

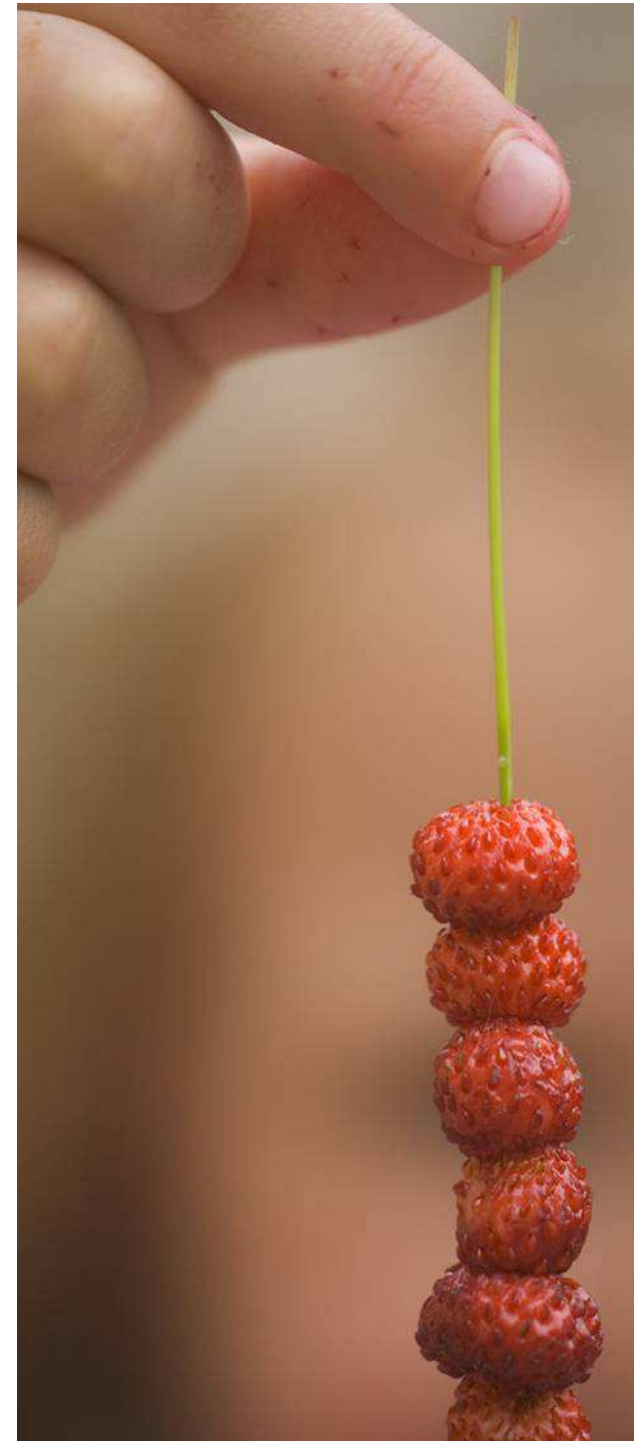
Finland was one of the first to complete ASO Where are we now?

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Anvia TV

- Product groups
 - Network solutions
 - Sales in Baltics: Paul Bergman. Customers for example Levira, SLO
 - Components and tools for fibre optic and coaxial networks, digital signage, packaging, head-end, transmission systems etc.
 - Consumer Electronics → mainly set-top-boxes
 - Market leader in Finland
 - In R&D development: DVB-C (DVB-C2), DVB-T/T2 and IPTV/OTT networks hybrid, Conax card and Verimatrix software encryption, SD/HD, MPEG4/MPEG2, HbbTV, DLNA
 - Content services and operations
 - Tv channels to DVB-C, IPTV and DVB-T networks
 - Finland, Sweden and Denmark
 - IPTV/OTT middleware
 - Hibox Systems Oy
 - Customers: operators, hotels, ships in Europe, USA and Middle-East
 - Features for example: linearTV channels (IPTV & OTT), OTT, VOD, SVOD, NPVR (Network Personal Video Recorder), timeshift, catch-up for TV, lap-top, iPad, mobilephones, stics (Android, Linux) and set-top-boxes
 - Not anymore DVB-T2 network capacity → transmitters sold → head-end for 1-2 multiplexes in selling process
- Turnover 2012: 18,1 M€

Analogue switch off in Finland (ASO)

- First country which had total analogue switch off
 - Antenna-tv 31.8.2007 (market about 50 %)
 - Cable-tv 31.1.2008 (market about 50 %)
 - Satellite earlier (market about 6 %)
- Some specialities
 - 15 free-to-air channel in antenna-tv
 - No mini-pay-tv
 - Pay-tv penetration only 30 %
 - History of local telcos → local telcos are also cable-tv operators
 - Horizontal set-top-box market for antenna-tv and cable



DVB-T and DVB-T2 networks

- Digita as network operator has
 - 4 DVB-T multiplexes (UHF), only SD content
 - 2 DVB-T2 multiplexes (UHF), 1.9 starts channel
 - Traditional tv-sites (high towers)
- DNA has 3 DVB-T2 multiplexes
 - VHF, mobile operator towers
 - Network operator and pay-tv operator
 - Multiplexes almost full of SD and HD content
 - Households needs to change antenna → low penetration
- Anvia got 2 DVB-T2 network licences 2010
 - Fast building the network → launch with pay-tv operator TV Viihde spring 2011 → due salesprosess of Digita, TV Viihde was closed spring 2012 → network licences back to ministry
- HD is not selling:
 - Only some of the major tv-channels has HD channels in antenna-tv - simulcasting is expensive
 - TV's are improving the picture quality
 - VHF antenna and HD receiver needs to be paid
 - Recession
 - → Need for new content or business models



Future?

- Hybrid IPTV, OTT is continuing the growth – copyright issues
- DNA (3rd biggest teleoperator) is purchasing the antenna-tv pay-tv operator PlusTV
 - Competition authorities probably say yes latest 20.9
 - Antenna-tv pay-operator monopoly to DNA
 - PlusTV starts the HD? In VHF/UHF?
- 2014: DVB-C2?
- January 2017
 - DVB-T and DVB-T2 network licence round before → Anvia might be applying again
 - One plan of ministry: only 2 DVB-T multiplexes and rest is DVB-T2
 - Pay-tv only in DVB-T2? → Too fast to consumers → plan is in adjustment process by the ministry and industry 2013 → generating of DVB-T2 penetration
 - 700 MHz to telecommunications?
- When UHDTV, 2k, 4k, 8k, 3D, H.265 (HEVC)



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