



Peering with the Incumbent.

#DENOG12 – November 9, 2020

Init7



About Init7

Init7

Init7

Founded January 2000, Init7 is one of the last remaining independent ISPs in Switzerland  with its offices in the city of Winterthur.

January 2000						
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31						



Peter elektro, CC BY-SA 3.0, via Wikimedia Commons

Init7 - 2013

~50% revenue with IP wholesale – own IP backbone AS13030, massive peering, outbound heavy traffic ratio

~40% revenue with business customers

Only 12% revenue with residential customers using mostly BBCS for DSL services =~ Layer 3 BSA in 

December 2013						
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Init7 - 2014

May 22, 2014:

- Redefinition of the broadband market in Switzerland 
- Launch of Fiber7 - symmetric Gigabit Internet for a disruptive price - CHF 777 per year (CHF 64.75/month)
- **Fiber7 is not broken.** No CGN, fixed /48 IPv6, Multicast TV, free choice of router, SPEEEEEEEED, Peeeeeering...

May 2014						
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Init7 - today

~80% revenue with residential customers

~10% revenue with business customers

~10% revenue with wholesale (mostly eyeballs)

November 2020						
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The traffic of AS13030 experienced **a metamorphosis from Outbound Heavy to Inbound Heavy** in the past years.

[Marketing Slide]

Bilanz Telecom Rating
Winner 2018 / 2019 / 2020 Category
«Best Internet Provider Residential Customers»



Anbieter	Rang 2020	Rang 2019	MARKETS TELEKOM-RATING 2020					
			Total	Qualität	Innovation	Punkte Preis	Flexibilität	Support
Mobiltelefonie	1	1	Net+	24,3	4,7	4,6	4,8	5,1
	2	2	- Digitec Connect	24,1	4,5	4,2	5,4	5,1
	3	3	Quickline	24,0	4,7	4,3	5,0	4,8
	4	4	Wingo	23,1	4,5	4,1	5,2	5,0
	5	5	Coop Mobile	23,0	4,5	3,9	5,1	4,9
	6	6	M-Budget	22,9	4,5	3,9	5,1	4,8
	7	7	Sunrise	22,4	4,4	4,0	4,6	4,7
	8	8	Aldi	21,4	4,4	3,4	5,0	4,6
	9	9	Yallo	20,8	4,2	3,6	5,0	4,4
	10	10	Salt	20,7	4,1	3,7	4,6	4,3
	11	11	UPC	20,0	4,1	3,6	4,6	4,2
			Swisscom	4,0	3,5	4,1	4,3	4,2
Internet Access	Init7	Teleboy	24,8	5,0	4,1	5,3	5,3	5,1
		Green.ch	24,0	4,9	4,3	5,1	4,9	4,9
		Vay	23,9	4,7	4,0	5,0	5,1	5,1
		hand.ch	23,8	4,7	4,1	5,0	5,1	5,1
			23,7	4,6	4,1	5,0	5,1	5,0
			23,6	4,6	4,3	5,3	5,0	5,0
			23,5	4,8	4,3	5,1	4,8	4,6
			23,3	4,6	4,0	4,8	4,9	4,8
			22,9	4,6	4,2	4,8	4,9	4,8
			22,8	4,4	3,9	4,8	4,8	4,8
			22,5	4,3	4,0	5,0	4,8	4,9
			21,0	4,4	4,0	5,1	4,8	4,7
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Init7



Peering with the Incumbent?!

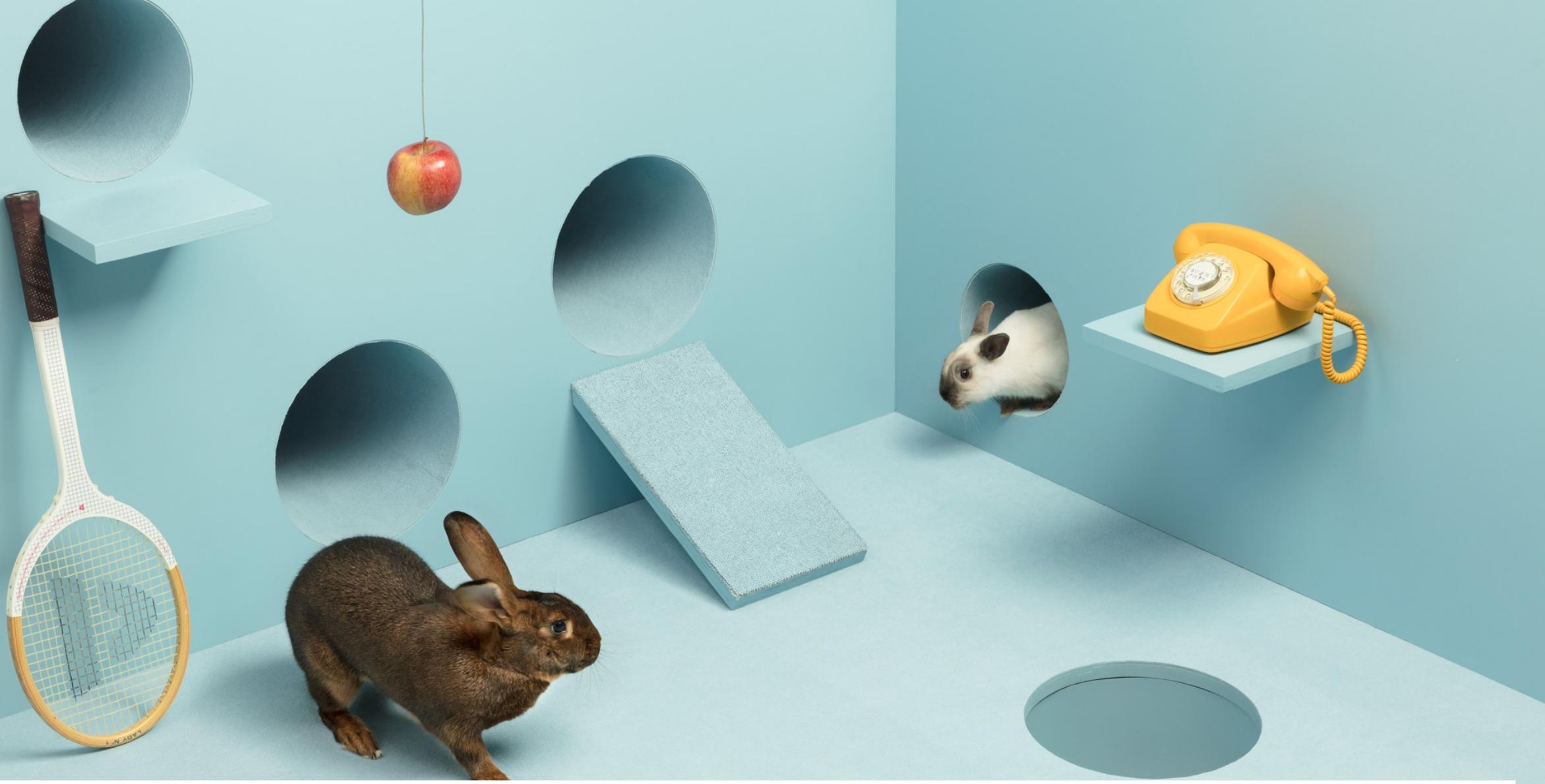
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No.



Thank you...

Init7



Seriously. Incumbent Peering?

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Incumbent in Switzerland



- Telecom Liberalization: January 1998
- former PTT (Post Telefon Telegraf) becomes Swisscom
- Main Shareholder (51%): Swiss Confederation
- Stock Market: SCMN (SWX)
- Market Share Broadband (2019): 56,4%
- Market Share Mobile (2019): 50,9%

Incumbent in Switzerland



HURRICANE ELECTRIC
INTERNET SERVICES

 Search

AS3303 Swisscom (Schweiz) AG

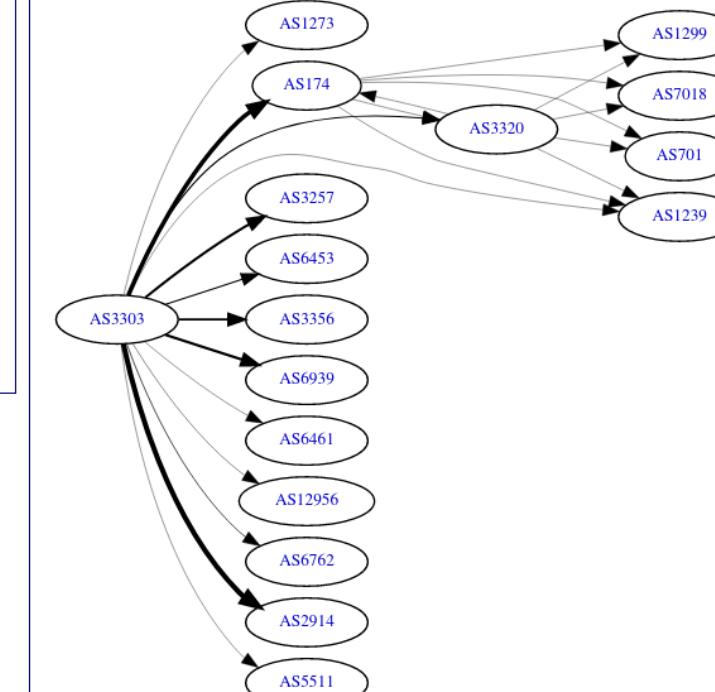
Quick Links

- [BGP Toolkit Home](#)
- [BGP Prefix Report](#)
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AS3303 IPv4 Route Propagation



Updated 06 Nov 2020 13:49 PST © 2020 Hurricane Electric

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- Swisscom operates AS3303, which contains their residential customer and also their mobile customers
- AS3303 peers with most large eyeball networks
- Single IP transit carrier *): Deutsche Telekom AS3320

*) may not be valid for all their prefixes

Peering Policy of AS3303

Version ~2008/~2012: a «selective» policy

- Requirements: geographic size of network (at least half of the size of Swisscom), amount of traffic, some usual stuff 

- advertised IP space: at least a /11 IPv4 aggregated  (discriminates content heavy networks)

January 2012						
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https://www.swisscom.ch/content/dam/swisscom/de/ws/documents/d-ott-dokumente/20181105_swisscom-peering-policy.pdf

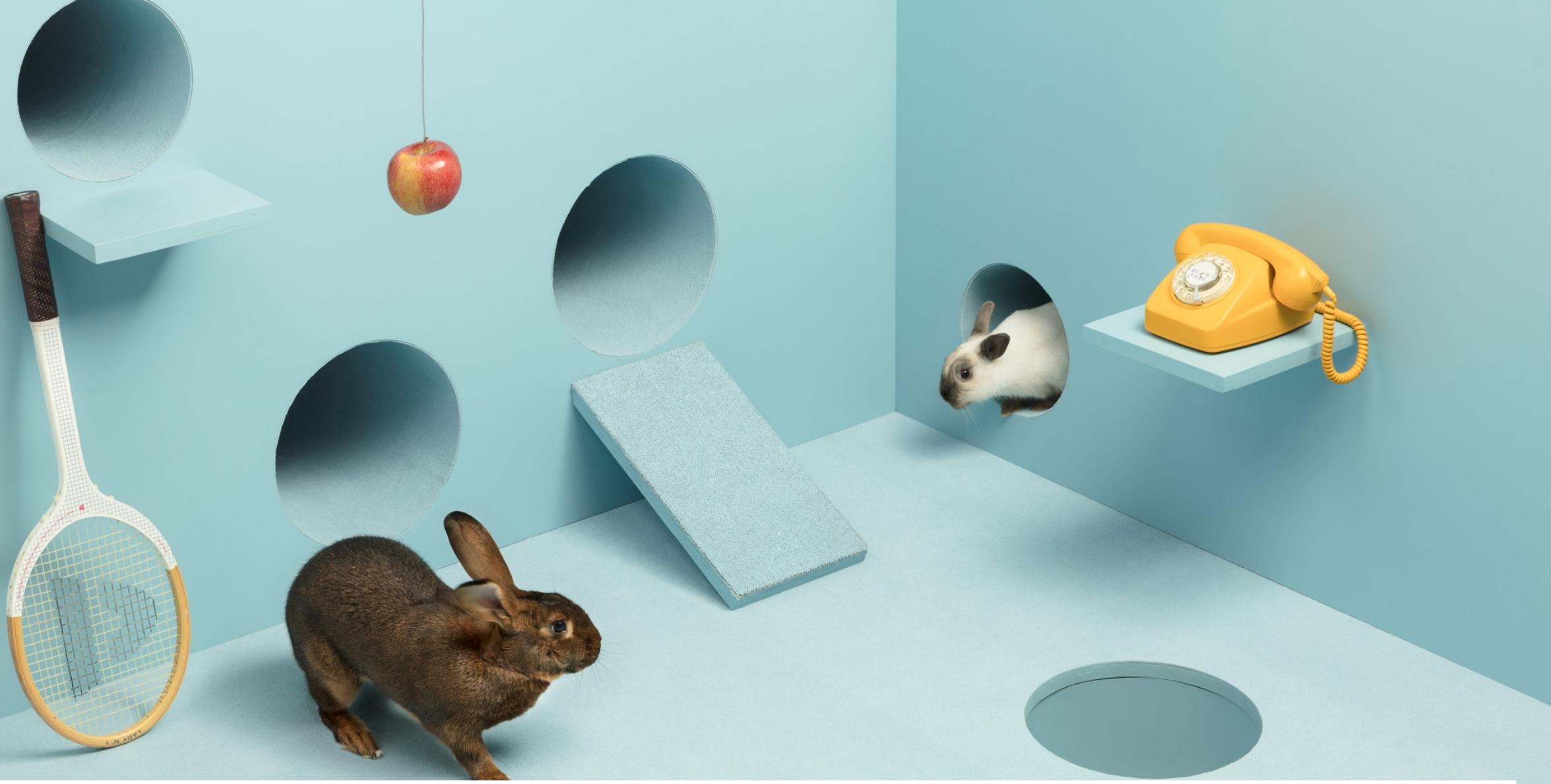
Peering Policy of AS3303

- Traffic ratio (inbound/outbound) **shall be roughly balanced and shall not exceed 2:1** X

(again, discriminates content heavy networks and reverses the causation principle)

- differentiation between **national and international peers** X

January 2012						
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The long way to peer Swisscom **Init7**

The long way to peer Swisscom (1)

- can't tell the exact story anymore... my first attempts to peer Swisscom probably started around 2002 or 2003...
- tried many of the methods described in the whitepaper of Bill Norton: «**The Art of Peering**» 😇

<http://drpeering.net/white-papers/Art-Of-Peering-The-Peering-Playbook.html>

- around 2007 (according to my email history) I started to involve lawyers as Swisscom did not give in 🙄

The long way to peer Swisscom (2)

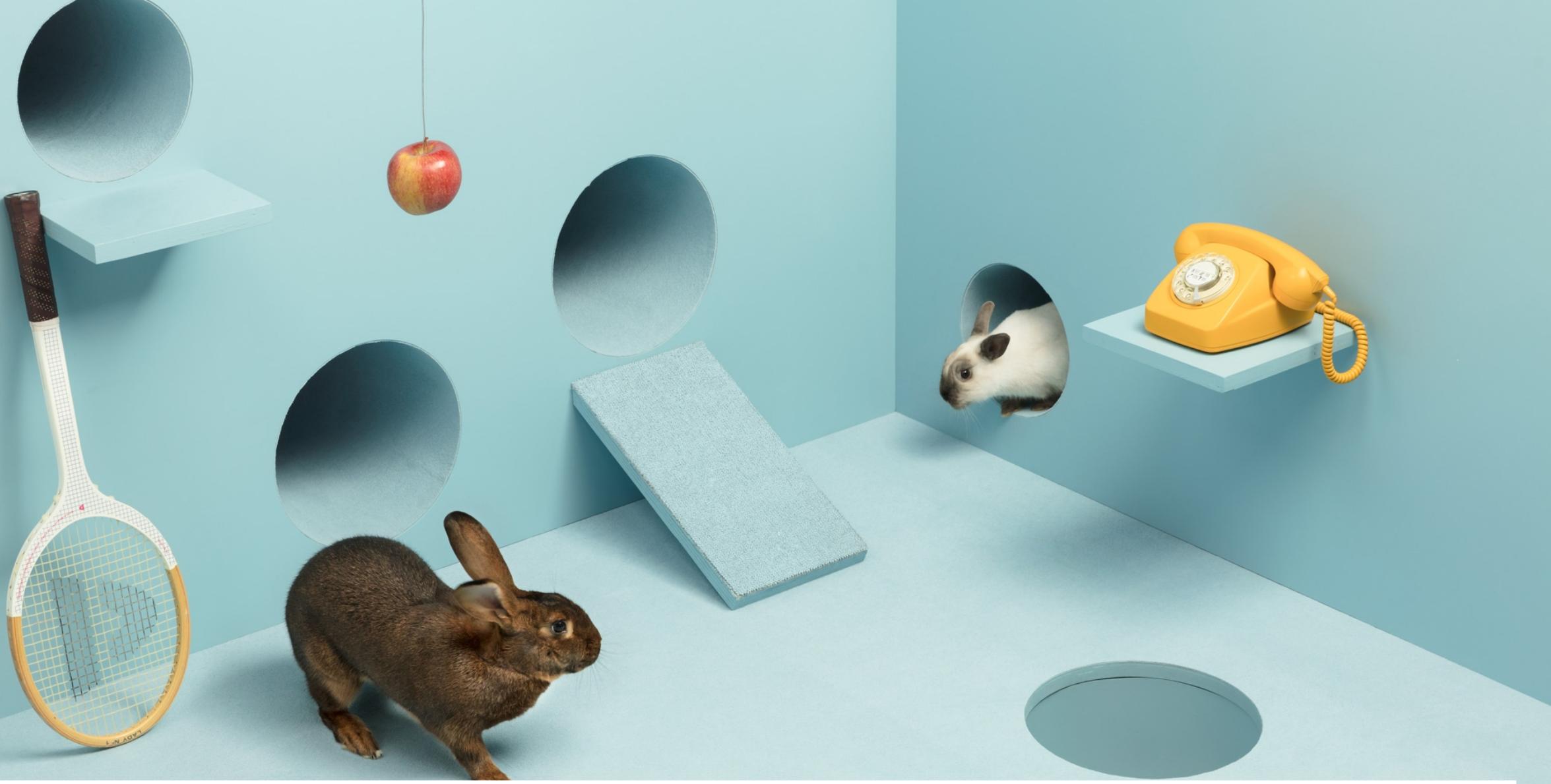
- as Init7 wholesale customer base was growing, we aggregated the required /11 over time 
- backbone expansion was also on a good way to reach at least half of the size of AS3303 
- national peers were required to peer in Zurich and Geneva – so we expanded the backbone to CERN... 



The long way to peer Swisscom (3)

- after all, 2011 Init7 achieved its goal to become a zero-settlement-peer of Swisscom AS3303 – they called it initially „Test Peering“ 
- two 10Gig PNI, one in Zurich (Equinix), one in Geneva (CERN)
- at the time we were transiting a lot of Zattoo AS8302 IP-TV traffic
- Traffic ratio was of course way beyond 2:1 but nevertheless accepted 

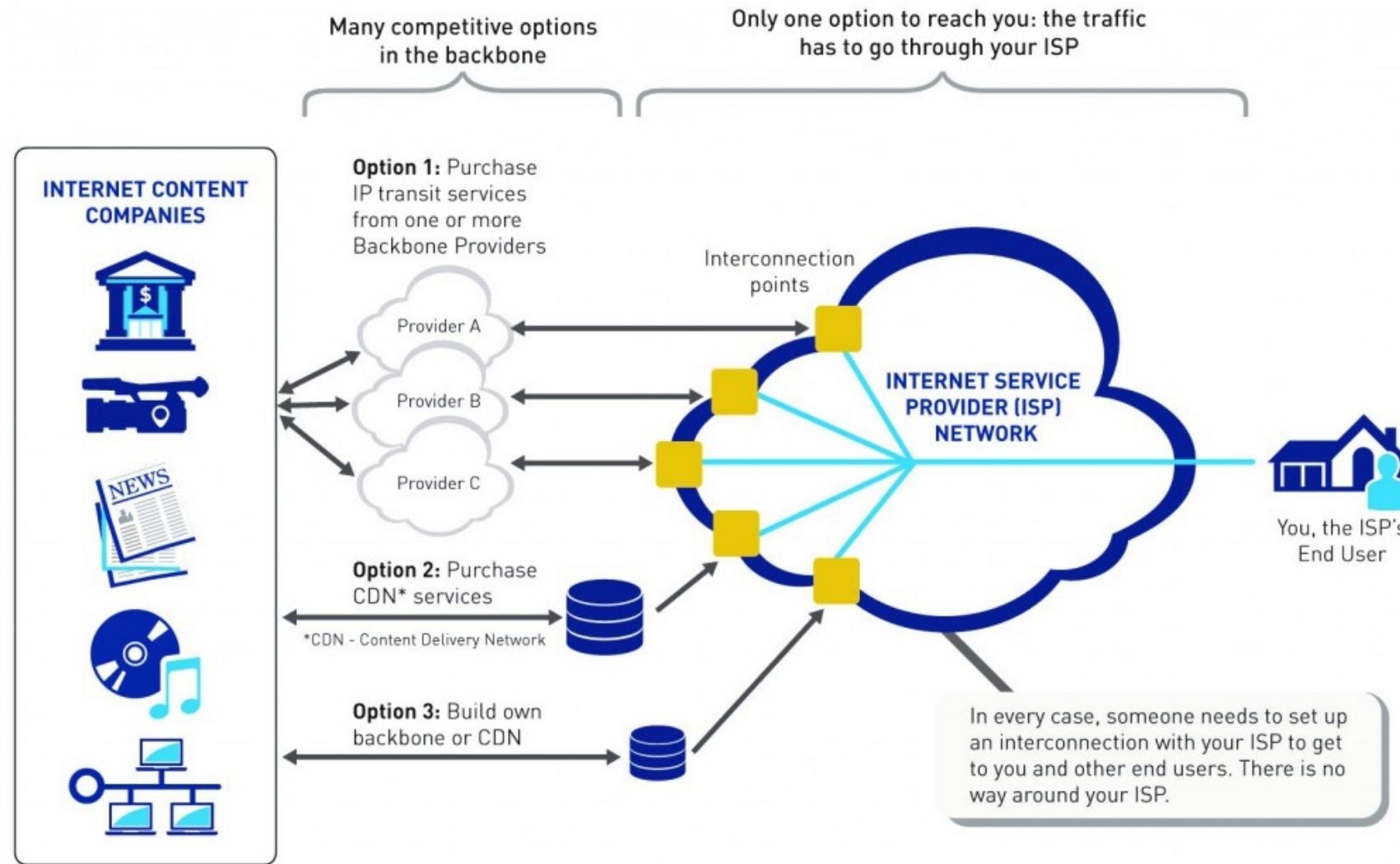
May 2011						
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23	24	25	26	27	28	29
30	31					



Broadband Monopoly

Init7

ISPs monopolize their customers





Pay or die!

Init7

Pay or die!



- Summer 2012: Swisscom announces that they are going to cancel the newly achieved peering contract by July 31, 2012
- New contract to be signed by Init7: any traffic exceeding the ratio of 2:1 will be charged by CHF 3.00 (€2.48) per Mbps. A price was beyond transit.
- Init7 did not sign. Quote:
«You are going to hear from us in a suitable way.»

July 2012						
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30	31					

Hoi [REDACTED]

Am 13.07.2012 15:52, schrieb [REDACTED]

per 30.07.2012 läuft unsere bestehende Peering Vereinbarung aus. Können wir mit der Unterzeichnung des neuen Vertrages bis zum 29.07.2012 rechnen?

Das ist bei uns noch in Arbeit, ihr werdet in geeigneter Weise von uns hören.

Gruss,

--
Freddy Künzler



Sueing Swisscom, Round 1

Init7

Sueing Swisscom #1



- Instead of signing the very unfortunate peering contract, we sued Swisscom for abusing their market power (further referred as „Competition Case #1“)
- Decision after a few months by **Handelsgericht Bern**: «**we are not in charge, peering is a question of regulation!**» – Init7 lost, wrong way. 
- While the case was ongoing, the peering remained up as a provisional measure. At the same time we tried to negotiate with Swisscom, but... no positive surprise, though. 

Empire strikes back

- After we lost at court, Swisscom rate-limited existing 2* 10Gig PNI Peering to 2* 1Gig **without announcing it!** X
- Reason for doing this was mainly **to force Zattoo** AS8302 and another TV-Streaming customer to sign a paid peering contract for a much higher rate they paid us before. To my knowledge, eight years later, they are still locked in into this contract.
- Besides, Swisscom was preparing something which I couldn't imagine then...





Sueing Swisscom, Round 2

Init7

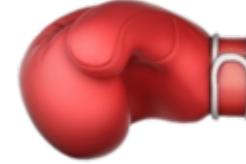
Sueing Swisscom #2



- We appealed at **Bundesgericht** (highest court) but lost again in summer 2013. While everyone can say that the De-Peering is a matter of market power abuse, the court showed us the way «**ask the regulator to get it fixed**». →
- While the Competition Case #1 was still pending at Bundesgericht, we started round #2, going to the regulator **Federal Communications Commission (ComCom)** *) and again requesting the precautionary measure that Swisscom must keep the existing peerings alive.

*) Note that some tasks of ComCom are fulfilled by BAKOM (Federal Office of Communications (OFCOM)).

Sueing Swisscom #2



- Further I call this „Regulatory Case“, which is divided into „Precautionary“ and „Main“. (German: Zugangsverfahren).
- While **ComCom** wasn't really amused about the case (**«the market should regulate peering»**), they nevertheless granted the precautionary measure. Swisscom had to re-establish the full 2* 10gig PNI capacity. A green checkmark icon inside a rounded square, indicating a positive outcome.
- At least from the perspective of network operations we were safe. Our customers (Zattoo et.al.) buying IP transit capacity for their IP-TV streaming were gone, though.

Sueing Swisscom #2



- Of course Swisscom appealed against the decision of ComCom at the **Bundesverwaltungsgericht**, but they decided in our favour. This was the last instance, Swisscom could not appeal again. 
- Meanwhile, ComCom and BAKOM started working on the Regulatory Case (Main). They involved **WEKO (Competition Commission)** to investigate regarding the market dominance of Swisscom. Some of you may remember their questionnaire which was sent to ~100 Peering market participants across Europe (End of 2014).



The Cartel

Init7

The Cartel

- While WEKO was investigating, they figured **the abusive behaviour of Swisscom (AS3303) and Deutsche Telekom (AS3320)**.
- To enforce their new 2:1 ratio peering policy (which was not only been imposed on us), **Swisscom used their DTAG transit as a leverage.**

The Cartel

- **DTAG paid kickback to Swisscom for harvested paid peering or transit traffic from content networks (!).**
- This fact has been freely admitted to me by Falk von Bornstedt, former Peering Manager of DTAG at Global Peering Forum GPF 10 (Freeport, Bahamas).

April 2015						
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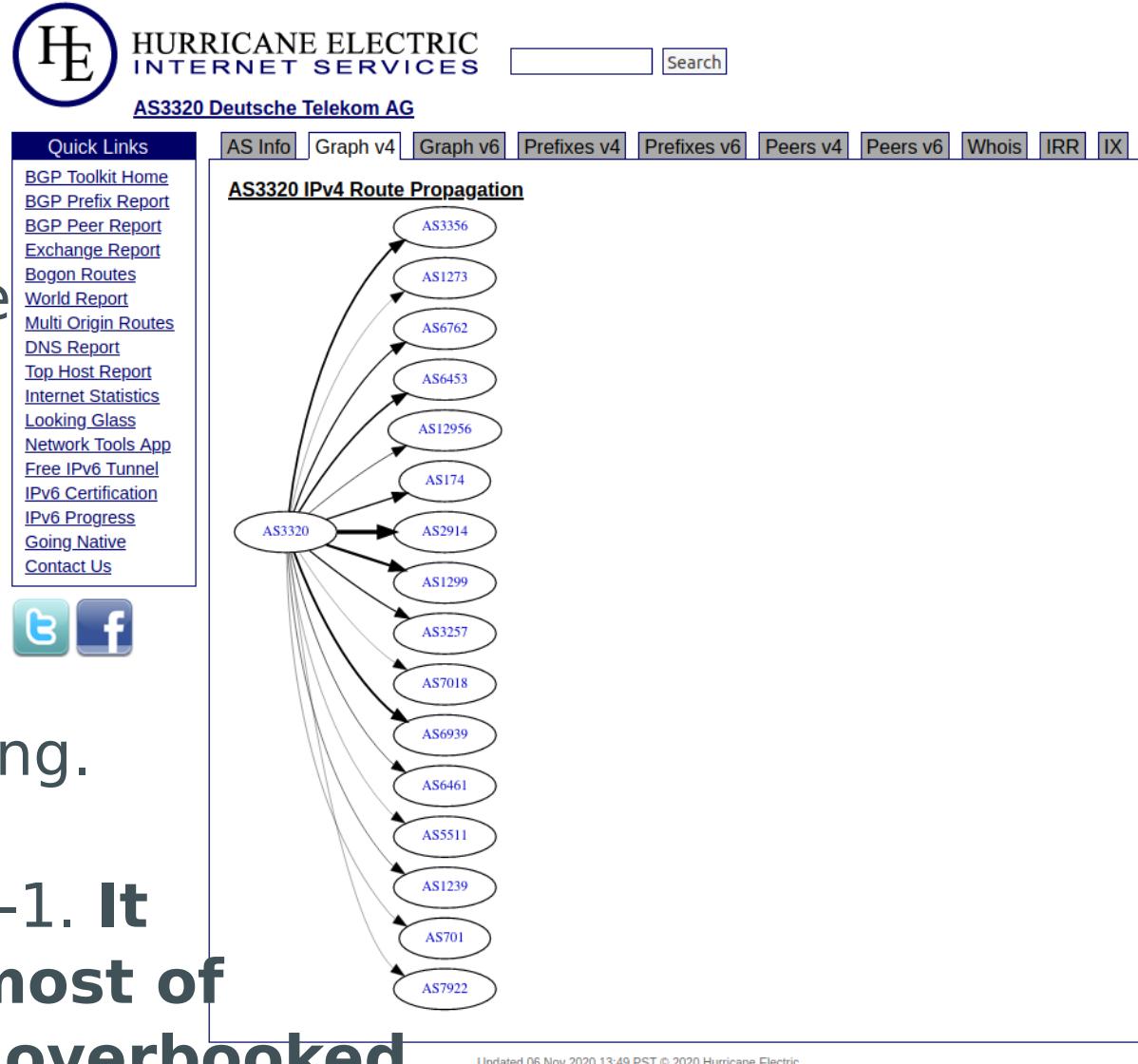


The Cartel

- To understand how the abusive cartel worked we need to see the position of DTAG in the global IP market.

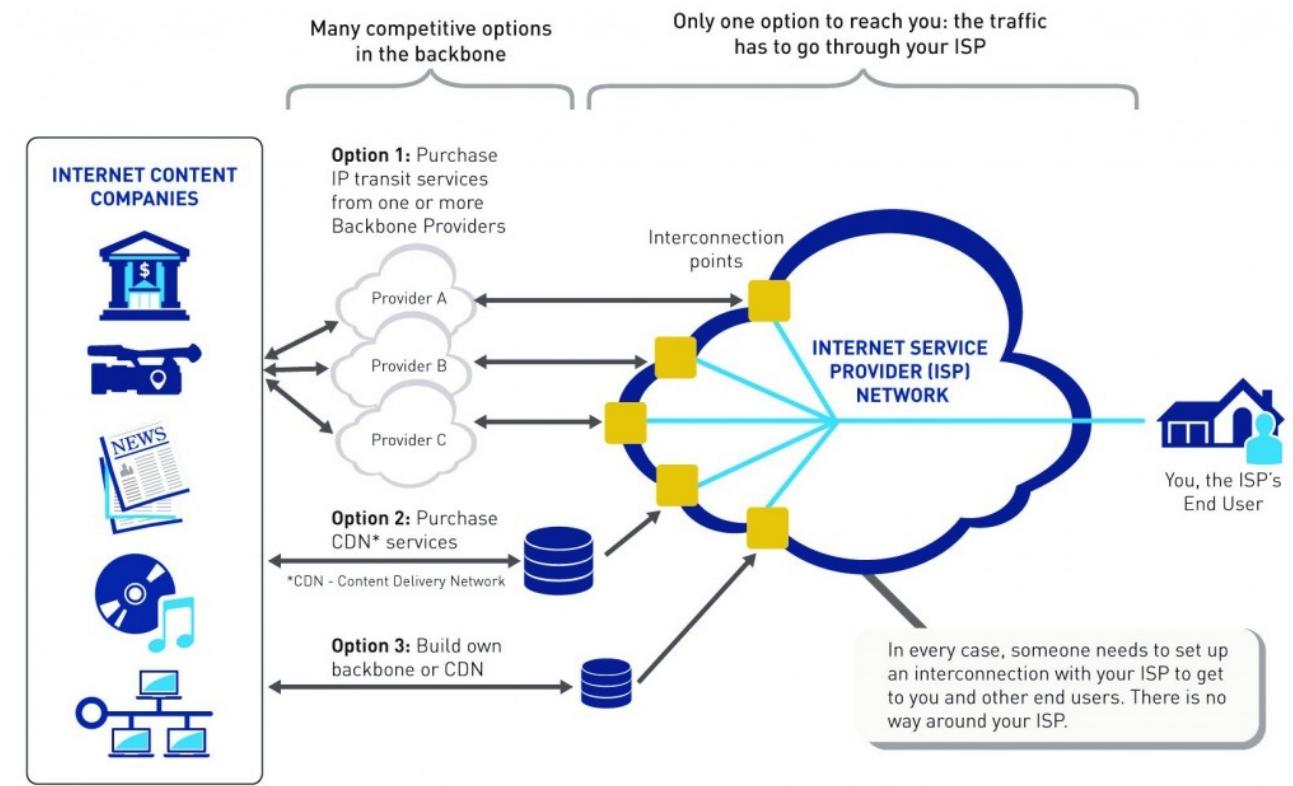
- DTAG AS3320 is a so-called TIER-1 network with 100% peering.

- They peer only with other TIER-1. **It is common knowledge that most of these peerings are massively overbooked.**



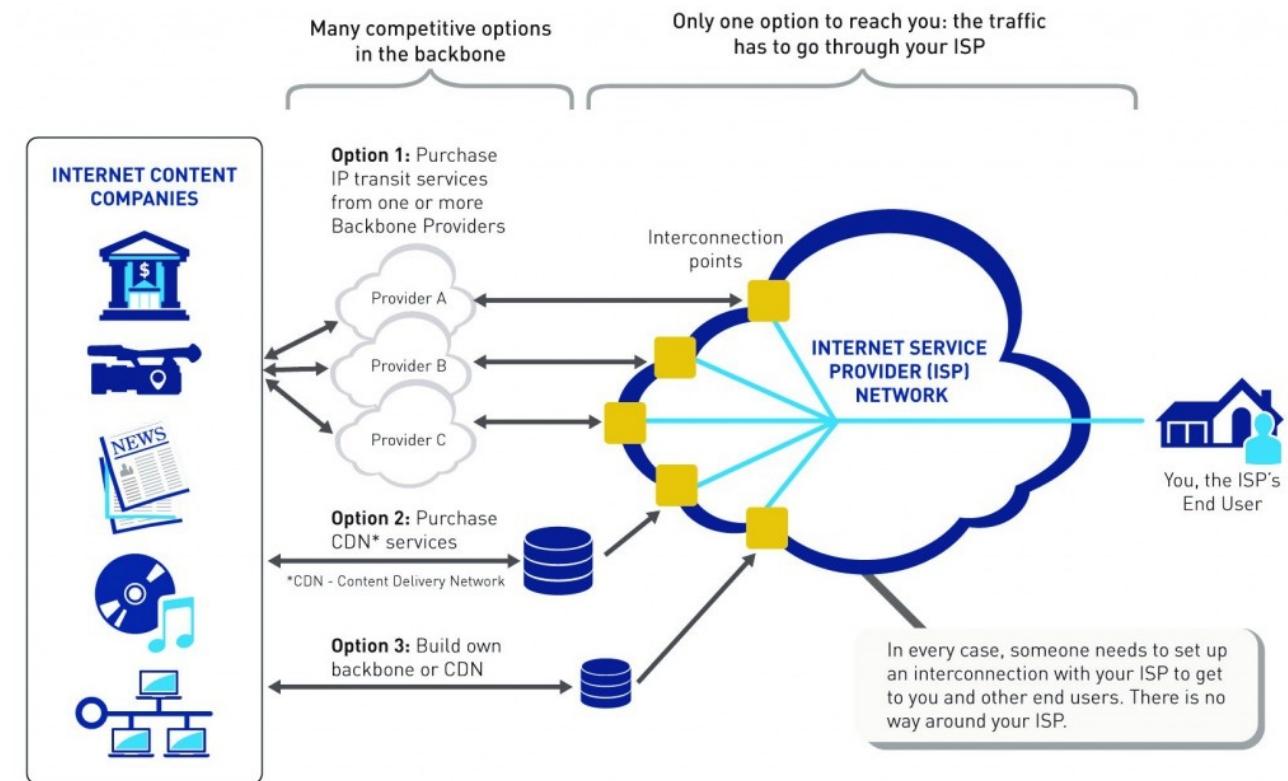
The Cartel

- For a business model such as IP-TV Streaming there is no option to get reasonable capacity into the network of DTAG **except a paid service**, which is very €€€.
- Buying transit (Option 1) doesn't work as the first three yellow dots are overloaded.



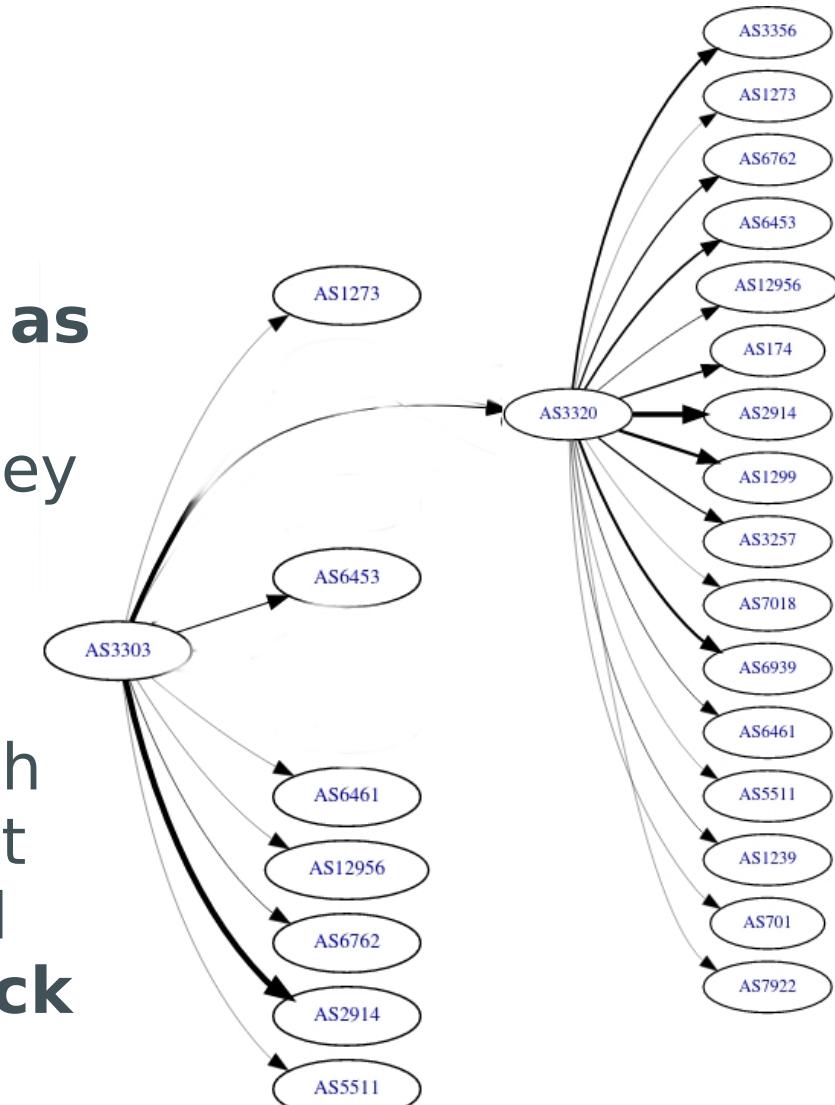
The Cartel

- To summarize: **DTAG was and is able to enforce every content network to pay.**
- I do know that this behavior is meanwhile very common in the industry (Telefonica, Comcast... doing the same), **but it is genuinely wrong.**



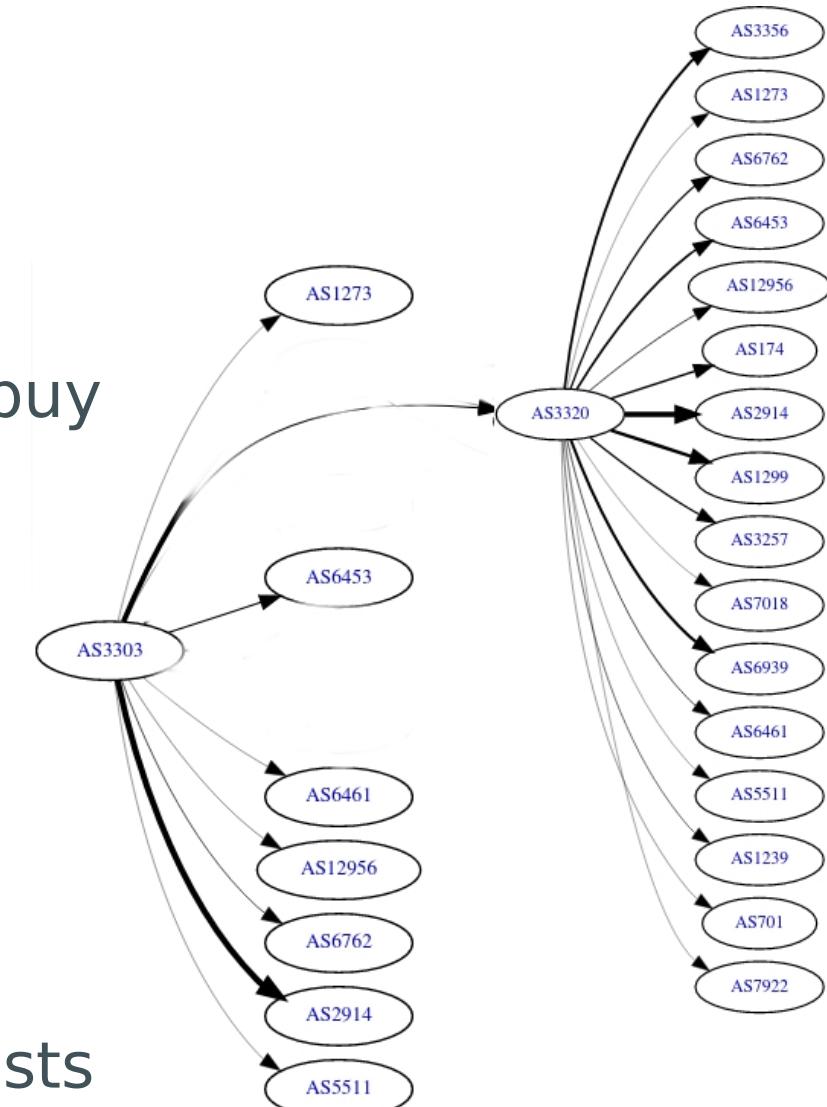
The Cartel

- During the cartel, **Swisscom used DTAG as leverage to enforce their policy.** At the same time DTAG could blackmail more money from content.
- The combined scheme shows how it worked: Swisscom was not peering then with Level3, Cogent and others. No one could not sell quality capacity reaching Swisscom end customers, **because traffic would be stuck in overloaded DTAG peerings.**



The Cartel

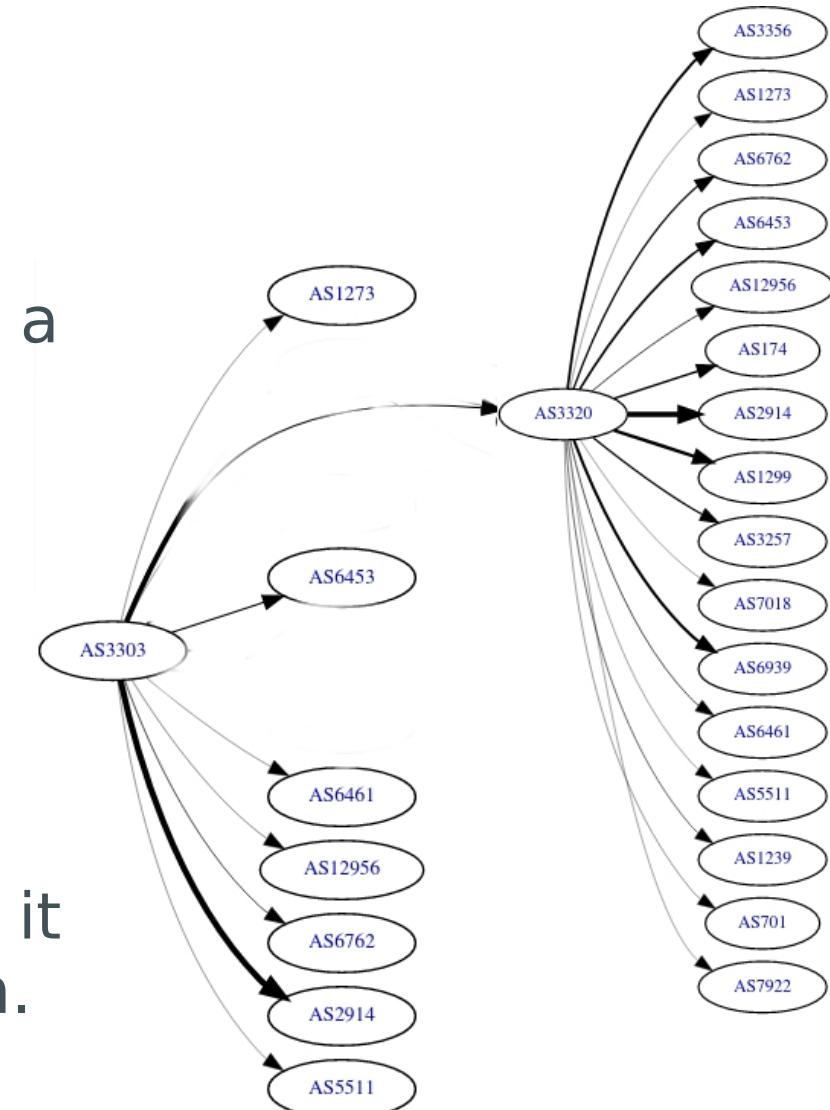
- Content networks which wanted to send traffic to Swisscom end users had either to buy paid peering from Swisscom or buy transit from DTAG. **Either way Swisscom gained money as DTAG paid them kickback.**
- While WEKO investigated our case, they figured the abusive behaviour.
- Antitrust law in Switzerland  is rather weak. If a cartel gets detected, WEKO requests the cartel members to sit at a round table.



The Cartel

- WEKO: Hey Swisscom and DTAG, you have a cartel problem. **Get it fixed.**
- Swisscom & DTAG: Ok, here is our new contract. **The terms and conditions you didn't like have been adjusted.** Are you happy now, WEKO?
- WEKO: Sure, thanks. No problem. Don't do it again, will you? Thanks for your cooperation.

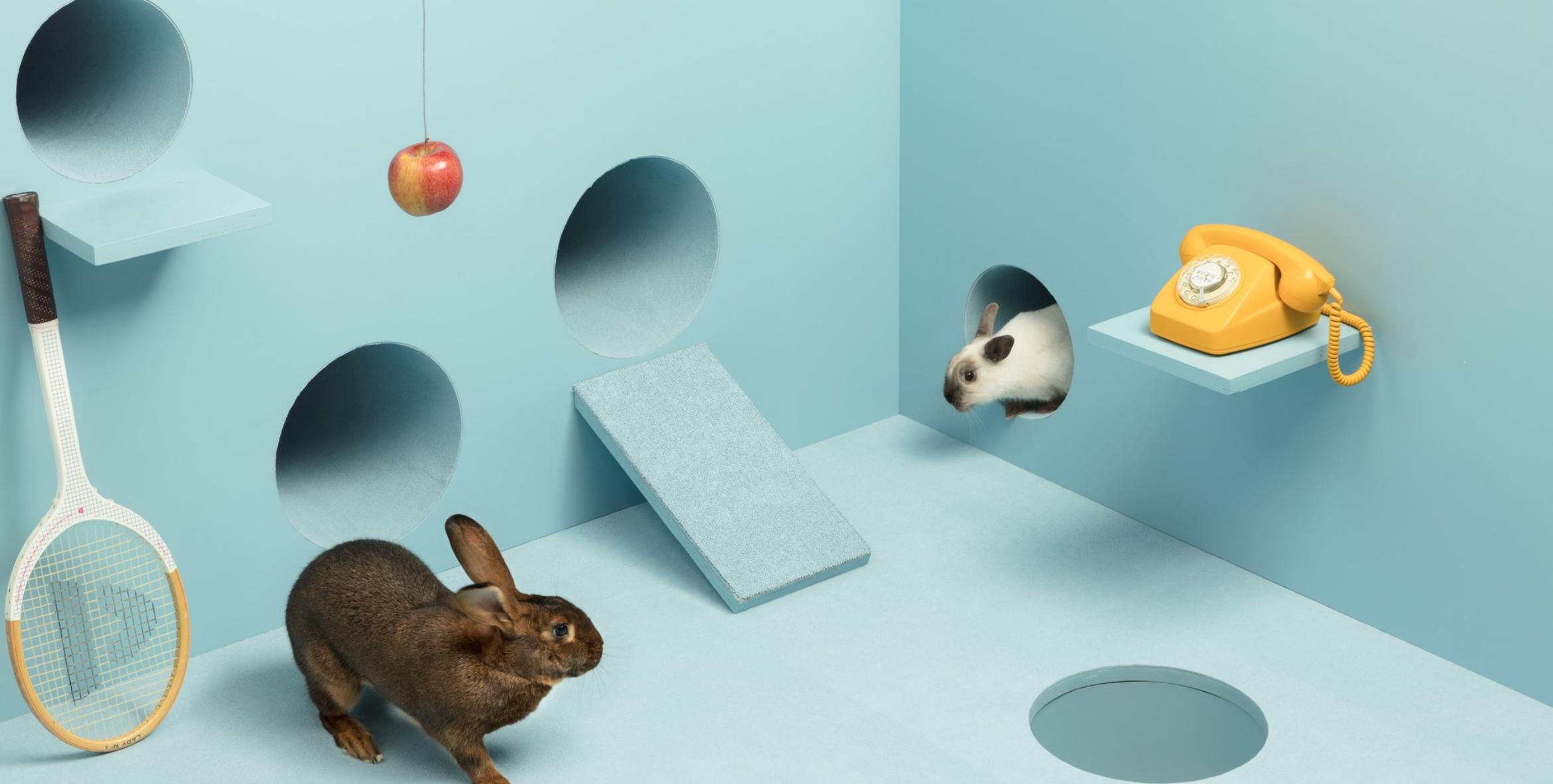
No fines, no punishment, nothing.



The Cartel

- **The Swisscom/DTAG Cartel officially ended January 2016.** DTAG had to stop paying kickback.
- While WEKO was dealing with Swisscom and DTAG, our Regulatory Case (main) at ComCom/BAKOM was suspended.
- Swisscom gradually started to setup new peerings with larger networks, i.e. Cogent, Level3, Hurricane Electric.
- The abusive behaviour of Swisscom and DTAG remained unchanged, though.

January 2016						
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#Netflixgate

Init7

#Netflixgate

- Spring 2016 Swisscom sees themselves **in a shitstorm** on social media - **#Netflixgate**

- What happened: **Netflix decided not to stream their content any longer towards Swisscom end customers via their expensive links to DTAG.** Instead, Netflix choose Cogent as their exit to Swisscom.
- Guess what happened: «all of a sudden», Swisscom customers couldn't stream Netflix content anymore in reasonable quality... 😊

March 2016						
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21	22	23	24	25	26	27
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#Netflixgate

- it took only about **5 days (including a weekend) to setup peering** between Swisscom and Netflix
- of course Netflix is not paying any money for those peerings, **regardless of the maybe 20:1 traffic ratio**
- general media was reporting widely, maybe the best coverage by [watson.ch](https://www.watson.ch/digital/schweiz/219136145-das-netflix-schlammassel-die-swisscom-ist-eingeknickt) <https://www.watson.ch/digital/schweiz/219136145-das-netflix-schlammassel-die-swisscom-ist-eingeknickt>
- **Fun fact:** the shitstorm started with a tweet by Victor Giacobbo, one of the **most famous Swiss comedians**



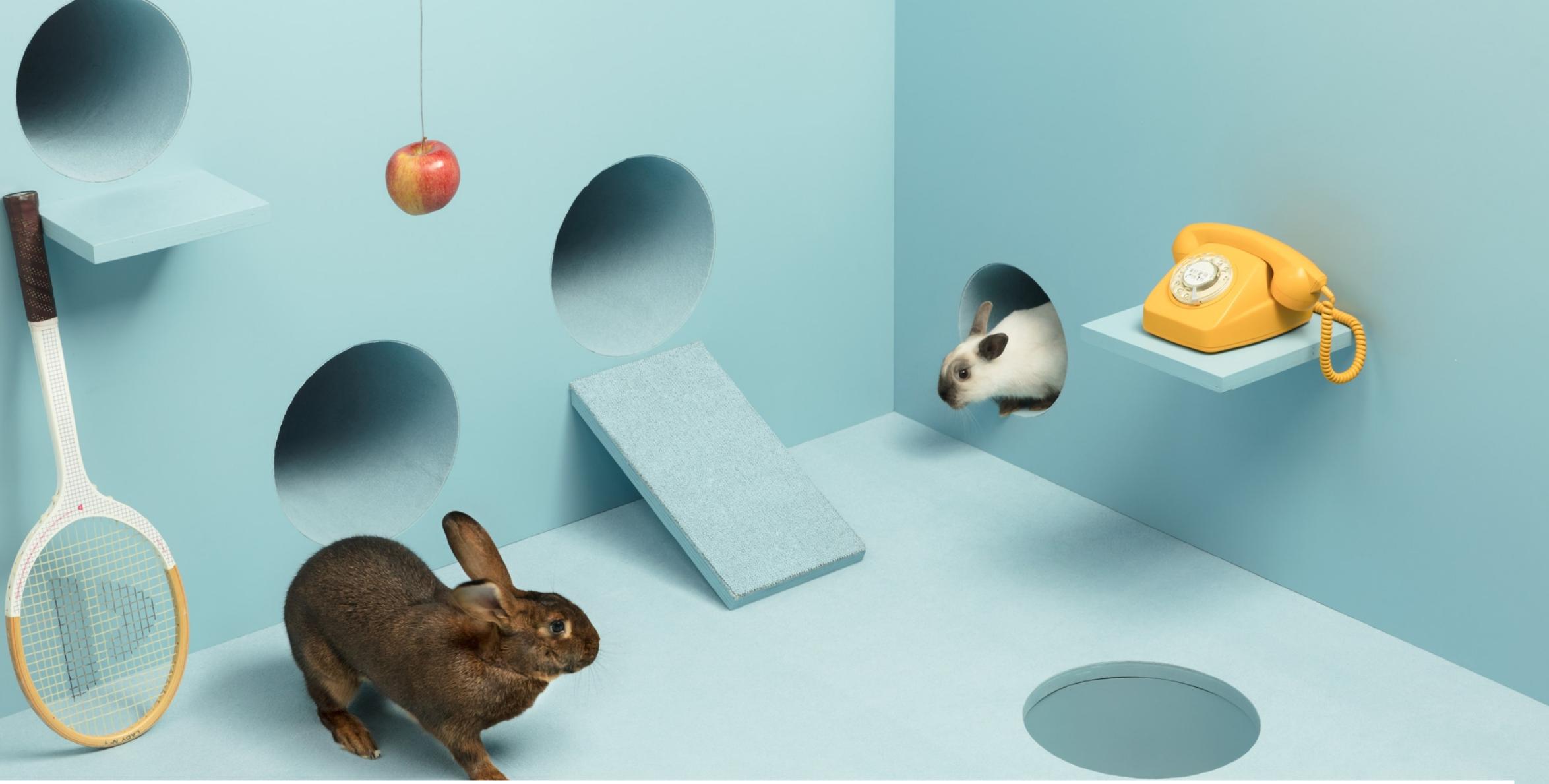
Viktor Giacobbo
@viktorgiacobbo

...

.@Swisscom_Care Gedenkt ihr, endlich das Netflix-Problem zu lösen - oder soll man zur Konkurrenz wechseln? [@NetflixDE](#)
[@Swisscom_de](#)
[Translate Tweet](#)

12:42 AM · Mar 21, 2016 · Twitter for Android

59 Retweets 2 Quote Tweets 85 Likes

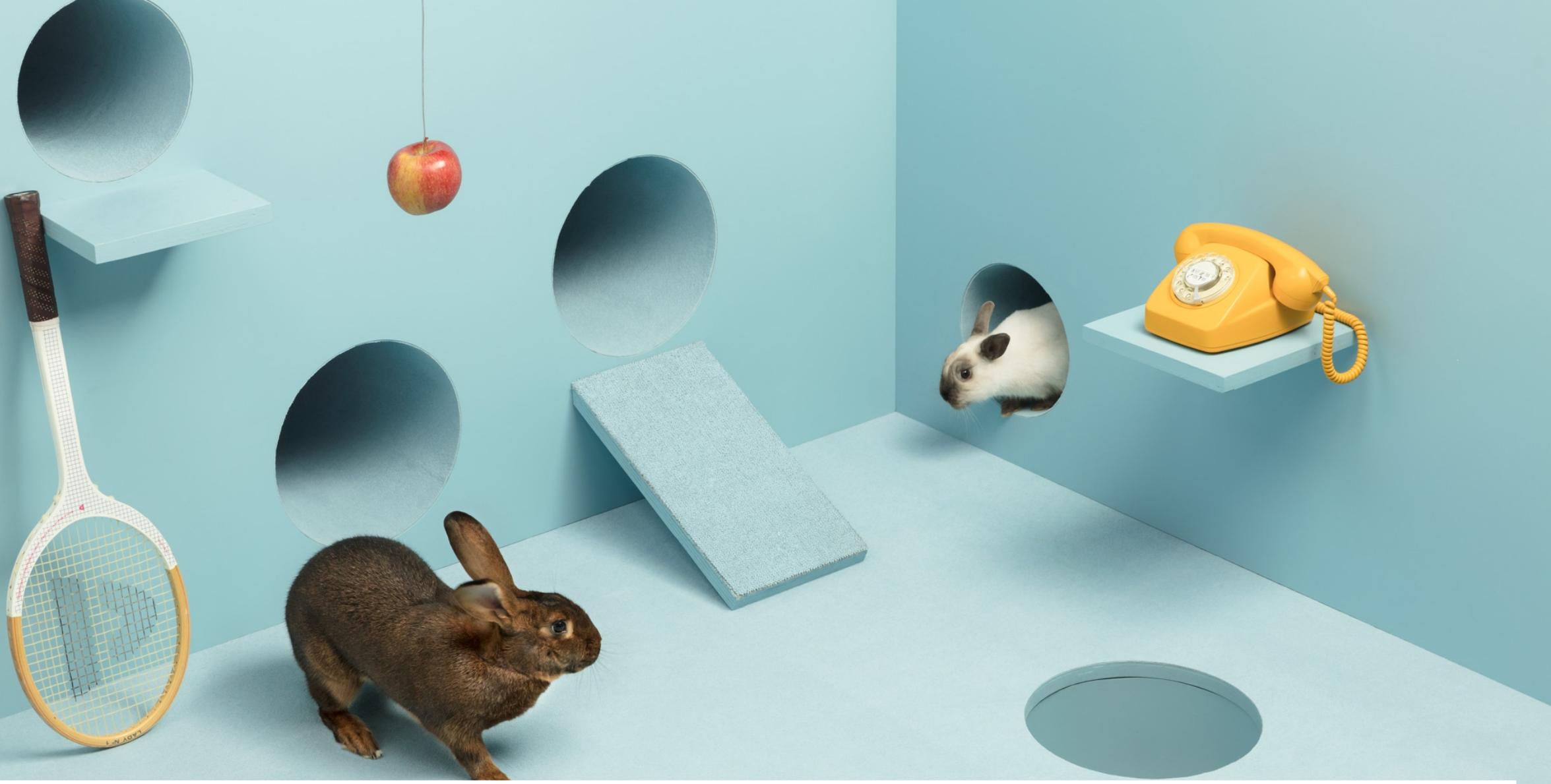


WEKO reports to ComCom

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WEKO reports to ComCom

- The findings of WEKO were reported to ComCom. In summary, they came to the following statements:
 - **Swisscom is market dominant** 
 - **IP transit is not a substitute for peering** 
 - Swisscom has been abusing it's position during the time of the cartel, togther with DTAG



Anybody home, ComCom?

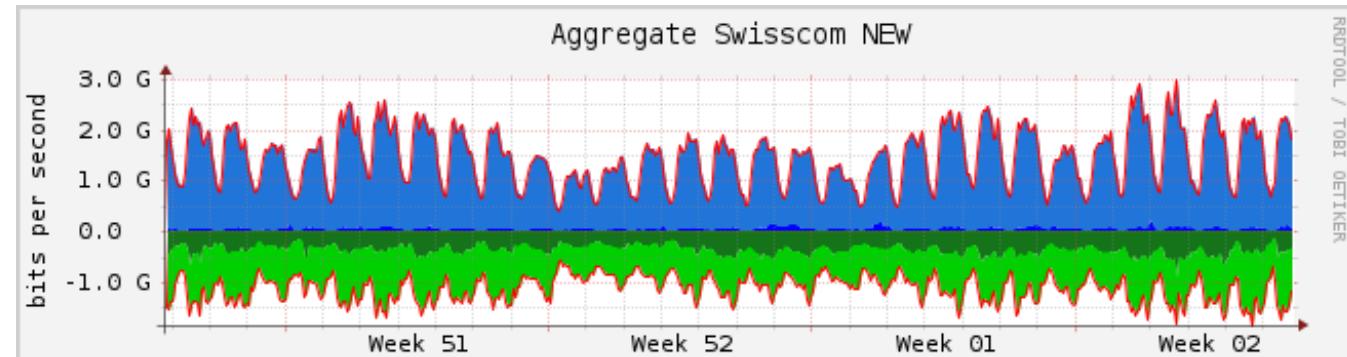
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Anybody home?

- It took **ComCom** quite a while to come to a decision.
- Despite the clear words of WEKO, **ComCom decided to reject our claim completely.** **X**
- Moreover, they stopped the obligation for Swisscom to keep the peerings alive. **X**
- Last but not least ComCom burdened the cost of the whole case on us: total **CHF 126'000.** **X**

August 2018						
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Ratio, reloaded.



- Immediately after the ComCom decision, Swisscom sent us **an invoice for the traffic beyond the 2:1 traffic ratio: Total CHF 550'000.** X
- One good thing: **Swisscom agreed to keep the peering up** despite that their obligation has ended. During these years Init7 AS13030 network has done the metamorphosis from content to eyeball. The peering was 2017/2018 within the required 2:1 ratio, meanwhile (2020) even 1:1. ✓

BEREC, please comment.

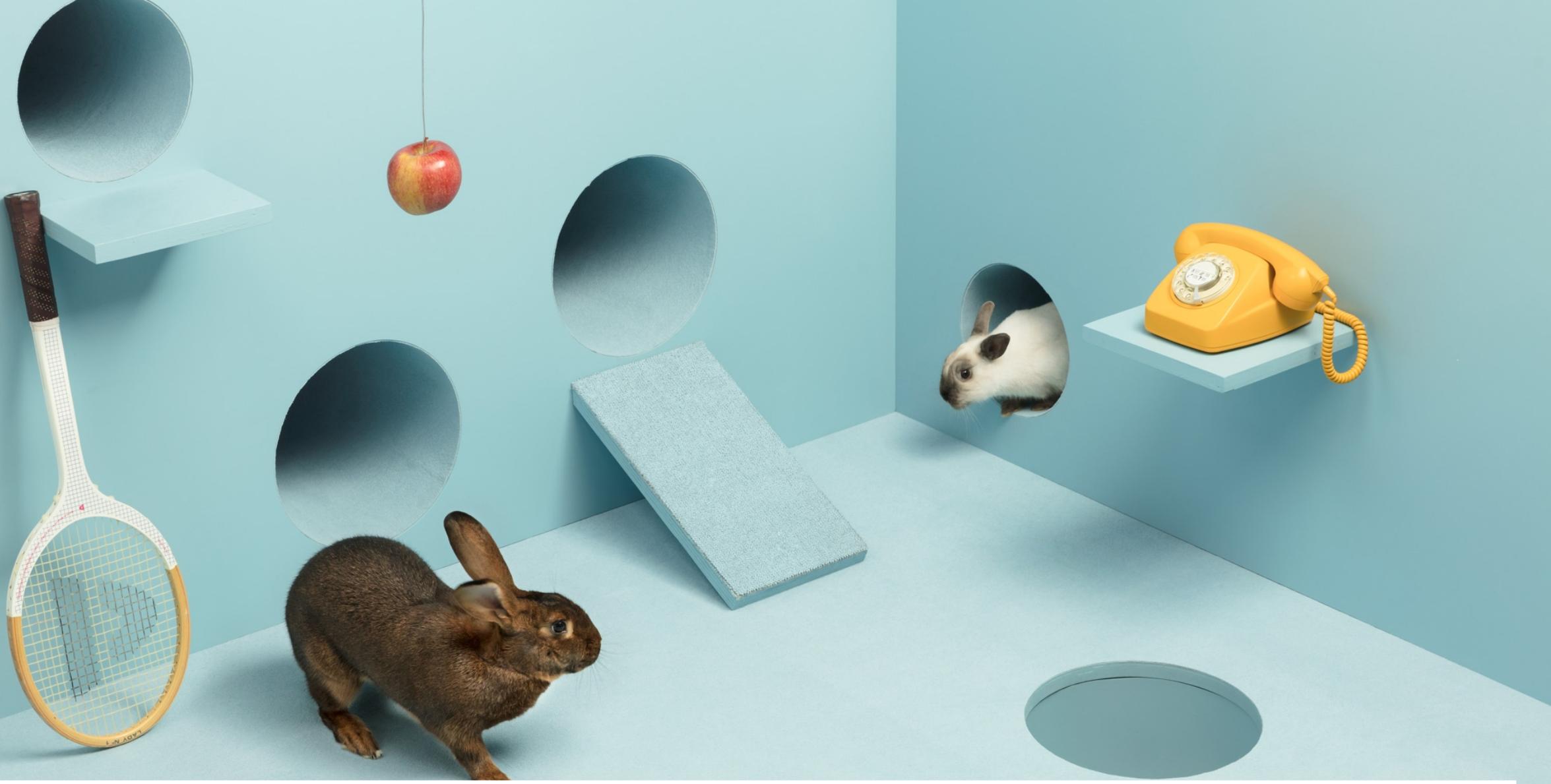
I suppose the decision was motivated by the simple fear to be the first regulator in Europe to be forced to regulate IP peering.

The case of course was and is under surveillance of BEREC, and the major belief among regulators is **«the market should regulate peering»**.

Of course this is just an assumption; maybe BEREC will make a statement.

Body of European Regulators
for Electronic Communications



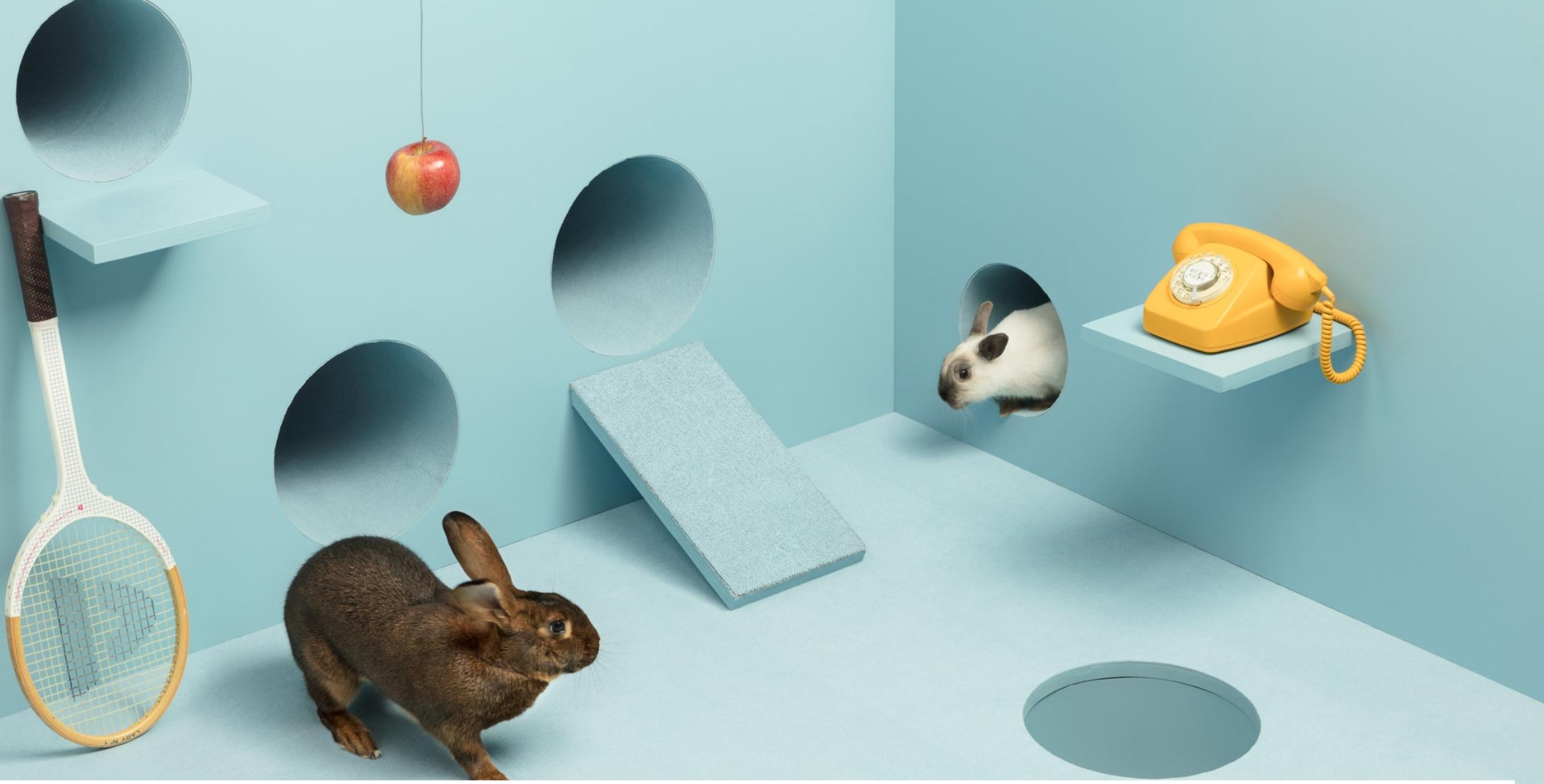


Appealing again

Init7

Appealing again

- Of course we appealed immediately to the next and final instance: **Bundesverwaltungsgericht**. The positive thing: we got the same judge who already decided the precautionary case.
- Meanwhile: ensure that the claim of Swisscom (CHF 550000) doesn't get processed by the debt collection office...



Victory!

Init7

Victory



- April 22, 2020 was our lucky day. The **Bundesverwaltungsgericht (BVGER)** judge overruled the decision of ComCom completely, accepting our claim. 

- BVGER is the last instance, Swisscom or ComCom cannot appeal anymore.

- Of course the cost of CHF 126'000 are off the table, but this is not the most important thing. 

April 2020						
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Victory



- Rather the remarkable statements by the judge:

«The ISP has a technical monopoly over its customers» 

(probably the first time that a judge confirms this)

«IP transit is not a substitute for peering» 

«Traffic ratio must not be a price criteria» 

«Swisscom is dominating the market» 

Victory



- The case goes now **back to ComCom who is forced to set the price for peering** according to the Swiss telecommunication law and the considerations taken by the judge. 
- As peering is in public interest since #NetflixGate, we published a press release (German):

https://drive.google.com/file/d/1WSAmAQRBsdllyMMq7_FleuE_-630ETL2/view?usp=sharing



The true cost of peering

Init7

The true cost of peering

- After our victory, ComCom started again to find the true cost of peering. Swiss telecommunication law foresees the calculation with **the LRIC (Long Run Incremental Cost) method.**
- ComCom asked Swisscom to present their LRIC calculation for peering, maybe hoping that they find a way to justify the claimed CHF 3.00 per Mbps traffic beyond the 2:1 ratio (which has been already judged illegal).

The true cost of peering

- Swisscom presented their **LRIC calculation**. Some 20+ pages blacking out a lot of relevant information, due to «business secrets»...
- As neither our lawyer nor anyone at Init7 is an expert in LRIC, we decided to ask for help and requested an expertise report from the smart people at **WIK Consult** - Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste - <https://www.wik.org/>

October 2020						
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The true cost of peering

- WIK Consult analysed the LRIC calculation of Swisscom. **Their findings: All wrong.** ✓
- Swisscom is including a huge amount of cost which are not causal for peering.
- WIK states **that causal cost of peering** according to the LRIC calculation method are rather small: **only the direct interconnection can be considered**. Means: the 10 or 100 Gigabit-Port on each router, and the interconnection cable. Nothing else. ✓



The true cost of peering

- As both peering partners bear their own approximately similar cost of their routers, **equipment costs cannot be considered either.** 



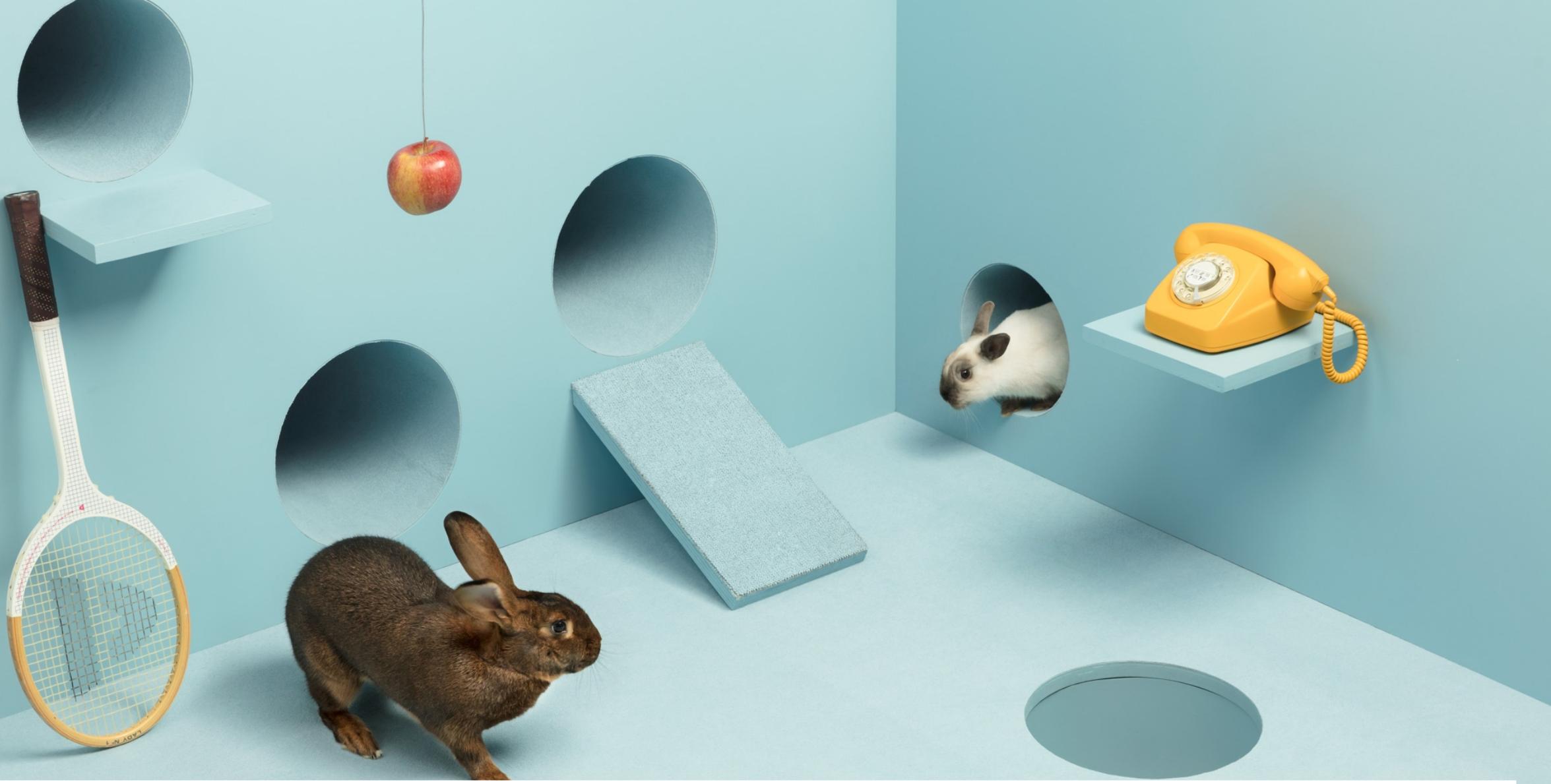
- Remains the interconnection cable (X-connect). **Common practice among peering partners is to order and pay the X-connects alternately**, as most peering partners have multiple geographically redundant peerings. 

The true cost of peering

- Considering this, WIK concludes that the cost of peering is:



Zero. Null. Rien.
Nada. Niente. Ничего.



The saga continues

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The saga continues...

- ComCom has to come to a decision and regulate IP peering. This is what they wanted to avoid. After WIK's clear opinion we expect ComCom to set **the price to zero**. I expect the decision by 2021. If needed, we will take the regulated price to the next instance.
- On a long term, the case **will have an impact on the peering behaviour of incumbents**, internationally.





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Happy Peering!

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