

Session 6: Emerging Challenges in the Digital TV Market

Introduction to HbbTV and the Hungarian test service

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Antenna Hungária

30th of January, 2014

Agenda

Introduction

International examples

HbbTV service of Antenna Hungária

Antenna Hungária is a leading telco in Hungary and the operator of the Hungarian digital terrestrial broadcasting network.

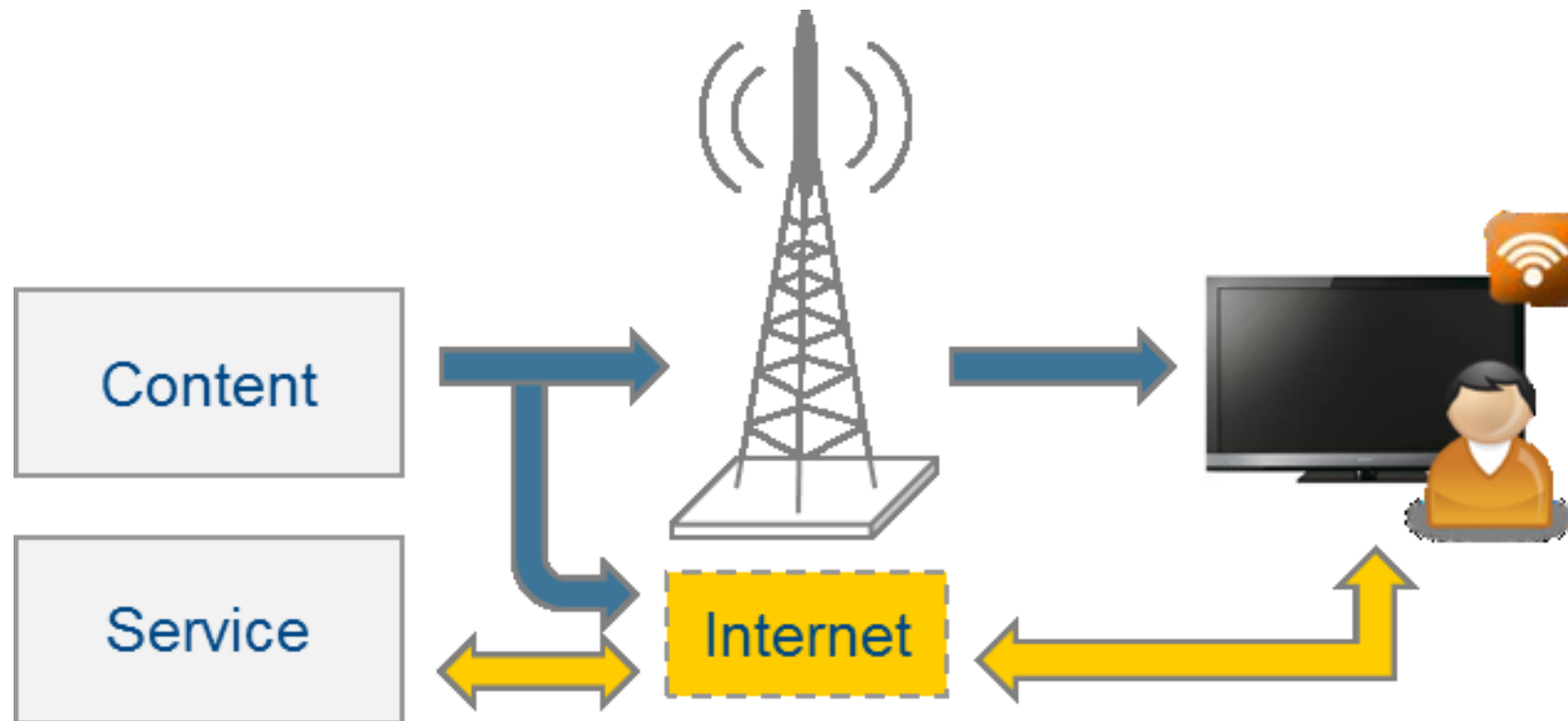
- Antenna Hungária is a **leading communication infrastructure provider** in Hungary with a unique nationwide site, transmission and operation network
- Antenna Hungária is the only **nationwide broadcast service provider** in radio broadcasting and **terrestrial TV**, with exclusive licenses for DVB-T frequencies
- Antenna Hungária also operates a **payTV service** (MindigTV Extra) on DVB-T since 2011. MindigTV Extra is the fastest growing payTV service in Hungary, presently having approximately 150 000 subscribers.

Terrestrial broadcast has advanced significantly with the continuous digital switch-over process.



- Digital allows for **higher number of broadcasted channels**
- Digital broadcast can result in **better quality**
- Digital terrestrial broadcast on its own already offers **basic level of interactive** services, but there are clear limitations due to the lack of two-way data communication.

With the wider scale availability of Internet and the advancement of end user equipment an IP-Broadcast hybrid setup seems to be an obvious solutions



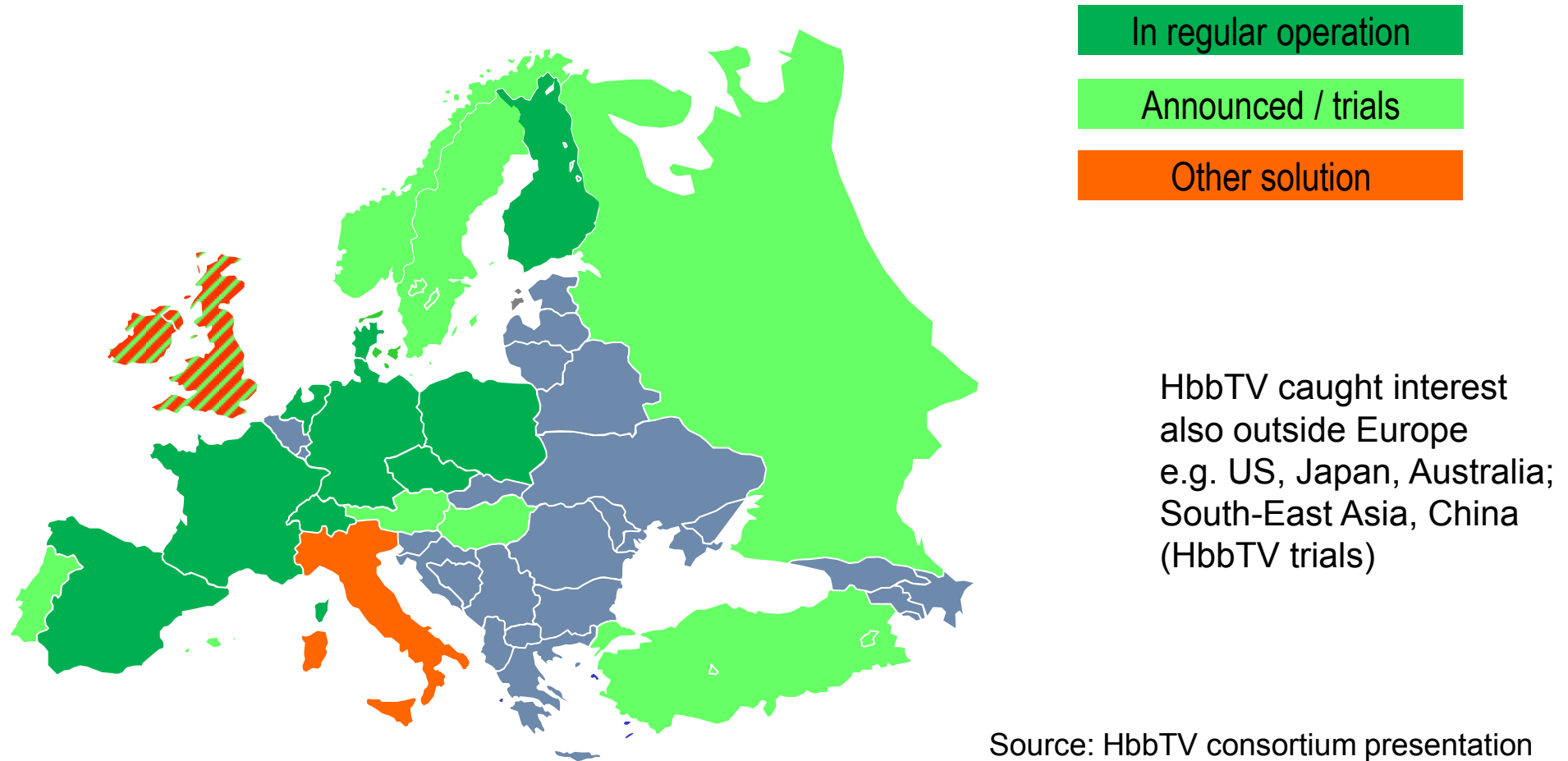
In the past decade there have been more than one standard with which a more connected digital broadcast experience could be reached



There are three critical factors of success:

- Receiver equipment availability and distribution
- Content provider support
- Number of countries adapting a certain standard

The international adaptation rate of HbbTV is growing fast with more and more test announced around the globe



There are more and more manufacturers incorporate HbbTV standard in their end user equipment



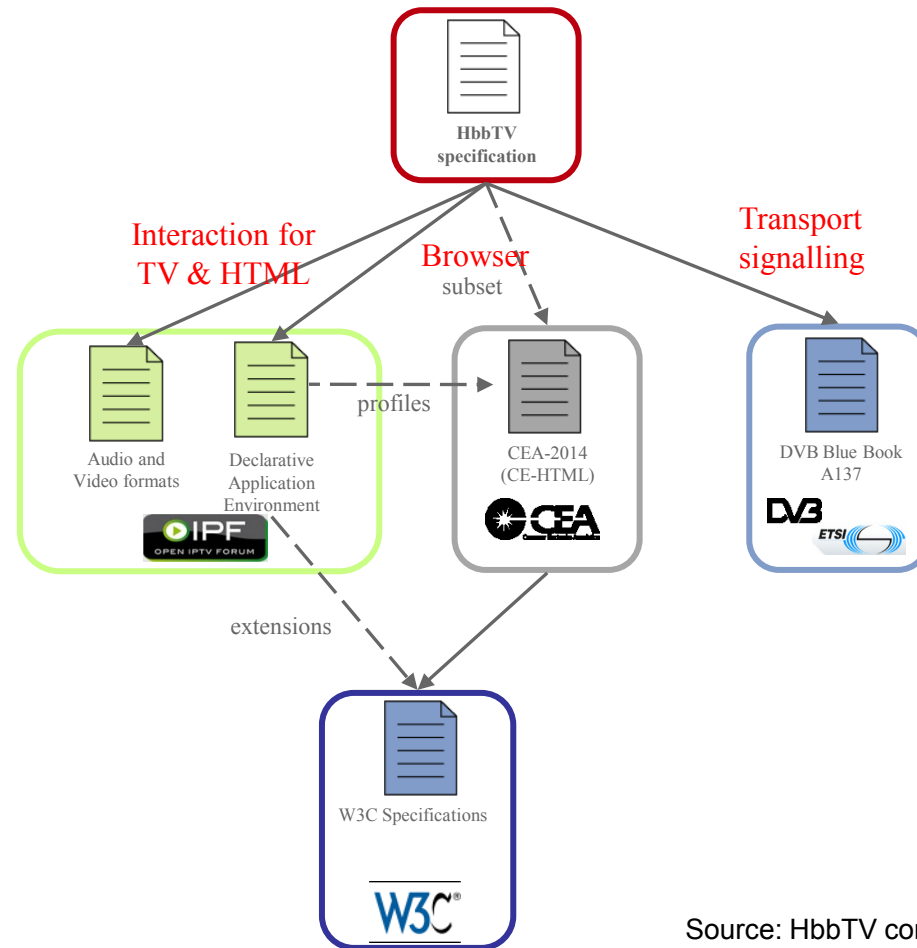
It is very important to all parties in the digital media value chain that key elements are based on established standards

- Start from two key mature & stable pieces of technology

- Web standards as included in web browsers for embedded devices
- DSM-CC object carousel as used with MHEG-5 in UK and MHP in Italy

- Mix in elements from other work where necessary

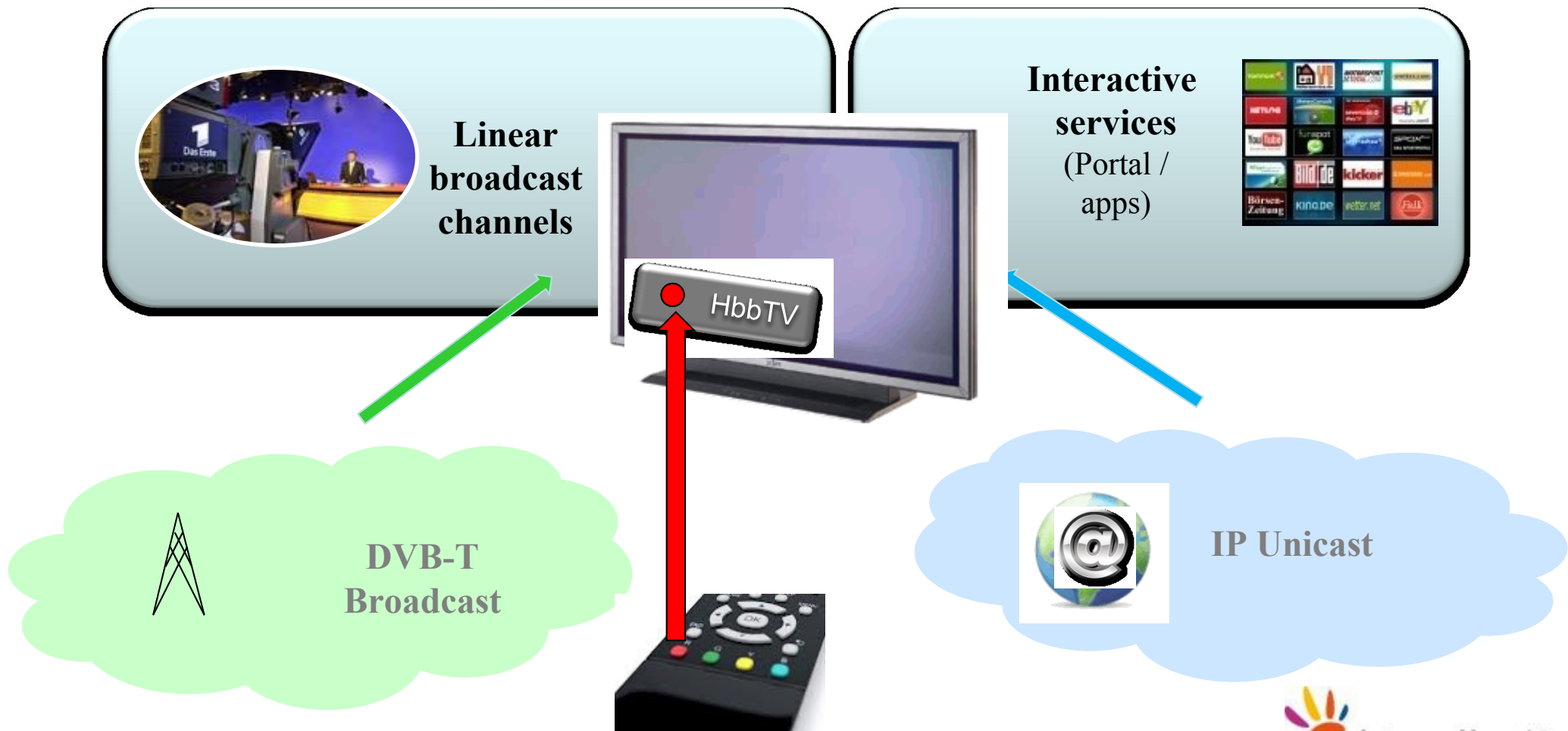
- Application signaling & lifecycle management as used in MHP
- JavaScript APIs for TV from OIPF
- MPEG-Dash Profile



Source: HbbTV consortium presentation

For the outlined reasons HbbTV was our choice of hybrid development at Antenna Hungária

Hybrid Broadcast Broadband TeleVision



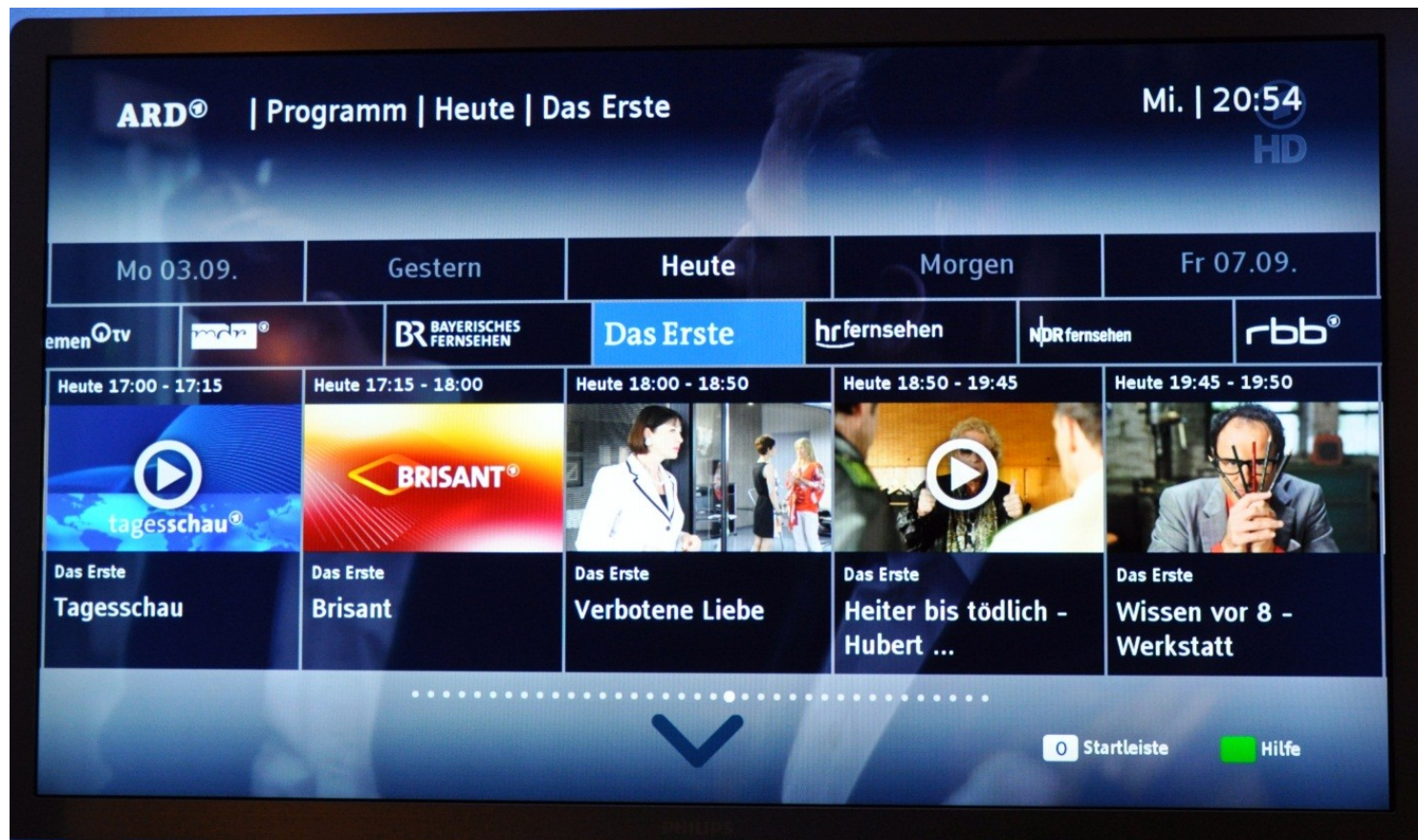
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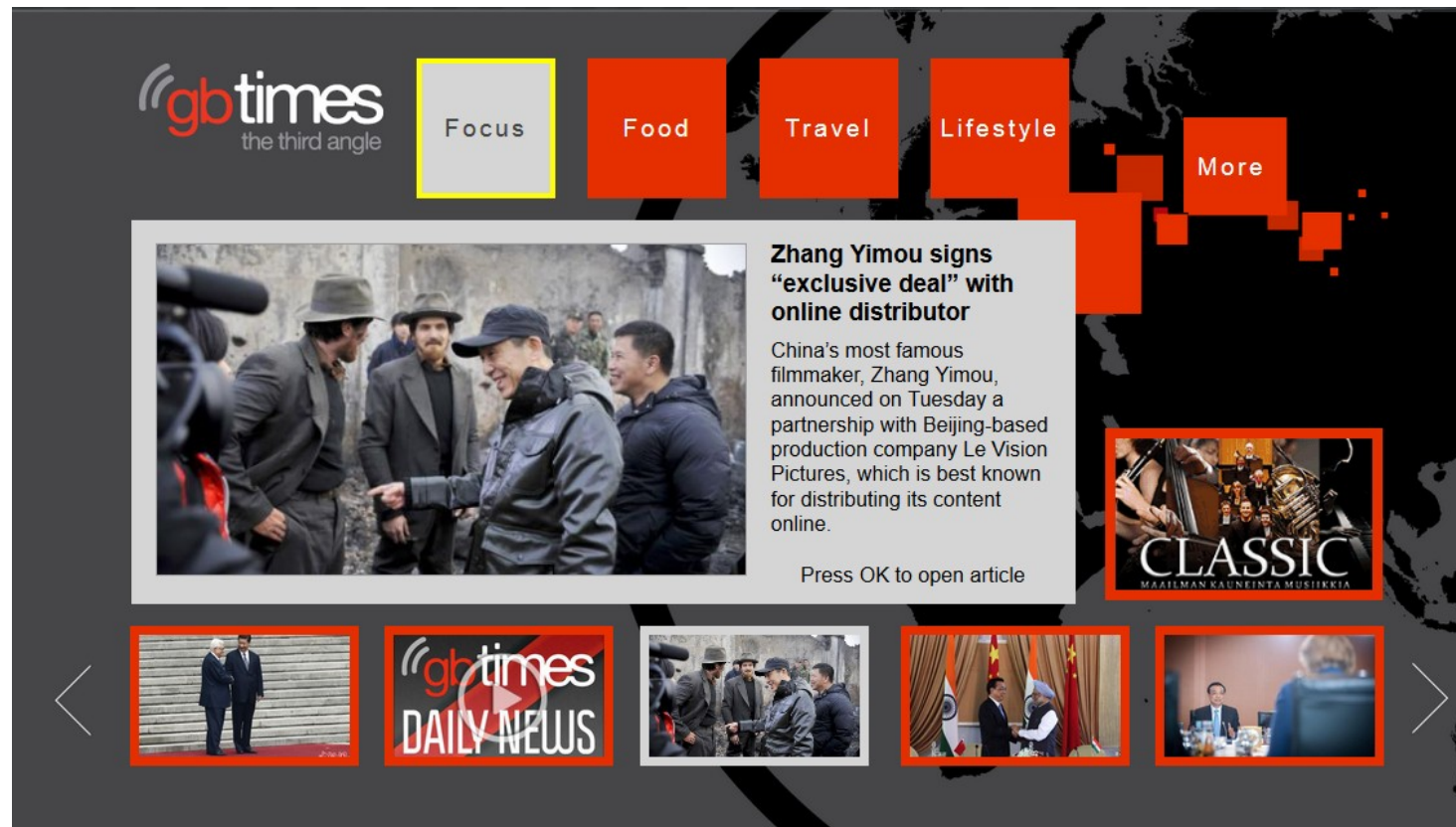
International examples

HbbTV service of Antenna Hungária

One of the most frequent application of HbbTV is multimedia rich EPG



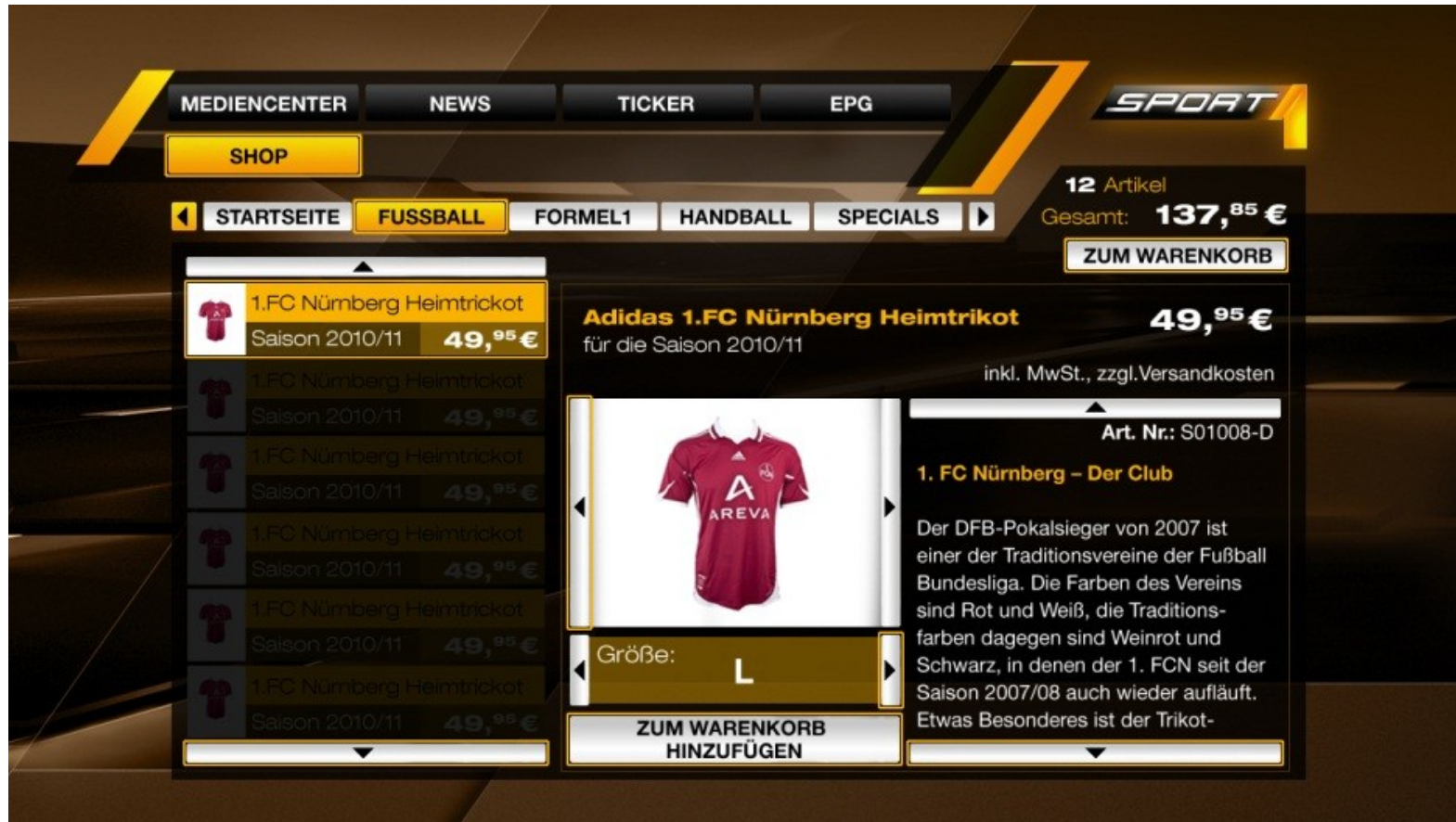
Another widely used service is on demand video as for viewers on demand is a key extension to the linear broadcast services



It is no surprising that advertisement options seen in the online space have easily made their way to HbbTV platforms



There are early stages of commercial applications also, but this field still has lots of room for improvement



There are some technically very complex HbbTV applications that translate into easy to use interactive services connected to live broadcast



In this context the blue button activates the „Salto” restart service.

There are excellent HbbTV application opportunities in the field of barrierfree media access



In operation

Source: HbbTV consortium presentation



Demo



It is not only in Western Europe anymore, the Czech Republic probably has the leading HbbTV service in the CEE region

TV program zkušební vysílání | pátek | 28.06.2013 | 15:01:55

ČT vysílá **ČT1** **ČT2** **ČT24** **ČT sport**

| 19:20 | Dnes | ČT2 19:50 | Dnes | ČT2 20:00 | Dnes | ČT2 20:55 | Dnes | ČT2 21:45 | Dnes | ČT2 23:10 | Dnes |
|-----------------------------|---------------------------------|------------------------------------|---------------------------|--------------------------------------------------------------|----------------------|-----------|------|-----------|------|-----------|------|
| | | | | | | | | | | | |
| h Possible I, ili pět útočí | Zprávy v českém znakovém jazyce | Zázračná planeta: Geniální zvířata | Vesmír II.: Kosmické síly | Dotěrný chlap, Emmerdeur, L', Velikáni filmu... Lino Ventura | Copak bych vám lhal? | | | | | | |
| | | upoutávka | upoutávka | upoutávka | | | | | | | |

6. út 25.06. st 26.06. Včera Dnes Zítřa ne 30.06. po 01.07. út 02.07. st 03.07.

0 ČT menu Konec Teletext TV program O HbbTV

StarDance ŠKOLA TANCE zkušební vysílání | středa | 18.04.2012 | 12:59:18

ŠKOLA TANCE S KAMILOU A HONZOU TOMÁNKOVÝMI

| Quickstep | Rumba | Waltz | Cha-cha |
|------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| | | | |
| V překladu je quickstep rychlý krok, což tento tanec přesně vystihuje! | Pomalý milostný tanec plný vášně, který vám určitě zlepši náladu! | Noblesní a něžný tanec, který by měl umět opravdu každý! | Svízný kubánský tanec s typickou přeměnou cha-cha-cha. |
| Bude aktivováno 8. 11. | Bude aktivováno 15. 11. | | |

Stránka 1 / 3 StarDance v SOBOTU 20:00 NA ČT1 | www.star-dance.cz

0 ČT menu 9 Kontakty Konec Teletext TV program O HbbTV

MS Hokej 2012 zkušební vysílání | pátek | 04.05.2012 | 15:09:35

| Program | Skupiny | Zápasy | Statistiky | Týmy | Stadiony |
|----------------------------|------------|----------|------------|----------|-----------|
| TABULKA / skupina B | | | | | |
| | TÝM | Z | V | P | VP |
| 1 | Německo | 1 | 1 | 0 | 0 |
| 2 | ČR | 0 | 0 | 0 | 0 |
| 3 | Dánsko | 0 | 0 | 0 | 0 |
| 4 | Lotyšsko | 0 | 0 | 0 | 0 |
| 5 | Norsko | 0 | 0 | 0 | 0 |
| 6 | Rusko | 0 | 0 | 0 | 0 |
| 7 | Švédsko | 0 | 0 | 0 | 0 |
| 8 | Itálie | 1 | 0 | 1 | 0 |

TÝMY

- Česko
- Kazachstán
- Lotyšsko
- Německo
- Finsko
- Slovensko
- USA
- Francie
- Švýcarsko
- Dánsko
- Švédsko
- Rusko
- Kanada
- Bělorusko
- Itálie
- Norsko

BODY

- 3
- 0
- 0
- 0
- 0
- 0
- 0
- 0

Následuje

- 11:15 4.5.2012 USA : FRA
- 12:15 4.5.2012 DEU : ITA
- 15:15 4.5.2012 CAN : SVK
- 16:15 4.5.2012 CZE : DNK
- 19:15 4.5.2012 BLR : FIN
- 20:15 4.5.2012 SWE : NOR

0 ČT menu Zpět Konec Teletext MS Hokej O HbbTV

Euro 2012 zkušební vysílání | pondělí | 04.06.2012 | 16:58:34

| Program | Skupiny | Zápasy | Statistiky | Týmy | Stadiony |
|-----------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|----------|
| STADIONY / Městský stadion ve Wroclawi | | | | | |
| | | <p>Kapacita: 40 000 diváků</p> <p>Domovský klub: Slask Wroclaw</p> <p>Otevřen: září 2011</p> <p>Stadion ležící vedle řeky Slezky je spojen s centrem města novou tramvajovou linkou a svým tvarem připomíná čínský lampion. Stadion je částí komplexu, kde se nachází rovněž kanceláře, konferenční sály, fitness studio, kasino a muzeum místního klubu.</p> | | | |

Následuje

- 18:00 08.06.2012 POL : GRE
- 20:45 08.06.2012 RUS : CZE

0 ČT menu Zpět Konec Teletext Euro 2012 O HbbTV

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HbbTV service of Antenna Hungária

We have decided to build upon our existing set of brand to ease the communication and to utilize the brand power of our FTA and PayTV services

FTA



MinDig TV
minőség havdíj nélkül

PayTV

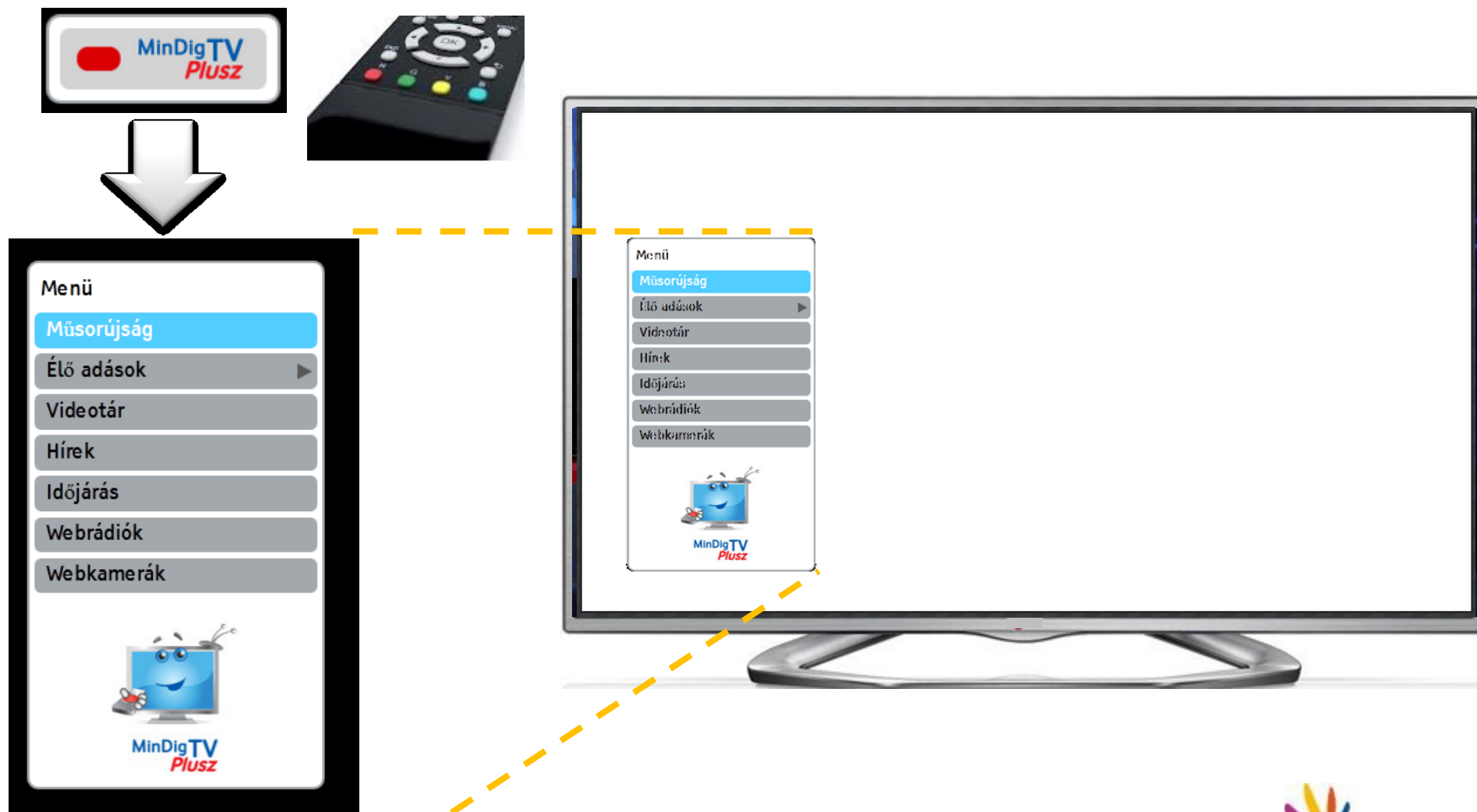


MinDig TV
Extra
MINDEN, AMI KELL
SEMMI, AMI NEM

HbbTV



Our experience is that a popup menu is more comfortable entry point for the user for standard services than a full page portal



In our trial service we have implemented the functions that are mostly used in HbbTV environments (1/5)

Rich EPG

- For all channels on DVB-T
 - FTA, PayTV, HbbTV Linear streams
 - Users can directly use the EPG to switch to any of these channels
 - Added multimedia content

Linear streaming

- Two TV channels which are not yet available on DVB-T
- Viewers can switch to these TV channels both from the popup menu and also from the EPG
- 8 radio channels (four Hungarian, four foreign)

In our trial service we have implemented the functions that are mostly used in HbbTV environments (2/5)

Video on Demand ➤ Using the content provided by the public broadcaster we have also created a video on demand section



In our trial service we have implemented the functions that are mostly used in HbbTV environments (3/5)

News

- The news in our test service automatically updates through RSS feeds so there is basically no extra work for the editors of existing news portals



MinDigTV Plusz • HÍREK

Tudomány

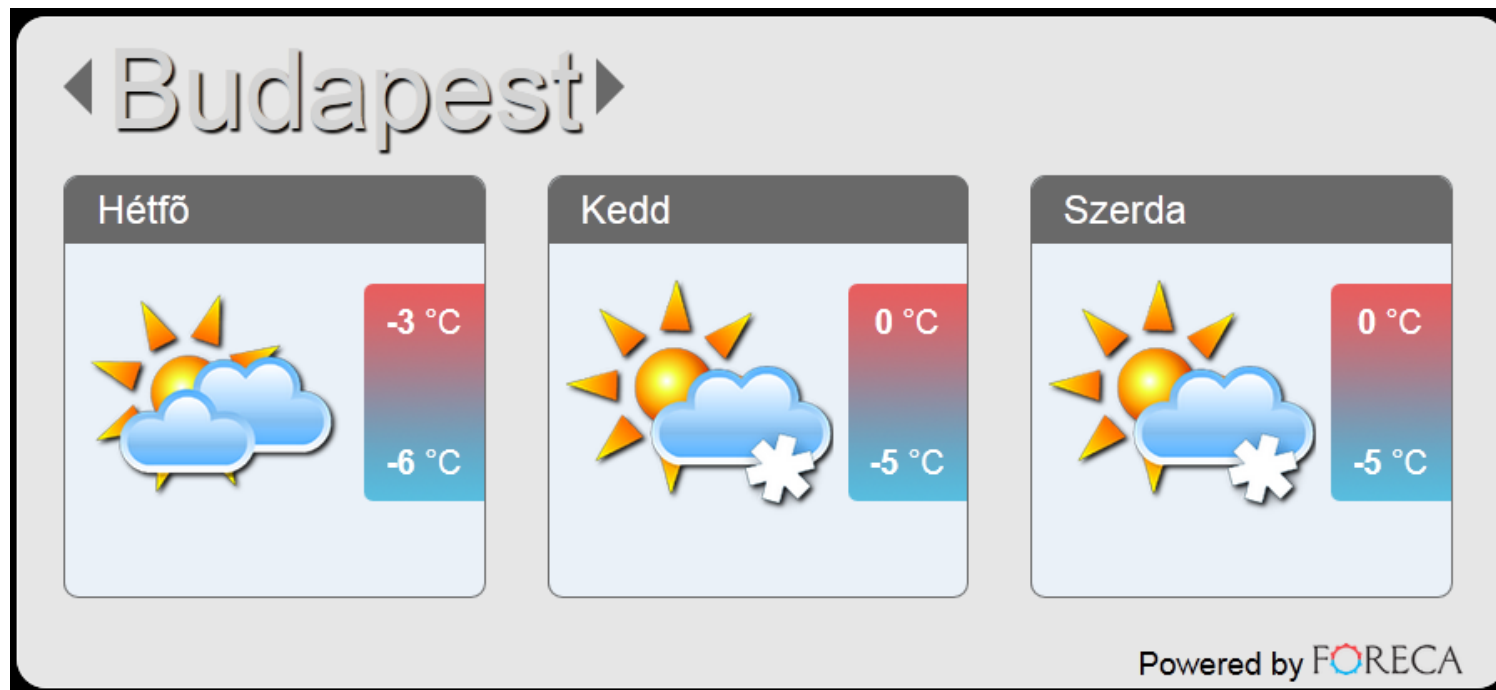
- Savas vízben virágzó korallzátonyra bukkantak**
Palau szigeteinél kiterjedt korallzátony-ökoszisztémára bukkantak olyan, savas környezetben, amely máshol már károsítja a
- A vélnél sokkal fiatalabb a Grand Canyon**
Egy kutatócsoport szerint a Grand Canyon a korábban vélnél fiatalabb, nagyobb része csak 5-6 millió évvel ezelőtt alakult ki.
- A szárazon vadásznak a jégről kiszorult jegesmedvék**
Kutatók szerint a jegesmedvék a klímaváltozásra és a sarkvidéki tengeri jég olvadására reagálva egyre többször vadásznak
- Az ember már 11 ezer éve formálja a távol-keleti esőerdőket**
Egy új kutatás szerint Délkelet-Ázsia trópusi esőerdeit az utóbbi 11 ezer évben az ember is alakította.
- Feltárták egy ősi európai vadászó-gyűjtögető genomját**
Egy ősi vadászó-gyűjtögető spanyol barlangban feltárt maradványai a modern emberéhez meglepően hasonló genomot mutattak.
- A klímaváltozás megemelte a jegesmedvék stresszhormonszintjét**
A kutatók Grönlandon élő jegesmedvéktől gyűjtöttek szőrmintákat, és megmérték azok kortizolszintjét.
- Cápcasali a strandnál**
A nyugat-ausztráliai partvidék nyolc népszerű fürdőhelye közelében engedélyezik az odavetődő nagyméretű tengeri ragadozók, köztük átmenetileg a fehér cápák elejtését, az
- Betegeskedik a Jåde nyúl**
Meghibásodott a kínai holdjáró, a szakemberek dolgoznak a hiba elhárításán. A Jåde nyulat egyszer már "elaltatták", két hete térítették magához.

Kilépés Főoldal Vissza

In our trial service we have implemented the functions that are mostly used in HbbTV environments (4/5)

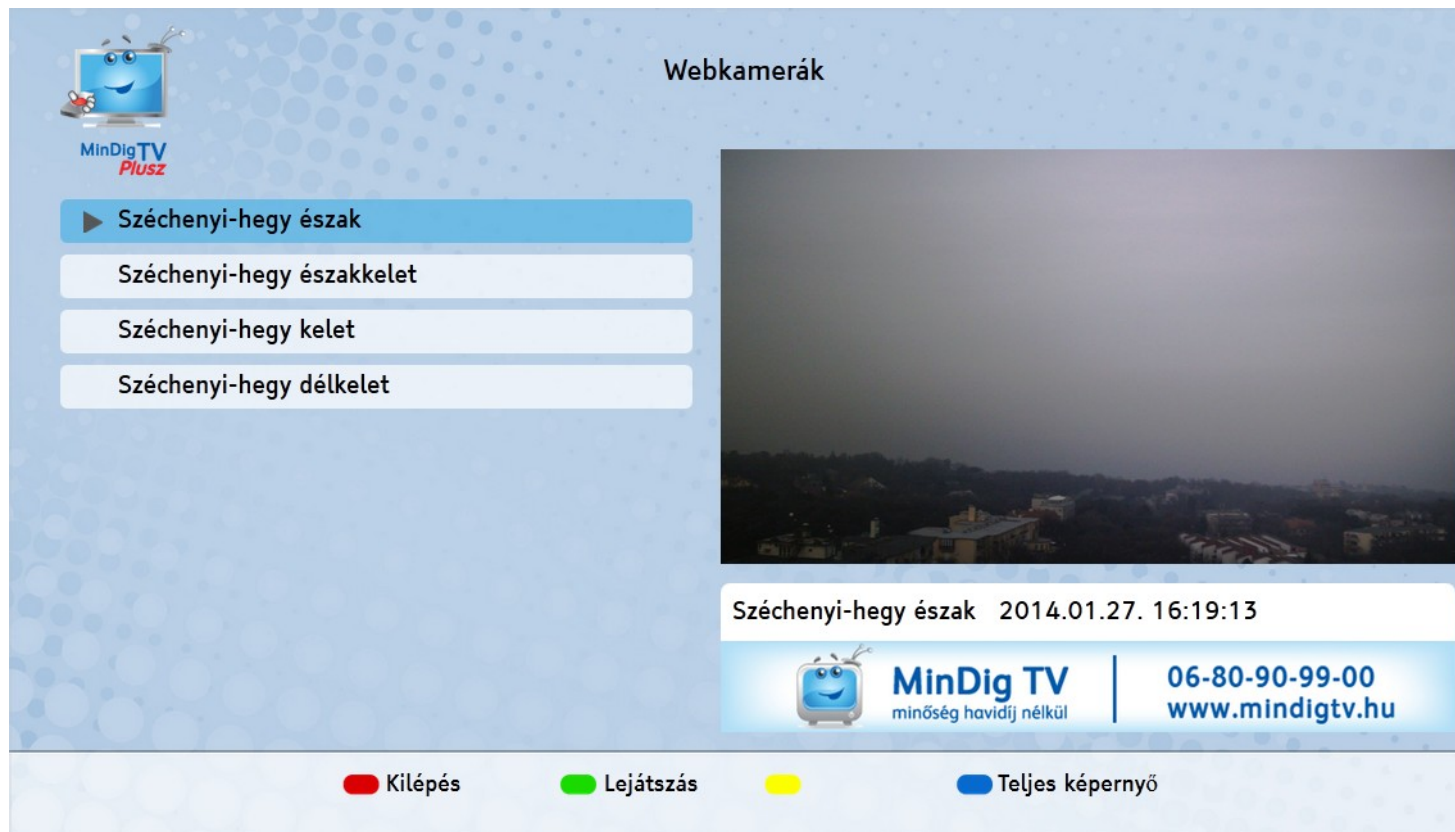
Weather info

- Small application that has basic weather information for the largest cities of Hungary



In our trial service we have implemented the functions that are mostly used in HbbTV environments (5/5)

- Webcam**
- Regularly updated still images of a webcam at one of our large towers
 - Possible key applications are tourism, sports and traffic information





Thank you for your attention!

Contact information:

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