

Appendix

Acronyms and Abbreviations

ADSL	Asymmetric Digital Subscriber Line
API	Application Programming Interface
ATSC	Advanced Television Systems Committee (the American digital TV format)
ATM	Asynchronous Transfer Mode
ATVEF	Advanced Television Enhancement Forum
CTS	Cable Test System
DAVIC	Digital Audio-Visual Council
DOCSIS	Data-Over-Cable Service Interface Specification
DSB	Direct Satellite Broadcast
DSL	Digital Subscriber Line
DSM-CC	Digital Storage Media – Command and Control
DTT	Digital Terrestrial Television
DTV	Digital TV
DVB	Digital Video Broadcasting (-C: cable, -S: satellite, -T: terrestrial)

EPG	Electronic Program Guide
FSN	Full Service Network
FTTC	Fiber-to-the-Curb
HBO	Home Box Office
HCT	Home Computer Terminal
HDTV	High Definition Television
IA	Interactive
ISDB	Integrated Services Digital Broadcast (the Japanese digital TV format)
ISDN	Integrated Services Digital Network
iTV	Interactive Television
LMDS	Local Multichannel Distribution Service
MHEG	Multimedia and Hypermedia Experts Group
MOD	Movies-On-Demand
MMDS	Multichannel Multipoint Distribution System
MPEG	Moving Pictures Experts Group
NC	Network Computer
NVOD	Near-Video-On-Demand
PDA	Personal Digital Assistant
POTN	Plain Old Telephony Network
POTV	Plain Old Television
PPV	Pay-Per-View
PVR	Personal Video Recorder
SGI	Silicon Graphics

SMDS	Switched Multimegabit Data Service
SOD	Services-On-Demand
TBA	To Be Announced
VCR	Video Cassette Recorder
VOD	Video-On-Demand
YCTV	Your Choice Television

Glossary

Ad Views (banners)	Please also refer to impressions.
Ad Click Rate	This is the percentage of ad views (banners and datagems) that resulted in an ad click.
Ad Click	The number of times a banner is clicked on by a viewer.
ADSL	Asymmetric Digital Subscriber Line—uses existing copper wire telephone lines to deliver a broadband service to homes. It is one of the most viable forms of Digital Subscriber Lines due to its effectiveness over distance, i.e., it does not require the user to be as close to an exchange as other forms of DSL. Asymmetric refers to the fact that it provides a faster downstream (towards the consumer) than upstream (towards the exchange) connection. ADSL is “always on” and is considered to be the main rival to cable in Europe. At present, download speed is 516k downstream, but in the next two years this should increase to 4mb. <i>See</i> DSL.
Analog Data	Data represented by physical quantity that is continuously variable and proportional to the data
ARPAnet	Predecessor to the Internet. Developed by Defence Department in 1969.
Aspect Ratio	Term used to describe the width-to-height ratio of the television picture. Wide-screen TV uses an aspect ratio of 16:9, compared with the traditional TV aspect ratio of 4:3.

ATM	Asynchronous Transfer Mode—An advanced data transmission and switching protocol that greatly increases the capacity of transmission paths, both wired and wireless. ATM uses packets of fixed size and establishes “virtual” circuit connections.
ATSC	The Advanced Television Systems Committee is an international organisation, comprising 200 members, that is tasked with establishing voluntary technical standards for the next-generation television systems. ATSC Digital TV Standards include digital High Definition Television (HDTV), Standard Definition Television (SDTV), data broadcasting, multichannel surround-sound audio, and satellite direct-to-home broadcasting.
ATV	Advanced Television—An FCC term to designate what is now called DTV or digital television. <i>See</i> HDTV.
ATVEF	The Advanced Television Enhancement Forum—This is an alliance located in the U.S. consisting of companies representing all components of the television broadcast industry. Its basis is to move toward standardisation within the industry and to ensure Web protocols are included in standards set for iTV creation.
Audience flow	Term used when a viewer moves from one channel to another when the program changes, compared to those that remain with the original channel.
Backbone	That portion of communication network, such as the Internet, made up of very high-capacity trunks connecting switches or routers.
Back Channel	The “back channel” can also be referred to as a “return path” and describes when digital information is sent from the user’s set top box via a telephone line to the broadcaster. This is usually facilitated via a dial-up modem, similar to the device found in the PC at home used for connecting to the Internet. This allows for two-way interaction between the broadcaster, and makes services like interactive game shows possible and also allows advertisers to monitor the areas the user has visited within their interactive campaign. Some platform providers, for example ONdigital, don’t currently use a dial-up modem for the back channel and at present rely on the user to pick up the phone in the conventional sense. This means that

if an advertiser wants to build a product offer into their interactive campaign, then the user has to telephone through to a call centre to ask for the product.

Bandwidth	This concerns how quickly digital information can be passed along a network. The higher the capacity of the network, the faster it can travel. Interactive TV is delivered along one of the following networks: cable, satellite, terrestrial, or ADSL. Bandwidth is particularly important when you are trying to send or receive large amounts of information, and is particularly relevant when you are sending or receiving “bandwidth-hungry” information like video and audio.
Banner	A banner is a simple graphical device no larger than 346x46 pixels, which usually offers viewers the chance to “click-through” to see information on the advertiser. Banners are used predominantly on the Web and also within the walled garden of the iDTV platforms.
BARB	This is the key source of TV audience data in the UK. BARB is responsible for quantitative audience measurement and qualitative audience reaction or the audience’s appreciation of programming. Viewing estimates are obtained from panels of television-owning households representing the viewing behavior of the 23+ million households within the UK. The panels are selected to be representative of each ITV and BBC region, and collectively provide a network sample of 4,485 households.
Bit	A binary unit of information or data derived from a choice between two equally probable alternatives, such as zero or one, on or off.
Bitstream	A sequence of bits transmitted on a communication channel.
Broadband	(1) A high-capacity communication link, wired or wireless, capable of transmitting the equivalent of multiple TV signals. <i>See</i> Narrowband. (2) Any communication channel or medium capable of data rates in excess of what can be achieved with a telephone line and an analog modem.
Broadcast	One to many communications, print or electronic. <i>See</i> Multicast; Narrowcast.
Broadcasting	As used herein, radio or television (video) transmissions.

Browser	A client program (software) on a computer, set top box, or other device that is used to look at various kinds information, including Web pages and interactive television interfaces. An example of a web includes Netscape and Internet Explorer. Interactive TV set top boxes use their proprietary browsers; e.g., DTV navigator used on CWC and Telewest.
Buffer	A mechanism for storing data temporarily because they are arriving faster than they can be processed.
Byte	A defined number of bits, usually eight, often corresponding to a letter or symbol, upon which computer operations are performed.
Cable Modem	A “high-powered” modem that permits one-way or two-way high-speed data communication over a cable television system for purposes such as Internet access at speeds of around 1.5 Mbps. Download rate is 27 Mbps. It does not need to dial-up like conventional modems and is therefore “always on,” otherwise know as “impulse response.”
Cache	A temporary store of data intended for use or reuse; for example, recently viewed Web pages that might be revisited.
C-Band	A portion of the electromagnetic spectrum designated by the FCC for, among other things, the first commercial satellite communications.
CD	A (digital) compact disc, originally for music; also used for computer data, in which case it is called a CD-ROM, for “read-only memory.”
Cellular System	A wireless communication system in which relatively low power of focused transmitters reuse frequencies in non-contiguous geographic areas (cells).
Chat	Instant text communication over an electronic network between users, either anonymously or with known correspondents. Examples of chat include bulletin boards, chat rooms, and “instant messaging.”
Churn	A term that describes the rate at which a Pay-TV service loses customers, typically represented as a percentage and measured on an annualised basis, i.e., 30% churn rate denotes a loss of 30% of the customer base yearly.

Circuit Switching	A communication network in which users are connected, through switches, using a channel dedicated to that use for the duration of the communication. A telephone system is an example of such a network. Packet networks, in contrast, are “connectionless.”
Clarke Orbit	The orbit at an altitude of 22,300 miles above the equator at which a satellite is stationary relative to the Earth.
Click-Through	This is referred to when the user clicks on a banner advertisement within the walled garden or the broadcast stream and hyperlinks to a micro site. Advertisers are concerned with click-through rates, but this is only one of the ways of measuring the effectiveness of advertising.
Client	A computer or user in communication with a server.
Coaxial Cable	A broadband transmission line consisting of two cylindrical copper conductors arranged concentrically, separated by insulation.
Codec	Coder-decoder or compressor-decompressor. Hardware or software that serves as an intermediary between a computer and a digital transmission medium.
Commercial Impressions	The total audience for all adverts in a schedule.
Compression	Reduction of the bandwidth or number of bits needed to encode information, most commonly by eliminating redundant bits. A means of saving transmission time and storage space.
Concurrency	This is a condition which affects digital cable users only, which refers to the speed of the service received by users and is dependent on how many people are connected at any one time. The more subscribers that are connected to the exchange, the slower the service becomes.
Conditional Access	This refers to the manner in which channels are encoded or “scrambled.” By controlling the operation of the unscrambling system via a prepaid access card or transmitted code, the broadcaster is able to control access to particular channels or services. Conditional access is typically used for Pay-Per-View and parental control.

DAL	Dedicated Advertiser Location (also described as a micro site)—A small site, usually consisting of a few pages or screens, which has a pre-determined lifespan. The purpose of the site usually supports a product launch or other similarly focused marketing activity.
Data	A collection of bits. The quantities or symbols on which computer and communication equipment operate, typically stored or transmitted in the form of electromagnetic energy. <i>See</i> Bit; Information.
DBS	Direct broadcast satellite television service, such as DirecTV or Primestar. <i>See</i> GEO.
Digital	A function that operates in discrete steps, such as “on” and “off.” Because the physical world is continuous, such representations are approximations. Digital communications uses discontinuous, discrete electrical, optical, or electromagnetic signals that change in frequency, polarity, or amplitude.
DirecTV	A DBS service operated by General Motors’ Hughes business unit. Shares a satellite with USSB; the combined system is called DSS.
Download	The process of retrieving data from a distant database; also, the data so retrieved.
DRAM	A type of random access memory chip.
DSL	Digital Subscriber Line—An ordinary telephone line improved by expensive equipment, making it capable of broadband transmission. DSL comes in many flavors, known collectively as xDSL. <i>See</i> ADSL, VDSL.
DTT	Digital Terrestrial Television (e.g., Ondigital, NTL).
DTV	Digital Television—The term adopted by the FCC to describe its specification for the next generation of broadcast television transmissions. DTV encompasses both HDTV and STV. <i>See</i> ATV, HDTV, STV.
D-Cab	Digital Cable Television (e.g., Telewest and NTL).
D-Sat	Digital Satellite Television (e.g., Sky).

DVB	Digital Video Broadcasting—A consortium of about 300 companies in the fields of broadcasting, manufacturing, network operation, and regulatory matters that have come together to establish common international standards for the move from analog to digital broadcasting. DVB is the organisation behind deployment and research into the creation of a single standard (API) for cross-platform interactive TV application creation. This European-centric “Holy Grail” is commonly known as DVB-MHP or Multimedia Home Platform.
DVD	Originally, digital video disk or digital versatile disk; now stands for nothing. Physically similar to a CD, a DVD is much more densely packed with data. Eventually it will contain the equivalent of eight hours of TV programming.
EPG	Electronic Programme Guide—An essential navigational device allowing the user to search for a particular program by theme or by category. They are currently the highest traffic areas on all platforms and are therefore of great interest to advertisers.
e-mail	Text messages created and viewed on PCs and transmitted electronically, usually over an office network or over the Internet.
Enhanced TV	Traditional TV programming or advertising which has an interactive element included within the broadcast stream. The distinction with interactive television is that interaction is not carried out within the broadcast stream and usually takes place within a walled garden.
Ethernet	A protocol for transmitting computer data over local area networks.
Fiber-Optic Cable	A cable containing one or more optical fiber strands. Each strand is capable in theory of carrying 25 trillion bits per second.
Fiber-Optics	Thin, flexible glass fiber cabling which is capable of handling large amounts of information/data. Fiber-optic cables provide the network to carry digital cable services.
FTP	File Transfer Protocol—A procedure for transmitting files of computer data over the Internet.

GEO	Geosynchronous communication satellite in the Clarke orbit at an altitude of 22,300 miles. It remains in a fixed position relative to the Earth.
Gigahertz	One billion hertz (q.v.). 28 and 38 gigahertz: portions of the spectrum designated by the FCC for terrestrial broadband fixed services. 28 gigahertz is currently used for LMDS; 38 gigahertz for wireless trunks.
HDTV	High Definition TV—A television that offers a very high-quality picture (similar to 35mm film) and sound (similar to audio CDs). HDTV uses digital rather than analog signal transmission. <i>See</i> DTV.
Headend	This is the electronic control center of a television system that processes the signal for transmission to digital and analog subscribers.
Hertz	The frequency in cycles per second of a wave form or carrier used for communication.
HFC	Hybrid Fiber-Coaxial System—A local cable TV or telephone distribution network consisting of fiber-optic trunks ending at neighborhood nodes, with coaxial cable feeder and drop lines downstream of the nodes.
HTML	Hyper Text Markup Language—A simple form of programming language used to build Web pages and simple interactive content on the NTL and Telewest digital cable platform.
HTTP	Hyper Text Transfer Protocol—Standard for transferring documents on the World Wide Web.
Hypermedia	A non-linear representation of information that allows users to access related works or images from a single computer screen. For example, a user reading an encyclopedia entry on jazz music can also hear excerpts from recordings and view photos of various artists. Sometimes synonymous with “multimedia.”
Hypertext/Hyperlink	This is used to describe an action where a user can jump (by pressing a key on a keyboard or by pressing a button on a remote control) from one area to another area.
Information	In communication theory, a measure of one’s freedom of choice in selecting a message, or of the range of possible

alternatives when receiving a message. The greater the number of potential messages, the greater the information contained in any one. Not to be confused with data or meaning.

Impressions

The number of times a banner, page, or page element on an iTV site is downloaded into the set top box, or the number of times a banner, page, or page element is seen by the viewer. The page of an interactive TV campaign can consist of several frames or graphics, and each of these elements will generate an impression. Accurate reporting of how many times a viewer saw a page can be difficult. In addition, caching issues affect impression rates.

Internet

The physical connections through which millions of computer users exchange data. The Internet comprises thousands of smaller networks, each associated with an organization such as firm, a university, a government agency, or an ISP. Communication is possible because of voluntary agreements to use certain communication techniques. *See* WWW.

Intranet

Interconnected IP networks confined within an organization, enterprise, or membership group; Intranets may be connected to the Internet.

Interoperability

Term describing the compatibility of content across all the platforms, i.e., it does not need to be repurposed in order to be viewed on all the platforms. *See* MHP.

IDTV

Abbreviation for Interactive Digital Television. This term is also used as “Integrated Digital Television,” which represents a TV with a built-in STB.

Impulse Response

When a user presses a button on their remote or on their keyboard, they are immediately connected to the broadcaster. The modem (cable modem) which provides the access to the service is always “on” and requires no dial-up facility.

ISDN

Integrated Service Digital Network—An early and limited version of a digital subscriber line with capacity of either 64 or 128 kilobits per second. ISDN is viewed by some as a technological bridge between the current telephone system and an updated broadband network. Others see ISDN as a symbol of the failure of local telephone companies to adapt promptly to new technology.

ISP	Internet Service Provider—An organization that arranges connections between the Internet and individuals or enterprises. Large ISPs operate their own Internet backbones. Value-added ISPs (AOL, CompuServe) offer information services as well as interconnections.
ITC	Independent Television Commission—The ITC receives its powers through the 1990 and 1996 broadcasting acts. The ITC controls the issue of commercial broadcast licenses which govern the standard of programs and advertising. The ITC also acts as a watchdog body, regulating broadcasters and ensuring compliance with its regulations on program content, advertising, sponsorship, and technical performance.
iTV	Abbreviation for Interactive Television.
Ka-Band	A portion of the electromagnetic spectrum reserved by the FCC for both terrestrial and satellite uses, for which various specific proposals have been made.
Ku-Band	A portion of the electromagnetic spectrum designated by the FCC for, among other things, direct broadcast satellites.
LAN	Local Area Network—Communication paths linking computers, printers, and servers into a network for use by an individual, office, school, or other organization.
LMDS	Local Multichannel Distribution Service “wireless cable”—A new broadband wireless service operating in a frequency range (28 gigahertz) designated by the FCC for that purpose.
Local Loop	The pair of dedicated copper wires (or equivalent channel) that connects each telephone to a local switch or “central office.” <i>See Twisted Pair.</i>
Metadata	The interactive component or data of a broadcast stream.
MHEG	Multimedia and Hypermedia Experts Group—A programming language used to build interactive TV applications for digital terrestrial TV in the UK. For example, all iTV applications for the ONdigital platform are built in MHEG.
MHP	Also known as DVB-MHP; developed as a middleware standard to develop content across all digital TV platforms. MHP standards have been determined by over 300 companies consisting of Philips and Microsoft, and will be implemented in Finland.

Modem	Modulator/demodulator—A device that transforms digital information into analog form for transmission over analog telephone lines, reversing the process for received data.
Moore's Law	The quantity of microelectronic processing speed, power, or memory that can be purchased with a dollar doubles every two years or so. In contrast, Internet traffic doubles two to five times per year. Named for Gordon Moore of Intel.
MMDS	Multichannel Multipoint Distribution System “wireless cable”—A local wireless terrestrial video broadcast technology that relies on line-of-sight transmission. An analog MMDS has up to 33 television channels; a digital MMDS may have 150 or more.
MPEG	Motion Picture Experts Group—An ISO-related industry standards organization that develops standards for coding video transmission.
MSO	Multiple System Operator—Any company that owns a large number of cable television systems.
Multicast	(1) A procedure for minimizing the Internet backbone capacity requirements of broadcasting identical simultaneous bitstreams to multiple recipients. (2) The use of digital spectrum assignments by broadcasters to air multiple channels or “standard” television rather than one channel of HDTV.
Multiplex	This is an ultra-high-frequency channel that is used to carry digital signals. Using compression, several services can be carried on the same frequency channel.
Multiplex Operator	A term for a broadcaster transmitting on one or more multiplexes. The UK digital terrestrial platform has four operators, BBC, Digital 3 & 4 (ITV and Channel 4), SDN, and Ondigital. Ondigital has three multiplexes, the others operate on one each. Multiplex operators do not necessarily have to be the originators of broadcast content, as Ondigital obtains its content from other providers.
Narrowband	A low-capacity communications link, such as a telephone cable, which with present technology is incapable of transmitting multiple TV signals. <i>See</i> Broadband.
Network	The collection of links that connects end users with one another and with devices such as servers, switches, and routers.

NTSC	National Television Standard Committee—Used to refer to the technical standards and physical characteristics of conventional analog TV broadcasting, as enshrined in FCC regulations.
NVOD	Near-Video-On-Demand—A facility deployed by digital satellite and cable operators. Movies are provided on multiple channels with staggered start times (i.e., every 10 minutes). Subscribers can then tune in to the next available showing. This is not available on digital terrestrial due to bandwidth constraints.
Platform	Term used to describe the distinct digital and analog distribution methods. For example, interactive TV applications are distributed across the various platform providers. The main platform providers include Telewest, NTL, Open, and BT (ADSL).
PC	Personal Computer.
PCS	Personal Communication Services—An FCC term for digital cell phones' recently auctioned frequencies.
POTS	Plain Old Telephone Service.
Protocol	A formal description of the message formats and rules that computers, switches, or other devices must follow when exchanging messages.
PPV	Pay-Per-View—Typically associated with a film channel or live sporting event where the viewer pays to watch. The same model as hiring a video from the video shop, but without the car journey and the inevitable late return.
Pay/Basic Ratio	A measure of the number of subscriptions to the pay channels as a percentage of total subscribers. As defined by the ITC in cable homes.
PVR	Personal Video Recorder—A separate unit that resembles a set top box and is plugged into the viewer's TV system. This intelligent device tracks and learns viewing preferences, seeks programs that meet viewer criteria, and automatically saves them for later retrieval. The requested content is digitally recorded on a hard disk drive located in the PVR in an MPEG2 format while also permitting the viewer VCR type control and functionality over the broadcast stream. The dominant platforms at present are TiVO and ReplayTV, although Sky Digital

will be integrating NDS's XTV PVR into their next generation of set top boxes.

Re-Versioned	The adaptation or modification of a site or service to allow its distribution or display on another media format or channel other than the one it was originally created for. Another commonly used term for this is "re-purposed."
Search Engine	Software that facilitates the discovery of relevant information in distant databases.
Shannon's Law	The quantity of accurate information that can flow over a channel has an upper limit determined by the bandwidth of the channel and its signal-to-noise ratio. Named for Claude Shannon of Bell Labs.
SMATV	Satellite Master Antenna Television—A private cable television system serving an apartment complex or similar residential grouping. Such systems currently serve around one million United States households.
Spectrum	The range of wavelengths (or frequencies) of electromagnetic radiation, from the longest radio waves to the shortest gamma rays. Visible light is only a small part of this range. "Frequency spectrum" or "airwaves."
STB	Set Top Box—Used to decode digital and analog transmissions for display on TVs. Also referred to as an "intelligent" box that connects to the TV set and also to the network which feeds the broadcast signal to home. Capability of these boxes is somewhat limited at present, due to the fact that they were given away to the consumer to encourage uptake. Use of more powerful, capable STBs will become more widespread as the platform providers increase their services.
Streaming	A real-time bitstream conveying audio or video information.
Switch-Off	Phrase used to describe the eventual hand-over from analog broadcasting to digital only.
SSL	Secure Socket Layer—A protocol developed by Netscape Communications Corporation which provides a means of encrypting information (like credit card details) over a network allowing for secure transactions. 128 bit is what most companies consider acceptable and is currently deployed at Telewest and Open Interactive.

Teletext	Commercial text service. The digital offering from Teletext is available on a new dedicated channel (Channel 9) on Ondigital, digital cable, and mobile services.
Transponder	One of the (12 or more) active electronic units in a communication satellite. Receives signals from Earth, translates to a different frequency, amplifies, and then broadcasts (down-links) them.
Trunk	A physical or wireless broadband connection linking switches or routers to one another. Each trunk carries many connections. In contrast, a local loop generally connects a single subscriber with a nearby central office switch.
TVR	Television Rating—This is an expression of the number of times that a commercial has had the opportunity of being seen as a proportion of the number of people who make up the total audience. A rating or TVR is a percentage and is expressed in terms of a particular target audience.
Tiering	Used to describe the selling of channel packages to Pay TV subscribers.
Trigger	The point in a broadcast program when a viewer presses a button on the remote control and exits the broadcast stream to access interactive content.
UHF	Ultra High Frequency—A range of spectrum designated by the FCC for television broadcasts; originally channels 14 to 84, later reduced to 14 to 69.
Universe	The total number of people in a particular grouping, i.e., the UK TV universe refers to everyone who has a TV set in the UK.
URL	User Resource Location—Commonly referred to as an online address. For example: www.bmptvi.co.uk .
VCR	Videocassette recorder.
VHF	Very High Frequency—The original FCC-designated television broadcast spectrum. Channels 2 to 13.
Video-On-Demand/VOD	The user can watch a film or TV program when they want to watch it (on-demand). The broadcasters will offer consumers on-demand films initially, but may extend the service to all TV programs in the future. Obviously this is dependent upon

many things. One of the main issues is that on-demand services are delivered via ADSL and the current penetration of ADSL is low. Building the infrastructure to deliver ADSL on a national scale is a huge undertaking from a technical and commercial perspective.

Web Page	An element of the interface offered to the user by a distant database, as displayed on the user's computer monitor when running a Web browser program.
Wide-Screen	Wide-screen television sets allows for wide-screen broadcasts to be displayed in a 16x9 format. All digital TV transmissions are broadcast in the wide-screen format. It is worth mentioning that the consumer does not need to buy a wide-screen TV to view digital TV (although you do need a set top box); a normal 4x3 aspect TV is fine.
Walled Garden	Term used to describe an area where the content is owned and controlled by the platform provider. All of the content is designed for the TV. A good example of a walled garden on the Internet is AOL.
Wireless Cable	<i>See</i> Gigahertz; LMDS; MMDS. Wireless cable systems of all kinds served fewer than one million United States households in 1997.
xDSL	<i>See</i> DSL; ADSL.
Zapping	Switching from channel to channel, normally via a remote control and often during a commercial break.
Zippping	Fast forwarding through a commercial break while playing on a VCR.