

Digital Terrestrial TV

Straight to the point

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Digital Terrestrial Television in Latin America – Straight to the point

DTTV

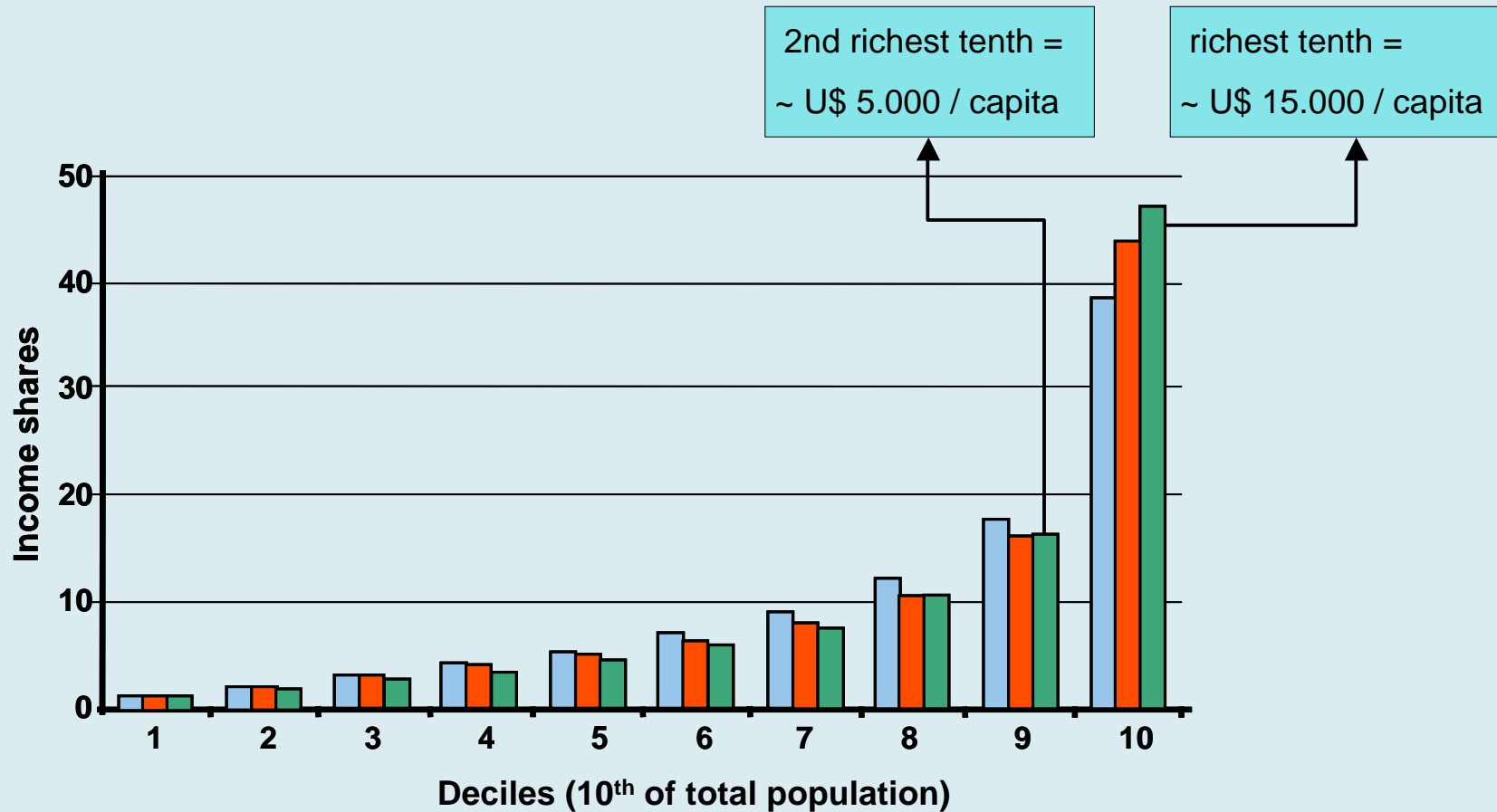
DTTV and inequality

Markets Voice

DTTV Business Models

Latin America, one of the most unequal region of the world

(not changing over decades)



■ Argentina (2001)
■ Mexico (2000)
■ Brazil (2001)

Source: The World Bank

DTTV and the need of addressing inequality

SDTV

or

HDTV ?



Reuse of existing TV sets
Cheaper new CRT screens
Cheap SDTV settop boxes



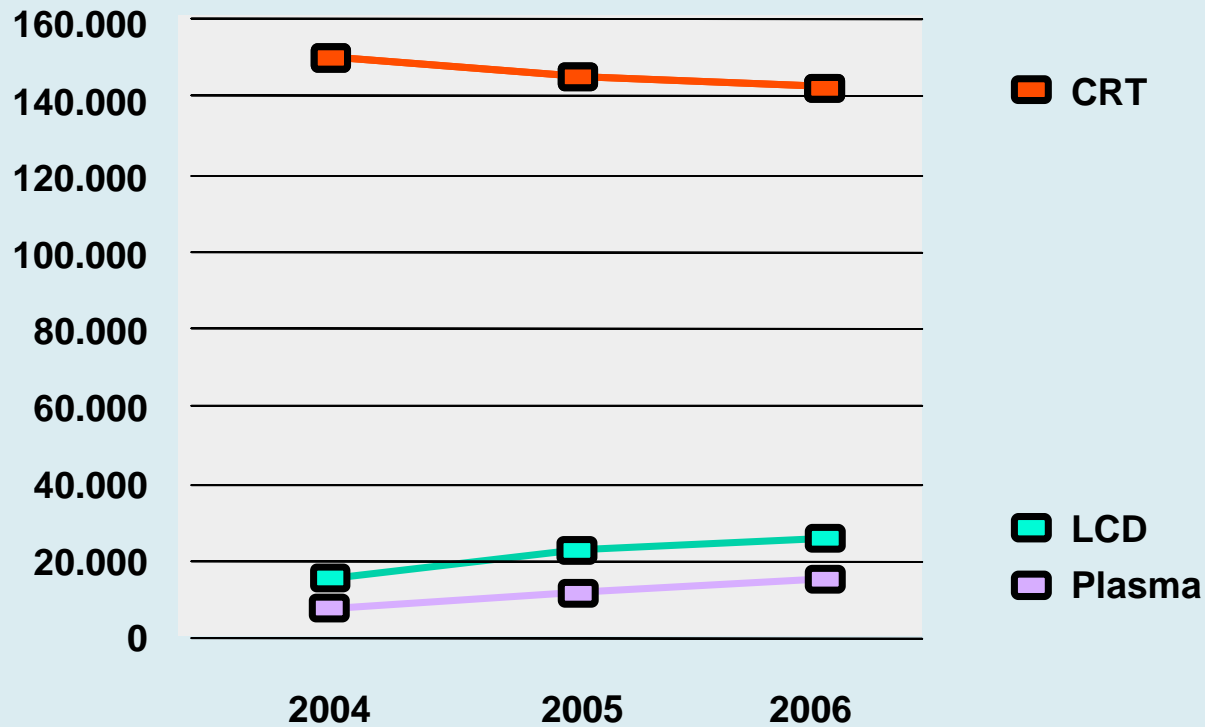
New large LCD and Plasma screens
High-end settop boxes (e.g. HD PVR)



The right answer in LA is: both!

International figures confirm it

TV set shipments per technology (thousands)



Source: Deloitte, Predictions, 2006 - A Focus on the Media Sector, 02.02.2006

According to Deloitte, CRTs will continue to be the high runners, mainly due to emerging countries

CRT = Cathode Ray

First evidence of the right technological answer

Standard focus

Standards	HDTV	SDTV
ATSC	<input type="checkbox"/>	<input type="checkbox"/>
DVB-T	<input type="checkbox"/>	<input type="checkbox"/>
SBTVD-T	<input type="checkbox"/>	<input type="checkbox"/>
ISDB-T	<input type="checkbox"/>	<input type="checkbox"/>

Strategic Summary/ Vision

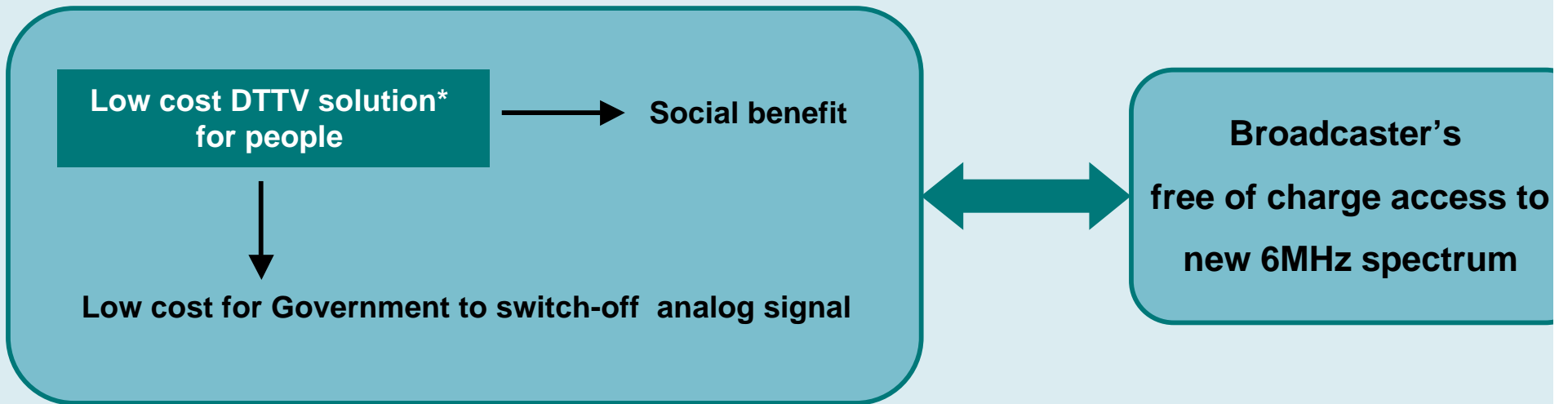
ATSC – “replacing analog CRT-TVs through HD screens ”

DVB-T – “DTTV for high diversity of needs”

SBTVD-T – “Brazilian standard shaped for its needs”

ISDB-T – “from analog HDTV to digital HDTV”

Likely the best formula to pay-off additional 6MHz spectrum for Broadcasters



Its good for people !

Its good for Government

Its good for broadcasters

* Only available with DVB-T due to the global economies of scale (similar to the GSM phenomena)

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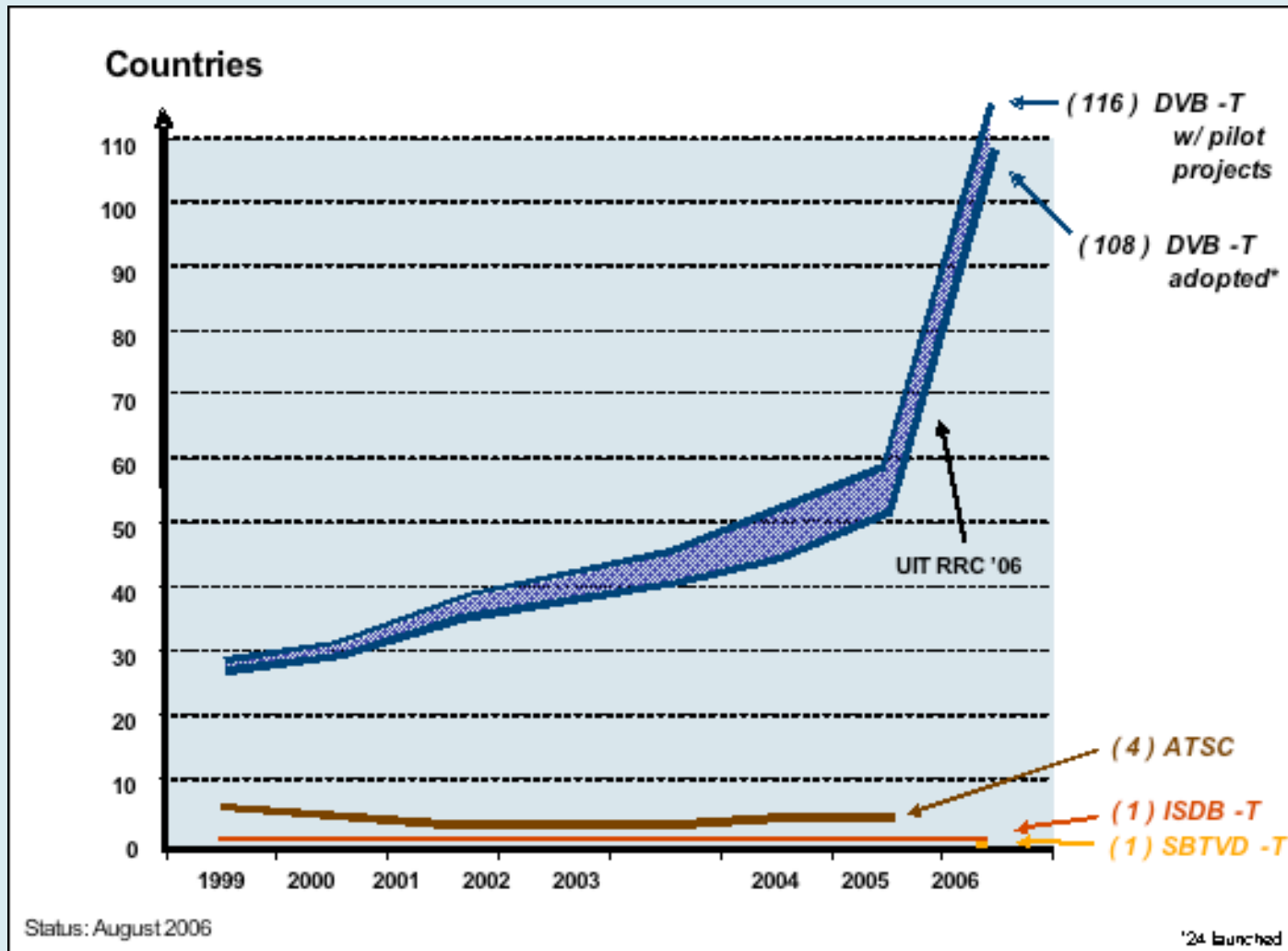
DTTV

DTTV and the main question in LA

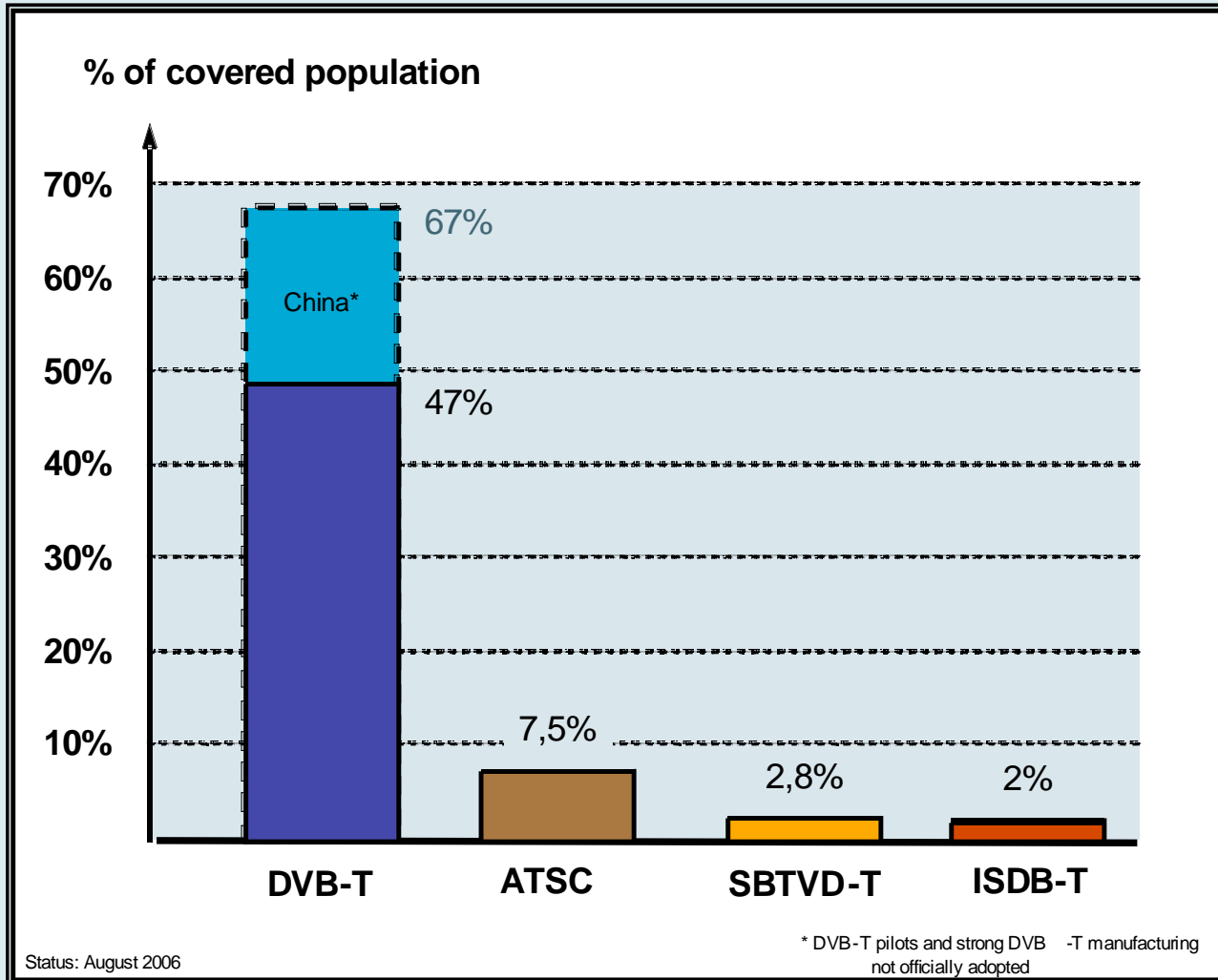
Markets Voice

DTTV Business Models

Digital Terrestrial TV Standard Adoption



Digital Terrestrial TV Standard – Covered Population (globally)



Sources: DVB Project, UIT, FCC, World Bank

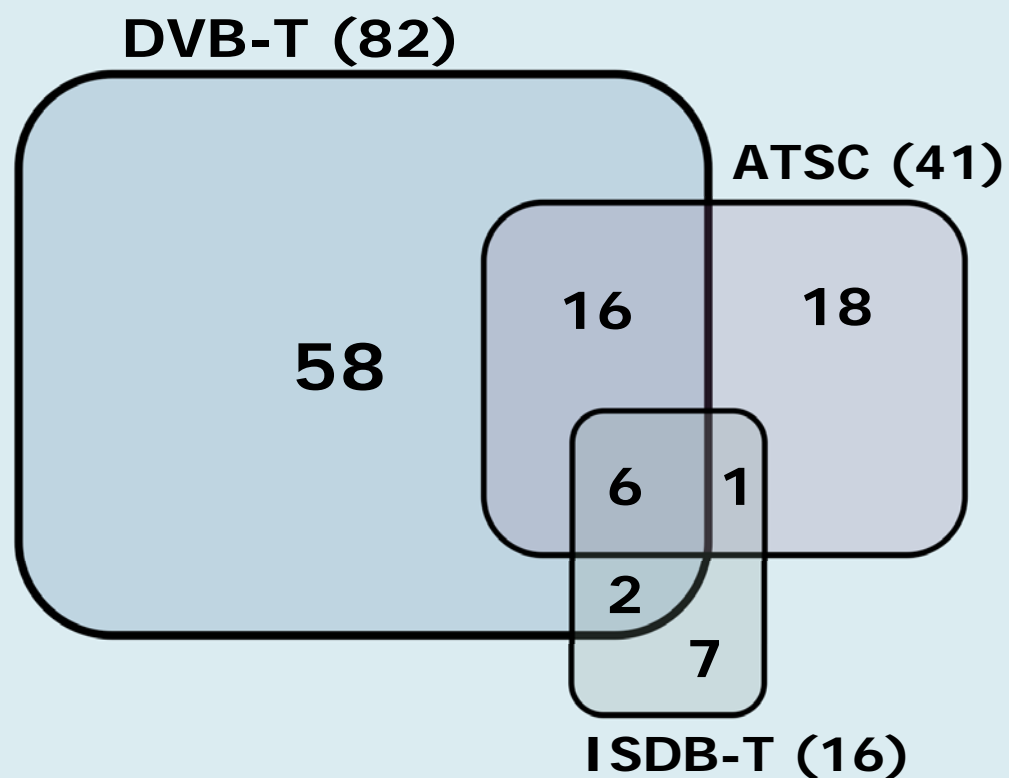
Country GNI/capita segmentation

GNI / capita	DVB-T	ATSC	SBTVD-T	ISDB-T
> US\$ 15.000, -	25	3		1
US\$ 5.000, - to US\$ 15.000, -	22	1		
< US\$ 5.000, -	61		1	
Status: August 2006				

Sources: DVB Project, UIT, FCC, World Bank

DVB-T is committed to serve developed and developing countries
 (= structurally committed to serve unequal societies)

Manufacturer's landscape (quantitative assessment)*



Total globally: 108 companies

Status: February 2006

Sources: DVB Forum, ATSC Forum, Websites of companies

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* SBTv-D suppliers not known yet

Variety of DTTV Products, the essence of deliveries to the real market

DVB-T

DVB-T kits for mobile TV, SDTV



PCI HD and SD DVB-T cards



USB – HD and SD DVB-T Sticks



HD TV sets

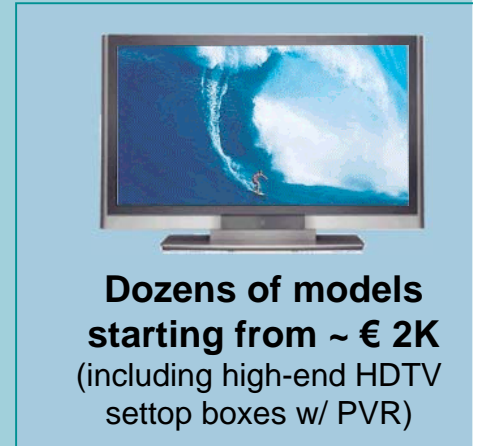


DVB-T SD and HD settop boxes



ISDB-T and ATSC*

HD TV sets



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DTTV Business Models

Main Business Models (in practice, w/ market support) and associated features

Standards	Fixed		Mobile				Flexible assignment*	SFN**	5, 6, 7, 8MHz LDTV roaming	Convergence w/ 3GSM
	HDTV	SDTV	HDTV	SDTV	LDTV	n x LDTV				
ATSC	<input checked="" type="checkbox"/>	<input style="border: 1px dashed black;" type="checkbox"/>								
DVB-T	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input style="border: 1px dashed black;" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SBTVD-T	<input checked="" type="checkbox"/>	<input style="border: 1px dashed black;" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
ISDBD-T	<input checked="" type="checkbox"/>	<input style="border: 1px dashed black;" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		

- 1) During transition period to full HDTV, 4 SDTV programs might be sent instead of 1 HDTV;
- 2) Possible, but not used as SDTV is robust and far enough for mobile vehicular applications
- 3) Used as no SDTV transmission
- 4) Through DVB-H, which is compatible to DVB-T in the same 6MHz channel

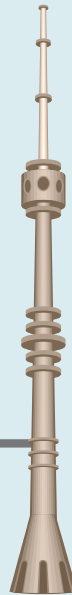
LDTV = portable low battery consumption solution
 • Flexible assignment of fixed and mobile, and simultaneous HDTV, SDTV and LDTV programs to a 6MHz channel, including codec type
 *** Single Frequency Network (several transmitters)

Main Business Models – How it works with ATSC

1 fixed arrangement in one 6 MHz channel



Only Fixed



1 x HDTV
(alternatively 4 x SDTV*)



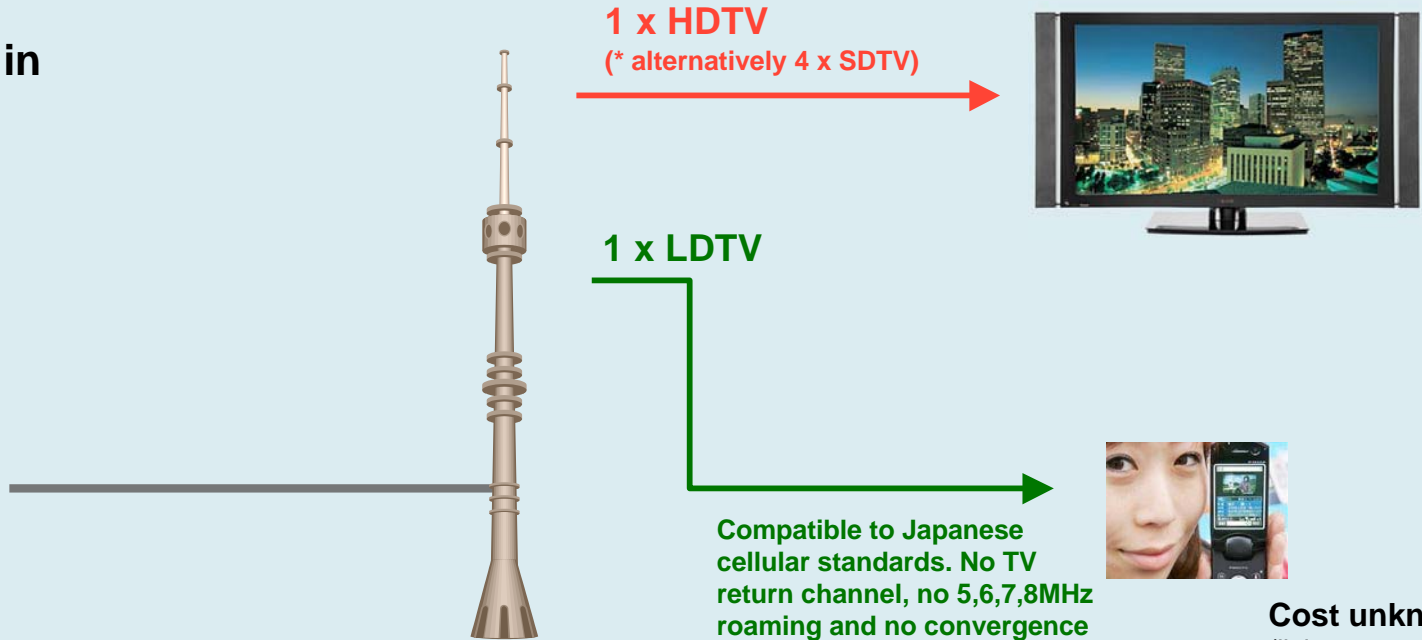
Solution to reduce cost for low income people in USA. U\$1,5 billion subsidies announced by Government

* Vision for the transition period towards full HDTV programming (not possible to have HDTV transmissions and SDTV transmissions simultaneously)

Main Business Models – How it works with ISDB-T

1 fixed arrangement in one 6 MHz channel

*



1 x HDTV
(* alternatively 4 x SDTV)



1 x LDTV



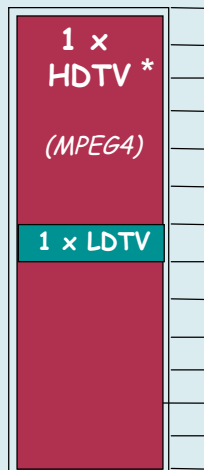
Compatible to Japanese cellular standards. No TV return channel, no 5,6,7,8MHz roaming and no convergence with cheaper GSM products.

Cost unknown
(little economies of scale)

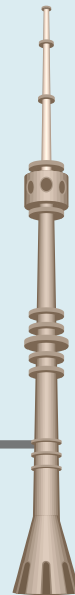
Fixed and/or Mobile

Main Business Models – How it works with SBTVD-T

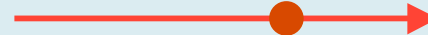
1 fixed arrangement in one 6 MHz channel



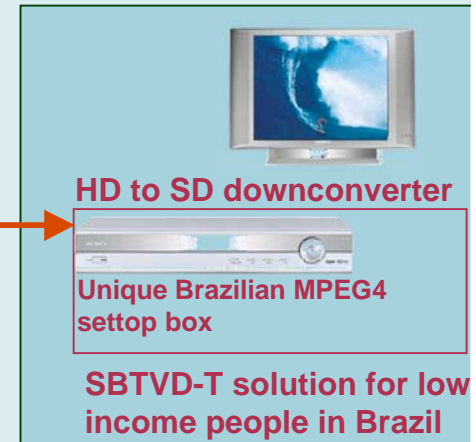
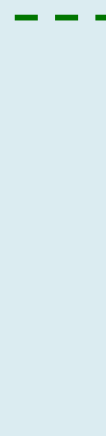
Fixed and/or Mobile



1 x HDTV (MPEG4)
(*alternatively 4 x SDTV)



1 x LDTV



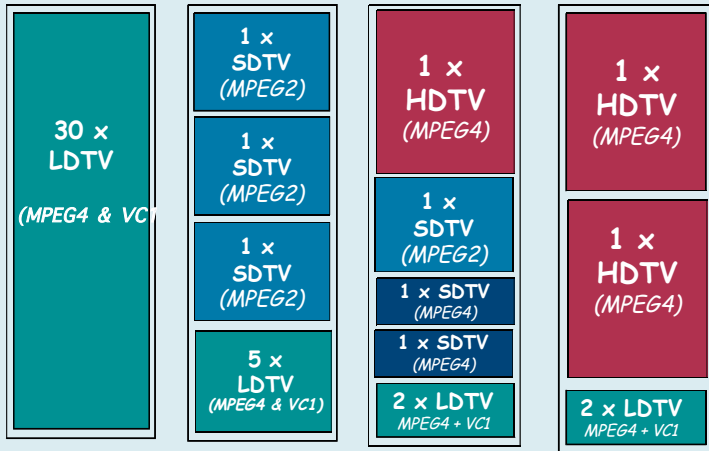
No terminals
GSM / ISDB-T known
or forecasted by industry

(GSM is dominant in Brazil)

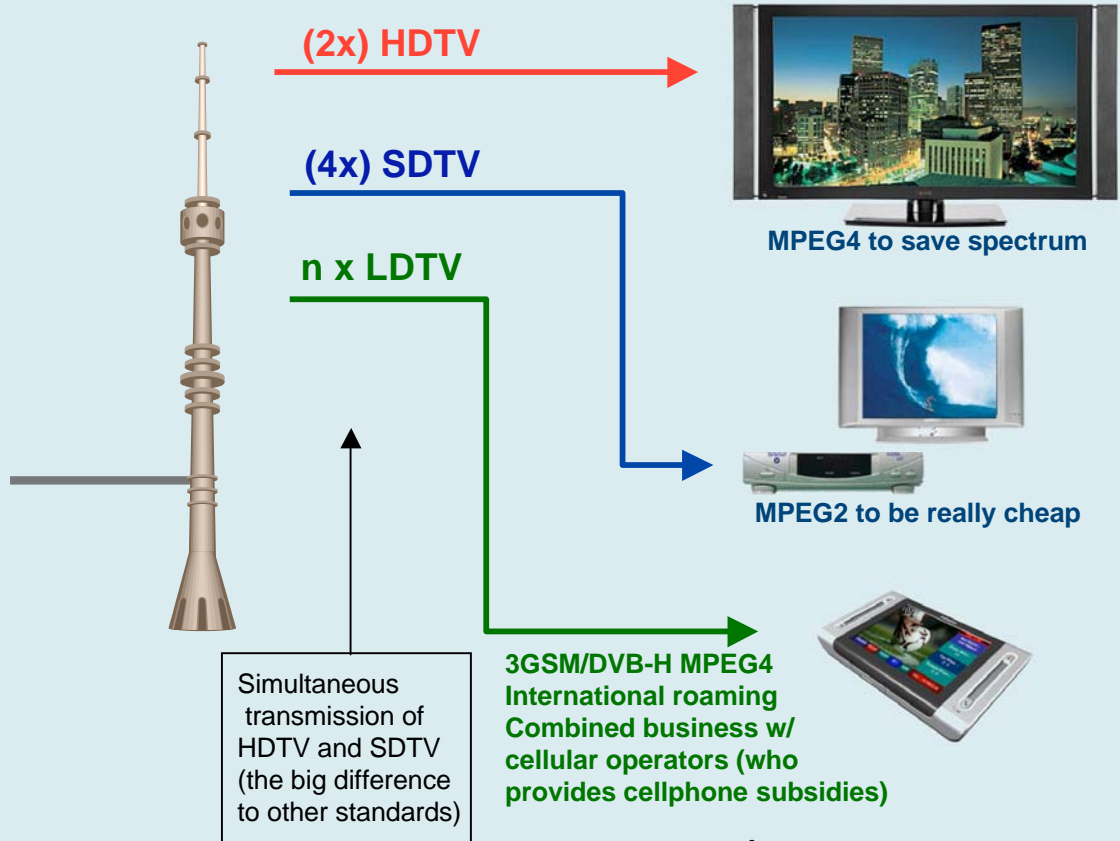
Business model for SBTVD-T not fully defined yet,
possibly HDTV or 4xSDTV with MPEG4 (H.264)
(more expensive for low income customers than with MPEG2)

Main Business Models – How it works with DVB-T

Flexible arrangement in one 6 (7, or 8) MHz channel



Fixed and/or Mobile (examples)



MPEG4 to save spectrum

MPEG2 to be really cheap

3GSM/DVB-H MPEG4
International roaming
Combined business w/
cellular operators (who
provides cellphone subsidies)

- 1) Addressing the market optimally
- 2) Broadcaster might change business model over time, adapting to market changes

MPEG4 =

Convergence with cellular operator possible (not shown here)

Main Business Models – How DVB-T can manage convergence (example)

DVB broadcaster

HDTV + SDTV + LDTV

LDTV

HDTV

SDTV

n x LDTV

“free to air”

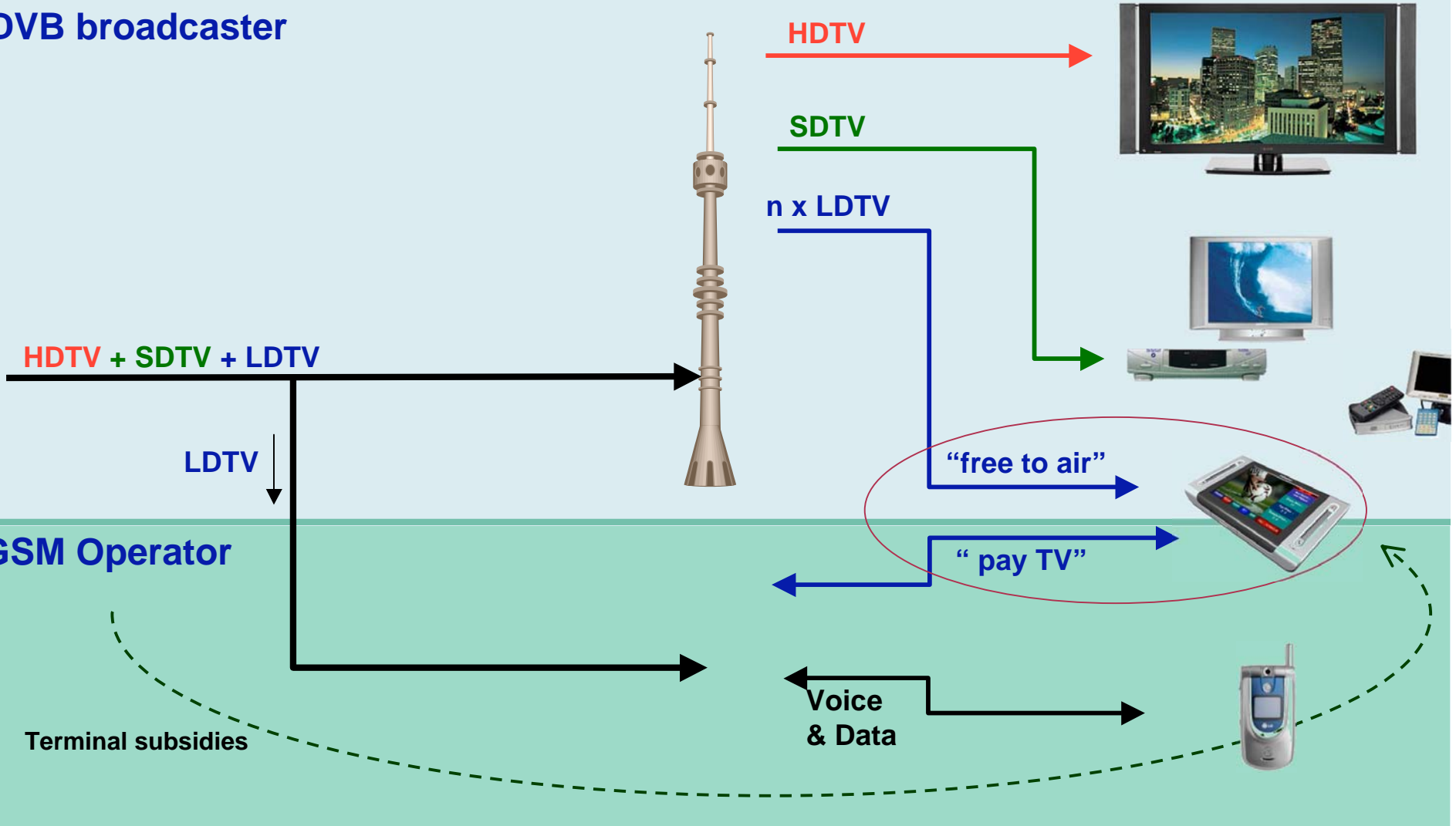
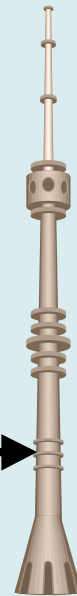
“pay TV”

Voice & Data

Terminal subsidies

GSM Operator

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First results of ~50 GSM/DVB-H pilots → favorable to TV on cellphone

	Period	“Channels” TV + Rádio	Time (daily)	Approved?	Pay to have ?	How much (monthly)
Sydney, Australia	7/05 - 7/06	16	25 min	80%	-	-
Helsinki, Finland	- 6/05	16 + 3	18 min	58%	41%	€ 5 - € 10
Barcelona & Madrid	9/05 - 2/06	20	16 min	75%	55%	€ 5
Sevilla e Valencia	12/05- 03/06	22	36 min	80%	-	-
Oxford, UK	10/05 – 03/06	16	34 min	85%	72%	if acceptable
Paris, France		13 + 4	20 min	73%	68%	≥ € 7

Other trials ongoing or performed:

Salzburg, Austria; Ghent/Brussels/Mechelen, Belgium; Toronto, Canada; China; Zagreb, Croatia; Brno, Czech Rep.; Lyngby, Denmark; national, Finland; Metz/Paris/national, France; Berlin1/Berlin2/Erlangen/nacional, Germany; Hong Kong, Hong Kong; Delhi, India; Turin, Italia; Kuala Lumpur, Malasia; Hague, Netherlands; Varsaw, Poln; Lisbon, Portugal; Moscow, Russia; Singapore, Singapore; Johannesburg, South Africa;; Zaragoza/Gijón/national, Spain; Gothenburg/Stocolm, Sweden; Bern, Suisse; Taipei/national,Taiwan; Kiev, Ukraine; Cambridge, UK; Pittsburgh/national USA.

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First successful commercial convergent business (Broadcaster + Cellular Operator) in practice!

La 3 Live

La 3 Sport

SKY SPORT

SKY TG24

SKY VIVO

SKY CINEMA

Rai Uno

Rai Due

Rai Tre

La prima vera TV Digitale Mobile.
Da oggi nelle tue mani: è ora di credere ai tuoi occhi.
SKY, Rai, Mediaset:
il meglio dell' intrattenimento televisivo con la qualità delle immagini digitali in qualsiasi momento lo desideri.

BOING
Tv libera tutti.

ALL MUSIC

35

EPG; public service; international sports; International news; reality show; films (tied support info); Rai one, due e tre with news, varieties, games, series, shows, sports, talk-shows, etc; kid channels; teen channel; Italian open TV contend channel.

TV	Pacchetto Base
1 giorno	3 €
1 settimana	12 €
1 mese	29 €
6 mesi	99 €

Canone servizi	TV	Dati ⁽⁴⁾	Pianeta 3	Chiamate e servizi internazionali e videochiamate
49 €/mese ⁽²⁾	La3 TV ⁽³⁾	1 GByte/mese	3 Club ⁽⁶⁾	0 cent ⁽⁵⁾ 60 min

Large variety of pre and post pay plans, combining voice, data and TV, terminal included
(first terminal 3GSM/DVB-w/o subsidies ~ € 600,-)

> 110K users in 2 months, forecast of >500K till Dez./2006

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And much more to come with DVB!

The End (for today!)



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