



Living Images

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SWelcom's Present Businesses



Commercial Television and Radio



Cable Communications



Digital Media Solutions

Web design, web hosting, web TV platforms

What Happens in TV?

“DVB”

“mobile TV”

“HDTV”

“IPTV”

“VOD”

“time-shifting”

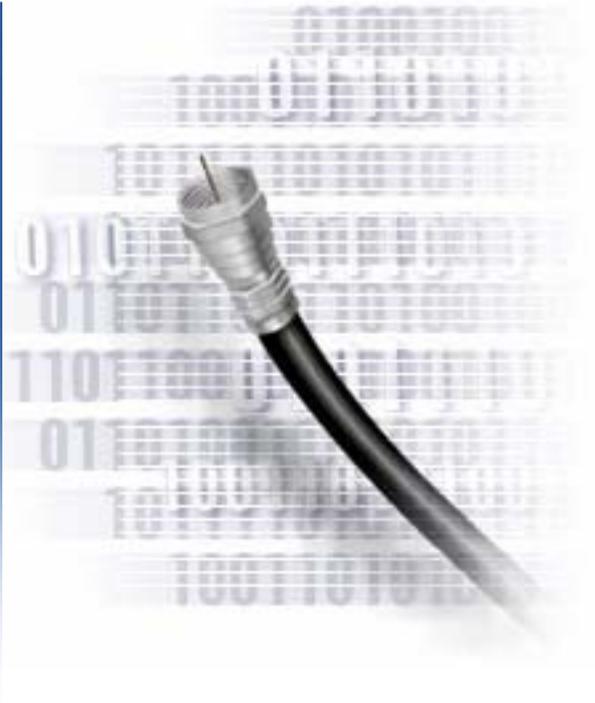
“pay TV”

“UGC”

The Transmission Platforms of Broadcast TV Have All Become Digital



DVB-T
TERRESTRIAL



DVB-C
CABLE

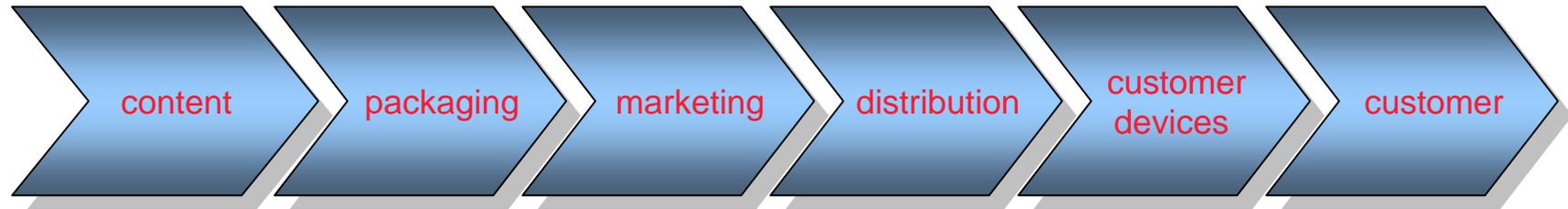


DVB-S
SATELLITE



DVB-H
HANDHELD

The Whole Value Chain of "Traditional" TV Is Now Digital



Digital Content

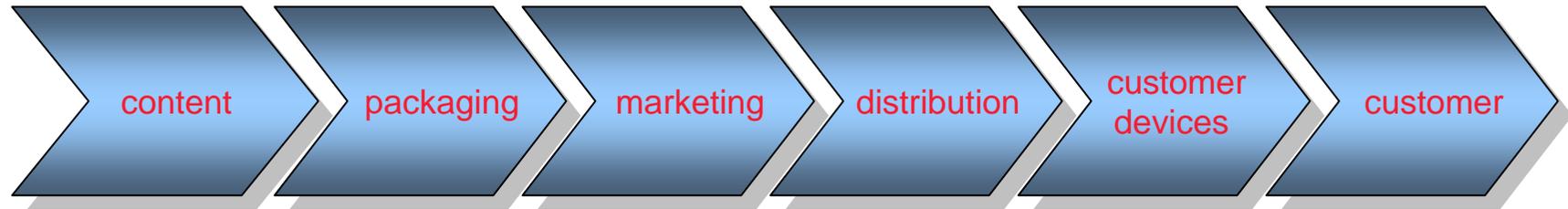


Digital Transmissions



Digital Receivers

The Whole Value Chain of “Traditional” TV Is Now Digital



Digitalisation has led to:

- Increased distribution capacity on all platforms
- Alternative digital distribution platforms (broadband, mobile)
- Alternative “receivers” (PCs, mobile phones)
- New features (time-shifting, user generated content, ...)

Increased Distribution Capacity Has Led to Increased Number of TV Channels

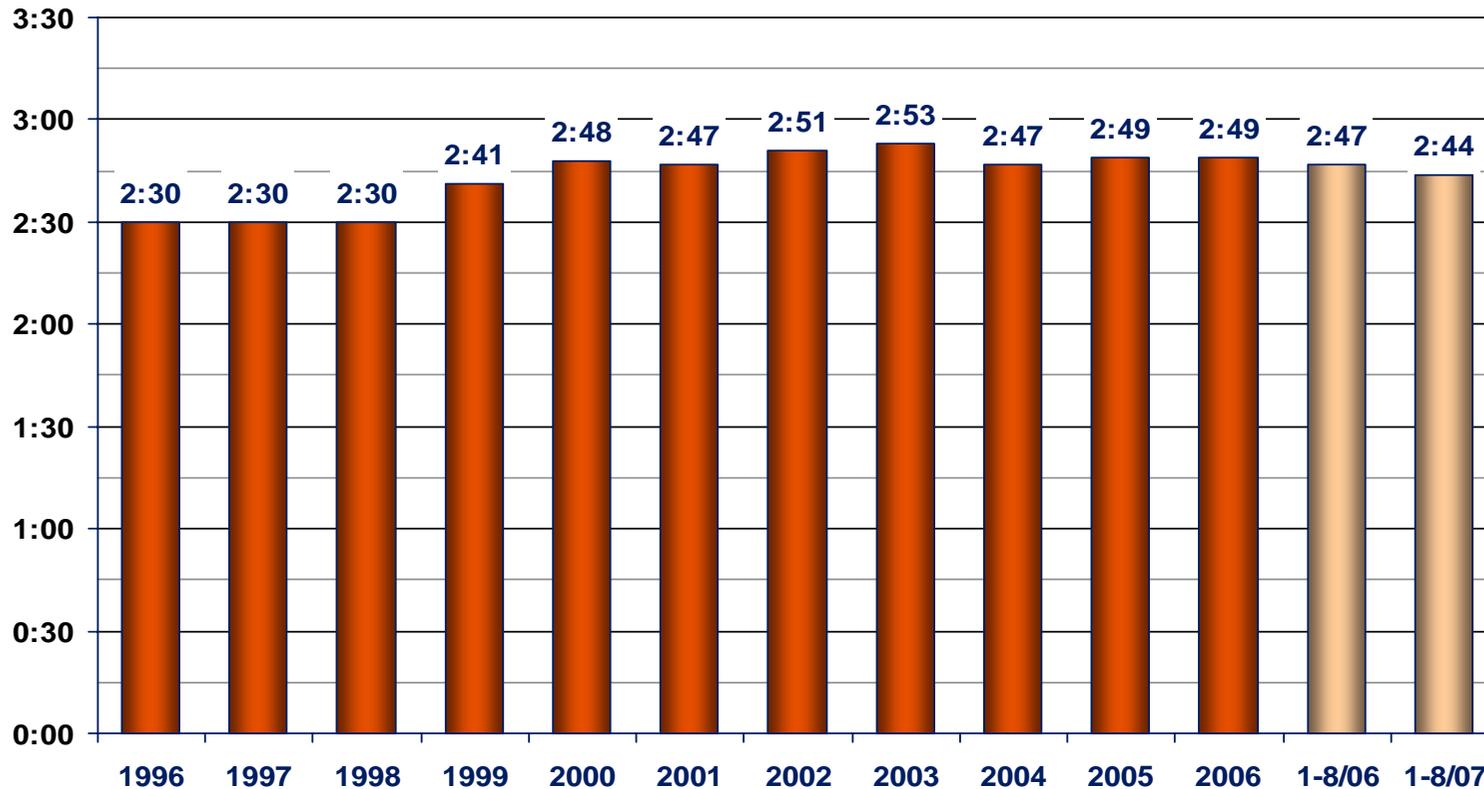


Analogue Terrestrial Television Channels in Finland

Increased Distribution Capacity Has Led to Increased Number of TV Channels

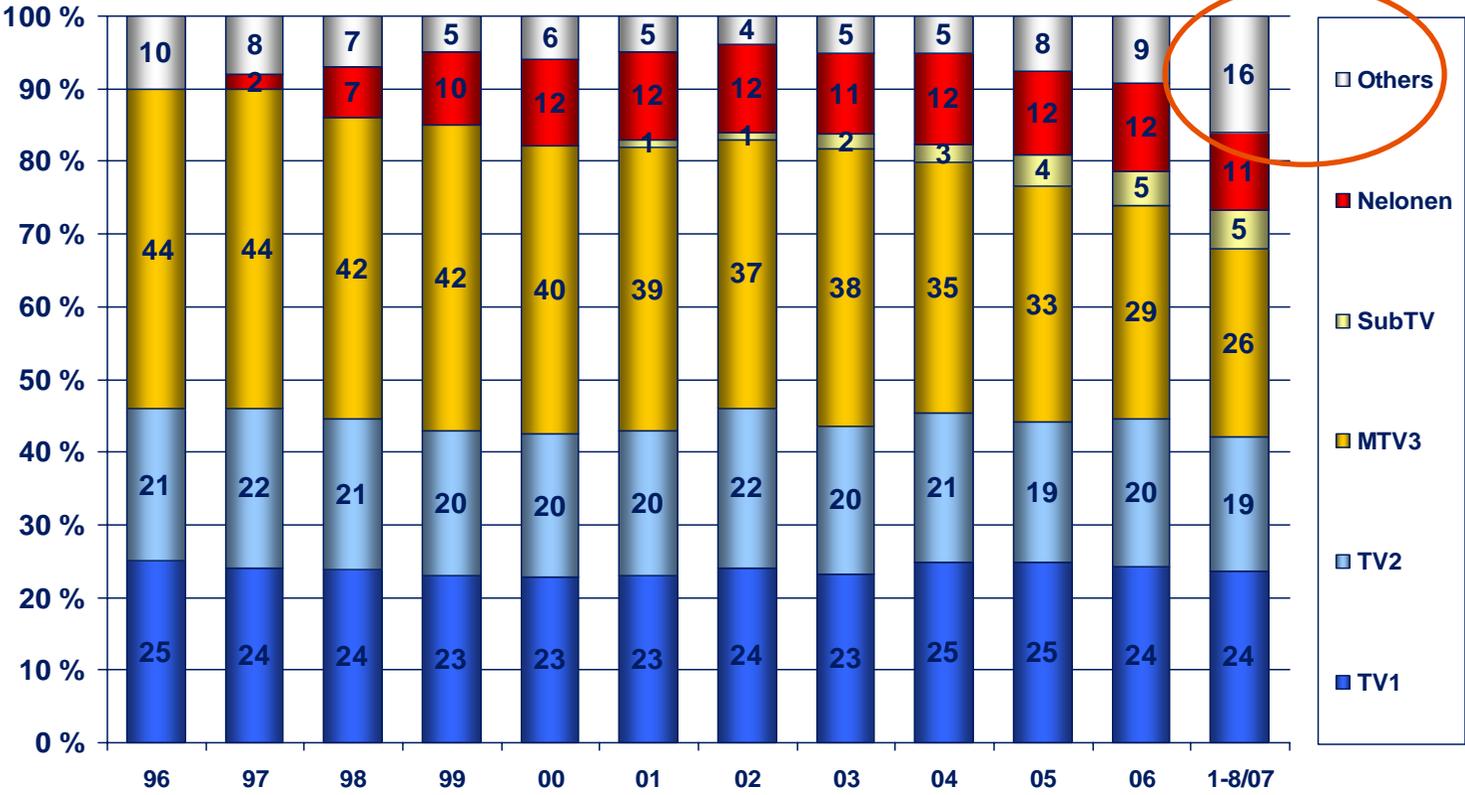


Increasing Number of Channels Does Not Lead to Increased Viewing ...



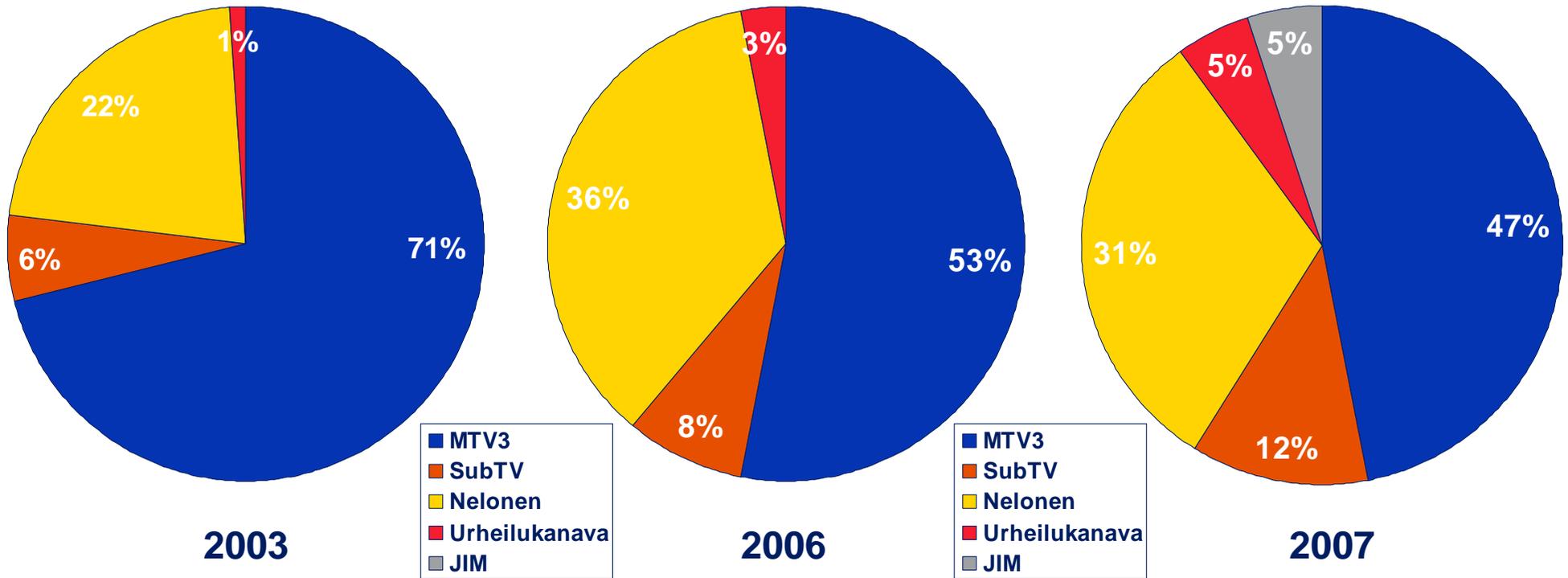
Average Daily Television Viewing in Finland (h:min)

... But, More Channels Means More Fragmented Viewing



National Shares of Viewing in Finland, 10+ Population

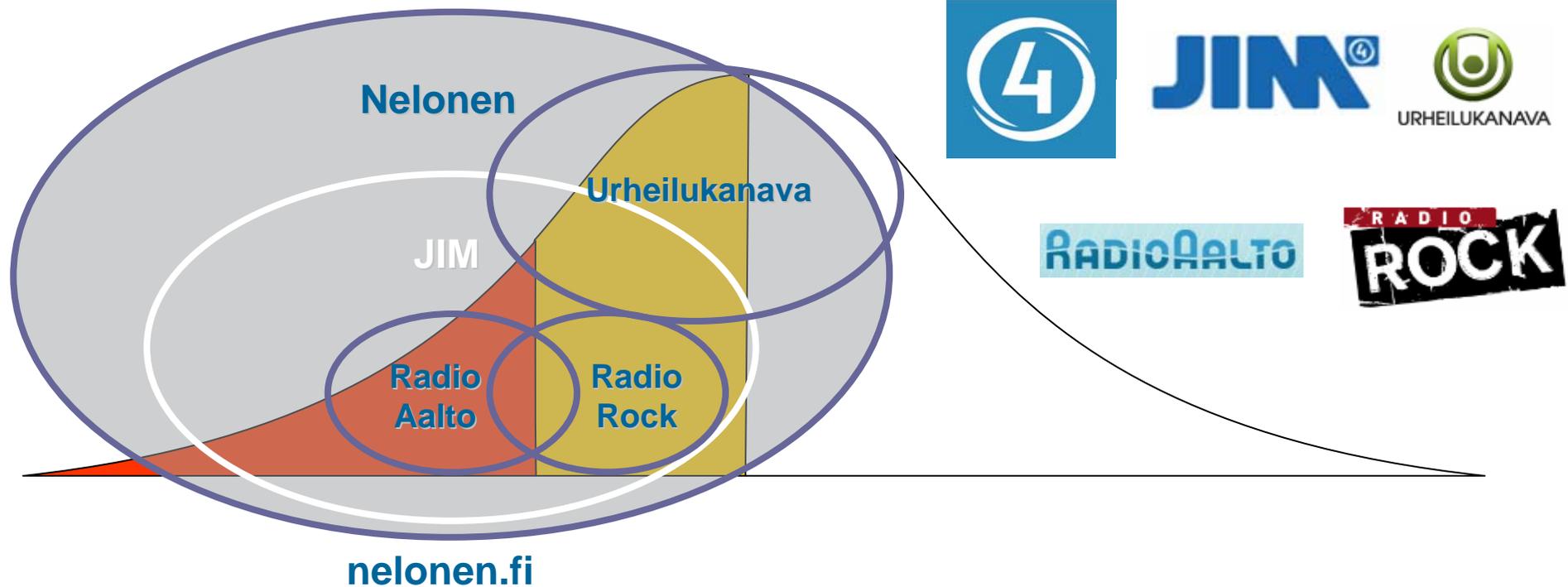
Fragmented Viewing Means More Ad Spots on More Channels



Optimal Placement of Advertising Spots to Reach the Target Group 25–44y (300 TRPs, Net Coverage 79%)

We Continue to Cover The Fast And Early Adopters With Our Channels

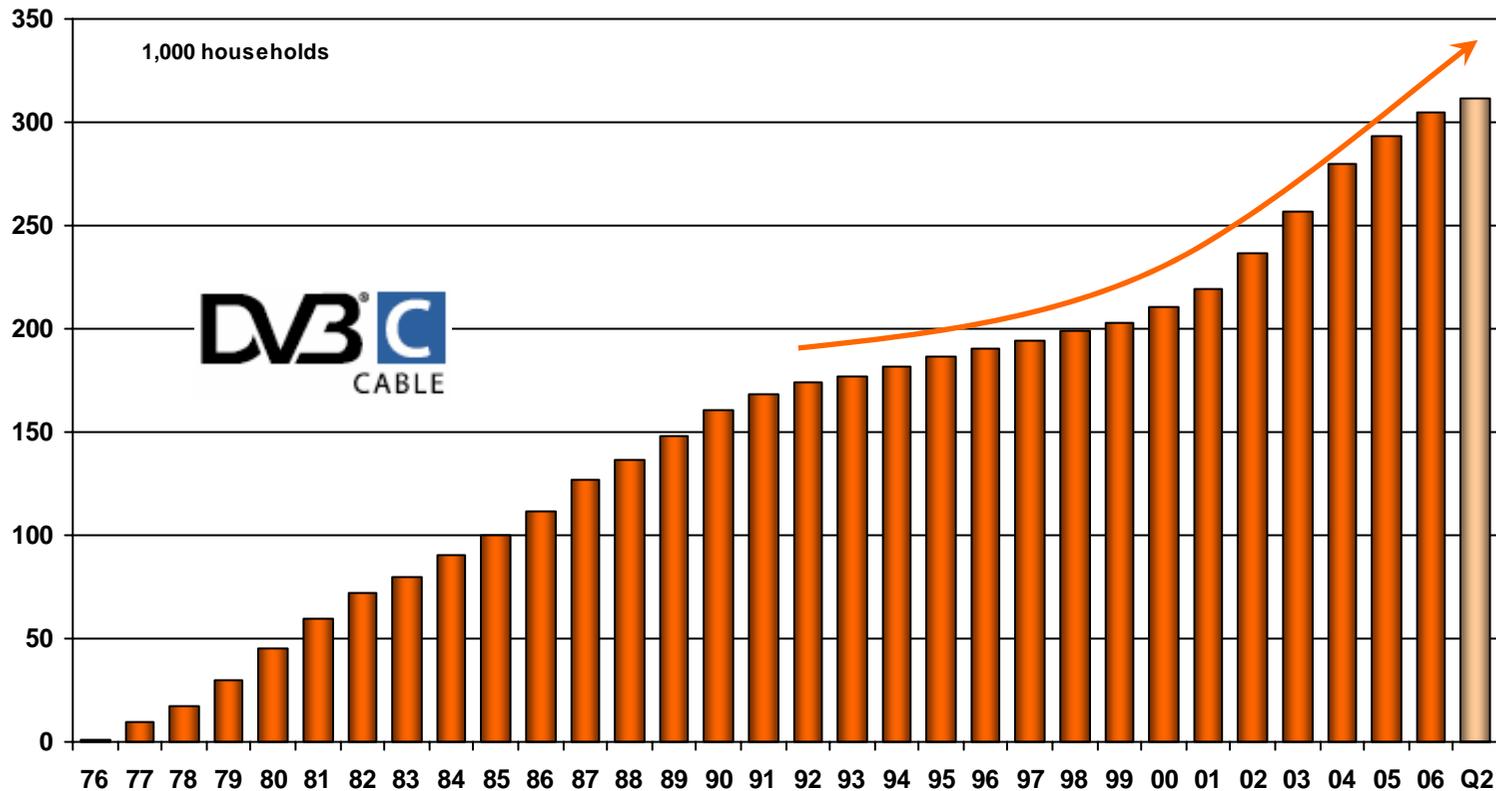
Fast and Early Adopters



About Time-Shifting and Ad-Skipping

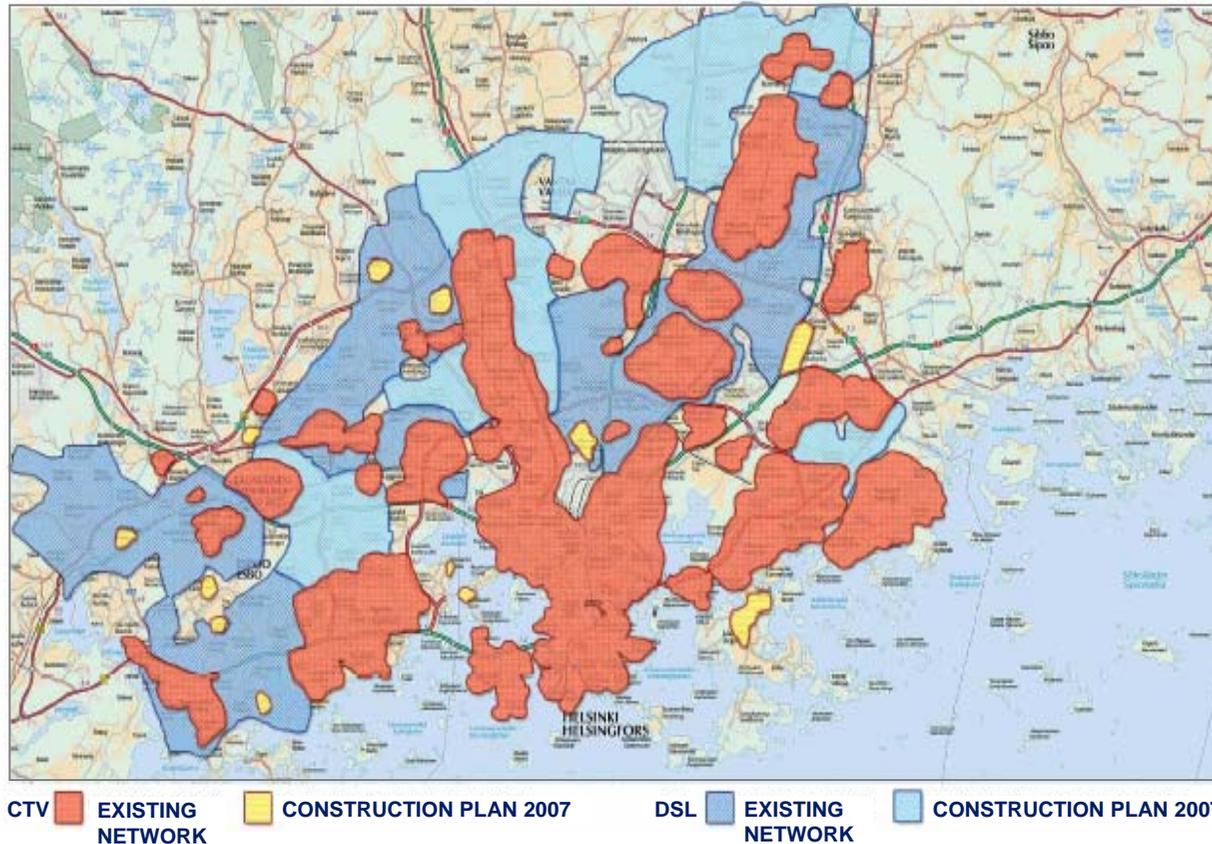
- Technically time-shifting can be arranged in different ways:
 - with Digital Video Recorders (DVR) owned by the viewers
 - through “previews” or “catch-ups” offered by the TV channel online
 - with a central storage (“Network DVR”) operated by e.g. a cable operator
- Time shifting is **a feature of linear television**
 - enables viewers to watch what they would otherwise miss
 - helps viewers to choose the best time for viewing
 - increases viewing, but also enables skipping of ads
- Finnish TV operators’ pricing is based on audiences watching ad breaks
 - advertisers do not need to worry about the impact of ad-skipping
 - Finnpanel will start measuring also the time-shifted viewing
 - TV advertising revenues are still expected to grow!

Digitalisation and Broadband Have Led to Rapid Growth of Cable Subscribers



Households Connected to Welho's Cable TV Network

Welho Is Expanding Its Network both with Cable and DSL Technologies

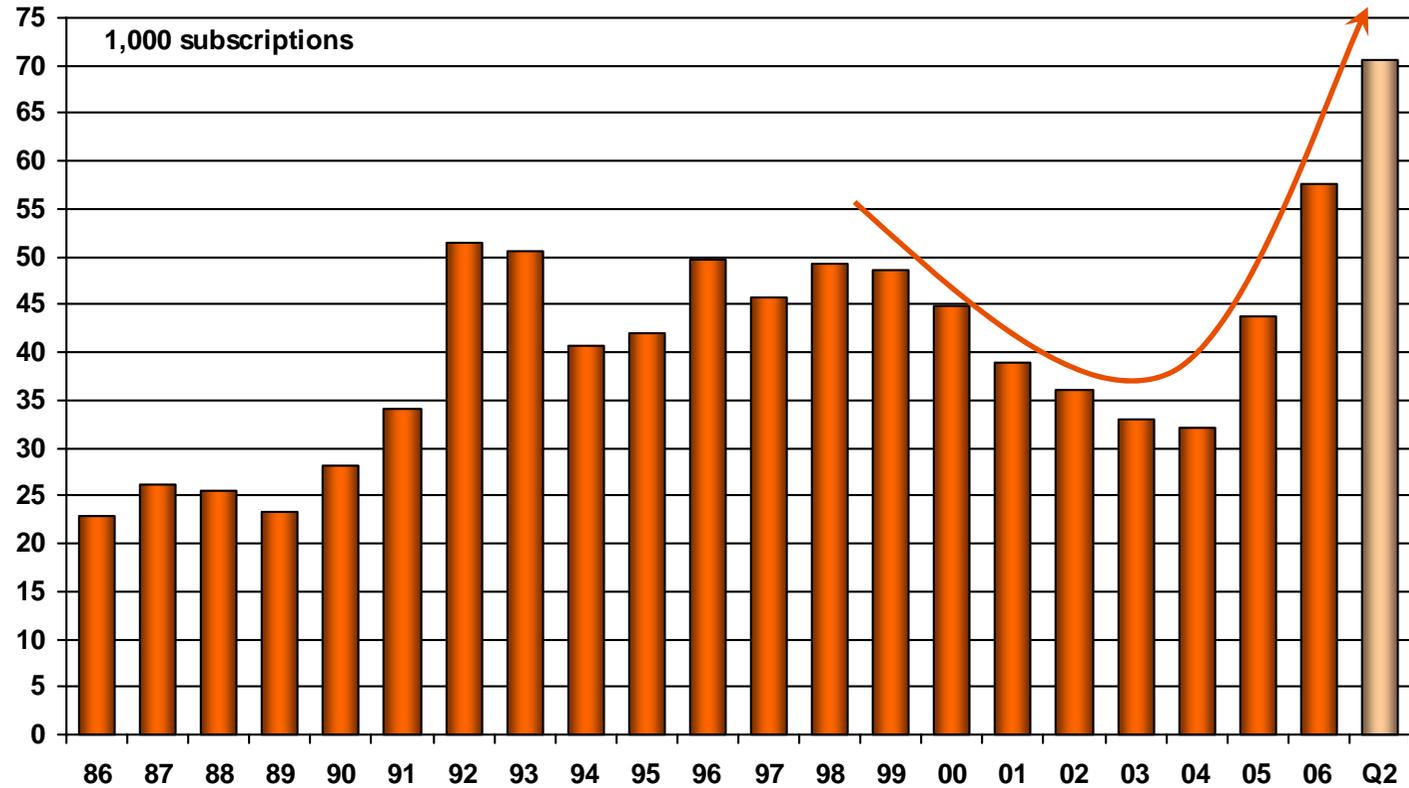


Welho Distributes Today over 100 Digital Television Channels



... including High Definition TV

Pay TV Represents a Growing Revenue Source for Television Operators



Welho's Pay TV Subscriptions

Welho Has Now over 92,000 Broadband Customers

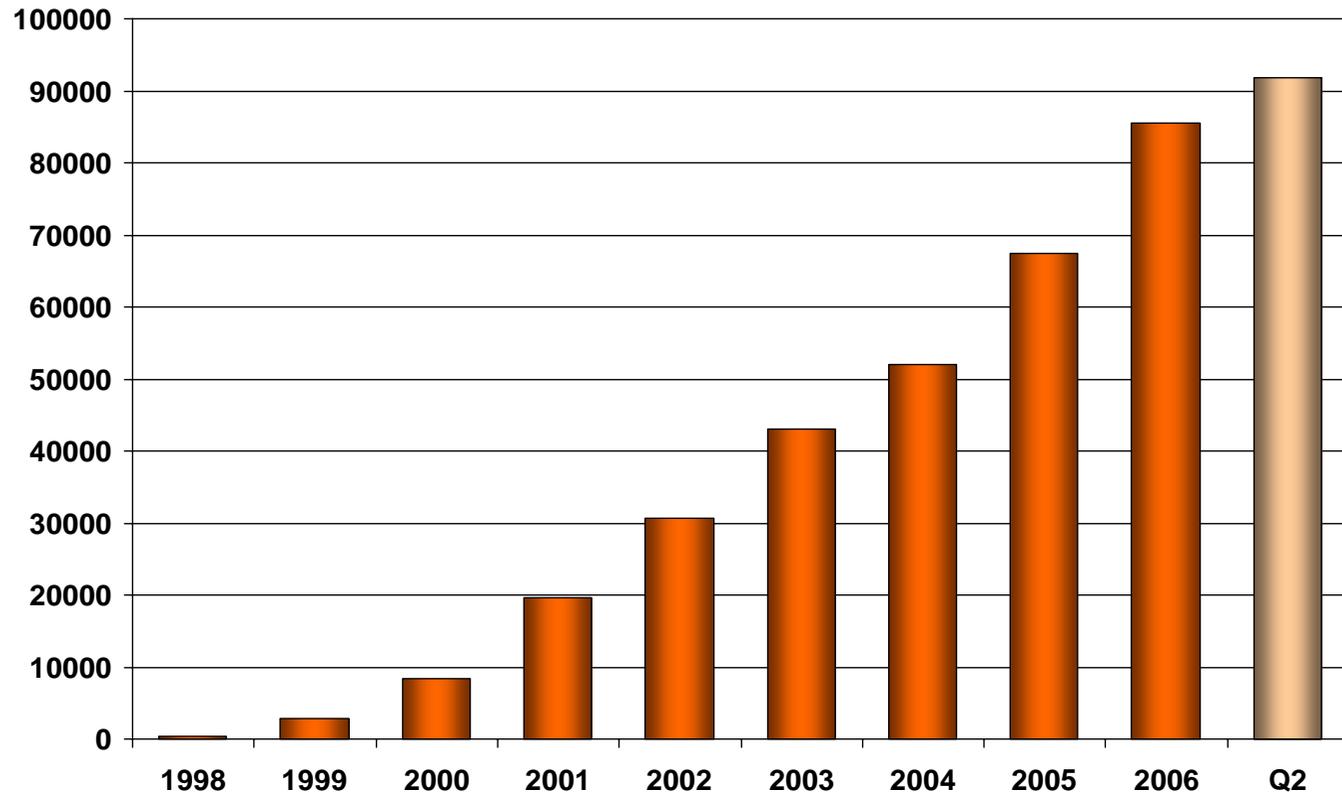
10M
max. 10 Mbps/1 Mbps

4M
max. 4 Mbps/1Mbps

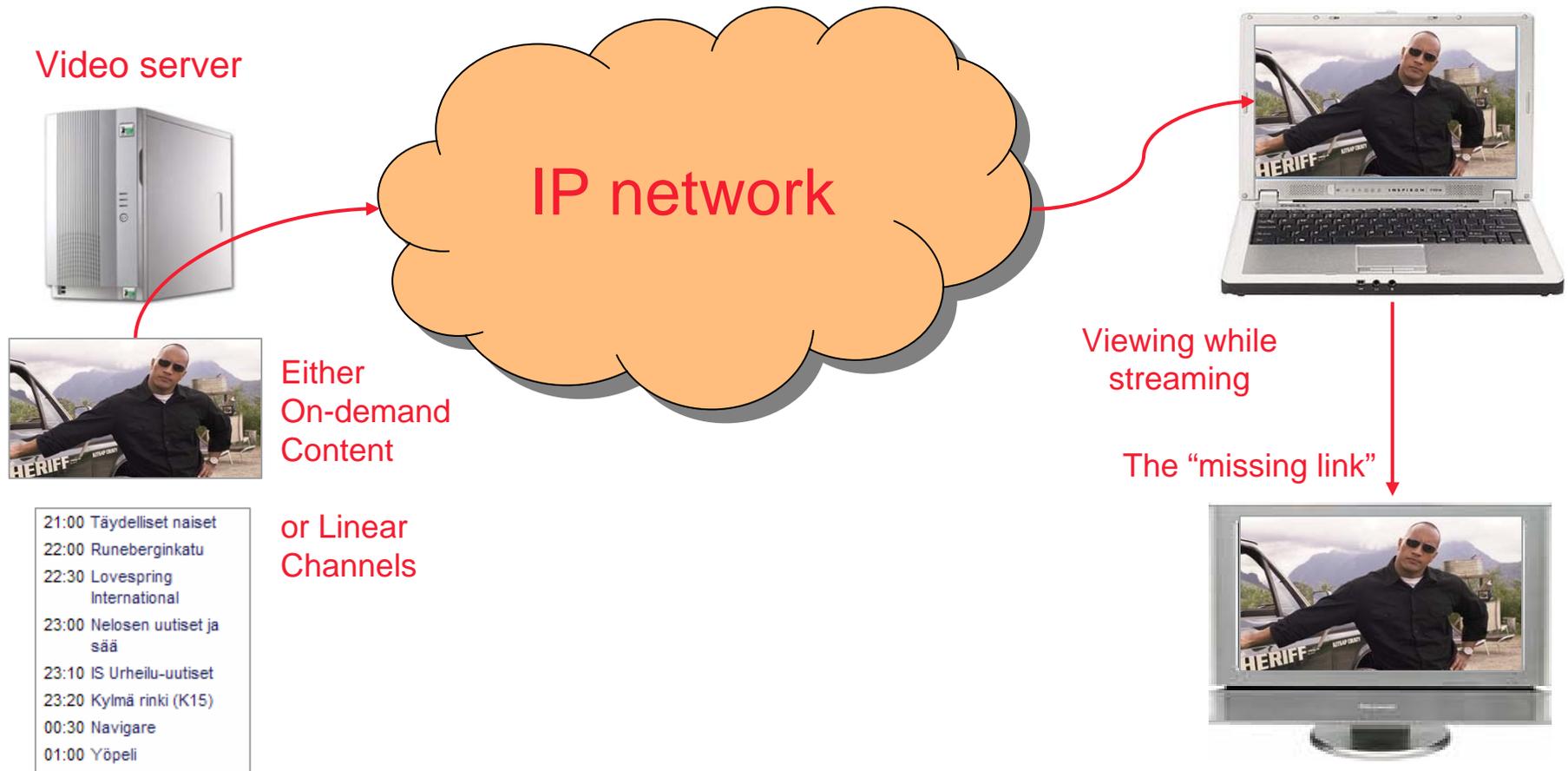
1M
max. 1 Mbps/500 kbps

275
max. 275 kbps/100 kbps

WELHO
© HOTSPOT



Increasing Speed Has Enabled "Live Streaming" over Broadband



Example of "Live Streaming": Nelonen Netti-TV (VOD Site)



Nelonen's own programming offered over broadband

Example of "Live Streaming": Nelonen's "HOT from the US"



HELSINKI/LONDON (Reuters) - [Walt Disney's](#) (DIS.N) international television arm said on Monday it would let viewers of Finnish commercial broadcaster Nelonen pay to watch hit shows on the Internet four days after their U.S. release.

Disney-ABC International said the deal with Nelonen, part of SanomaWSOY (SWS1V.HE) group, marks the first time the company has introduced multiple network series to non-U.S. markets so soon after release.

[washingtonpost.com](#)

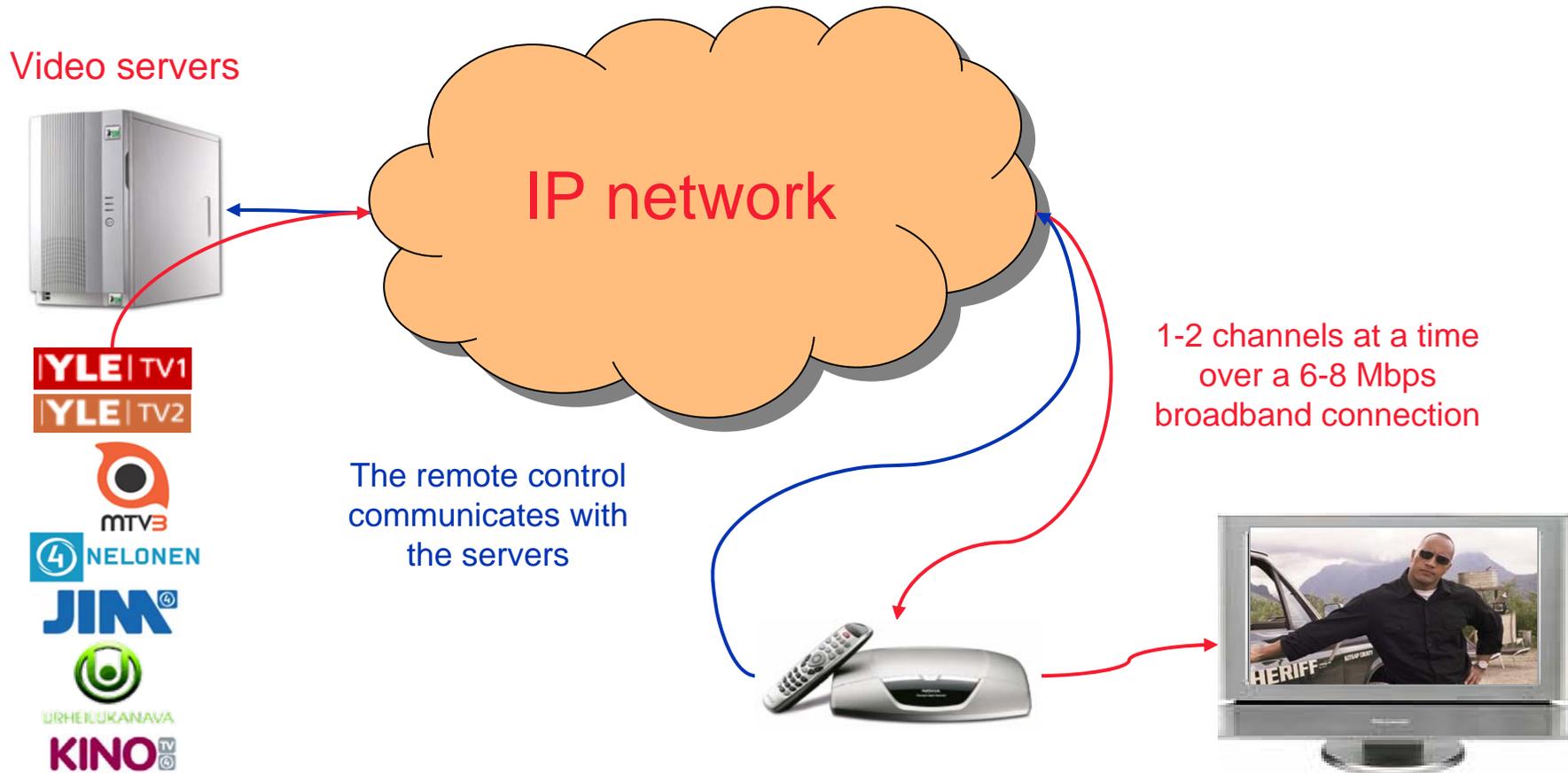
Fresh episodes of Disney-ABC series offered by Nelonen on-line

Example of “Live Streaming”: Welho Play (Video On-demand Site)



VOD “aggregation”: content from different VOD sources

IPTV: "Cable TV over IP Network"



Maxisat Is a Finnish Forerunner of IPTV with Their **Maxinetti Multi** Service



SWelcom owns 46.2% of



Welho Offers IPTV to Its DSL Customers Outside the Cable TV Network



The Two Versions of Mobile TV



DVB-H

- The TV signal is received from a digital terrestrial TV transmission
- Requires a transmission network of its own
- The reception of TV signals does not load the mobile telephone network

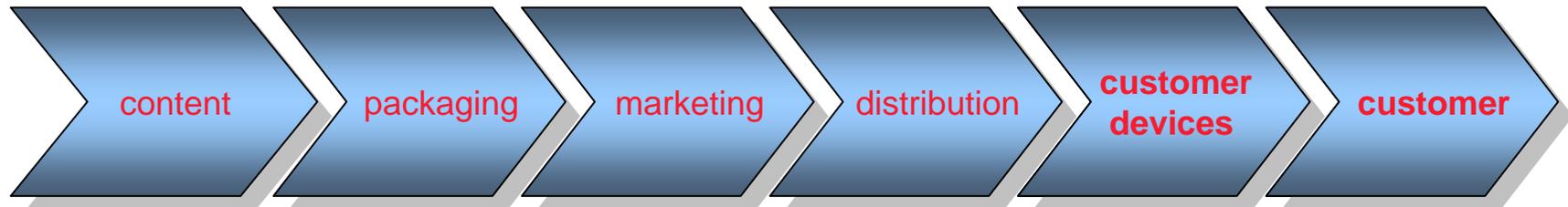


3G

- The TV signal is transported through the 3G mobile telephone network
- Does not require a separate transmission network
- The signal is transported separately to each device, which loads the network heavily

Nelonen is active in both versions of mobile TV

With Digital Cameras and Mobile Phones also Users Generate Content (“UGC”)



Customers Take A Position In Both Ends Of The Value Chain

Examples of UGC: Nelonen's UGC Sites



So, TV Can Now Be Watched ...



**... traditionally
“over the air”
with TV sets ...**

So, TV Can Now Be Watched ...



**... but also
over the internet with
e.g. personal computers ...**

So, TV Can Now Be Watched ...



... and with mobile devices over mobile networks.

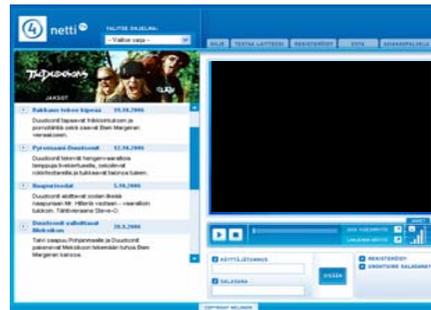
... And the Viewing Can Be ...

... “linear” (according to a program chart), ...

TV:SSÄ SEURAAVAKSI		TO 26. 10.
17.30	Dr. Phil	
18.30	Tanssi, jos osaat!	
20.00	Kahdeksan uutiset	
20.20	Nelosen sää	
20.25	IS Urheilu-uutiset	
20.27	Keno ja ässä-arpa	
20.30	Krisse Show	
21.00	Lost (K15)	



... or “on-demand” as provided by the operator ...



... or forward “time-shifted” by the viewer with a Digital Video Recorder (DVR).



So, What Happens in TV?

Shift Happens!

Network Shifting
Device Shifting
Time Shifting
Place Shifting



Introducing: SWelcom 2.1

Multi-channel



Online



Multimedia



Electronic
Entertaining Experiences
for People to Enjoy

swelcom[®]