

Personal TV-Anytime

Personal Digital Recorders

The Benefits For Users And Content Providers

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Chair of TV-Anytime Business Models

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What's he gonna talk about?

- Statistics for thought
- The BBC. Opportunities
- Business Models Working Group - who we are
- TVA environment - “local storage to home server”
- Opportunities for all stakeholders & user scenarios

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Some PDR stats

95% of content in US will be viewed from off-line devices 2005

by end 2001, 900,000 people will be using PDR's

by 2004 there will be 4 million

More than 57% of UK population prefer pay per use (choice) rather than subscription model

2009 80% of the world's media consuming population will be using Personal Storage systems - whether PC or set top based

Price Waterhouse & Forester

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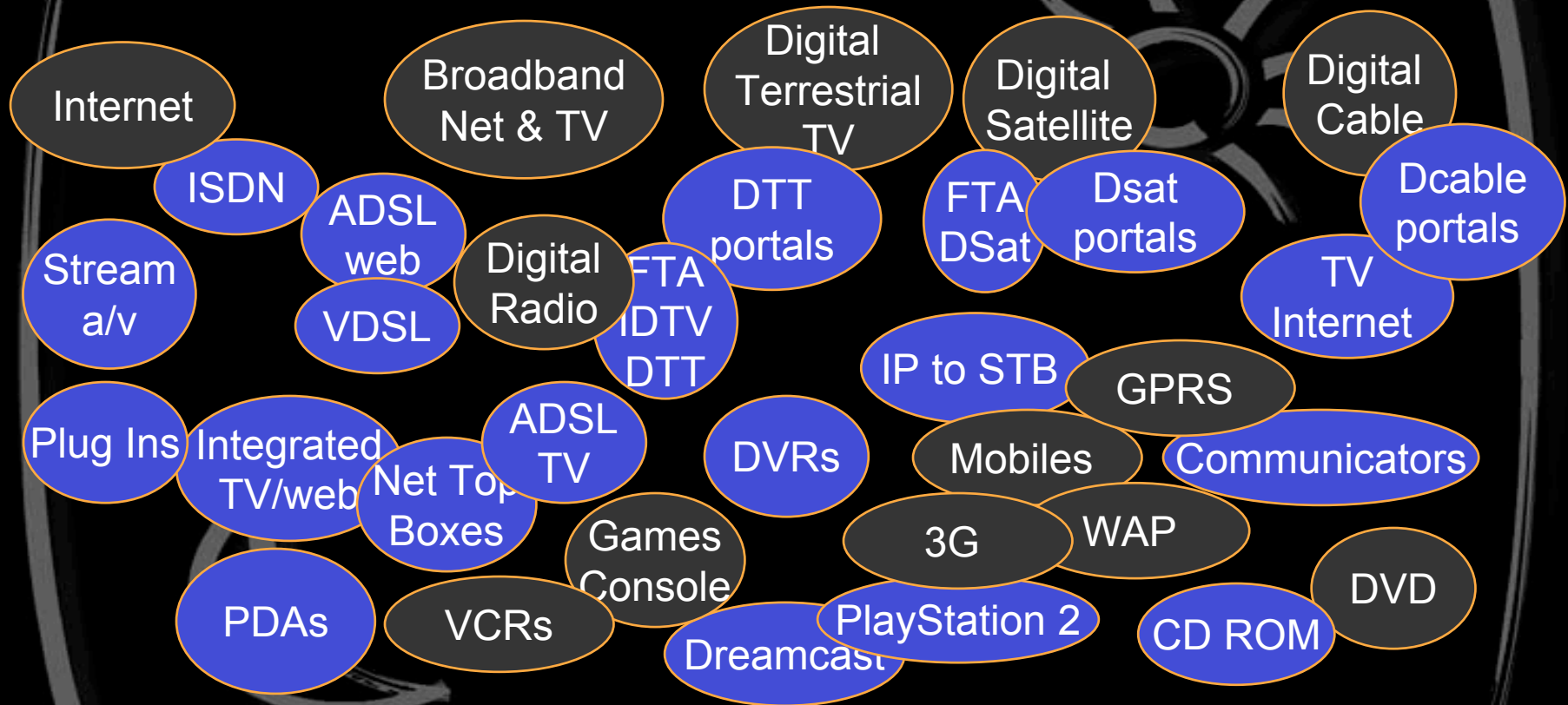
What kinds of services could the BBC offer via PDRs?

- News bulletins - personalised 'regionalised' capture
- **Personalised** capture from magazine programmes
- Packages of **theme'd** or popular programming eg: comedy
- **Highlight** 'capture' of key sports or live event programmes
- Educational packages with **targeted** levels of learning
- Packages of **interactive** TV or web linked enhancements
- **Niche** content trickled in off peak to specialised audiences
- Targeted **promotion** 'off the PDR' to individuals

Concept link

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The UK platform diversity 'headache' for providers



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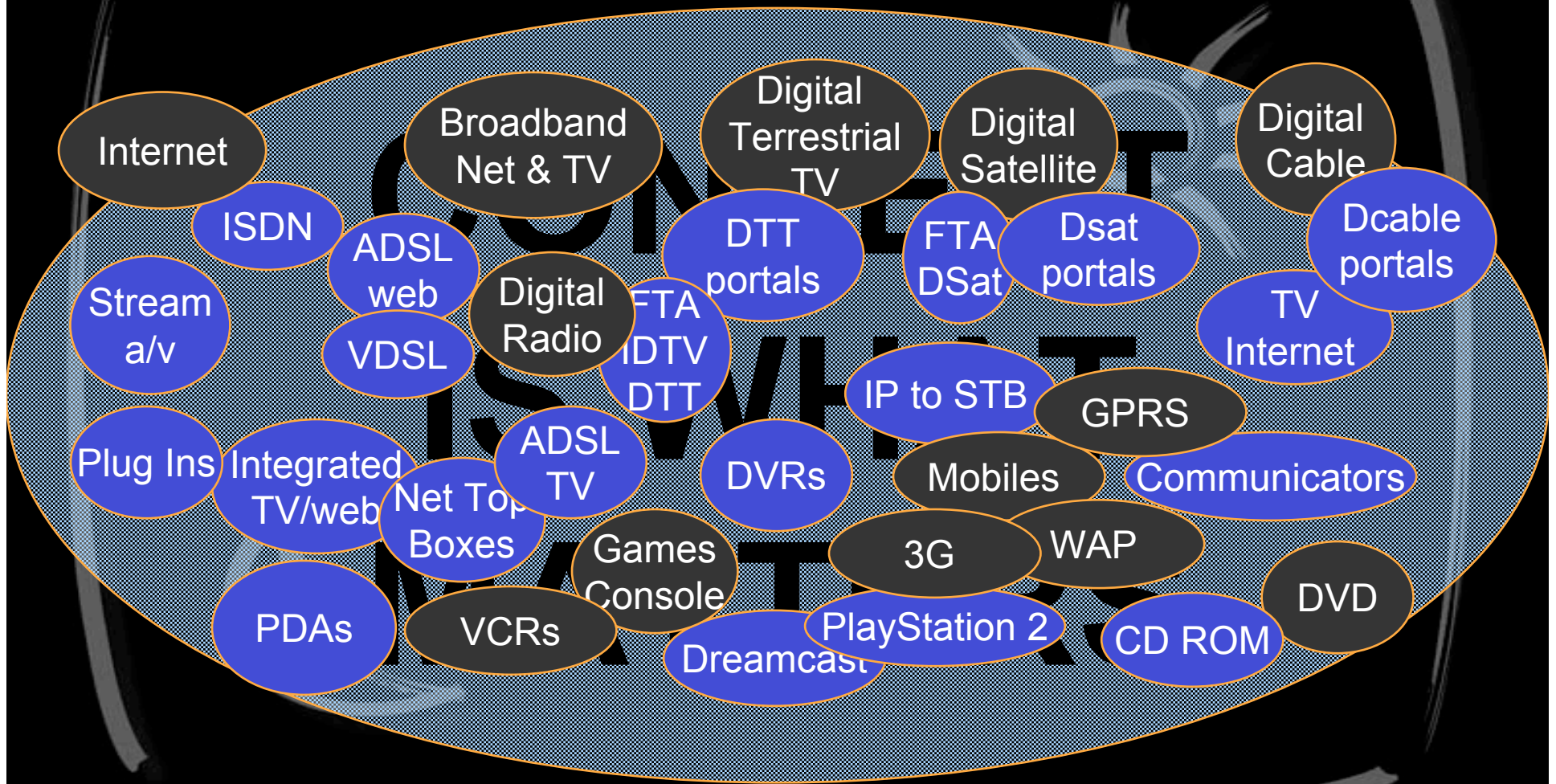
UK Digital 'Interactive' - diverse environment

Platform	Audience '99	Audience Q1 '01
Internet on PC	2.5 mill	3.8 mill
Digital Terrestrial TV 550 000		1.2 mill
Digital Satellite TV	3.2 mill	4.8 mill
Digital Cable	100 000	2.1 mill
DSL services (e.g.:ADSL)	100 000	0.6 mill
Games Consoles	(6 mill)	4 mill (net access)
Mobile 'Assistants' wap etc	25 mill	10 mill (data access)

Estimates aggregated over several UK research companies

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At the end of the day...



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Key benefits for content providers such as BBC

- The diversity of delivery begins to be **equalised**
- PDR's automatically 'fish' for content in regular schedule - making diverse output appear personally **relevant**
- End of scheduled programming turned to advantage
- Down-loading (Web, TV and eTV) in **off-peak** hours
BBC has 19 TV streams 'mostly' dormant 1-6 am (95 hrs!!)
- Cross promoting of other viewer relevant content
- Managing rights by **usage tracking**
- Providing **segmented**, more compact programming if the viewer requires

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Finally...TVAF - Business Models Group

Irvine (Sep 99) - Mission *“That no system can be developed without first imagining & documenting every conceivable present and future way that it could be used”*. Informative - to be used as reference by technical working groups.

- Geneva (Nov 99) - Devised benefits, simple system for CFC
- Business scenarios based on feature sets 1 and 2
- Sunnyvale (Jan 00) - User centric scenario classifications
- Osaka (Mar 00) - Converged above into TVAF ‘Environment’ document including functionality road map
- New York (May 00) - Created ‘value chain’ scenario additions

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TVA Environment Document (RI) - Key Sections

- Consumer privacy & provider rights
- **Brave New World. Overview and Mission**
- Persistent storage simple network
- The *'Return Path'*
- Functionality models & road map
- **User centric usage scenarios**
- Opportunities and benefits
- **Value Chain Scenarios**

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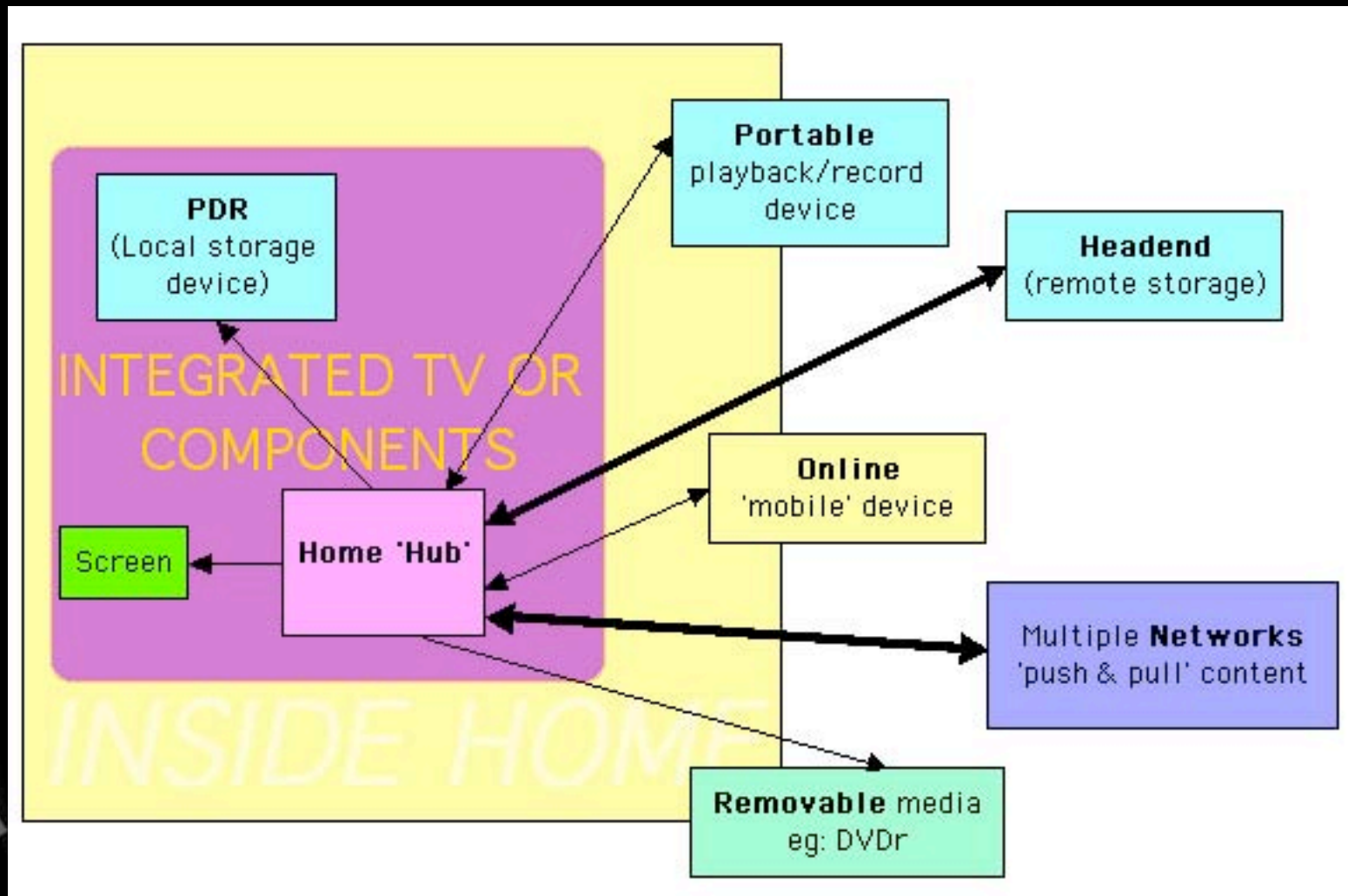
Value chain scenarios. | | Stakeholders

- 1 Content creators
- 2 Content owners
- 3 **Content** providers
- 4 Advertisers
- 5 Software developers
- 6 **Service providers**
- 7 Portal owners
- 8 Network operators
- 9 Equipment manufacturers
- 10 Retail
- 11 **Consumers**



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Persistent storage simple network



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The Environment “the three evolving models”

- Model 1a and 1b - Basic ‘push’ model. Free via Unidirectional “no return path”
- Model 2 – User Response model Free + PPC via Bi-directional “limited communications channel”
- Model 3 - Full interactive model Free + PPC via Bi-directional “integration between multiple content providers, services providers, resource locators and the Internet”

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Priority	PDR Functionality	Scenario	Models			
			1a	1b	2	3
1	Instant Record	I				
2	Record and playback an AV stream	I				
3	Simultaneous record and playback	I				
4	Live pause	I				
5	Content Search and Access	II				
6	Playback of content in indexed/highlight mode	II				
7	Book marking (personalisation/agents)	III				
8	Portability of user profile (personalisation/agents)	IV				
9	Updating of content	III				
10	Storage management – basic & advanced (e.g: quality)	I - III				
11	Profile management (personalisation/agents)	III				

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Priority	PDR Functionality	Scenario	Models			
			1a	1b	2	3
12	Multi-user profile support (personalisation/agents)	III				
13	Multi-modal operation	IV				
14	Targeted services using local profiles (personalisation/agents)	III				
15	Compliance to all content delivery mechanisms	IV				
16	Synchronisation of stored & 'live' content	IV				
17	Supports a variety of content types regardless of source, delivery channel or medium	IV				
18	Transferring/archiving content to & from other local devices	IV				
19	Using other devices to control PDR remotely <i>Rights Management & Protection</i> <i>Return Path*</i>	IV				

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Priority	PDR Functionality	Scenario	Models			
			1a	1b	2	3
20	Limited eCommerce	VI				
21	Ability to pull content	II-IV				
22	Synchronisation of cross media with pull elements	IV				
23	Usage data can be exploited (e.g: rights)	III+VI				
24	Consumer profile data can exploited by all	III+VI				
25	3rd party management of PDR	III+VI				
26	Updating of content with verification	III				
27	Content usage verification	III-VI				
28	Networking using the PDR (e.g: email, remote control by mobile, etc)	IV-V				
29	Full Pay Per Choice eCommerce capable	I-VI				

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Towards a definitive set of scenarios (30 pages in RI)

- Basic PDR functionality – general DVR features
- Navigation & Selection – the capabilities of integrating ECG with sophisticated digital recorders
- Personalisation – ways that a viewer can manage the PDR system and make it more relevant to them
- PDR and TV enhancements – beyond audio and video - web, interactive TV applications & PDR advanced features
- Communication – two way interaction between viewers around their PDR 'network'
- Transactional opportunities – eCommerce relationships between viewers and providers

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Basic PDR functionality

- Dynamic record
- Pause modes, time shift



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Navigation & Selection

- Selecting content
- Selection enhancements
- Segmentation, skipping, highlight viewing & track changing
- Non-ECG capture options
- Scheduled TV or online browsing

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Personalisation

- Multi user log in, PDR operation, PDR management
- Personalised filtering and search
- The intelligent agent
- Personalised capture modes & 'targeting'
- Preferred providers
- Playback & updating preferences
- Preferred quality

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PDR and TV enhancements

- Non ECG or TV content capture
- TV to web/data services links
- URL & link collection, favourites
- Remote content selection & transfer
- Archiving
- Portability of personal profiles
- Personal content

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Communication

- Mail and the PDR
- Sending trails/ads & receiving trails or ads attaching metadata to allow easy capture
- Sending indexes of their own 'highlight edit'
- Attaching low/high bandwidth content to mails
- Integration with existing mail devices, mobile, PC etc.
- Forward content to a friend, send as a gift
- Popular choice involvement

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Targeted ads

"Viewer receives targeted ads when viewing time shifted or live content"



www.tv-anytime.org

TV-Anytime

Combining the immediacy of television with the flexibility of the internet



Stakeholders

Key benefits in the value chain

- | | |
|-----|--|
| 1-3 | Benefits from appropriate ads and/or prod placement. |
| 1-3 | Additional revenues - faster turn-around |
| 1-4 | Reach target audience – enhance loyalty |
| 1-4 | New market segments – shift e.g.: – from printed to TV (banners) |
| 5 | Reducing waste. Advertisers pay for fewer viewers at a higher CPM |
| 5 | Right ads get to right consumers |
| 5 | Multiple replay of ads for one download |
| 5 | Identify demographics within individual households |
| 5 | Appropriate dynamic insertion |
| 5 | Localisation for national ads (connected to 3.) |
| 5 | Off-peak cheap delivery to PDR |
| 5 | Integration of different media types (TV, Web, links) |
| 5 | Offline categories of ads |
| 5 | Live ‘broadcast’ – capture the ad or links |
| 5 | Adjust optimal presentation intervals / number of impressions (‘make good’) |
| 5 | ‘Prime time all the time’ – |
| 5 | Skipping – as long as it is measurable |
| 5 | Flexible pricing |
| 5 | Favourite ads capture (‘bunches of ads’) |
| 5 | creating new software- e.g.-data mining, filtering, measurement, matching, agents, navigation, ad authoring tools, micro-billing |
| 6-7 | market differentiation , tailored services, more revenues |
| 8 | Subsidised box via ad industry |
| 11 | Seeing relevant ads, saving time |

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FINISH

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