Digital Broadcasting Industry :Today and Tomorrow

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- Digital Broadcasting Vision
- Digital Broadcasting Phenomena
- Sollen- Sein Gap
- Digitalization policy
- Market Remedy & Policy Remedy

- Summary & Conclusions

Overview — Europe

DTT Progress in Europe

	Legislation in place	Soft launch	Full launch	Switch off date
Operational Platforms				
UK	July 1996	September 1998	November 1998	2006 to 2010
Sweden	May 1997	April 1999	September 1999	2008
Spain	October 1998	May 2000	May 2000	2007 to 2009
Finland	May 1996	August 2001	October 2002	2006
Germany	Spring 2002	November 02	1Q 2003	ongoing 2010
Netherlands	1999	April - 03	4Q 2003	start 2004
Yet To Launch				
Portugal	2000	2004	2004	2010
Switzerland	2003	2004	2005	2015
France	August 2000	2004	2005	2008+
Norway	March 2002	2005	2005	start 2006
Austria	2001	2005	2005	2012
Denmark	December 2002			2011
Belgium	2002			Flanders 2005
Ireland	March 2001			2010
Italy	November 2001			2006
Greece	?			

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Europe

DTT Households and Penetration

	1998	1999	2000	2001	2002 1Q	2003 1Q	2003 2Q	Penetration
UK	247	552	774	1,217	1,260	1,400	1,510	6.1%
Sweden		15	35	83	100	140	175	4.2%
Spain			3	150	130	130	130	1.1%
Finland				5	10	97	150	6.5%
Germany					0	120	170	0.5%
Netherlands						0	8	0.1%
TOTAL	247	567	812	1,455	1,500	1,890	2,143	

Source EBU estimates

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Freeview

75% of Freeview viewers are over 35 years old
40 % over age 55
80% of viewing time still with the 5 terrestrial channels

Most attractive feature: one-off payment with no contract
Presence of BBC channels very important to 53%

Powerful Bsky B

7 m subs. and a dominant program provider but BBC

High ARPU Cable

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- *An early starter but slow progress*
- *After 4 years, 175,000 DTT households (4.2%) but strong recent growth*
- *A pay model*
- *Teracom(transmission company) has invested 220 million euro.*
- *Government currently reviewing key aspects*

Sweden - channel line-up

- 21 channels free/pay mix

Mux 1	Mux 2	Mux 3	Mux 4
SVT1	TV 4	Kanal 5	Eurosport
SVT2	TV 4 +	Canal +	MTV
SVT24	MediTeve	Canal + Yellow	Nickelodeon
SVT Children	TV4/CNN	Canal + Blue	VH1
	DTU7	1 vacant	Discovery
	Regional Ch		Animal planet
			E!/Style

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Sweden

- *an early adopter ---there are not any know-how from other experiences*
- *Weak marketing led to bad reputation*

→Marketing failure: no differentiated strategy

DTT cost(euro/month) : 16 for basic, 37 for premium
DTH cost : 19 for basic, 39 for premium

- *Platform structure*
- *Political problems and fierce competition.*
- *High STB price*
- *Only SVT channels unencrypted*

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Finland

- *150,000 boxes were sold(6.5%) by this summer.*
- *MHP applications are broadcast but only 10% of boxes can use them.*
- *A free model with no single commercial operator: chs. and mux allocated separately.*
- *STB market is Open market.*
- *Sony, Finlux are strong in the STB market and idTV market*

Finland - channel line-up

YLE TV1 D* YLE TV2 D* +YLE Rinnakkainen	MTV3 D*	NELONEN D* +Nelonen Plus
YLE FST (Swedish speaking)	SUB-TV (for young people)	Canal+ (3 Pay-TV-channels)
YLE 24 (24h news channel)	URHEILUKANAVA (sports channel)	Vizor (shopping channel
YLE TEEMA (culture and education 4 digital radio services	WELLNET (home, health, etc.)	Local channels

*Simulcast

- *Resolution of problems in the third mux.*
- *Fourth mux carryng IPDC services to launch net year offering interactive services to mobiles, PDAs, etc*

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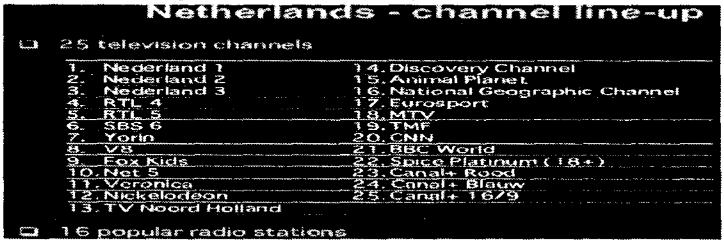
•DTT consortium Digitenne launched in April 2003 targeting cable customers and portable market
•A single commercial operator backed by KPN, Nozema, NOB, SBS, and Canal+
• plan to run 4 national muxes
•From A to Z, cable is a main counterpart.
→Average cable costs installation 40+ euros/ monthly charge 12 euro for 35 chs.
→DTT costs: 30 euro access fee /free welcome- pack with retail value of 40 euros
9 euro per month subscription fee



→How will cable react?

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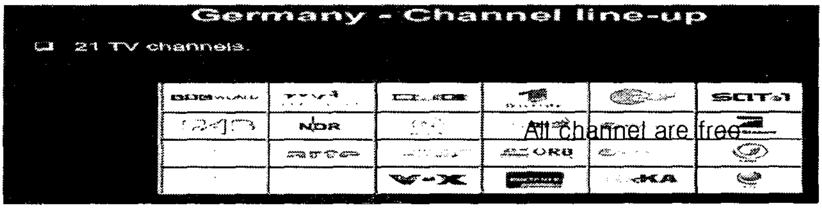
• Berlin launched November 2002 based on a free model and completed analog shut-ff in August 2003
• Open market for receivers developing with about 20 models available
• Very little migration from cable
•At national level, government wants to set up common DTT fund.
• Poor reception problems.



•Next stages of island-by-island roll-out

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The burgeoning open STB Market

		2001	2003
1.	Brands	1	29
2.	Models	1	34
3.	Avg. cost	249 euro	99-299

Source: Technotrends

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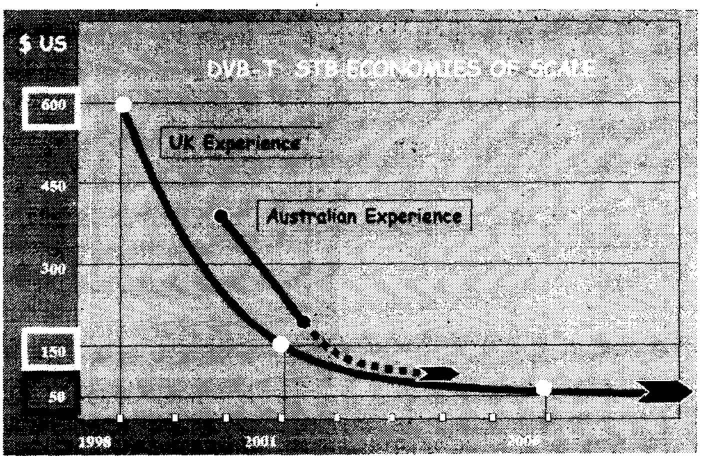
Set Top Box Costs



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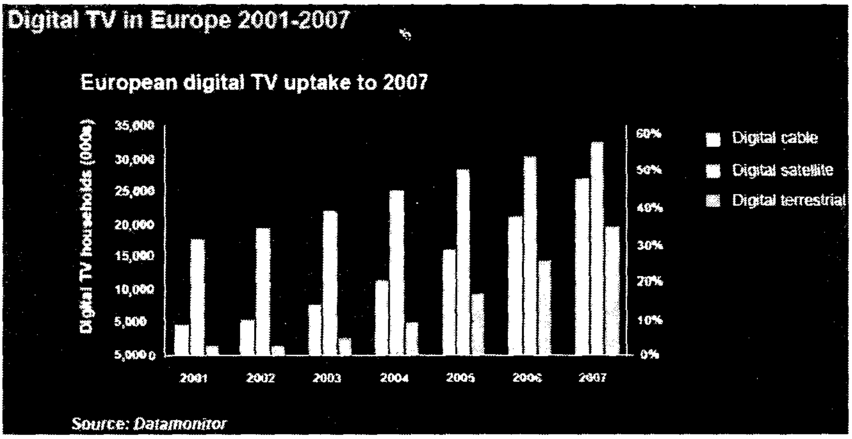

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DTV Sale

- ***DTV is estimated to be dominant in the annual revenue this year.***

More DTV, less ATV

• ***the 6 months, 2003***
- ***Total 1,438,713 DTV sale($ 2.1 billions)***

• ***June, 2003***
- ***365,520 DTV sale($0.5 billions)***

STB Sale

– The size of STB sale is reportedly increasing according with the growth of DTV sales.

•Standalone STB
– Total 49,928 units, $22.3 million in revenue (2003.2Q)
– 161% unit increase & 171% revenue increase compared to 2002.2Q

•Cumulative DTV STB has reached 397,512 units(1999–2003.6)
– ATSC receiving products (including both units) reached 701,512 units
– ATSC receiving products will keep the growth pace in sales.

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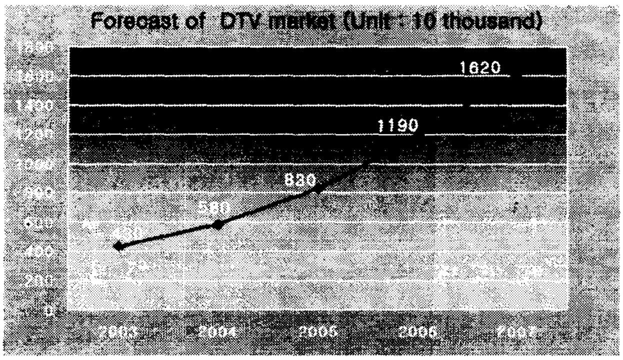
US



4.3 m (2003)
5.8 m (2004)
8.3 m (2005)
11.9 m(2006)
16.2 m(2007)

CEA 2003

- Consumer Access to Digital Television Enhancement Act of 2003
- FCC Approval of 'Plug & Play'

→ To promote the digitalization of 70 mil. Cable houses

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US

DTV Display 2.535 M (2002) / 4.28 billion
DVD Player 12.9 M (2002) / 1.66 billion

	DVD Players			Digital TV Sets and Displays		
	Unit Sales in Thousands	Dollar Sales in Millions	Average Unit Price	Unit Sales in Thousands	Dollar Sales in Millions	Average Unit Price
1998	1,079	$421	$390	12	$43	$3,147
1999	4,072	1,099	270	121	295	2,433
2000	8,499	1,712	201	648	1,426	2,200
2001	12,707	2,109	165	1,460	2,648	1,812
2002	12,924	1,661	128	2,535	4,280	1,688
[illegible]	[illegible]	[illegible]	[illegible]	3,846	5,543	1,441

Source : CEA Market Research 1/03

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DirecTV HD Package Service

- DirecTV 14 M
- HD 7 chs(11.4 M) service
  (HBO, SHOWTIME, PPV movies etc.)
- new HD Package service(monthly $10.99) (2003. 7)

24H Simulcast	24/7ch	24H	24H
Best Sport Events News, Inf., Ent, services	Nature, Science, Technology, Travel, Culture etc.	Hockey, Boxing Live events, Drama, concerts	Movies (Sony, Warner etc)
ESPN HD	Discovery HD Movies		HDNet Movies

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Most Cable-Based Video Services Will Be Widely Adopted Within the Next Three Years Others, such as network PVRs, may never see mass adoption

0-1 Year	1-3 Years	3-5 Years
• Digital • HSI • VOD • SVOD	• HDTV • Broadband Portals • Telephony • PC-based Connectivity	• PVR • Connected Set-top Boxes

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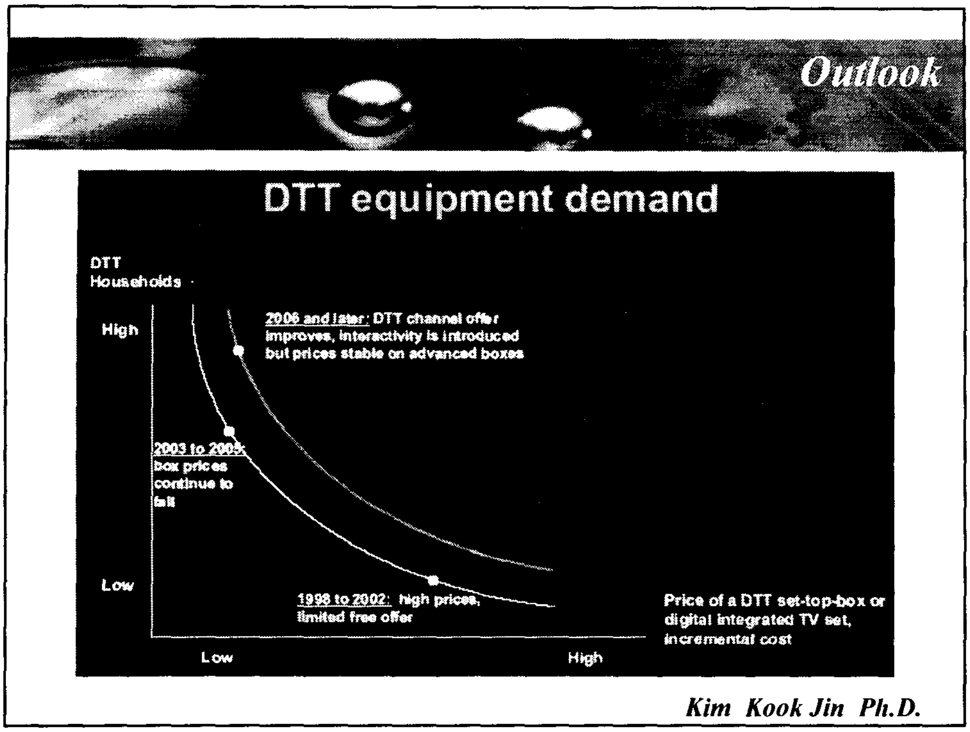
Outlook
DTT equipment demand
DTT Households
High
Low
2006 and later: DTT channel offer improves, interactivity is introduced but prices stable on advanced boxes
2003 to 2005: box prices continue to fall
1998 to 2002: high prices, limited free offer
Low
High
Price of a DTT set-top-box or digital integrated TV set, incremental cost
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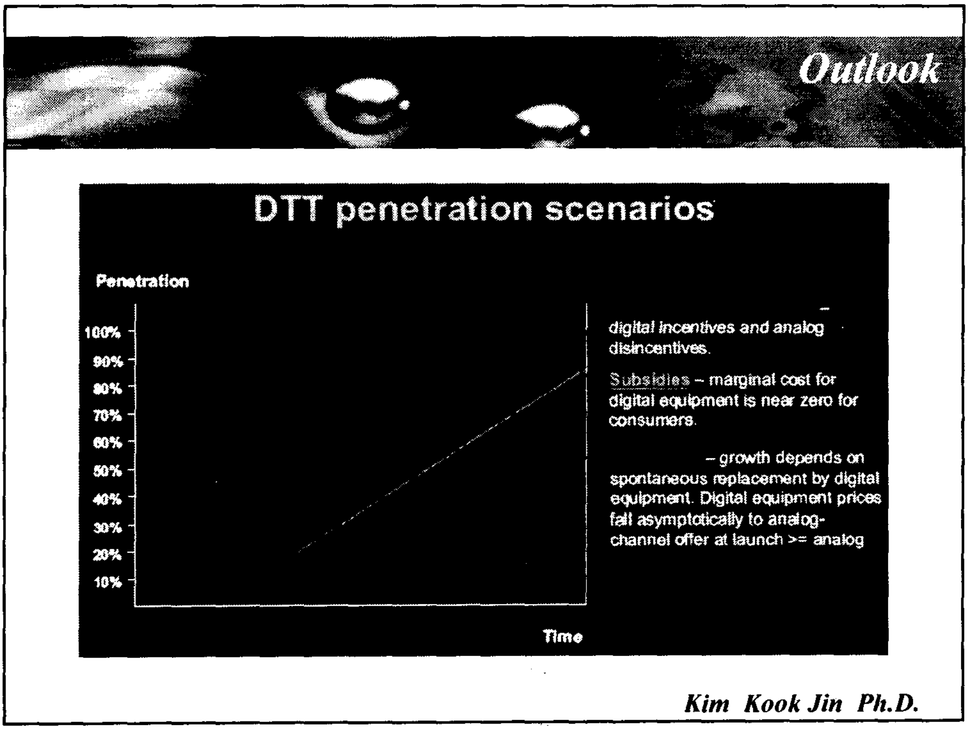
Outlook
DTT penetration scenarios
Penetration
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
Time
digital incentives and analog disincentives.
Subsidies – marginal cost for digital equipment is near zero for consumers.
– growth depends on spontaneous replacement by digital equipment. Digital equipment prices fall asymptotically to analog-channel offer at launch >= analog
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Digital Vision

- *More Channels--- diverse of broadcasters*
  new services
  → competitive market
- *High Quality ----- High Quality Services*
  5.1ch stereo/ HD
  → High Satisfaction
- *Interactivity------ Interactive services*
  (datacasting, T-commerce)
  → Digital Community
  → Solution for Digital Divide
  T-Government
- *Mobility ----------- Mobile TV services*
  → Seamless service condition

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Digital *Phenomena*

- *More Channels--- limit of broadcasters*
  no new services
  → anti-competitive market
- *High Quality ----- a few High Quality Service*
  a few 5.1ch stereo/ HD
  → no High Satisfaction
- *Interactivity------ limited Interactive services*
  a few service
  → no solution for Digital Divide
- *Mobility ----------- not Mobile TV services for cost high,*
  only mobile reception
  → island or other tech.

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Sollen-Sein Gap

Why ?
Basically it's digitalization.

- ***More Channels--- want of contents***
  want of competitive market condition
  But in US, HD oriented market
  in Europe, US program market

- ***High Quality ----- no motive of production for High Quality***
  want of skill and experience
  low penetration of DTV

- ***Interactivity------No STB , no motive***
  poor condition of horizontal market

- ***Mobility ----------- no money enough to start a service***
  no business model

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Digitalization Policy Beyond analogue map?

Country	*Main reception modes*	*Total coverage*
France	T	78.4%
Greece	T	100.0%
Italy	T	94.5%
Portugal	T	80.8%
Spain	T	90.4%
United Kingdom	T	77.1%
Finland	T+C	84.7%
Ireland	T+C	90.9%
Denmark	C+T	81.9%
Sweden	C+T	83.9%
Belgium	C	95.8%
Luxembourg	C	77.7%
Netherlands	C	97.1%
Germany	C+S	83.6%
Austria	S+C	73.6%

T = Terrestrial C = Cable S = Satellite

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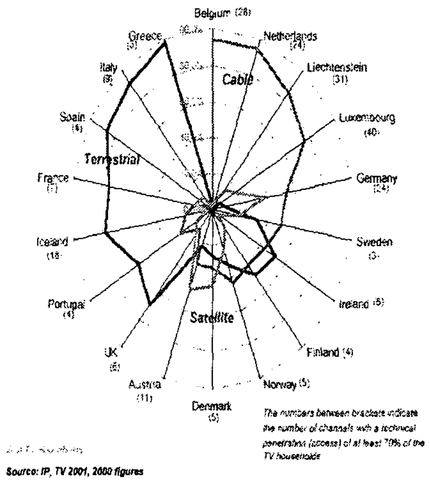
Digitalization — Difference & same



Source: IP, TV 2001, 2000 figures

•Analogue Dominant Media will maintain their positions in the Digital world

Why?
It is transition
Policy of main services for consumers

Therefore, the way is different in every countries

- *Analogue Market 's problems will be problems in the Digital Market, too.*
  - *Want of contents, US Program Market*

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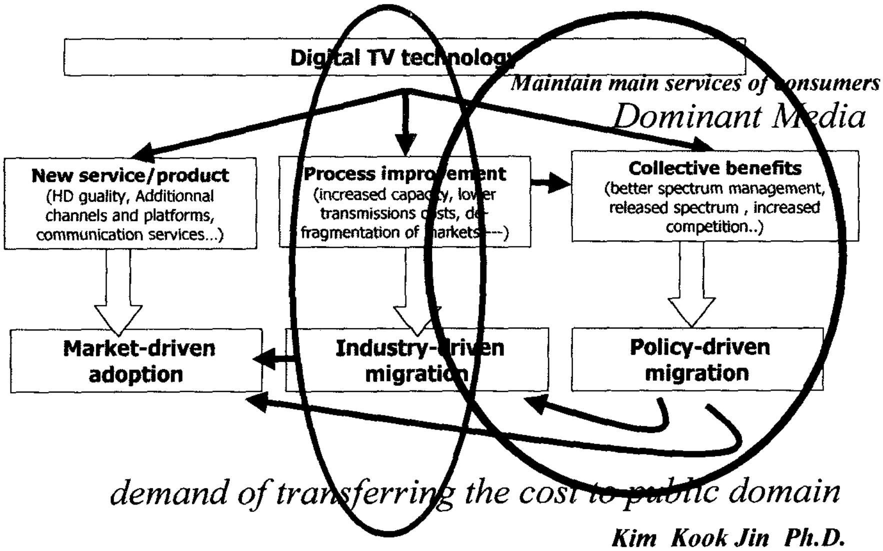
Digitalization For ? By ? — Risk



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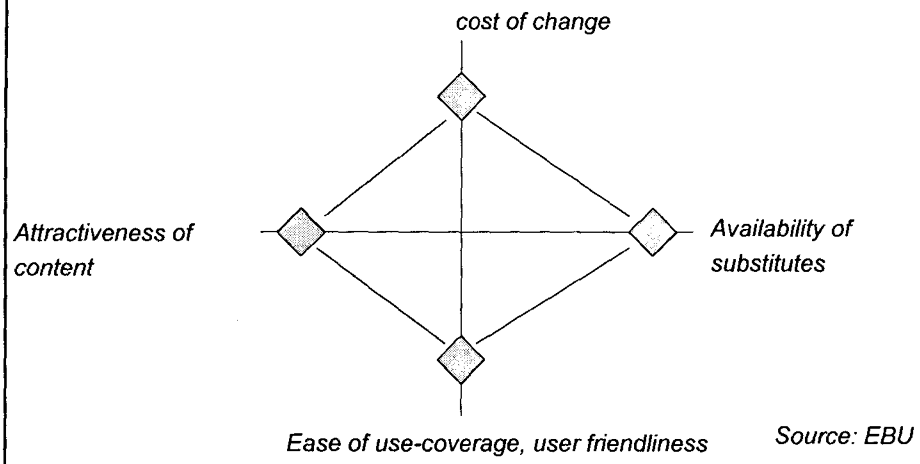
Digitalization DTT success factors



Source: EBU

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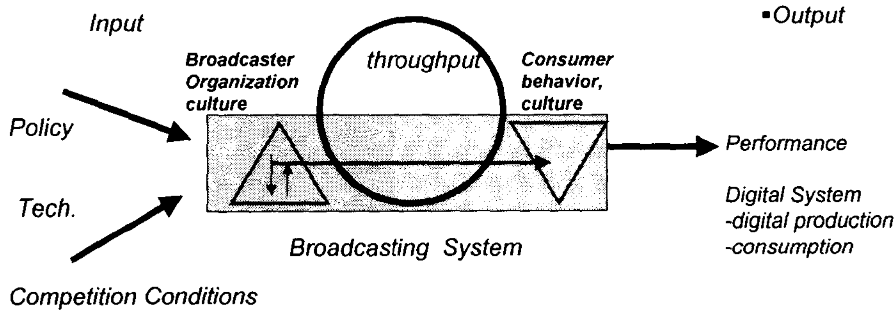
Digitalization DTT success factor2

- *Understanding Input, throughput, Output*



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Di...lization The need for policy intervention

- General interests in reaching a faster, wider migration
- Five types of structural obstacles to the digital migration

  Chicken-and-egg situations, Free-rider

  *Situation rents, Threshold effects, **Network** External effects*

- **Therefore the need for policy intervention**

  To overcome co-ordination problems in take-up phase (chicken-and-egg, free driver)

  →Switchover roadmaps to help co-ordination of market forces

  To avoid policy dilemma between mid-term DTV and information society objectives

  →Public debate on post-Analogue policy and DTV/broadband consistency

  Ensure greater commercial freedom for digital TV and broadband services

  →Drive competition by allowing more freedom for DTV players and consumers

  Because spectrum efficiency is an external benefit to most broadcast spectrum users who therefore have a situation rent →Study of a « tax per Mhz »

  Through awareness advertising campaigns and labelling campaigns

  Because DTV notions still confusing or even frightenning

  →Encourage in-depth information on DTV

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Market Remedy and Policy Remedy

- ***Terrestrial broadcasting oriented Market***

→ DTT oriented policy has to be revised

→ Digital cable policy is important if not new entry

AV oriented services market

→ introducing Multimedia services

→ making Interactive services market

→ making DMB mobile services market/portable internet service market

Low quality service market

→ HD obligation policy has to strength in the audio and video.

→ Building Content development supporting system

Converging market

→ The Balance of Broadband Policy and Digital broadcasting policy

→ introducing Seamless digital service concept

→ Starting Digital Home policy

→ New role of digital media

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Summary

- *High potentiality of Digital broadcasting Industry*
- *Low performance of digitalization policy*
- *Sollen-Sein Gap makes a bad mood to the digital broadcasting industry*
- *Fill up the gap with aggressive digital policy*
  No stimuli , no move
- *But need understanding of throughput*
  input isn't all
- *Digital is common language therefore all information market will be converged as soon as you can imagine.*

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Thank you

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