Personal Television Standards

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Content

- **What is TV-Anytime - role of Business Models**

- **Key working groups: Metadata, Content referencing, Rights Management Protection**

- **Metadata - content description and world wide interoperability**

- **Content Protection Principles**

- **TV-Anytime Forum Phase Two**

- **BBC priorities and aspirational services on PDR's**

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TV-Anytime Forum over 100 member companies

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- The *TV-Anytime* Forum is a non-profit association of organisations which seeks to develop specifications to enable audio-visual and other services based on persistent local or online storage

- Membership is open to all who sign the Memorandum of Understanding, pay membership fee and attend meetings. Full info at: http://www.tv-anytime.org

- TVAF collaborates with MPEG and DVB (in Europe), with ATSC in the US and ARIB in Japan (amongst many).

- No one standards group is doing everything needed - this is not competition, it's collaboration.

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TV-Anytime Challenges for Business Models WG

- **Keeping up with industry developments, so that TVAF standards are not too little, too late**

- **Ensuring content providers are encouraged to develop material for personal TV services**

- **Documenting new revenue-producing business scenarios which capitalize on TV-Anytime standards to provide interoperable systems and services to large groups of users**
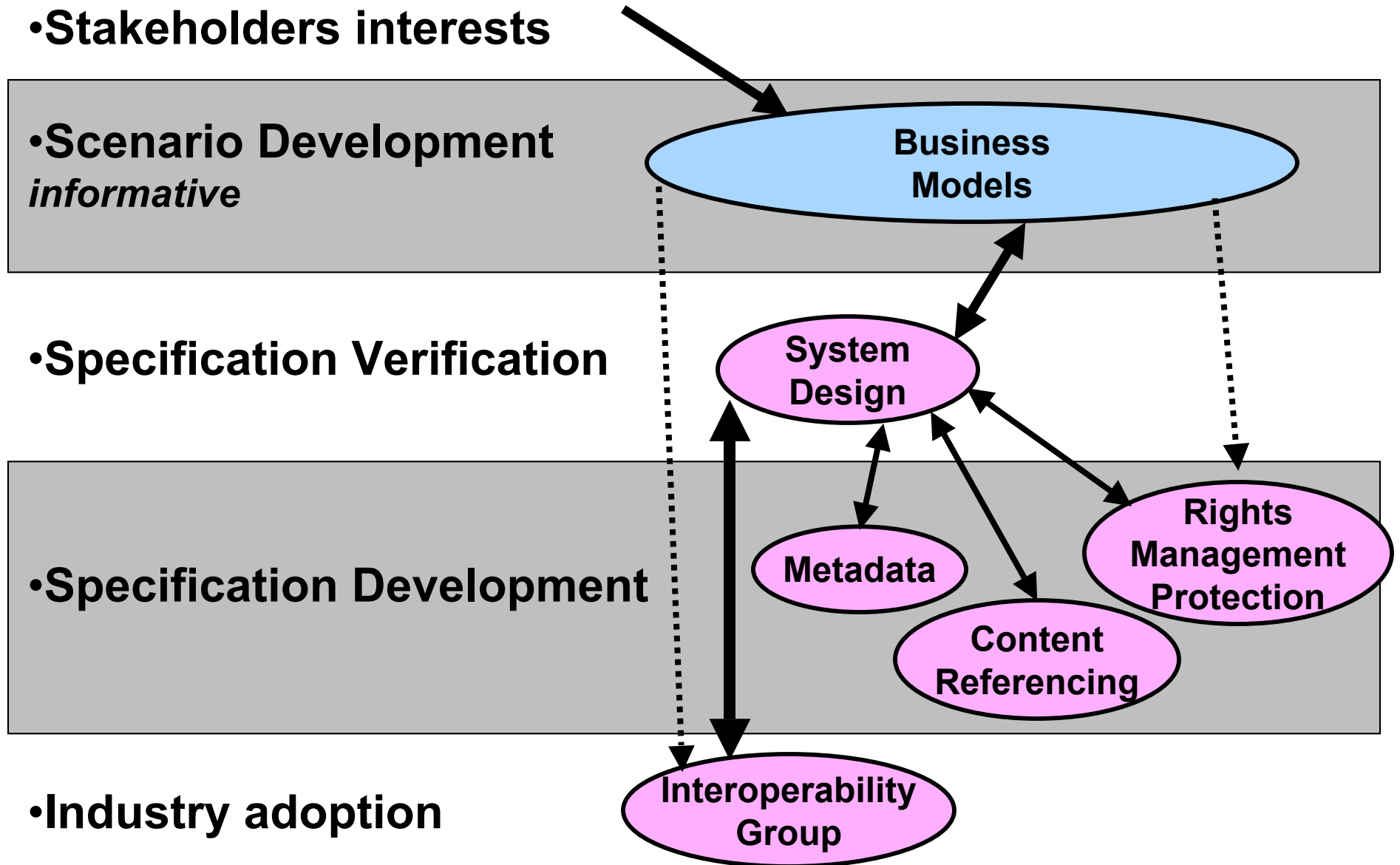
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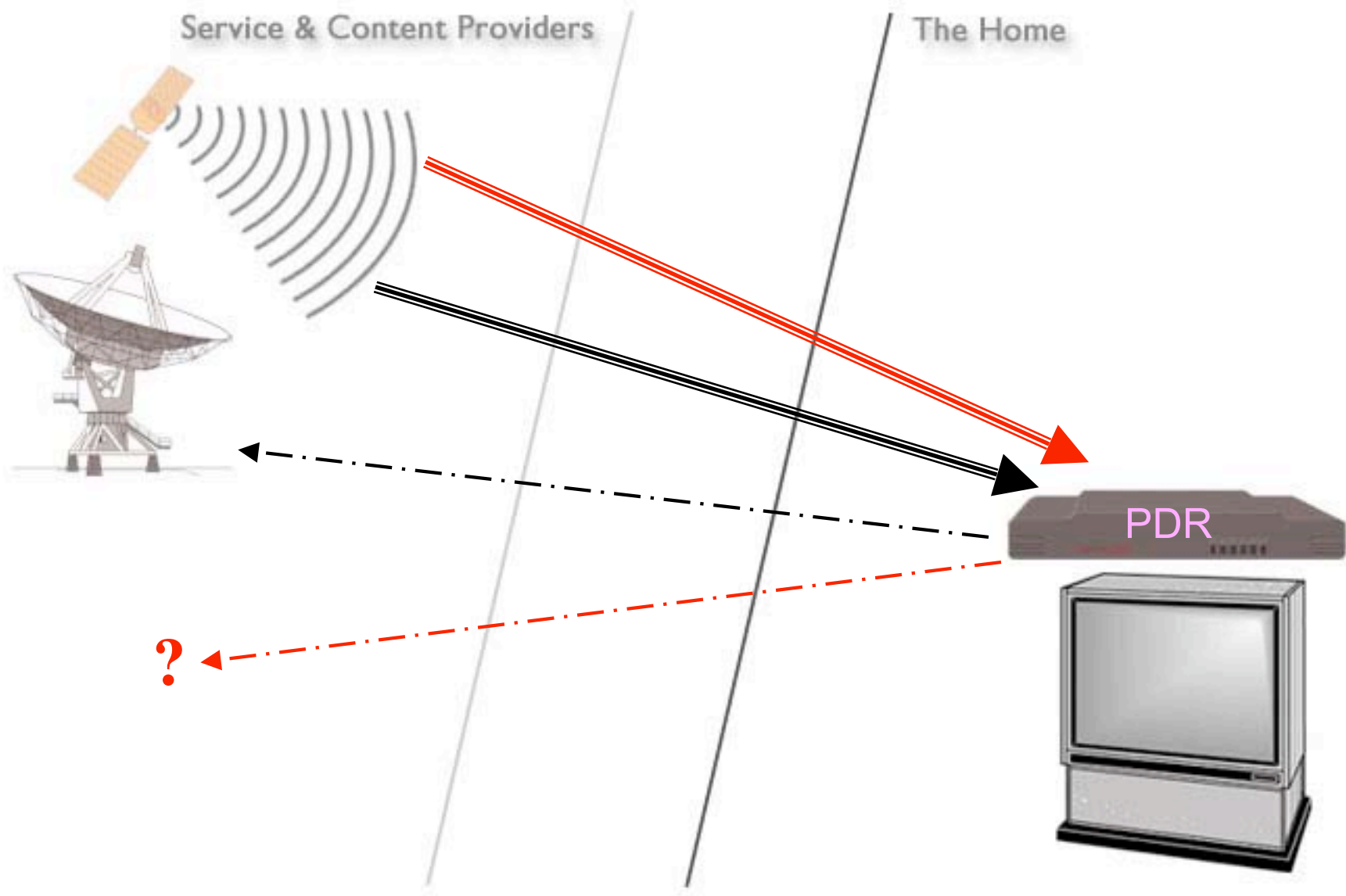
- **Stakeholders interests**

- **Scenario Development**
  informative

Business Models

- **Specification Verification**

System Design

- **Specification Development**

Metadata

Content Referencing

Rights Management Protection

- **Industry adoption**

Interoperability Group

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Service & Content Providers

The Home

PDR

?

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Major Issues with Personal TV technologies

- Metadata - integrity, control, protection, quality
- Future - world wide interoperable ECGs?
- Rights Mngmt Protection - control in the value chain
- When will time-shifting reach significant penetration?
  - *Time-shifting may affect 50% of UK audience in 2006*
- Who will be the best Personal TV Service providers ?
- Who 'controls' viewer profiles - need to be mobile?
- What happens when viewers consume programmes more and more by segments ? (micro profiling)
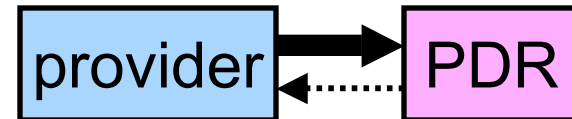
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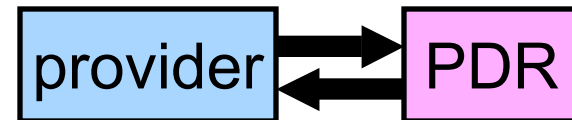
The Three TV-Anytime Models
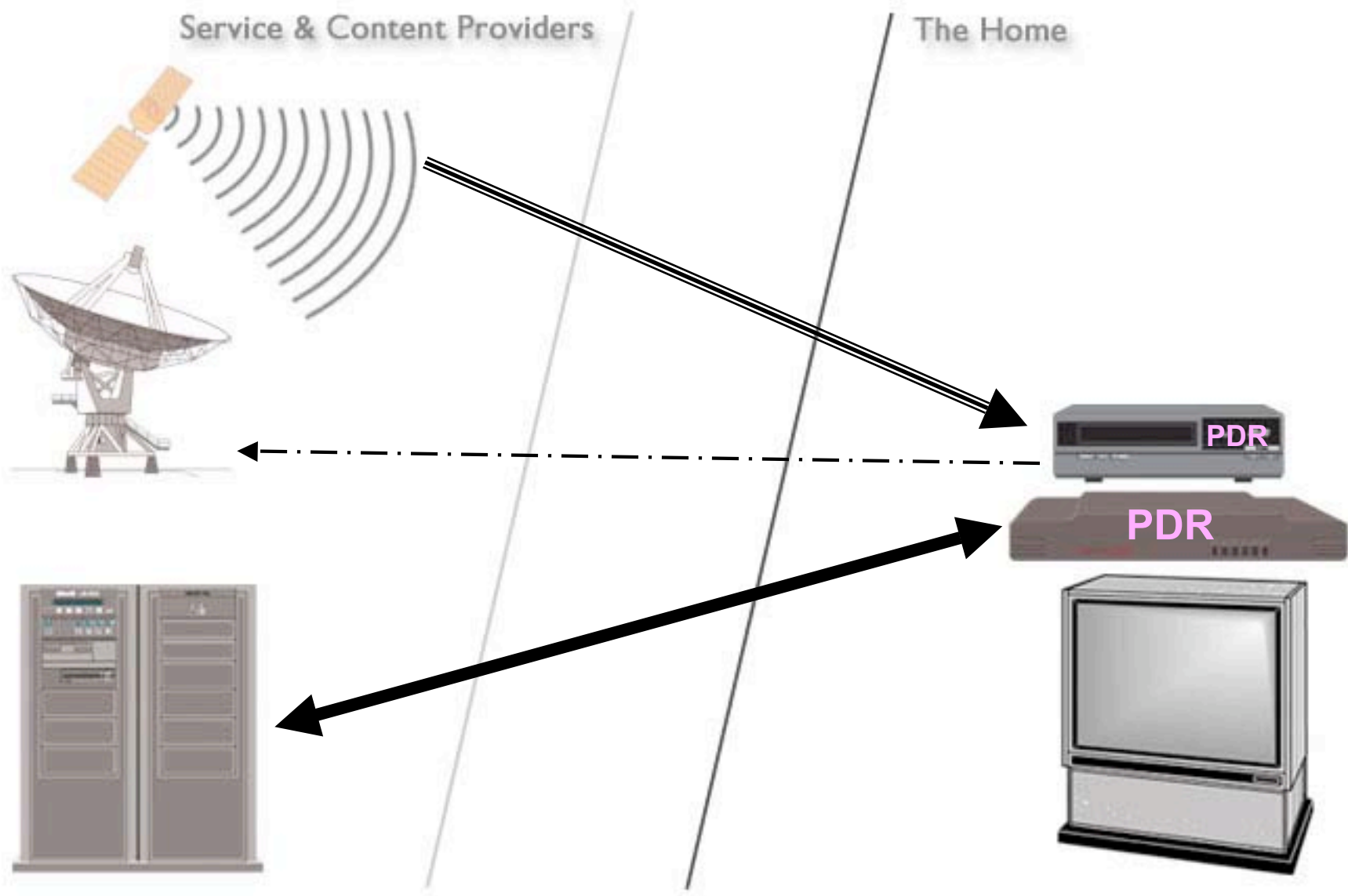
Model 1: **Broadcast**
(uni-directional)

provider → PDR
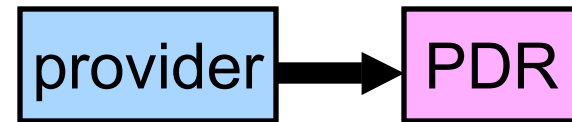
Model 2: **Consumer Response**
(bi-directional)

provider → PDR
provider ← PDR

Model 3: **Broadband**
(bi-directional)

provider → PDR
provider ← PDR

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Service & Content Providers   The Home

PDR

PDR

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TV-Anytime Metadata SP003 Overview

5.1 Content Description Metadata
- 5.1.1 Content Description Requirements
- 5.1.2 TV-Anytime Content Description model
- 5.1.3 Requirements check
- 5.1.4 Basic types
- 5.1.5 Description
- 5.1.6 Audio and video information
- 5.1.7 Program information
- 5.1.8 Group Information
- 5.1.9 Media Review DS
- 5.1.10 Basic Metadata (Informative)
- 5.1.11 Optional Metadata (Informative)

5.2 Instance Description Metadata
- 5.2.1 Program location entities
- 5.2.2 Program Location
- 5.2.3 Service information

5.3 Consumer Metadata
- 5.3.1 Usage History DS
- 5.3.2 User Preferences DS

5.4 Segmentation Metadata

2.1.1 Target description and Audience profile
- 2.2.1.1 Consumption profile
- 2.2.1.2 Demographics
- 2.2.1.3 Interests
- 2.2.1.4 Favourites
- 2.2.1.5 Content description related data
- 2.2.1.5.1 Mood
- 2.2.1.6 Atmosphere

3.1 Programme and service targeting

3.2 Advertising targeting (dynamic insertion of advertising)

3.3 Promotion targeting

3.4 Terminal targeting

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TV-Anytime Example Phase 1 Advanced Features

- Multi-user preference support and portable profiles

- Personal book marking/indexing of recorded content

- Playback content as virtual programmes (e.g. highlights)

- Dynamic *segment insertion* during playback (e.g. targeted advertisements)

- Updating recorded content with newer versions (e.g. keeping news, fresh)

- Verification of usage of content on PDR

- Consumer-controlled secure transfer of content from local to *remote 'personal' storage*

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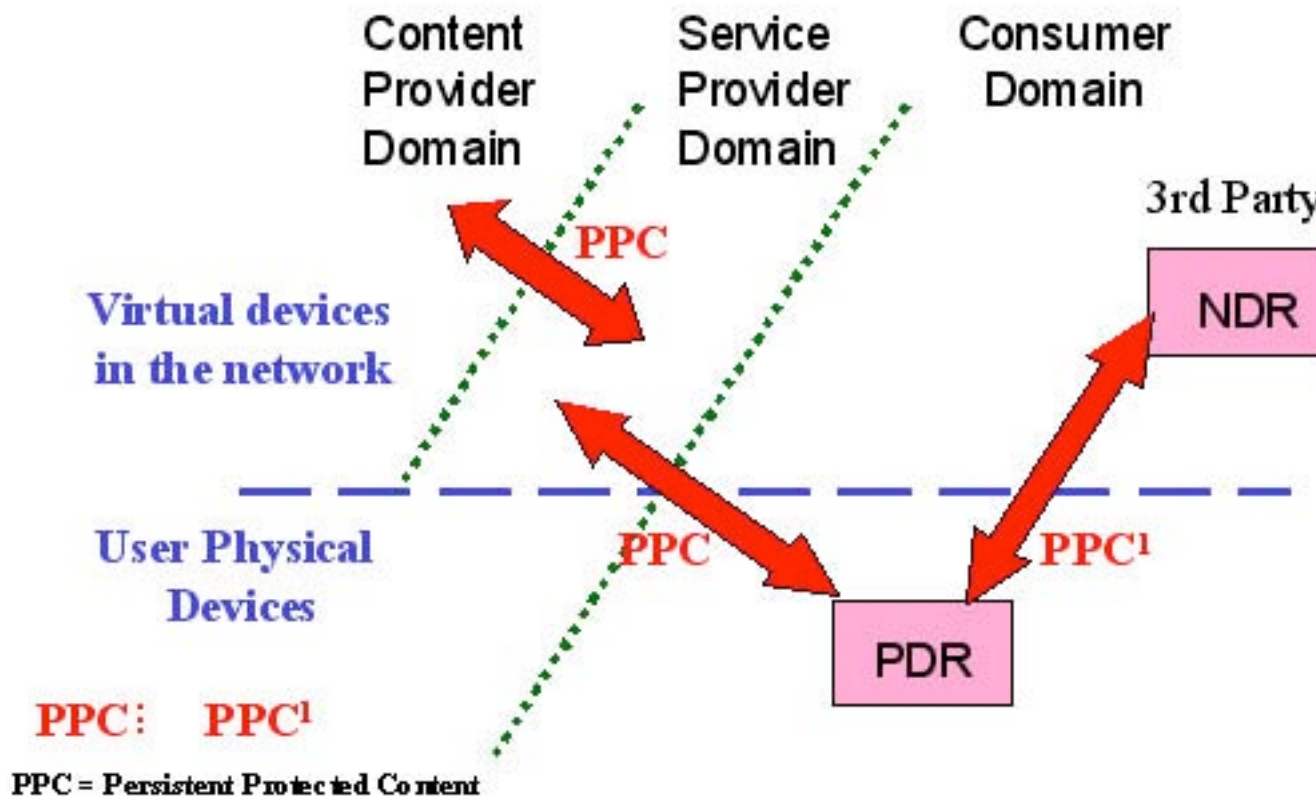## TVAF Rights Management Protection Principles

- Provide end-to-end persistent protection of content, associated data and user rights

- Enable interoperation with other systems and the flow of commerce

- Provide sufficient level of effectiveness to:

  - Prevent widespread, easy hacks, not professional piracy

  - Prevent unfettered re-distribution

  - Protect content related rights and user rights and data through a domain scheme
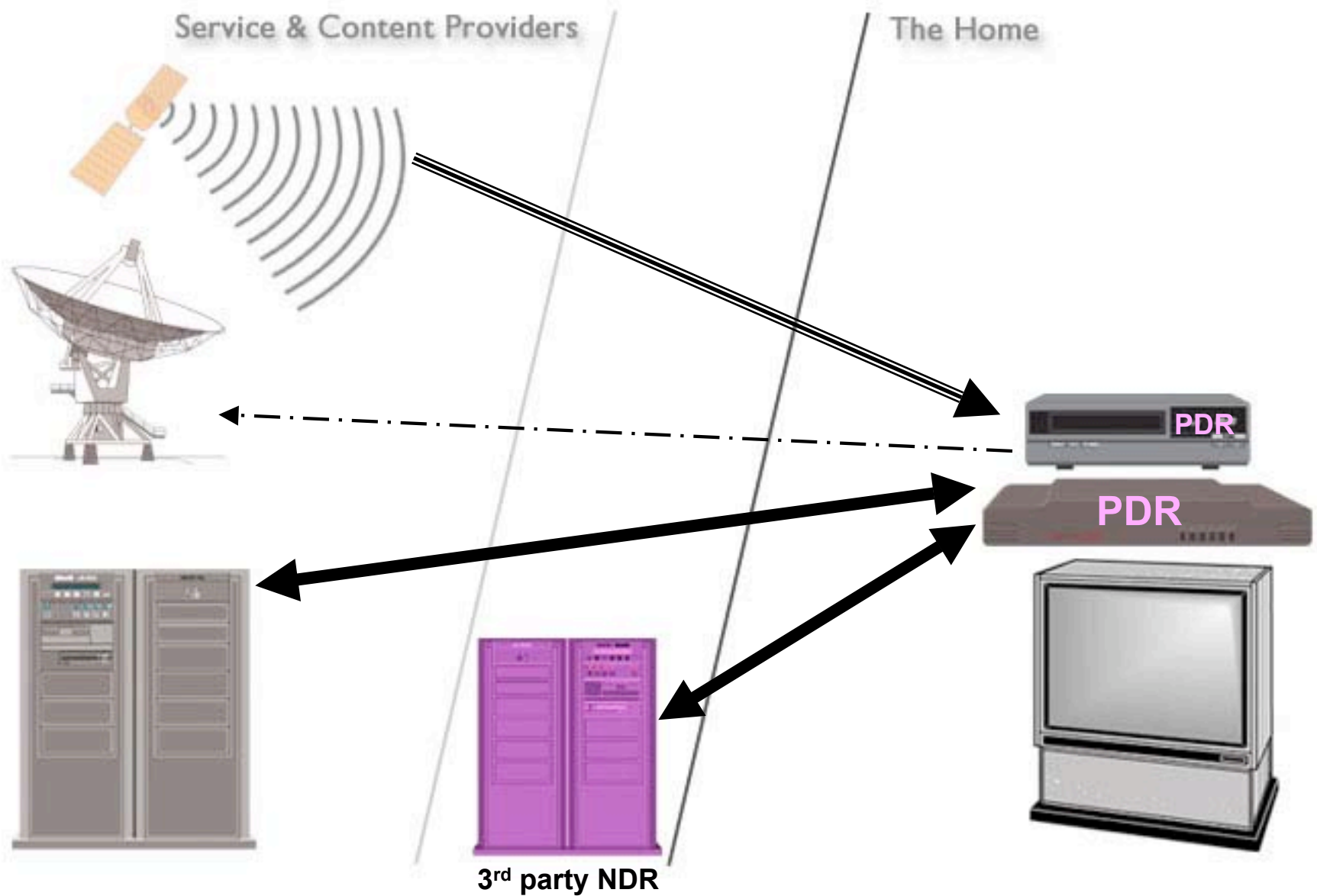
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From SP001 Appendix A

This example also uses a 3rd party NDR to provide adequate storage for the content required by the consumer. However in this example, the consumer directly selects and accesses the 3rd party NDR. It may be essential that the links to the consumer have similar capabilities. The benefit to the consumer is that they can off-load the storage requirement from their PDR to the NDR (e.g. archiving).

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PDR

PDR

3rd party NDR

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TV-Anytime Phase Two Considerations

- What services/products do consumers want?

- What capabilities are currently being developed and deployed by the industry?

  - Integrated TV/PC/mobile/internet hardware and services
  - Removable media; content archiving
  - Targeted, personalised content delivery systems
  - In-home servers/personal networking

- What services/products does industry want to provide?

- What services/products will generate revenue?

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Phase Two Areas - taken from the current CFC

New Content Types, Targeting & Redistribution

New Content Types - Integration of other content types (games, enhanced TV, web pages, music files, graphics, data and many other applications) in addition to audio and video content.

Targeting – Automatically matching & delivering relevant content to profiled consumers
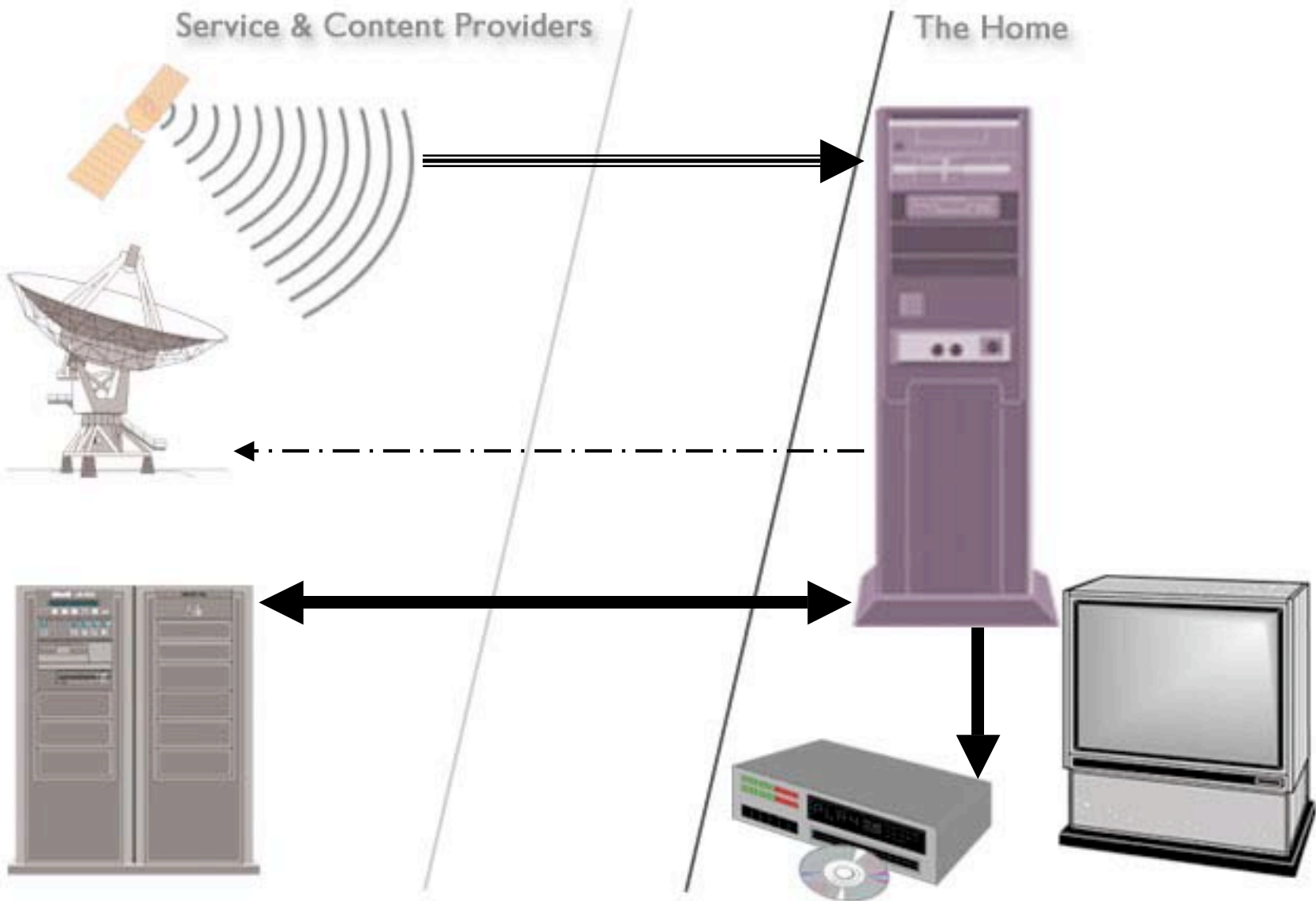
Redistribution – moving content around systems

- **Content sharing** - Peer-to-peer distribution of un-protected and protected content over provider networks
- **Home networking** - Multiple connected storage and display terminals within a defined private physical network
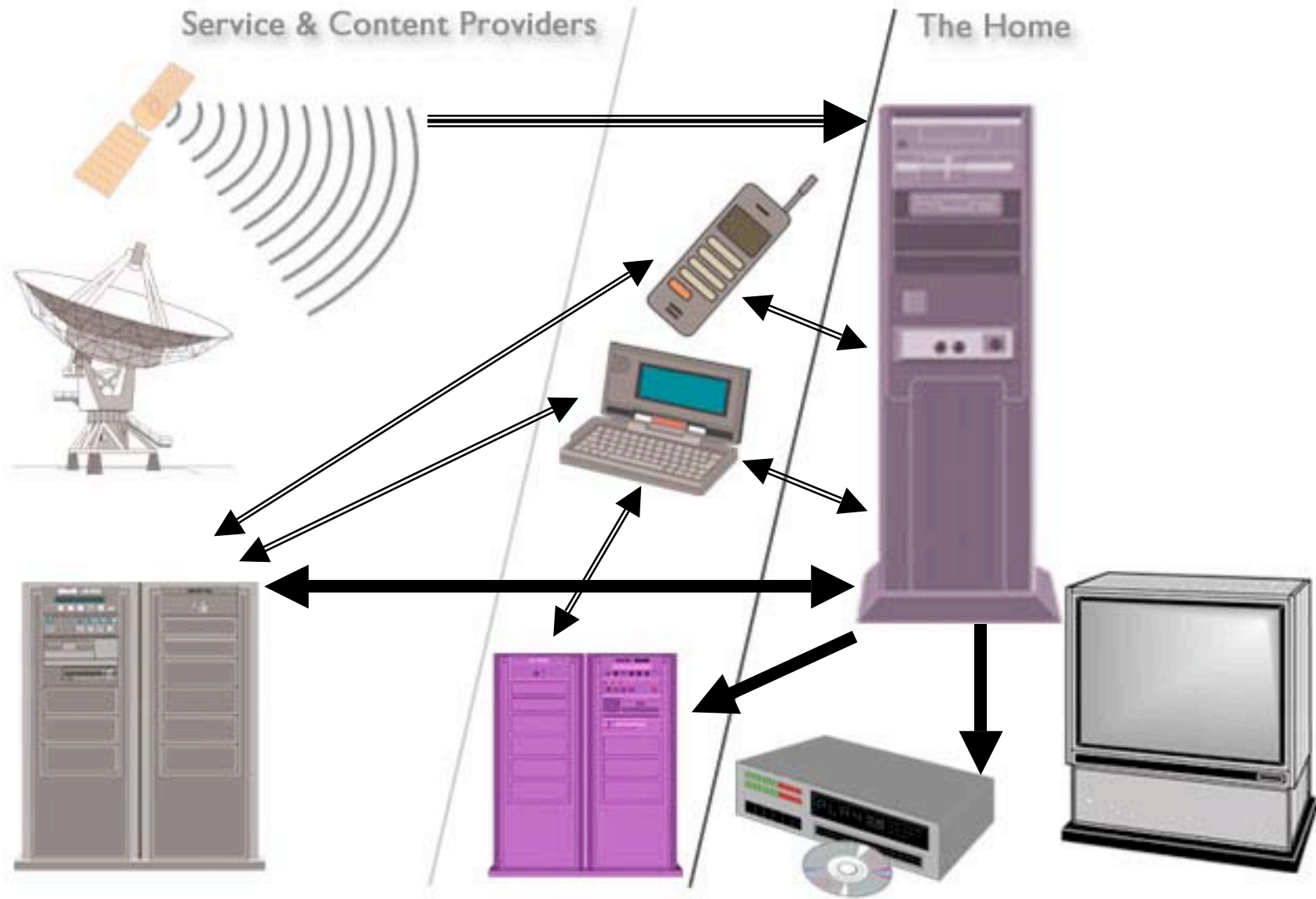- **Removable media** - Peer-to-peer distribution of un-protected and protected content on physical storage

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Service & Content Providers

The Home

PDR

PDR

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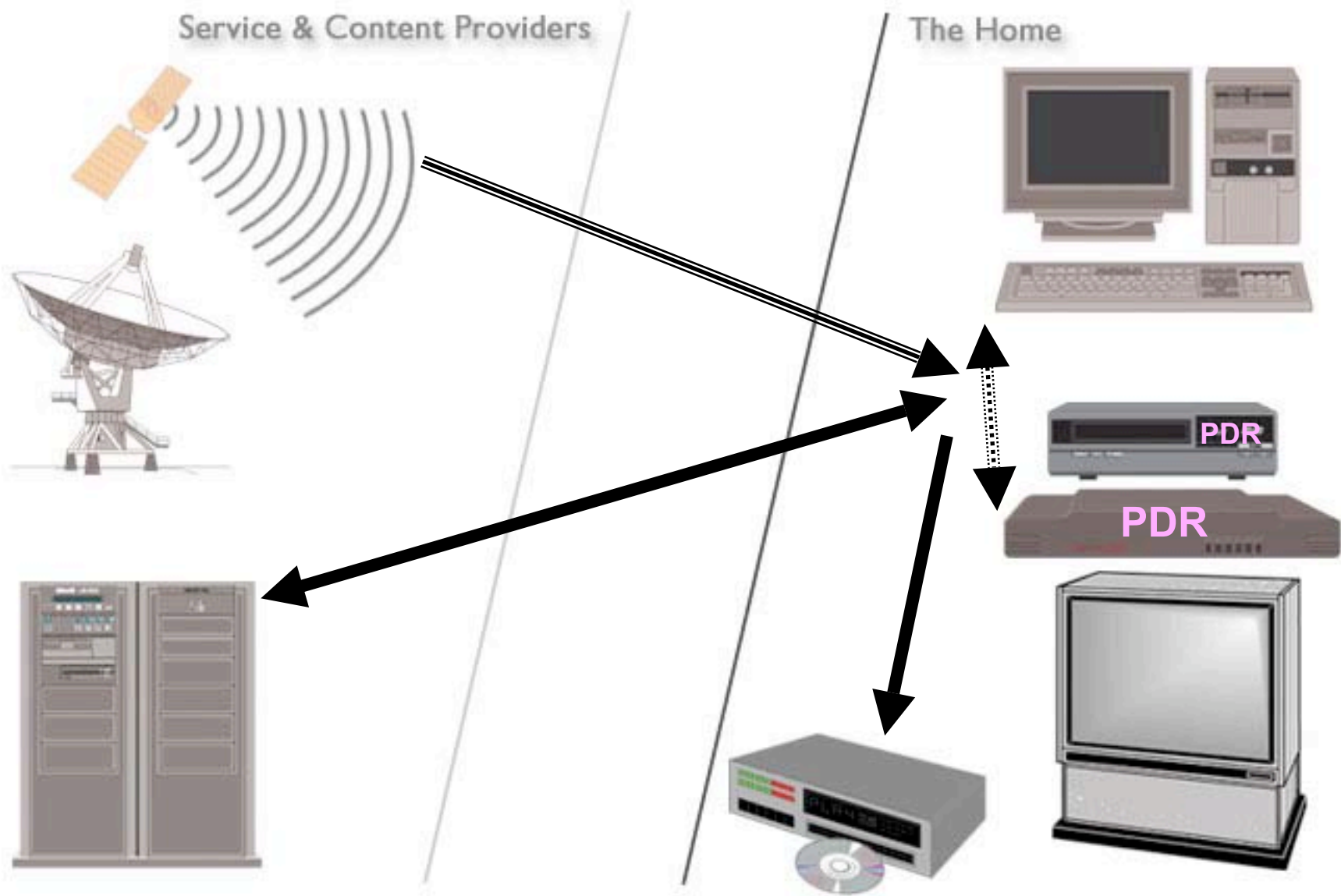
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'REAL' ADVERTISING OPPORTUNITIES

1 Targeted advertis...
we now know who is out...
indi...

2 Non-skipping options
For additional fees advertisers can
force non-skip - regardless of

3 Ad *free* or ad f...

14 Dynamic Insertion
Ads can 'drop' into relevant
content and viewers

4 "the ad loyalty card"
...ch my ads we give you benefits
...a coupon

5 ...

13 Story lines - repeat viewings
Created via stored 'soap operas'

12 Virtual ad channels
...iewers choose to go to
relevant ad channels

2 Commercial exclusivity - on...
...
Updating of commercials on the PDR
to retain timeliness

10 Infomercials
extending the short form ad.
Greater detail

9 Direct response
...nstant eCommerce gratification

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What kinds of services could the BBC offer via PDRs?

- News bulletins - personalised 'regionalised' and UPDATED 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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Priorities for advanced BBC services on PDRs?

Support (capture and playback) for proprietary and standardised API's	
Extra av streams *(Assumes multiple tuners the ability to capture multiple, parallel streams or staggered capture)*	A – Playback combined with live or pre-recorded streams
	B - Downloaded for before and after.
	C - Download alongside
Segmented video packages.	Control over updating and exchanging
Synchronised - AV synchronised with attached simple proprietary applications.	
Return path.	Network games – downloaded and played off line.
	Live linking from the site.
	Sending links for content, via trails
	Networking

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Contact
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PLEASE CONTRIBUTE TO THE TV-ANYTIME CFC
Go to www.tv-anytime.org to download

The difficult is done at once; the impossible takes a little longer