

Varsavia, June 2008



---

# Why Italy has chosen MHP and will stand by it

This document is confidential and is intended solely for  
the use and information of the client to whom it is addressed.

---

# Agenda

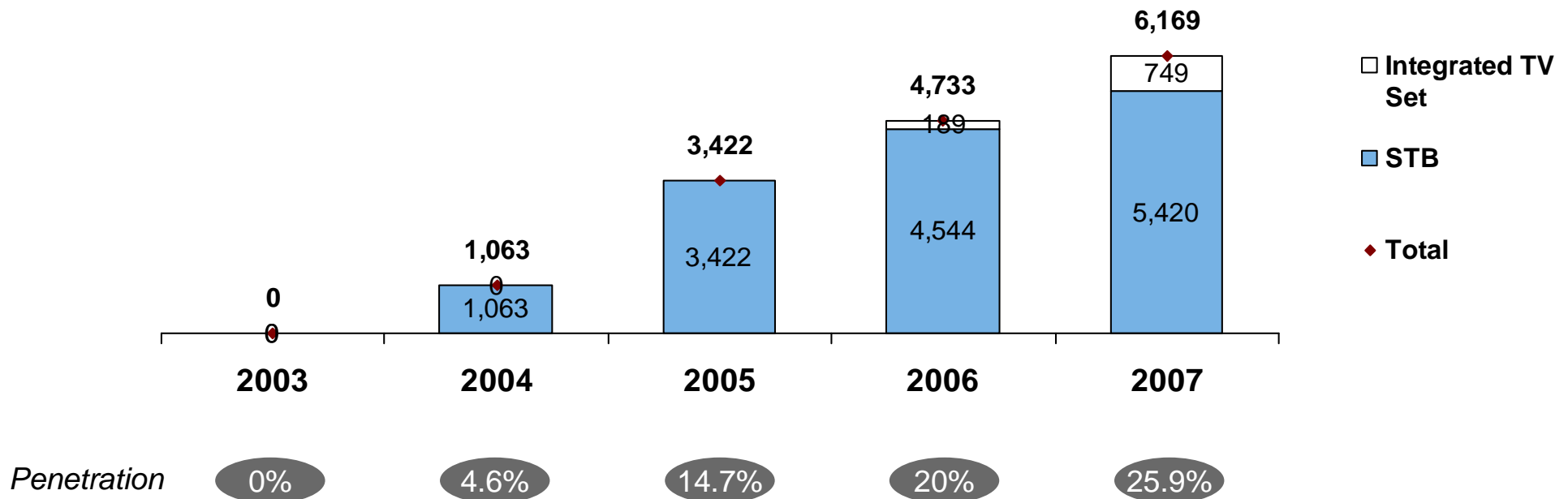
---

## MHP penetration and offering in Italy

Viewers use and enjoy MHP services: some data

# In 4 years, DTT reached a 25% penetration of Italian families – most of DTT viewers are equipped with STBs

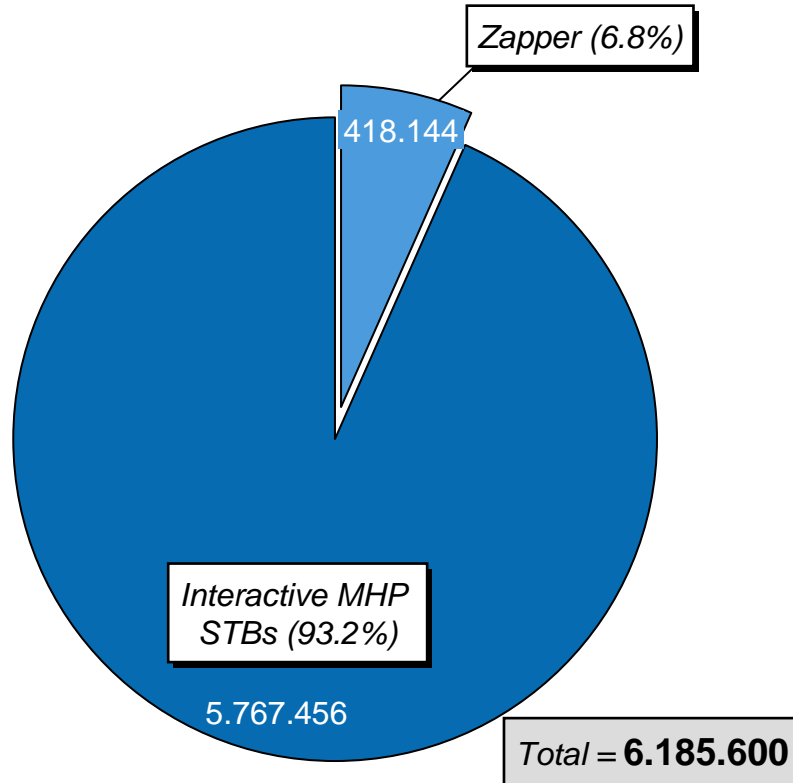
**DTT receiver sales**  
(‘000, at end of year)



Source: GfK; Booz & Co. analysis

# 5.7mln of Italian consumers (93% of total STB buyers) preferred an interactive MHP STB

**STB Total Italian Market Estimate**  
(Data referred to end of April 2008)



## MHP success factors

- 1 Government incentives** (2 mln MHP interactive STB's were financed by the State)
- 2 MHP STB price reduction:** from 320 Euro in 2003 down to Euro 70 in 2007
- 3 Endorsement & promotion** by broadcasters and institutions
- 4 Wide local interactive content offering**

Source: GFK Marketing Services Italia for DGTVi, Booz & co. analysis

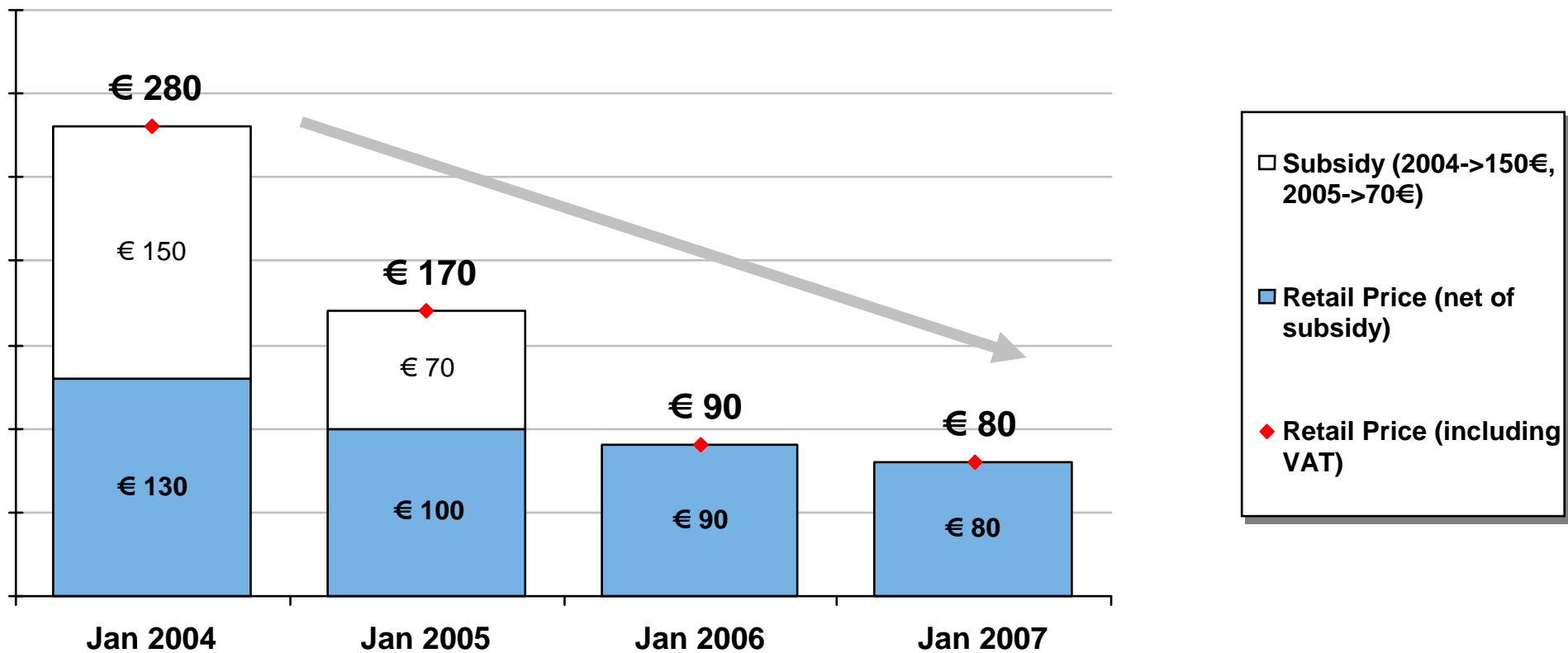
# Italian Government subsidized interactive STBs in 2004, 2005, 2006

Incentive evolution and amount, number of STBs/iDTV subsidized, notes

	Subsidized amount (for each STB)	STBs Subsidized	Notes & Requirements
<b>2004</b>	150 €	700.000	Interactive STBs with MHP
<b>2005</b>	70 €	1.230.000	Interactive STBs with MHP
<b>2006</b>	70 €	50.000	Interactive STBs with open standard Subsidize available only in switch-off areas (Sardinia and Aosta Valley)
<b>2007</b>	Up to 200 € <b>only iDTV</b>	-	Incentives requirements to be defined
<b>2008</b>	(20% of the total iDTV value)		

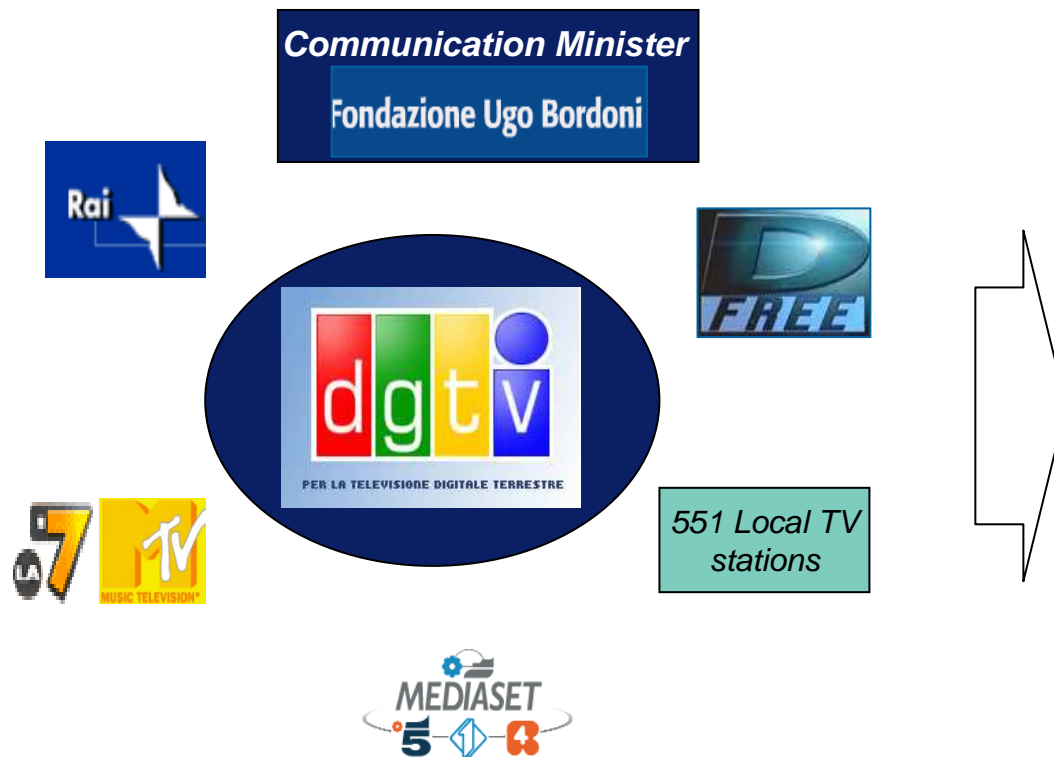
# MHP STB prices dropped and are now competitive with zappers

## Price of DTT interactive MHP STBs in Italy



Source: GfK Market Services; Market research; , Booz & Company analysis

Since 2004, DGTVi, the Italian DTT association of broadcasters, and communication minister, have endorsed the MHP as a middleware minimum requirement...



Italian DTT receiver D-Book



# During the 2007 Annual DGTVi Conference on DTT, the association announced the issuing of two trademarks to certify STBs and iDTVs receivers compliancy to D-Book requirements

1 STB “blue” trademark: MHP + Pay TV



2 iDTV “white” trademark: only pay TV



Comments
<ul style="list-style-type: none"> <li>▪ A <b>widely known trademark</b> can help the customer <b>purchasing the best product</b></li> <li>▪ DGTVi associates decided to <b>promote both trademarks on their networks</b> and to not develop any commercial initiatives with companies not enrolled in the labelling program</li> <li>▪ Buying the correct <b>STB</b> – able to show <b>Free and Pay DTT and interactive services</b> – is easier with the “blue” trademark (1)</li> <li>▪ The white trademark (2) warrants that an <b>iDTV is ready for Free and Pay DTT</b></li> </ul>

# 70% of STB market has joined DGTVi blue label program that certifies DTT receivers compliancy to MHP and Pay TV...

## 1 STB blue trademark: MHP + Pay TV



**Major STB requirements:  
DTT Tuner for free TV, Conditional  
Access System for Pay TV, MHP for  
interactive services**

Comments
<ul style="list-style-type: none"><li>▪ The full trademark certifies the availability of Pay TV and MHP features</li><li>▪ In the first few months DGTVi has certified:<ul style="list-style-type: none"><li>– ADB</li><li>– AURIGA</li><li>– ELSAG DATAMAT</li><li>– FRACARRO</li><li>– TELE System Electronic</li><li>– HUMAX</li></ul></li><li>▪ The DGTVi trademark is widely present on the shelves, <b>70% of the STB market is labelled with it</b></li><li>▪ <b>This trademark will be extended to all next generation iDTVs that will integrate MHP</b></li></ul>

... about 80% of iDTV market has joined the “white” trademark that certifies iDTVs compliancy to Pay TV

2 iDTV white trademark:  
only pay TV (Common Interface + CAM)



Major TV Set requirements:  
DTT Tuner for free TV, Common Interface for Pay TV(+ bundled CAM option)



Comments

- DGTVi has already certified major TV manufacturers:
  - SAMSUNG
  - Panasonic
  - TELEFUNKEN
  - Pioneer
  - FINLUX
  - INNO-HIT
  - LG
- The DGTVi trademark is widely present on the shelves, **80% of the iDTV market will be labelled with it**
- Manufacturers involved in the labelling program accept to add MHP feature to their iDTV by the end of 2009, becoming eligible for the “full” trademark

# In June 2008 DGTVi has entered into a joint agreement with ImpulsaTDT in order to share the D-Book and promote interactivity



**Italian DTT receiver D-Book**  
(Shared for free with ImpulsaTDT)

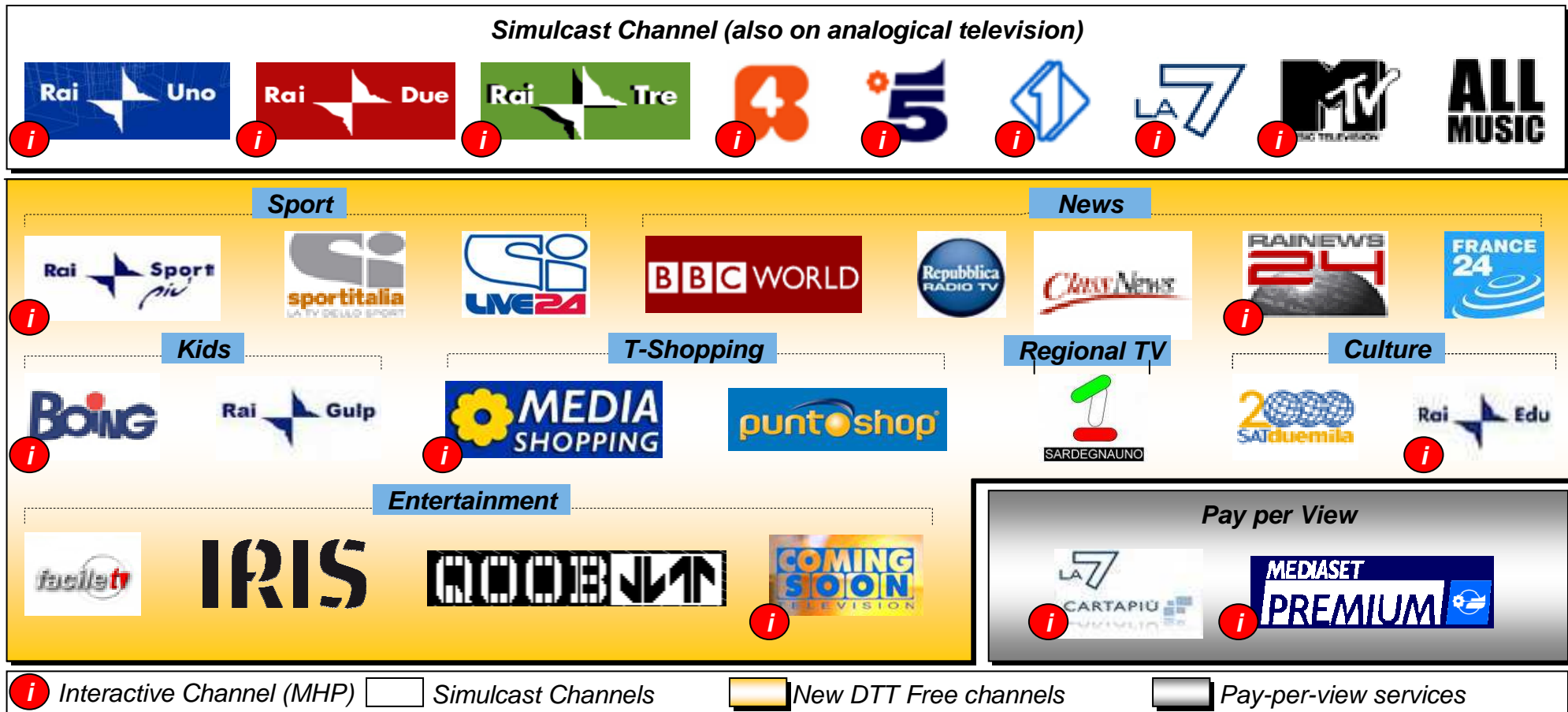


## Comments

- DGTVi and ImpulsaTDT will cooperate for a better DTT service and offering in their own countries
- ImpulsaTDT will write a Spanish version of the D-Book leveraging DGTVi know how
- DGTVi and ImpulsaTDT will drive the DTT market in order to offer more services to viewers

# 14 free national channel (out of 28) and all pay per view services are already enhanced by MHP applications

## Current DTT Offer



Source: DGTVi, DT, Booz & Company analysis

# Hundreds of interactive services have been developed since the launch of DTT, all of them exploit the MHP middleware functions

## Main interactive services developed by Rai, Mediaset and La7

	 <p><b>EPG</b></p>	 <p><b>Digital Teletext</b></p>	 <p><b>Quiz &amp; Games</b></p>	 <p><b>T-government &amp; T-banking</b></p>	 <p><b>Rai Utile</b></p>	 <p><b>Interactive Advertising</b></p>
	 <p><b>EPG</b></p>	 <p><b>News and info</b></p>	 <p><b>Quiz &amp; Games</b></p>	 <p><b>Content related services</b></p>	 <p><b>T-government &amp; T-banking</b></p>	 <p><b>Interactive Advertising</b></p>
	 <p><b>Info</b></p>	 <p><b>News</b></p>	 <p><b>Quiz &amp; Games</b></p>	 <p><b>T-betting &amp; other</b></p>	 <p><b>T-government</b></p>	 <p><b>T-government</b></p>

# In the switch-off areas, local broadcasters and institutions partnered to build powerful and rich Regional portals

Sardinia (homepage)



Aosta Valley (homepage)



## Project Details

- In January 2006 two consortia have been created to develop specific regional interactive applications focused on 10 thematic areas:
  - informative services
  - environment
  - education
  - sport and leisure
  - health and social services
  - culture
  - job and training
  - tourism
  - agriculture
  - civil preservation

Source: Sardegna Digitale; Valle d'Aosta Digitale

# MHP enabled Lombardy region to offer advanced T-government service using a simple Smart Card (without Conditional Access)

## Smart Card for Lombardy T-government service



**Screenshot of the Lombardy T-government service**  
(Screenshot: personal data pre-loaded in the Smart Card)



Comments
<ul style="list-style-type: none"> <li>▪ With the Regional Service Card a viewer can:                             <ul style="list-style-type: none"> <li>– Be recognized by a secure software</li> <li>– Sign documents online</li> <li>– Search for pharmacies timetable and addresses</li> <li>– Book a physical examination or an appointments with his medical doctor</li> </ul> </li> </ul>

# Mediaset already achieved relevant results through its MHP application and going forward many innovations will come

## “Chi vuol esser milionario?” MHP Application

Screenshot



## Interactive advertising on EPG

Screenshot



### Comments

- With “**Chi vuol esser milionario**” MHP Application Mediaset established a one-to-one relation with its viewers:
  - During the last season of the quiz show Mediaset leveraging the MHP application received **131k registration to its database**
- Mediaset is developing a **new business opportunity selling interactive advertising spaces** (in overlay during the shows or embedded in other MHP applications)

## Italian broadcasters will launch many additional interactive services in the near future

- Smart Card based loyalty services
- Innovative meteo services
- Gaming, betting, skill games, ...
- T-Government
- T-Learning
- ...

# Agenda

---

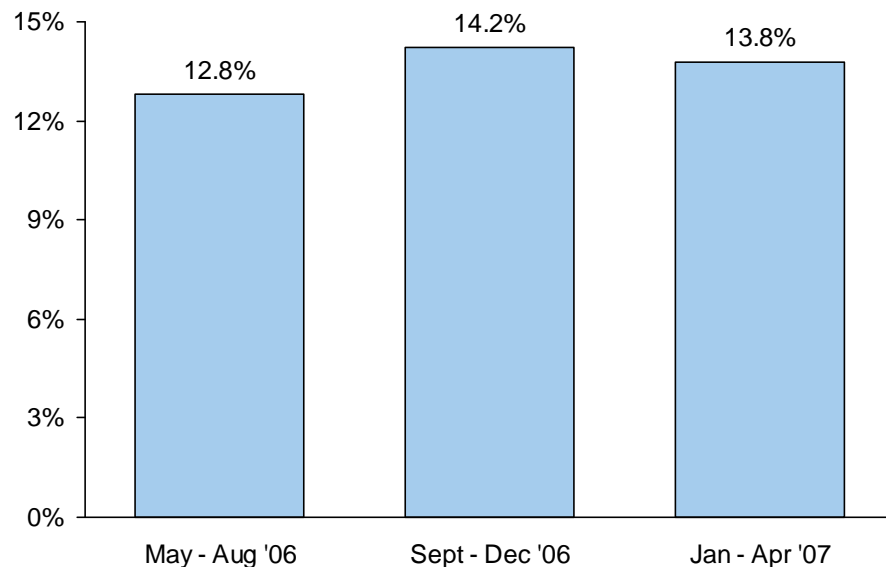
MHP: a global open standard

MHP penetration and offering in Italy

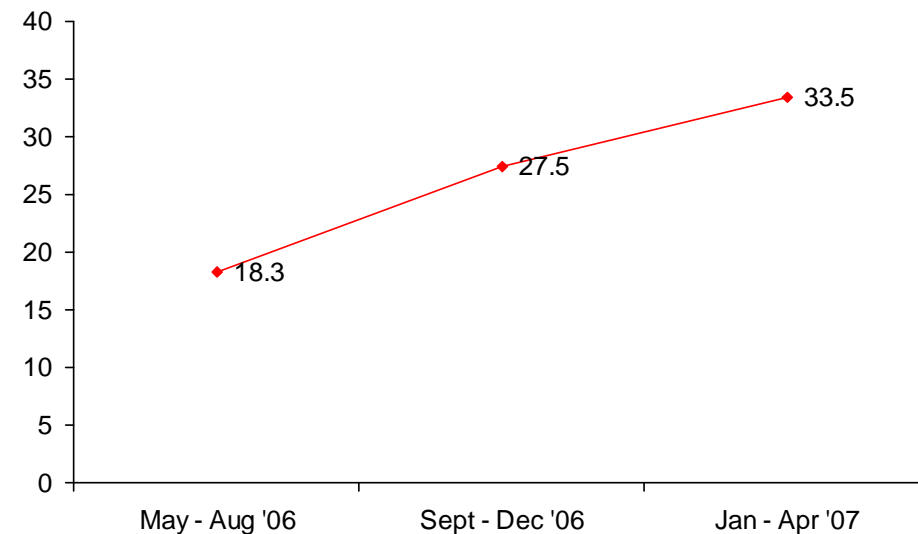
**Viewers use and enjoy MHP services: some data**

# According to the Mediaset-AGB panel\*, Mediaset MHP applications are used 33 minutes/day by 14% of viewers...

**MHP application reach\*\***



**Average Time Spent on MHP applications**  
(in minutes per day)



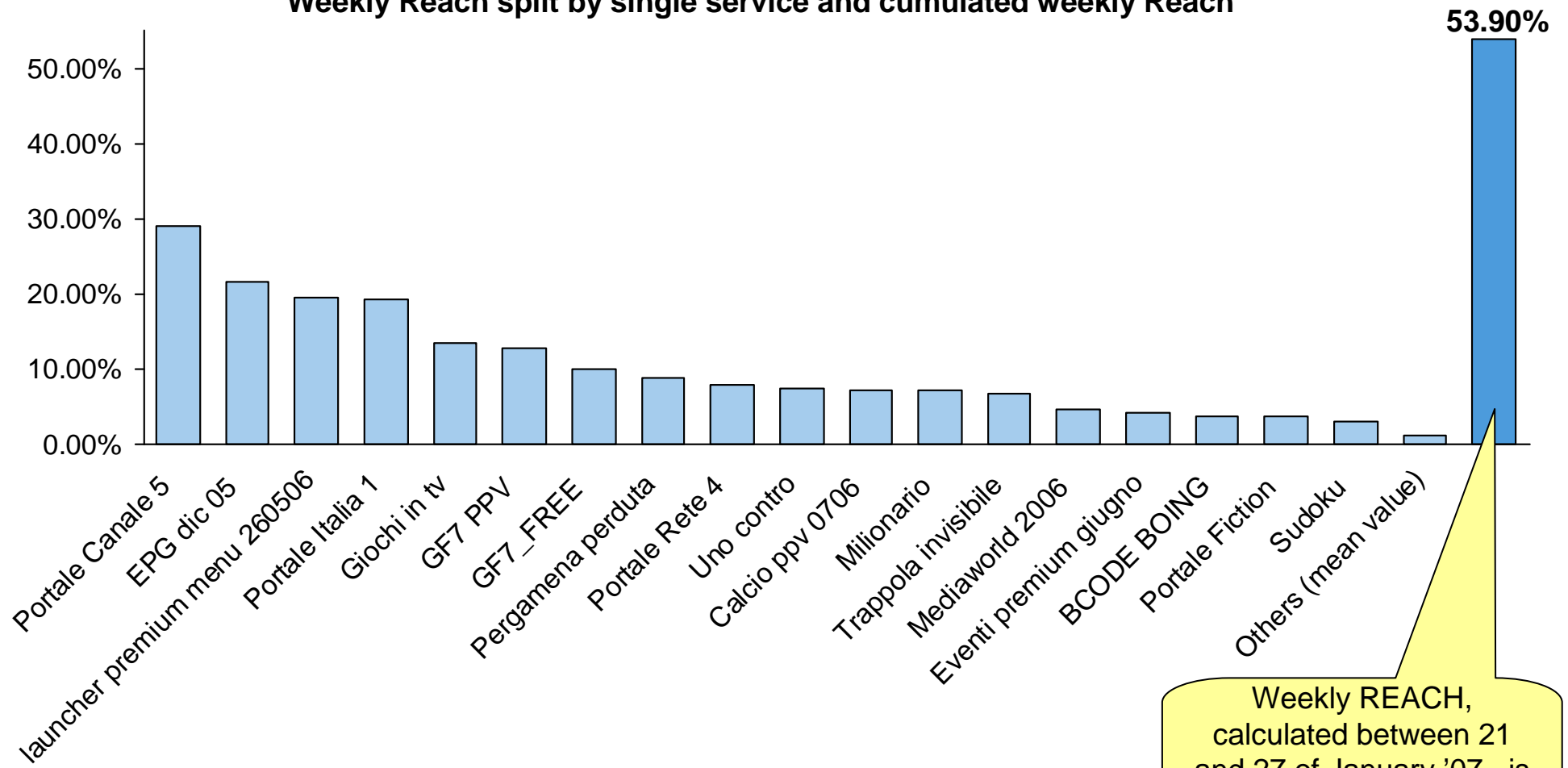
\*) The AGB Panel is composed by more than 650 families and has been commissioned by Mediaset -- All the statistics are referred to use of Mediaset interactive services -- all the statistics are referred only to usage of Mediaset interactive services

\*\*\*) Reach is defined as the size of the audience who listen to, read, view or otherwise access a particular work in a given time period (at least one minute)

Source: Booz & Co. Analysis on AGB panel data

...but if we look at the weekly Reach we can notice that 53.9% of the panel uses interactive services, at least once

Weekly Reach split by single service and cumulated weekly Reach



Weekly REACH, calculated between 21 and 27 of January '07, is 53.9%

Source: Booz & Co. Analysis on AGB panel data

# Multimedia Home Platform is the major, if not the only, open, interoperable, full interactive TV middleware endorsed by DVB and ETSI

## Future proof features

- MHP enables full interactive applications (via modem or Ethernet port) – it allows the use of smart cards, DRM and CA (Conditional Access), EPG – it is ready for next generation devices (PVR, IP-TV, ...)

## Openness and interoperability

- Based on a Java platform, MHP is now the only open and interoperable standard able to manage such complex features: this is a must in horizontal markets

## DVB / ETSI endorsement

- DVB-MHP is endorsed by the DVB project (Digital Video Broadcasting) and approved by ETSI (European Telecommunications Standards Institute)

## Global scale

- MHP has been adopted in many countries in Europe and Asia – The European Union included MHP as first standard in its Journal of Standards
- Tru2Way is the cable version of MHP (OCAP): major cable operators have committed to deploy support for the Tru2Way platform in service areas covering more than 90 million U.S. homes by the end of 2008.

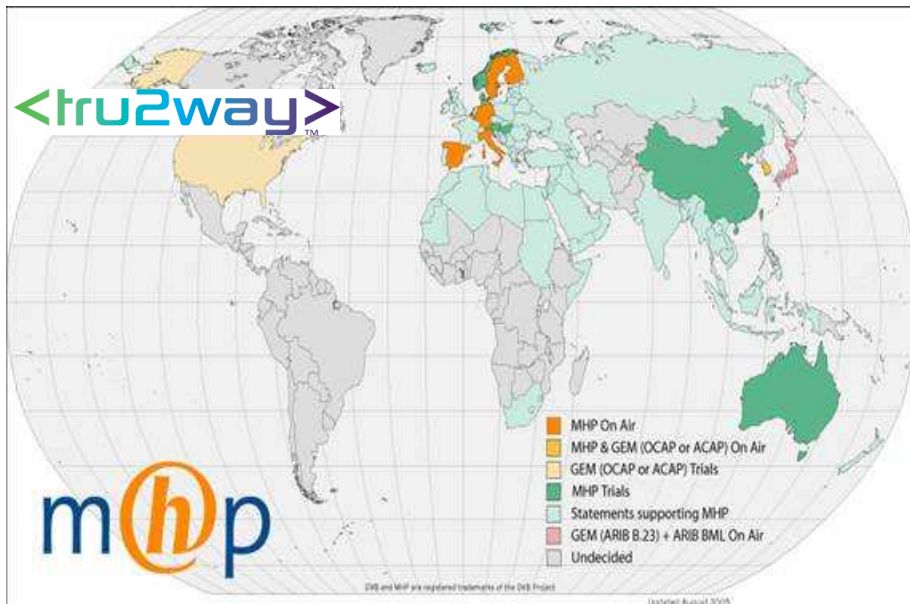
## Maturity and stability

- Commercially launched in 2003, MHP is now a mature and stable standard; several middleware vendors (Osmosis, Alticast, Idway, NDS, Samsung, LG) are proposing its implementations that can be easily and cheaply embedded in standard TV chipsets

# MHP has been adopted in Europe, Asia, US (with Tru2Way)

## MHP Adoption

- **Most European** countries adopted MHP:
  - Italy, Finland, Denmark, Norway, Sweden, Germany, Belgium,...
  - In the future also, Hungary, Czech Republic, Malta will adopt MHP
- **US** adopted Tru2Way (based on GEM), all of the major TV players are now on board - in May 2008 also Sony decided to support Tru2Way - along with all the big cable companies like Comcast, Time Warner, Cox
- In **South Korea** interactive services are based both on MHP and OCAP standards
- Australia and China are already testing MHP
- Several other countries in the world stated to support this standard



Source: [www.mhp.org](http://www.mhp.org) MHP Adoption Map

# European Union is endorsing interactive, open and interoperable TV standards like MHP

- **European Union repeatedly recommended the development of Information Society Services on TV using open and interoperable standards** (Lisbon Pact, eEurope 2002 and 2005 program , Barcelona European Council). E.g.:
  - *‘The European Council calls upon the Commission and the Member States to foster the use of open platforms to provide freedom of choice to citizens for access to applications and services of the Information Society, notably through digital television... invites the Commission to present at the Seville European Council a comprehensive analysis of remaining barriers to: the achievement of widespread access to new services and applications of the information society through open platforms in digital television’* – Presidency Council –Barcelona European Council 15-16 march 2002
- **European Union recommended to adopt open and interoperable standards, including MHP**
  - MHP has been the first open and interoperable standard (up to march 2006) recognized by ETSI and included in the ‘List of standards and/or specifications for electronic communications networks, services and associated facilities and services (interim issue) - 2002/C331/04’, pursuant to art. 17 of Directive 2002/21/EC on ‘common regulatory framework for electronic communications’
  - ‘On 30 July 2004 the Commission published a Communication on interoperability of digital interactive television services. The Communication set out the Commission’s position on interoperability of digital interactive television services pursuant to Article 18 of the Framework directive. According to this article, the Commission may take steps to make certain standards mandatory, if adequate interoperability of interactive digital television has not been achieved. The Communication stated that there was no clear case to take action to mandate any API standard at that time, but the issue should be reviewed in 2005. In the meantime, a range of promotional and associated actions were proposed to promote the deployment of interactive digital services using the MHP standard, which at the time was the only open standard for APIs adopted by EU standards bodies. These actions included the creation of a working group on implementation of MHP, confirmation that Member States can offer consumer subsidies for interactive television receiver equipment, subject to conformity with state aid rules, and monitoring of access to proprietary technologies.’ - Communication from the commission to the council, the European Parliament, the European Economic and social committee and the committee of the regions on reviewing the interoperability of digital interactive television services pursuant to Communication COM(2004) 541 of 30 July 2004
- **European Union recommended to subsidize interactive open and interoperable decoders and TV sets to consumers included in its list of standards**
  - According to the Commission’s decision in the Berlin-Brandenburg case of 9 November 2005, Member States may “*consider the granting of subsidies to consumers for the purchase of digital decoders. Such subsidies should be technologically neutral as described above. In granting subsidies, the authorities may encourage the use of open standards for interactivity. Open standards enable consumers to benefit from interactive services offered by different operators*”
  - European Parliament approved a resolution on accelerating the transition from analogue to digital broadcasting (B6-0583/2005) in which stated that ‘*Calls on the European Commission to act to prevent the formation of vertical bottlenecks; and horizontal monopolies; calls on the Member States to subsidise – in accordance with Community law – digital TV receivers (either set-top boxes or boxes integrated into TV sets) such as the Multimedia Home Platform system, with an open API to inhibit the development of bottlenecks; calls on the Member States to promote and develop interactive services in order to increase the level of digital expertise and the competitiveness of European society... In order to ensure that the digital divide in society is not exacerbated, calls on the Member States to ensure as soon as possible that there are adequate provisions in place prior to the transition from analogue to digital, including funding and intelligible information, which will mitigate the cost of conversion for those elements in society who will have difficulty in procuring and financing the necessary replacement equipment*’
- **Compliant to these EU requirements, in the 2005 budget law, Italy granted incentives only to fully interactive digital receivers with open and interoperable standards**

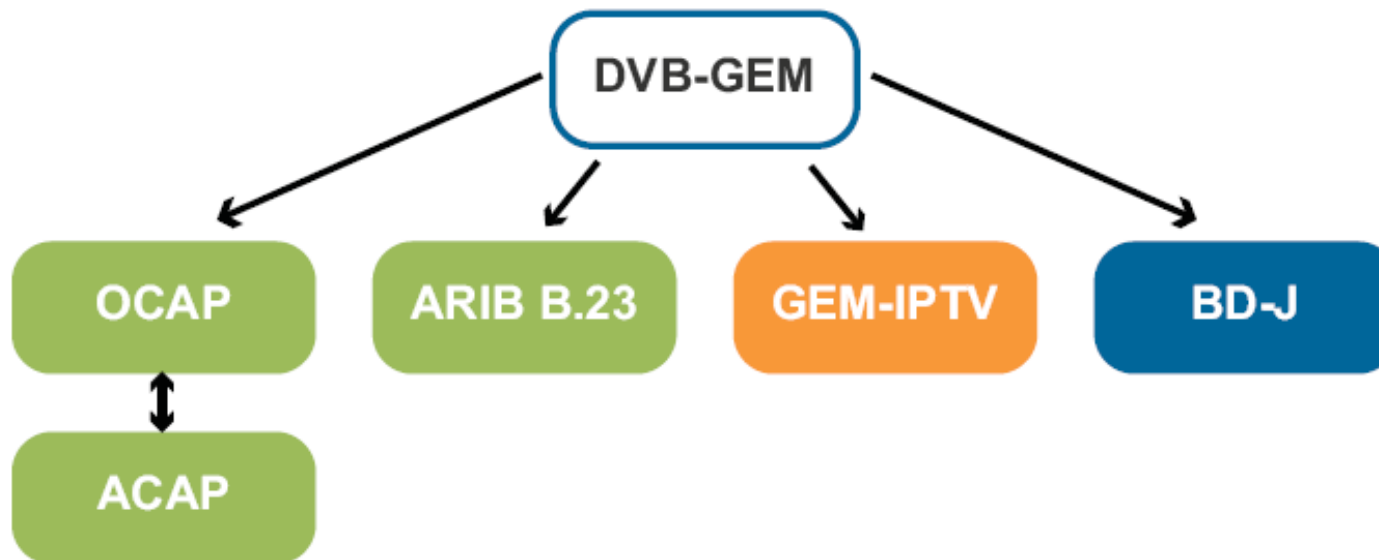
## **DVB demonstrated that MHP is a safe standard: recent debates on patents are not relevant, no fees from FTA have to be paid to use it**

- In 2006, Via Licensing, a company specialized in IP management, called for royalty licenses for both MHP and OCAP, issuing a document setting out the fees for device manufacturers, service providers and broadcasters that wish to use MHP for the delivery of interactive digital television services
- In 2007, the DVB created a group (TEM – Technical Enhancement of MHP) with the aim to examine the real risk of issues opened by third subjects, referred to the incoming demand of royalties for the MHP by some operator
- The TEM on the 5<sup>th</sup> of July, 2007, reported to DVB Technical Module Plenary their preliminary findings of non essentiality or irrelevance of patents pooled by Via Licensing
- The DVB Project on the 12<sup>th</sup> of June 2008 received **a letter from Via Licensing indicating that the requirement for free-to-air broadcasters to pay patent license fees for MHP has been removed with immediate effect.** The letter states that the decision has been taken in the interests of supporting the continuous deployment of MHP services around the world.

Source: DVB and MHP web sites

# MHP is not only for DVB, with GEM - Globally Executable MHP - it is possible to bring the benefits of MHP to non-DVB environments

Relationship between GEM and GEM-based specifications



Source: MHP website

# MHP with GEM BD-J supports advanced interactive content for Blu-ray Disc: high-definition DVD standard



**Blu-ray Disc Interactive Menu**  
(Pirates of the Carribean Menu Screenshot)



## Comments

- **Blu-ray Disc, the main innovation for home entertainment is using GEM to support advanced interactive content**
  - **GEM<sup>1</sup> has allowed the adaptation of MHP technology for use in new generation DVDs through the BD-J.**
  
- **BD-J: Blu-ray Disc Java is the interactive platform supporting advanced content for Blu-ray Disc**
  
- **Blu-ray Disc: at least 13 million players sold, including PS3**

1) **GEM** provides a means of ensuring that MHP applications can be carried over networks other than DVB  
Source: MHP and Blu-ray websites

# Agenda

---

**MHP: a global open standard**

MHP penetration and offering in Italy

Viewers use and enjoy MHP services: some data