

# ZATTOO

## P2P IP Television

May 5, 2008

RIPE #56

Thomas Billeter, VP Business  
Development

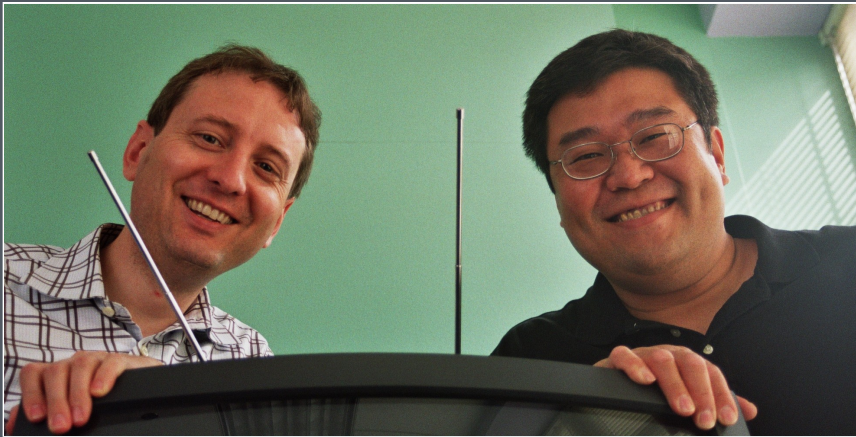
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# What is Zattoo?



- » Startup
- » Founded in 2005 by Beat Knecht (CH) and Sugih Jamin (US)
- » +50 team members and growing fast
- » Offices in Zurich (Switzerland) and Ann Arbor (Michigan/USA)
- » 15 million USD financing secured
- » Red Herring Top 100 Europe Award



# What do we do?



- » We bring live TV to your computer
- » We transmit country by country the most popular channels onto users' computers
- » Our proprietary software acts as a virtual set-top box
- » Free subscription, free software
- » Advertising is the primary source of revenue (a.k.a. Buffertainment)



# Internet TV Landscape

Archive Content      Live Content

Clips, short sequences	Youtube	MLB
Full 24/7 program	Joost	Zattoo

- » Zattoo has pursued a different approach than most of its competitors focusing on live content with full 24/7 programming (i.e. replicating classical TV experience in internet)
- » Its success demonstrates that in spite of the new content consumption models facilitated by the Internet (time shifted, on demand) linear consumption still has a lot of appeal, and most of all reflects existing habits of a wide majority of TV viewers



## 8 countries so far...

### » Europe:

Live in Belgium, Denmark,  
France, Germany, Norway,  
Spain, Switzerland, UK

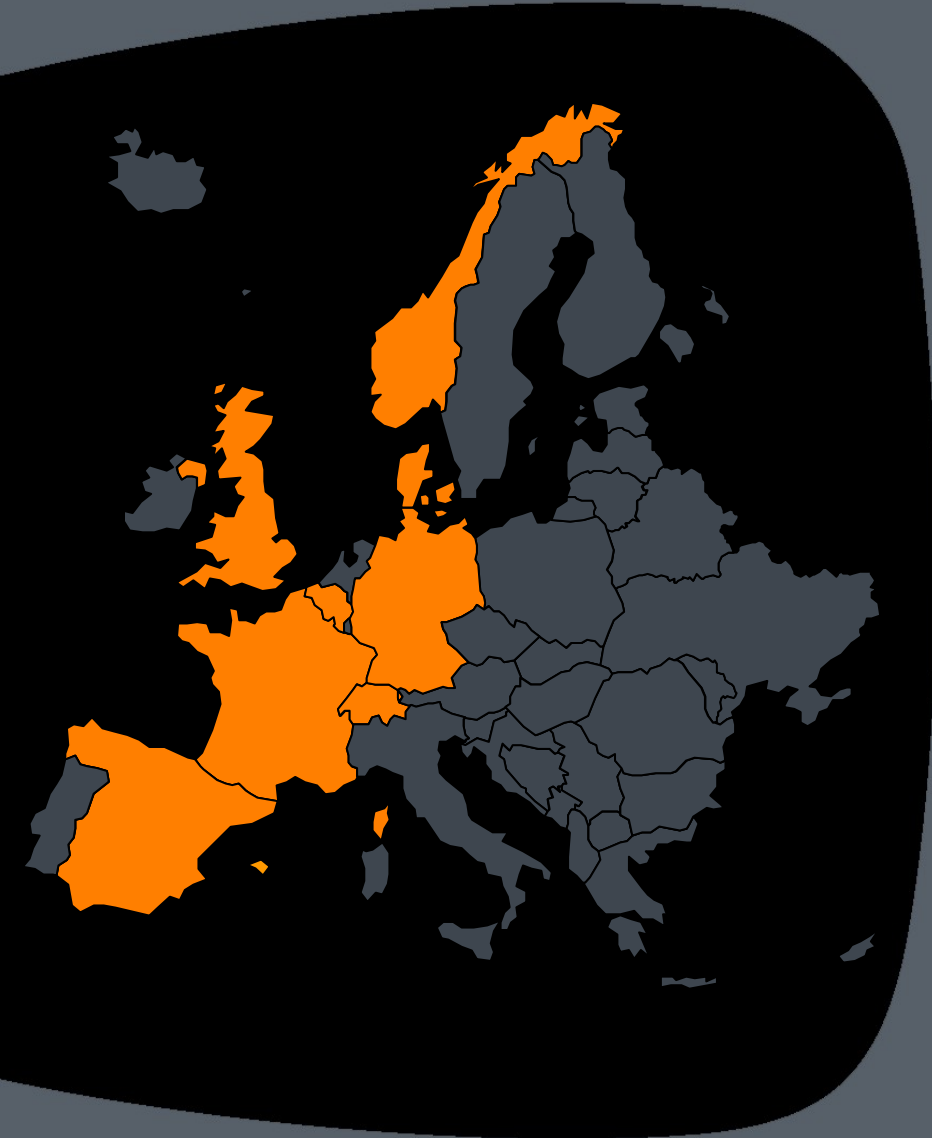
Upcoming soon

(hopefully):

Austria, Czech Republic,  
Croatia, Hungary,  
Italy, Netherlands,  
Romania, Sweden,  
Finland ...

### » North America:

Planned launch in Q3  
2008



# Who are our users ?

So far, we have over 2.2 million happy users in Europe. More are joining daily.

“ You are the kings of internet TV. Merci de la part de tous les téléviseurs français. ”

“ Très franchement, je trouve la technologie vraiment sympa, merci beaucoup à Zattoo ! ”

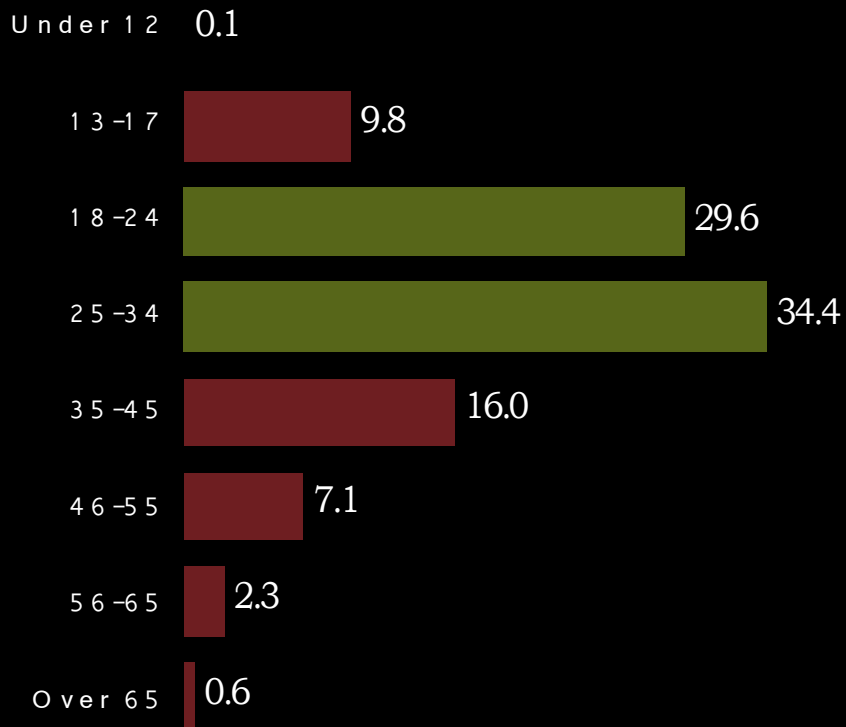
“ Nice one Zattoo, the Linux version works like a charm ... Excellent App and a great service! ”

“ Really excellent that we can watch Zattoo in Norway -well done!! Good quality, too! ”

“ Thanks for coming to Germany! ”

# Zattoo attracts fleeing viewers back to broadcast TV

Age distribution of Zattoo viewers  
Percent



Broadband Internet at home is luring young viewers away from TV

- More and more households are signing up for broadband connections
- Young adults with Internet access at home watch 7 hours less TV per week than the average viewer

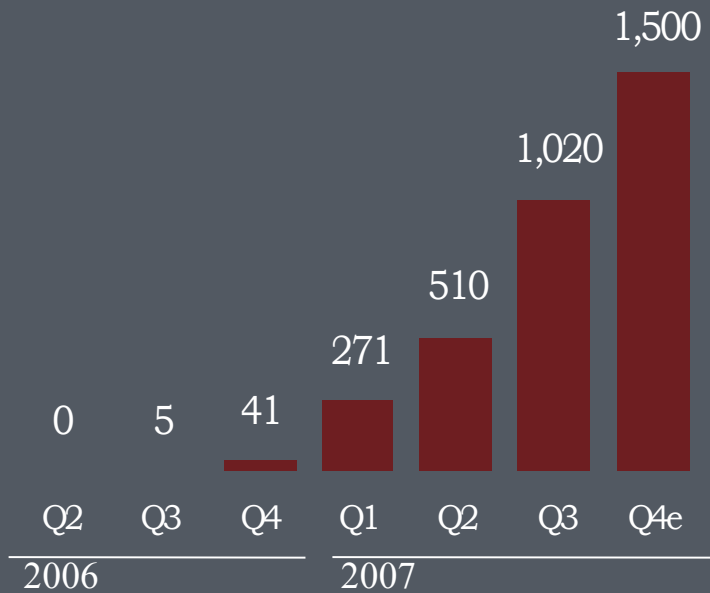
Zattoo attracts fleeing audience back to broadcasters' contents

- Zattoo viewers are technology-savvy, well-connected, young adults in their 20s and 30's
- Zattoo viewers represent golden segments for content owners, broadcasters, and advertisers alike

# Fast adoption confirms complimentary to TV offering

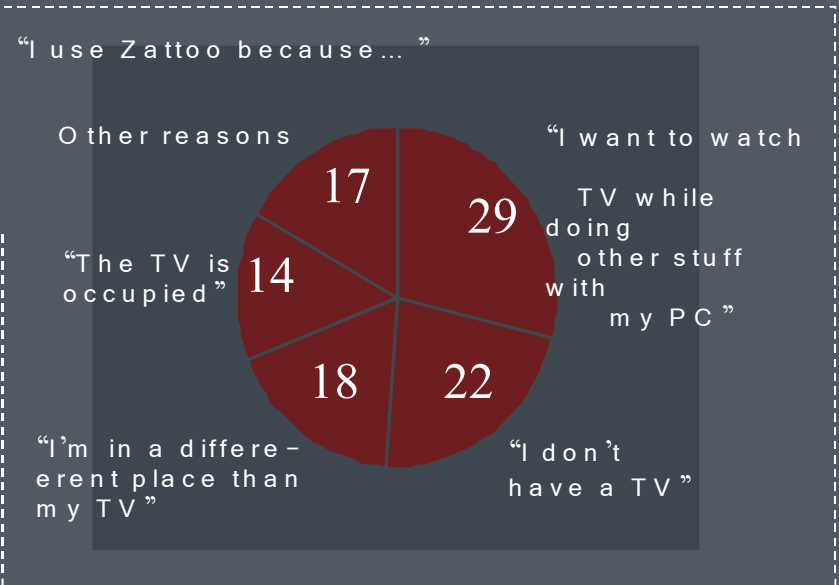
## Zattoo subscribers

Thousands



## Triggering factors driving adoption

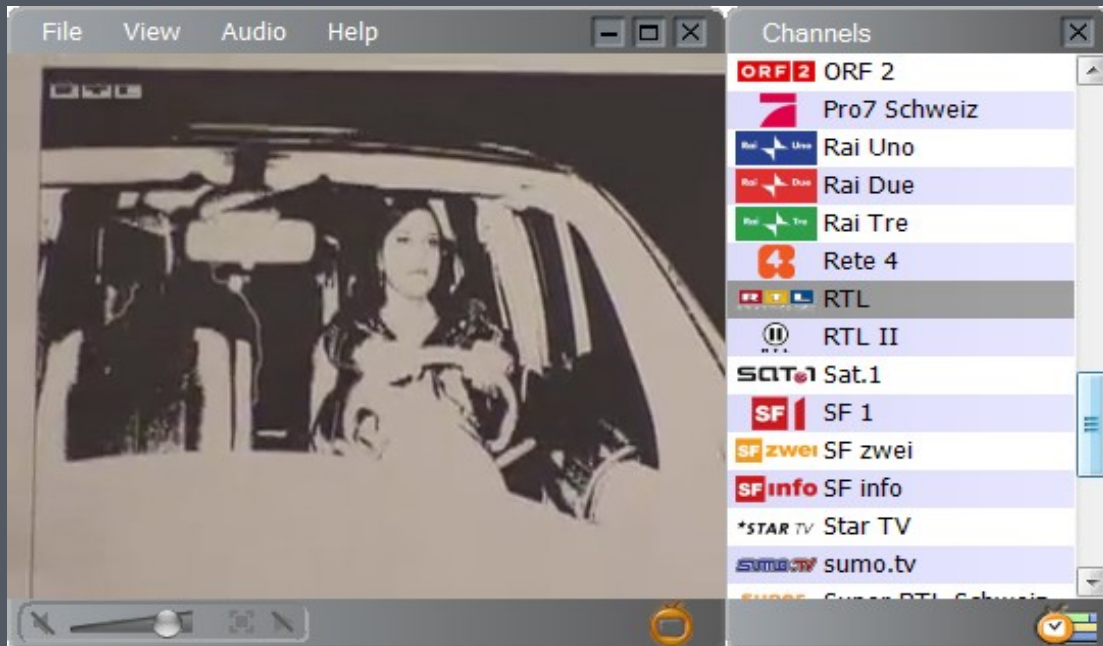
Percentage



- » 400'000 users in Switzerland (20% of all broadband users) in less than a year
- » 100'000 users in Spain in 2 weeks
- » Only thanks to word of mouth and media coverage

- » Zattoo is not a substitute but a complement and an extension to classic TV viewing

# Distinguish Countries: GEOip



- » For each country, Zattoo provides a localised TV Lineup!
- » Country selection is based on GEOip information
- » maxmind.com is our current GEOip info supplier



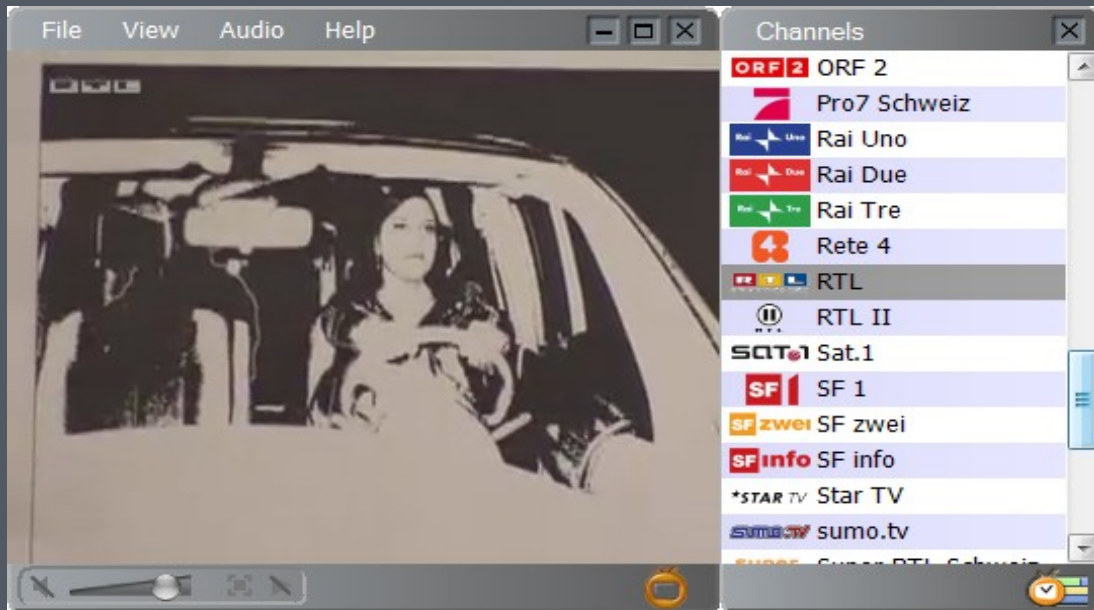
# Zattoo works with ...



- » Mac | Linux | Windows
- » MPEG 4
- » H.264 for Video
- » AVC for Audio
- » P2P algorithm has some intelligence such as ASN awareness



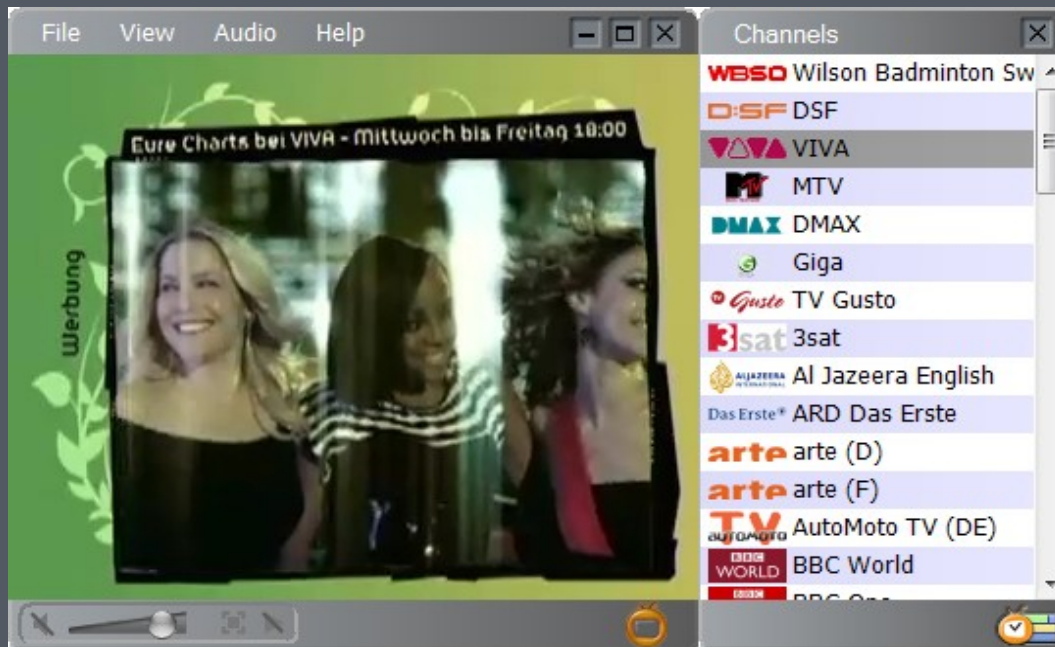
# In a perfect world ...



- » ... in a perfect world [i.e. Campus LAN with  $\geq 100$  Mbps to each desktop) Zattoo would achieve 100% P2P
- » The seeding server would just use one stream ( $\sim 500$  kbps)
- » All clients organise themselves as P2P sources



# ... but the Internet is far from being perfect!



- » ... low upstream bandwidth with most commercial residential broadband offerings
- » ... Oversubscription / Overbooking (everybody does it, nobody admits it)
- » Latency, Jitter, Congestion, Packetloss – the client's network is beyond our control

- » Zattoo needs to subsidize the missing upload bandwidth with repeater servers



# Sidenote: Whitepaper about CDN / P2P

» Recommended reading: Whitepaper from William B. Norton (Equinix):

Video Internet: The Next Wave of Massive Disruption to the U.S. Peering Ecosystem (v1.5)

<http://www.blogg.ch/uploads/Internet-Video-Next-Wave-of-Disruption-v1.5.pdf>



# Why is the Zattoo Infrastructure dispersed?



- » Huge bandwidth requirements, fast growing
- » Best bandwidth rates available next to internet exchanges
- » Peering ... (yes, we do love Peering!)
- » Generally hot-potato routing ... but Zattoo will start to long haul traffic for better peering efficiency, too



# Overprovisioning ...



- » Peak load during sport events such as Soccer, Formula 1, Tennis and other major events as Elections require massive overprovisioning of the Zattoo infrastructure.



# Zattoo tries to be a good citizen ...



- » Using local peerings and avoid long haul links requires the server be local
- » Zattoo doesn't eat up all available resources on the computer (CPU)
- » Zattoo is not using any resources once the Zattoo client has been shut down
- » ... and last but not least we want to talk to the eyeball providers to make the load as easy as possible!



# The business model: “Buffertainment”

- » Upon choosing a new channel there is a technically induced transmission interruption of 5 to 7 seconds
- » This interruption enables the exclusive display of an advertisement
  - Zattoo Channel Switch Ad
- » Animated flash format combined with an interactive button, which appears in the channel browser
- » Several new features planned

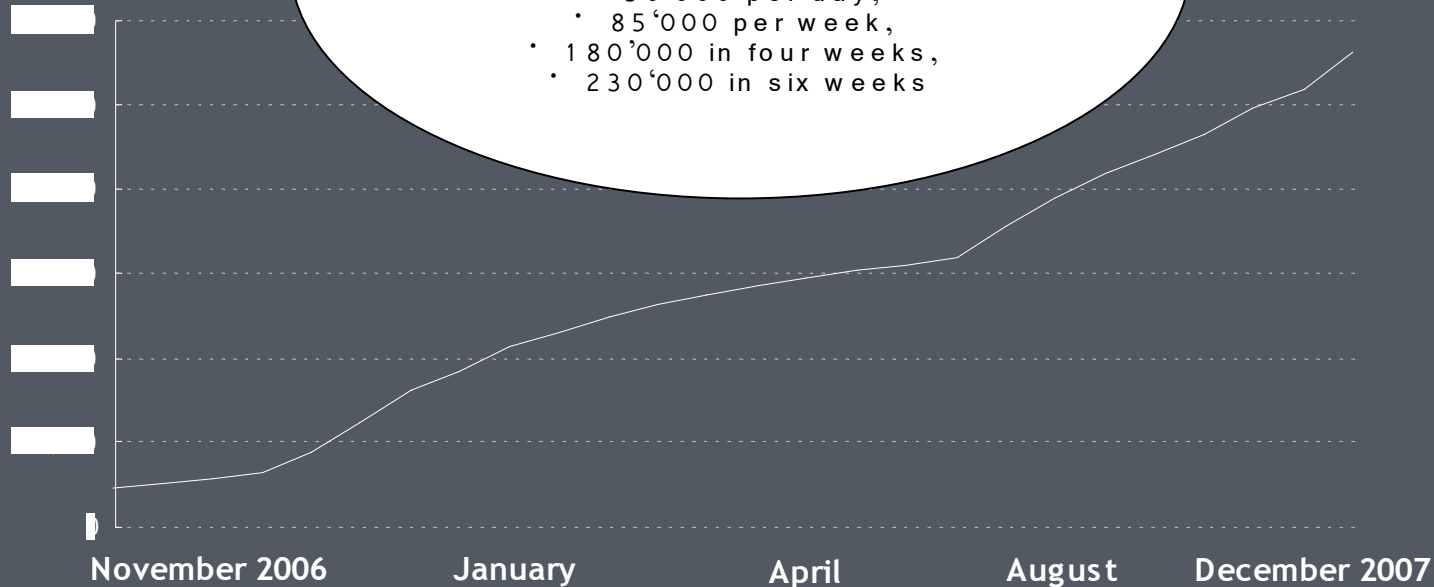


# Showcase for growth pattern: Switzerland

**6 Million streams  
(=contact = channel switch ad)  
per month**

- Unique users:
- 50'000 per day,
  - 85'000 per week,
  - 180'000 in four weeks,
  - 230'000 in six weeks

January 2008:  
575'755 users



Average usage per active user per week (in minutes):

148 126 124 135 106 108 104 116 119 135 124 136 164 168 173 187 183 210



# The case for partnership

## ISP

- Customer relationship
- Infrastructure (QoS and Multicast)
- Sometimes exclusive content

## Broadcasters / content networks

- Extending reach (Zattoo does not compete with broadcasters)
- Adding interactivity
- Testing new business models
- Aggregating ads

## Advertising networks /platforms

- Innovative platform
- Testing with some sophisticated targeting options
- Convergence play



# Who are our advertising partners?

We have a strong and established advertiser basis



# Future ...

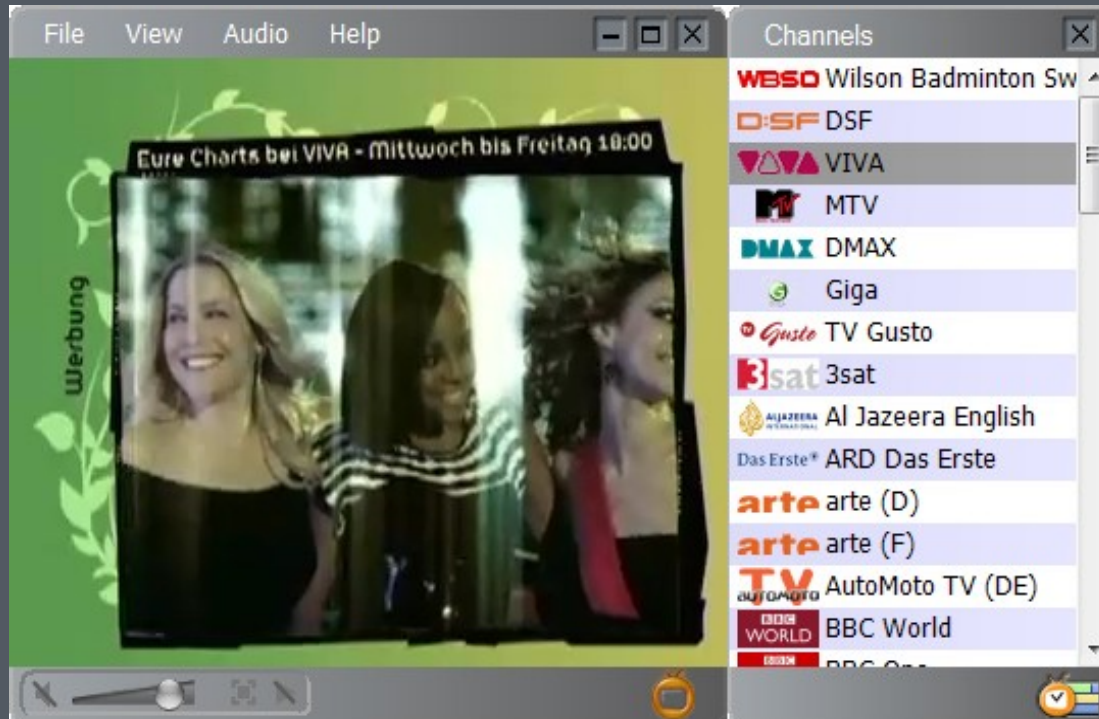
» Quote:

“Der Spiegel” (large German weekly magazine) yesterday April 1, 2008:

*“Who now discovers in the channel bouquet the BBC and already rejoices, will soon be disappointed: The European TV landscape remains an online quarantine zone. BBC will be for Britain, France gets its local french package, ARD and ZDF for Germany. [...] So Zattoo remains like the last year as overzealous acclaimed high-quality but still largely unsubstantial Joost: An outlook of what in Web TV is possible, if it would be allowed.”*



# Sign up today!



» [www.zattoo.com](http://www.zattoo.com)

(People outside of the Zattoo-enabled countries can sign up for the waitlist).



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