



IP Content Distribution – How IPTV will likely change the way we receive & watch TV



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So What Is IPTV?

IPTV = IP network-based TeleVision

There are many different forms:

- Service Provider IPTV – Distribution over an SP managed network
- “Over-the-Top” IPTV – Distribution over the public Internet
- “Contribution IPTV” – Using an IP network to gather TV content

Service Provider IPTV typically includes:

- Switched Digital Broadcast channels (SDB)
- Digital Video Recorder services (DVR/PVR/nPVR)
- Video-on-Demand services (VOD)
- Electronic Program Guides (EPG)
- Interactive TV applications (ITV)
- Targeted or Advanced Advertising



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Driven by Telcos entering the TV market (with MSOs evolving to IP as well)

Example: Verizon's FiOS TV Offering:

Broadband
Introducing FiOS TV

Great Value for the Consumer...

- 100% digital
- Over 375 video channels
- 47 music channels
- 20 HD channels
- 100% VOD capable
- 1,800+ VOD titles
- 120 hour DVR
- Advanced IPG
- Genre-based channel line-up
- \$39.95 Enhanced Basic

More Choices.
Right Before Your Eyes.

... and it'll keep getting better

Simple, compelling package

IPTV is a world wide initiative, including:

FT's Orange TV
Free's Freebox TV
DT's T-Home
BT's Vision
TI's Alice homeTV
Telefonica's Imagenio
China Telecom's NTV
FastWeb TV
SingTel's mio TV
PCCW's NOW TV
CHT's iTV MOD
SaskTel's MaxTV
Belgacom TV
Softbank's BBTB
KPN's Mine
Hanaro's Hana TV
NTT/Plala's 4th Media
NTT's OnDemand TV
KDDI's Hikari Plus TV
SureWest IPTV
Qwest's Choice TV
NRTC member telcos
AT&T's U-verse
as well as
Verizon's FiOS TV

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But direct-to-consumer "Over-the-Top" IPTV alternatives are emerging as well:

Logos shown include: hulu, blip.tv, COOLSTREAMING, hulu, sail.tv, Babelgum, vudu, Dailymotion, Movielink, abc, blinkx, miro, AKIMBO, NarrowStep, Vlogty, totalvid, YAHOO! VIDEO, TVU networks, YouTube, Google Video, mobuzz, BitTorrent, AOL in2, Broadcast Yourself, videoegg, msn Video, Heavy, RENKAR, Apple tv, GekTV, PPLive, veoh, NBC, ZATTOO, WUVE, SPIKE, CW, GridNetworks, Sci Fi.com, LIVESTATION, CBS, CINEMANOW, GMS anime, truTV, pcTVile, itv.com, i tv, DAVE.TV, CNN Video, metacafe, TVIDE, FOX Internet TV, Internet TV List, web2.com

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Delivering the promise of a new interactive Television Experience that is:



In Depth



Informative



Collaborative



Personalized



Educational



Beyond Traditional TV

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IPTV Benefits, Dimensions and Issues

■ IPTV Benefits

Unlimited content, Device and Network flexibility, Integrated and Interactive video-based services, Choice: Any Content, Any Time, Any Place



■ IPTV Dimensions

Streaming vs. Download, Over-the-Top vs. Managed networks
Real-time vs. On-Demand, Pay vs. Advertising-based,
Professional vs. "Prosumer" vs. Consumer video,
Home Theater HDTV vs. Cell Phone video experiences



■ IPTV Issues

Packet Loss, Reliability, Reach

- Addressed by CAC, BW mgmt, AL-FEC/ARQ, SVC, ...

Bandwidth, Scalability

- Addressed by MPEG-4 AVC, FTTx, DWDM, IP Multicast, ...

Finding Content, Navigation, Content Protection

- Addressed by Metadata, Internet & DRM technologies, ...

International Standards

- Addressed by ITU-T, ATIS, DVB, ETSI TISPAN, DLNA, ...



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