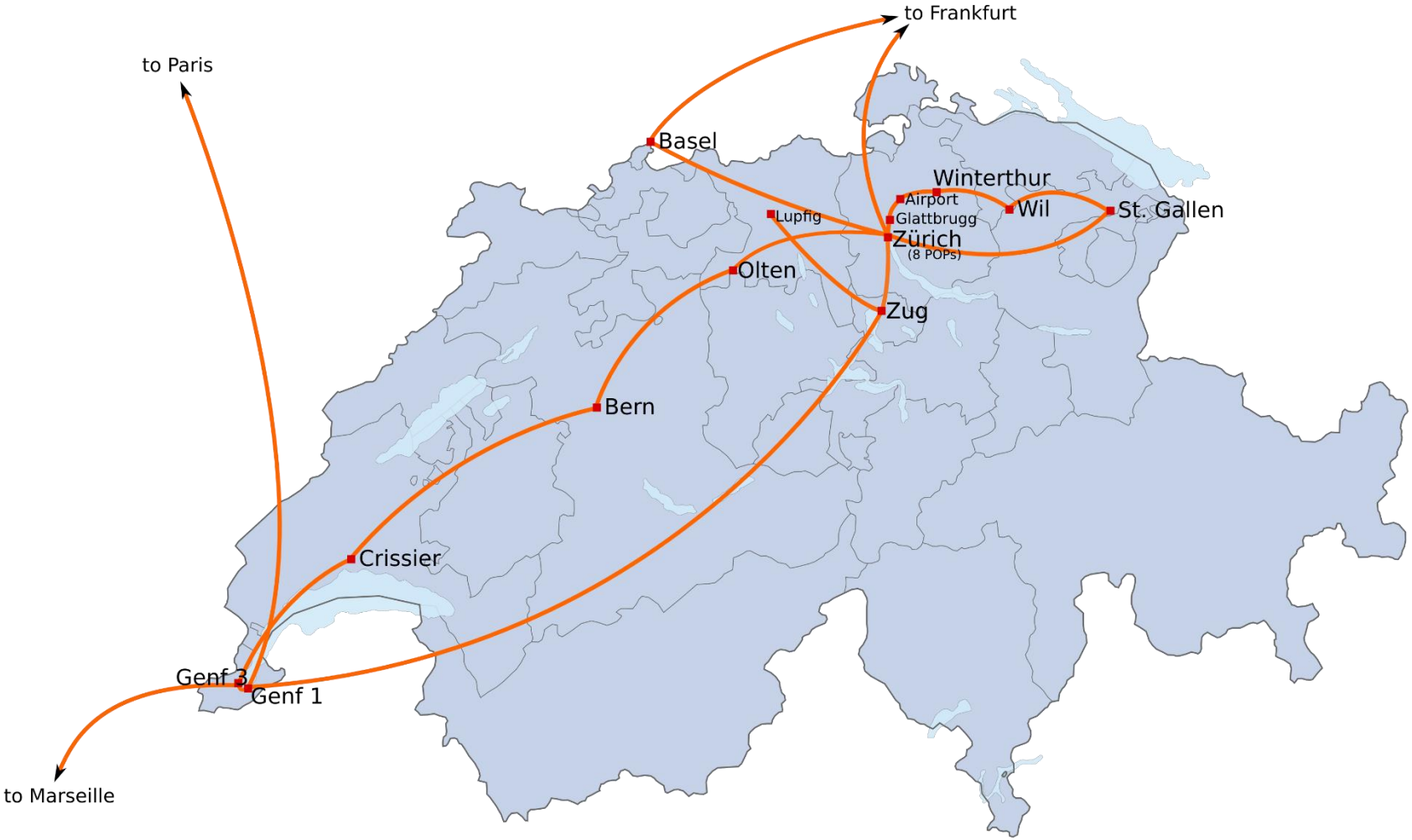
Facts

- Init7 betreibt den internationalen n*10Gbit IP Backbone mit der AS-Nummer 13030 (Autonomes System)
- Das AS13030 ist an ca. 20 Internet Exchanges angeschlossen
- Fast 1000 weitere Netze sind sogenannte Peering-Partner: mit deren Netzen bestehen direkte Interkonnektionen
- Mit über 40 Peering-Partnern bestehen dedizierte Peerings (sogenannte PNI), was die Qualität weiter erhöht
- Dies ermöglicht es, ca. 63% der globalen Routing-Tabelle direkt zu erreichen und damit optimale Konnektivität, Latenz, Durchsatz und Erreichbarkeit sicherzustellen
- Ca. 37% der Ziele sind über global verteilte Upstreams angeschlossen

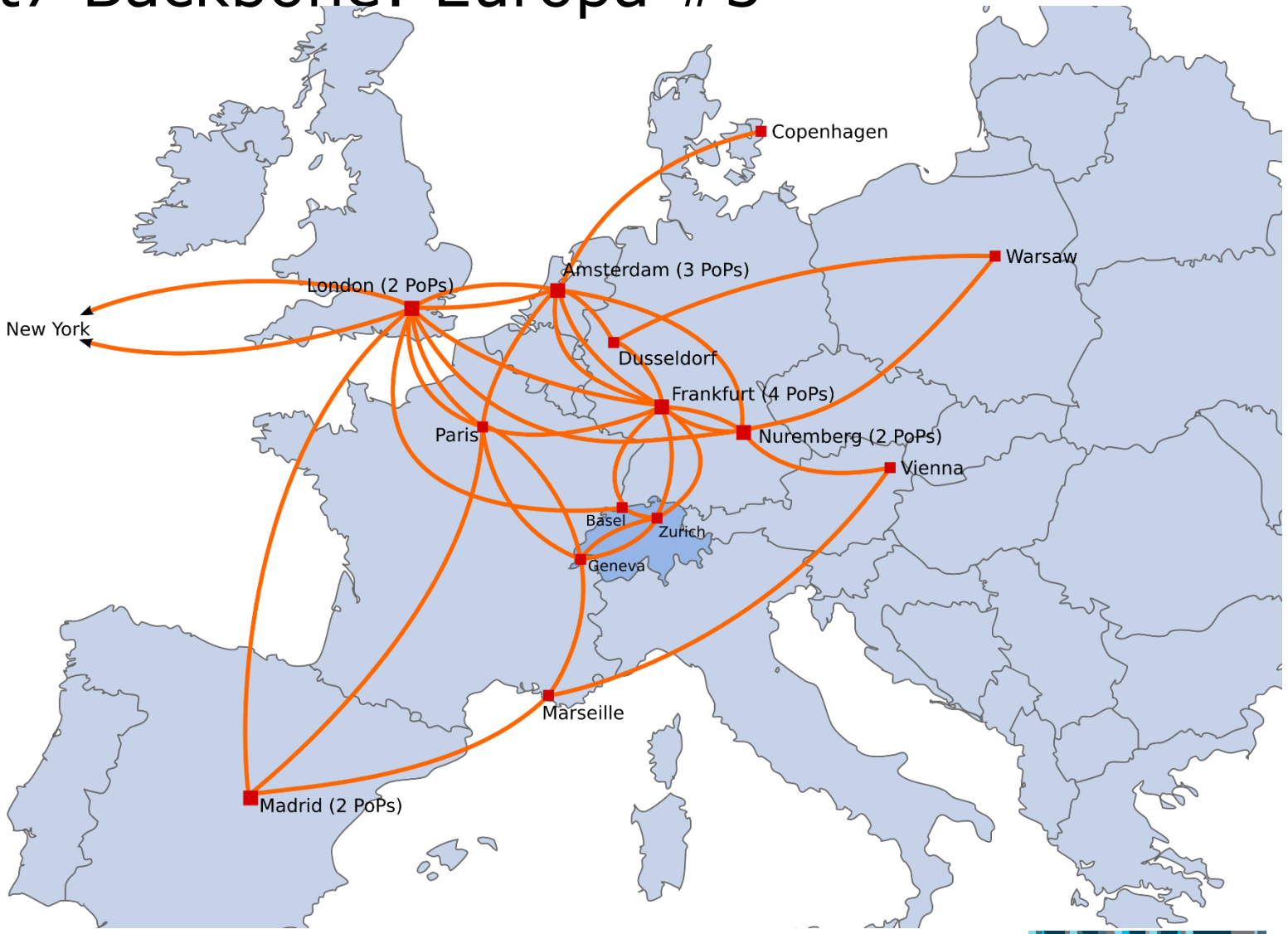
Vorteile

- Volle Kontrolle über Qualität unseres IP Transit Services
- Unabhängigkeit von Lieferanten
- Kosteneffizient skalierbare Kapazität

Init7 Backbone: Schweiz #2



Init7 Backbone: Europa #3



Init7 Backbone: USA #4

Kontakt

Kontakt

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Fiber7. No Limits.
Gigabit-Internet for residentials

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Residential Broadband in Switzerland #1

xDSL / DOCSIS:

- ADSL / VDSL: national incumbent (AS3303), appx. 1.7 Mio broadband customers
- BBCS (Broadband Connectivity Service): alternative operators use the incumbents infrastructure (L2TP). Appx. 140000 Sunrise + likely less than 100000 others, declining.
- Cable-Operators: DOCSIS 3 – regional monopolies, mostly dominated by UPC Cablecom (AS6830) appx. 700000 internet customers, 2nd largest is Quickline (AS15600)

Residential Broadband in Switzerland #2

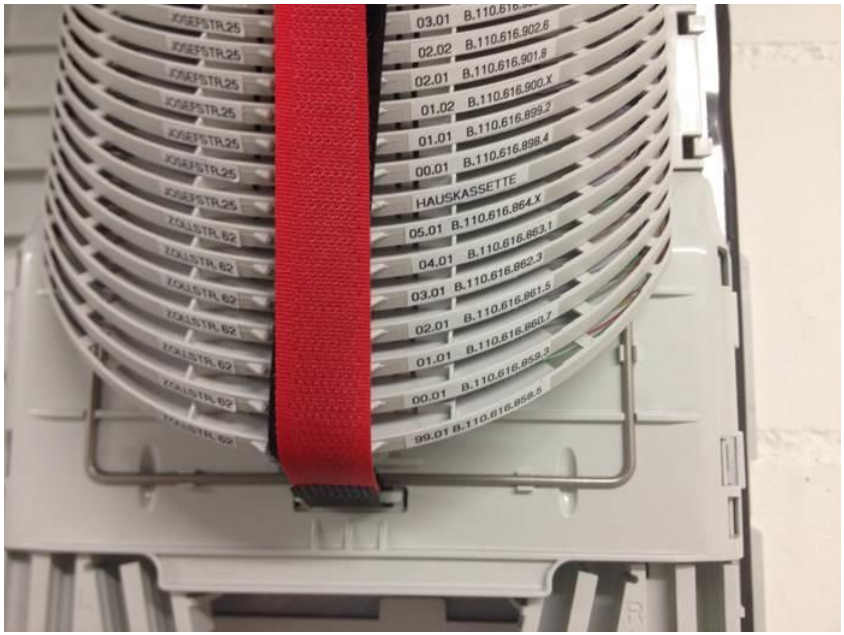
xDSL / DOCSIS

- Biggest alternative operator: Sunrise (AS6730), mostly based on unbundled copper (ADSL2+) (160000 customers). Sunrise is currently migrating unbundled copper customers towards BBCS (!)
- National incumbent started to roll out vectoring DSL technology in some areas to reduce the competition disadvantage against DOCSIS

Residential Broadband in Switzerland #3

FTTH

- Fiber rollout happing on a large scale (today: 800000 households connected, estimate for 2018: 2 Mio)



Note: 800000 households are BEP-Ready (Building Entry Point)

Residential Broadband in Switzerland #4

FTTH

3 Models of Fiber rollout:

- Larger cities: cooperation among the national incumbent and the local energy provider (utility)
- Some smaller cities: national incumbent builds fiber alone
- Competition model: national incumbent and local network build fiber uncoordinated (i.e. Glattwerk)

Residential Broadband in Switzerland #5

FTTH

Fiber rollout of the utilities (which belong to the public) was subject of public voting in several cities:

- Winterthur: CHF 67 Mio (2012, 80% YES, Population 107k)
- St. Gallen: CHF 78 Mio (2010, 82% YES, Pop 75k)
- Zürich: CHF 200 Mio (2007, 64% YES) + CHF 400 Mio (2012, 64% YES, Pop 402k)

Residential Broadband in Switzerland #6

FTTH

Fiber rollout: well established standard rules, which were defined by a round-table around 2008.

Partners of this roundtable were the national incumbent, several utilities and other stakeholders, and it was moderated by the Swiss regulator BAKOM.

Now we earn the fruits of this early effort as almost every Fiber wall plug (OTO Optical Telecommunication Outlet) looks the same!

Residential Broadband in Switzerland #7

FTTH

- FTTH: in most larger cities (all except Basel) the utility operates a FTTH layer-2 platform, with restricted wholesale offerings (10/10, 20/20, 30/30Mbps etc.)
- The FTTH platforms are often used by more than 10 competing service providers
- Everyone offers similar products with similar pricing – sometimes more than 100 options – way too much!
- Not really competitive against DOCSIS offerings (except symmetrical bandwidth)

Fiber7. The Product #1

FTTH – new ideas

- Init7 jumped onto the Glasfaser-bandwagon of some utilities and offered FTTH in Zurich, Winterthur and St. Gallen, starting with symmetric bandwidth from appx. 2012 based on the Layer-2 service. Sale results were poor (few hundred customers only), because the wholesale product is crippled (not really competitive against DOCSIS).

- While we managed to compensate the xDSL churn with FTTH, we never were happy with the product itself (limited flexibility, me-too, some additional technical constraints)

Fiber7. The Product #2

The fiber is there – let‘s use it!

- While most alternative providers just purchase lit fiber with aggregation (Layer-2 service of the utilities or BBCS-F of the incumbent, which is even more crippled), unlit fiber is available too.

- The unlit fiber is called
  ALO (Access line optical – incumbents terminology)
  FLL (Fibre local loop – utilities terminology)
  and is a commercial product!
  (unlike the unbundled copper which is regulated)

Fiber7. The Product #3

Fiber7. No Limits.

FIBER7

- Based on the opportunity to access the unlit fiber (ALO/FLL) we created Fiber7.
- Considering the broadband market, the possession of a decent IP backbone and existing resources as RIPE LIR, DHCP/DNS servers and experience we designed Fiber7 as a unlimited Gigabit-Ethernet internet service.

Fiber7. The Product #4

The fiber is there – let‘s use it!

- While the ALO / FLL (unlit fiber from the central office to the customer) is a commercial product (the incumbent tries to avoid regulation as good as he can), an alternative operator has to buy the regulated KOL (colocation in the central office / Telefonzentrale) to access the ALO / FLL.

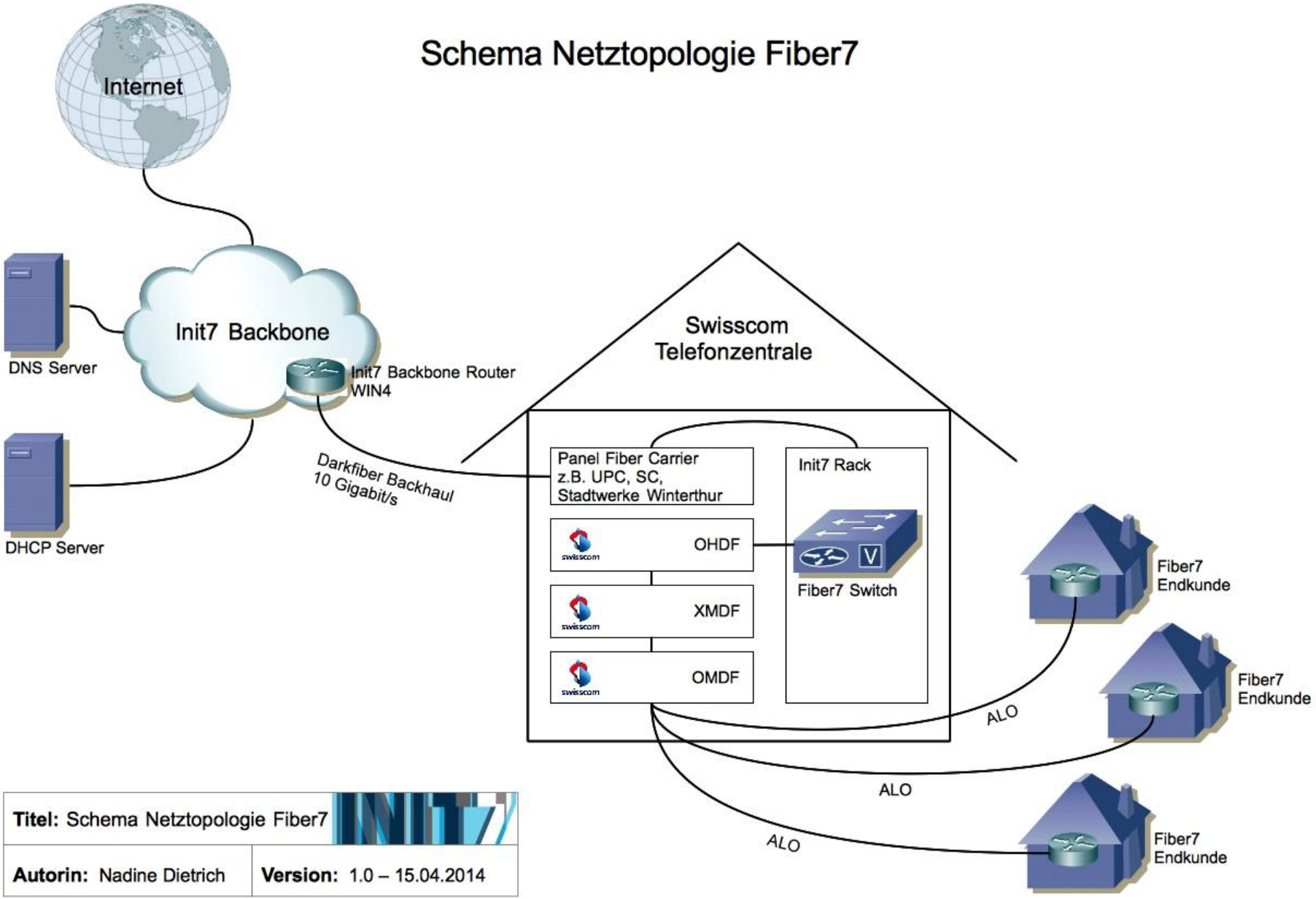
- Init7 had zero KOL pops by beginning of 2014, as we never entered the unbundled copper market (copper regulation was late – April 2007).

Fiber7. The Product #5

The fibre is there – let‘s use it!

- This means: Fiber7 is a greenfield operation. No copper/DSL legacy to be taken into consideration.
- But: every Fiber7 pop in a central office has to be built from scratch – and as KOL is regulated, it’s really really really really really painful and slow (tentatively 4 month time to build a Fiber7 pop).
- So far we have 27 Fiber7 pops live, by the end of 2014 we’re growing to 31 – that’s more than one per week **(…YES WE ARE PROUD)**

Schema Netztopologie Fiber7



Titel: Schema Netztopologie Fiber7	
Autorin: Nadine Dietrich	**Version:** 1.0 – 15.04.2014

Fiber7. The Product #6

Fiber7. No Limits.

FIBER7

- It‘s simple: only one bandwidth profile: symmetrical Gigabit.
- No technical or administrative perception, just a specification, every customer can use the router he likes
- IPv6 per default enabled
- optional Geek-Features (one or more fixed IPv4)

Fiber7. The Product #7

Fiber7. No Limits.

FIBER7

- Disruptive price tag: CHF 777 /y (CHF 64.75 ~ €53 / mt).
- Why so cheap? The broadband market is saturated, no one changes his setup for just a few CHF/€ savings. The value-for-money must be considerably better, not just a few %.

Fiber7. Technical Background #1

Fiber7. No Limits.

FIBER7

- Gigabit-Ethernet (not GPON – not common in Switzerland)
- Cisco 4510e switches with one/two… linecards as needed
- BiDi Optics from Flexoptix
- every Fiber7 pop has 10gig backhaul (some cascaded)
- Centralized DHCP/DHCPv6 and DNS servers

… everything pretty much straight forward – no challenge!

Fiber7. Technical Background #2

Fiber7. No Limits.

FIBER7

- Default Cisco 4510e port config

```
interface GigabitEthernet1/1
 description empty
 switchport private-vlan host-association 6 7
 switchport mode private-vlan host
 switchport port-security maximum 5
 switchport port-security
 ip arp inspection limit rate 25
 spanning-tree portfast
 spanning-tree bpdufilter enable
 spanning-tree bpduguard enable
 ip verify source vlan dhcp-snooping port-security
 ip dhcp snooping limit rate 25
 ip dhcp snooping vlan 7 information option format-type circuit-id string empty
end
```

Fiber7. Technical Background #3

Fiber7. No Limits.

- Main issue: no decent CPE available on the market
- everything in one box: SFP slot, Routing/NAT, IPv6 with DHCPv6-PD (prefix delegation) WiFi 802.11ac, at least a 5-port Gigabit Switch and wire speed routing / switching for a consumer price (<= €150) is not existing as of now

Fiber7. Technical Background #4

Fiber7. No Limits.

FIBER7

- The recommended all-in-one box of Mikrotik (RB2011UiAS-2HnD-IN) cannot route more than ~400Mbps in day-to-day operations
- Most speedtest servers are way too slow: causes a lot of questions (most people believe that Gigabit is actually 1000Mbps – its not!)

Fiber7. Technical Background #5

Fiber7. No Limits.

FIBER7

- We have our own speedtest server with 10gig uplink now. http://init7.speedtest.net/

Fiber7. Launch #1

Fiber7. May 22, 2014

FIBER7

- Press-Release, about 300 media emails
- Twitter @fiber7_ch
- Website: https://www.fiber7.ch/

Fiber7. Launch #2

Fiber7. May 22, 2014

- Thursday 9 a.m. launch.
- 2:30 p.m. our webserver breaks down – too many requests after being linked by Hacker-News. We allocated more memory and were able to bring the website back within 10 minutes.

Fiber7. After 6 months. #1

Fiber7. No Limits.

FIBER7

- 27 Fiber7 pops live
- 31 pops until end of 2014

- Sales figures are on track

- (little) marketing campaign started only these days

Fiber7. After 6 months. #2

Fiber7. No Limits.

FIBER7

Issues / Learning points:

- Our own CRM was too late and has potential
- Provisioning systems of suppliers are rather beta / alpha (PowerGate and ALEX)
- Service Fullfilment: huge quality issues, way too many trouble tickets – lot of unnecessary effort

Fiber7. After 6 months. #3

Fiber7. No Limits.

FIBER7

Market reaction:

- Almost none (!)
- Two copycats, but rather an act of desperation than a well thought product launch

Fiber7. After 6 months. #4

Fiber7. No Limits.

FIBER7

Bandwidth usage per user:

- Average bandwidth (24/7): 1.11 Mbps In / 0.84Mbps Out
- Peak bandwidth: 3.25 Mbps In / 2.09Mbps Out

Fiber7. Q & A.

Fiber7. No Limits.

FIBER7

- Questions?
- Comments?
- Rants?

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