

conglomerates new to the game such as News Corporation, the opportunities are substantial.

Bandwidth and online video technologies

A key element in the current drive towards the distribution of large video files over the Internet has been the explosion in the consumer adoption of broadband, and the subsequent accessibility enabled by rising bandwidth and improving digital video solutions. In short, it is now possible to distribute video efficiently and economically.

As of end 2006, there were over 60m broadband subscribers in Western Europe, and 54m in the US. As telcos, cable companies

and fiber operators continue to compete for broadband market share, prices continue to decline whilst speeds are on an ever upward trajectory.

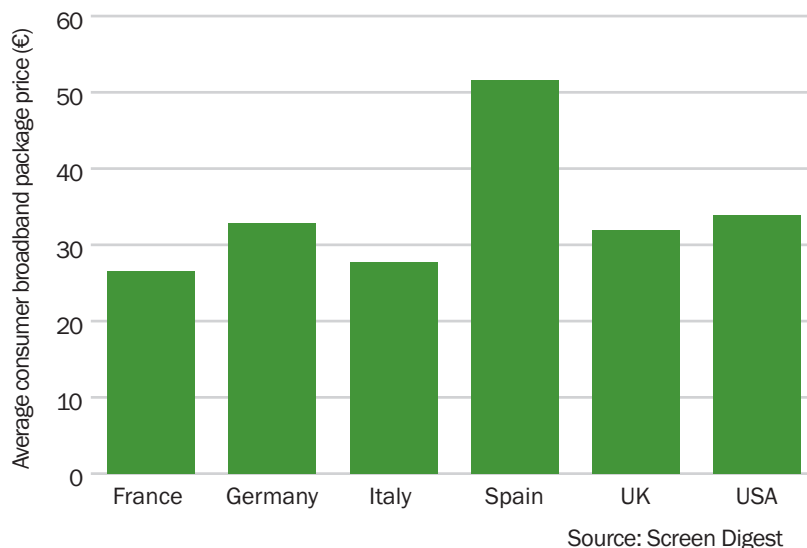
Offers in some Western Europe territories were even more consumer friendly, as heated competition in the DSL market resulted in 'free broadband' offers from service providers such as UK pay-TV operator BSkyB, France Telecom's Orange subsidiary and The Carphone Warehouse.

The continued improvement in video solutions, both for download and streaming, has also played an important role in advancing the prospects of online video services. The present generation of codecs, such as Windows Media Video (WMV), VC-1, AVC and DivX, are now capable of pushing rather large files ever smaller whilst maintaining picture resolution. So as broadband speeds improve, and the pipes get bigger, the capacity of the files pushed through the pipes to carry more and more data in smaller file sizes continues to improve. At present, a 1Gb video file providing marginally less than DVD quality, can be downloaded in approximately 90 minutes using a standard 2 Mbits/s connection. On a 10 Mbits/s connection this is reduced to as little as 20 minutes.

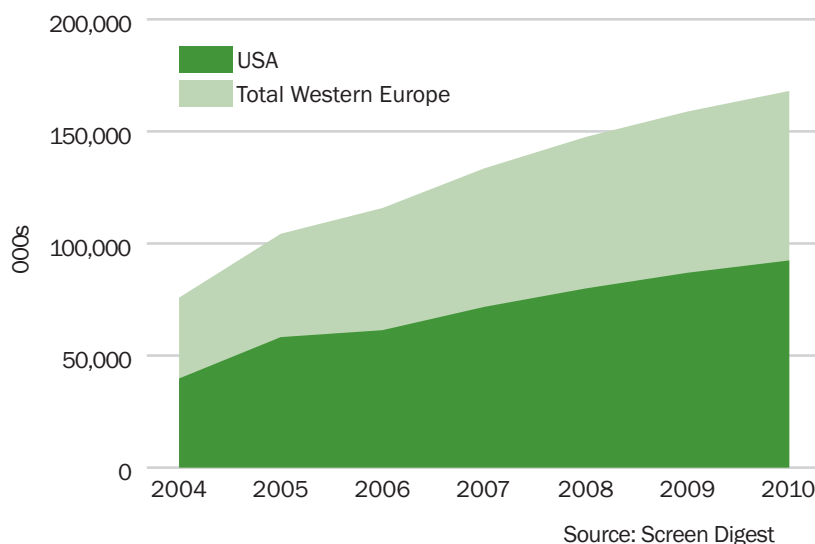
The development of the Flash Video (FLV) codec, which delivers video files over the Internet using Adobe's Flash Player, has also had an impact, especially for streaming services. The nature of FLV is that it is highly efficient and playable and viewable on most operating systems, via the widely available Macromedia Flash Player and web browser plug-in. The current crop of user-generated online video websites such as MySpace, YouTube and Google Video use FLV as the codec of choice, because of not only its prevalence but also its streaming efficiency.

However, codecs aren't the only development improving downloading streaming technology. Companies such as Bittorrent, Akamai, Limelight Networks, Grid Networks and Kontiki amongst others have also played a part by developing centralised and/or peer-assisted delivery solutions enabling more efficient video transmission over the Internet. Indeed, content delivery management (CDM) companies are continuing to push down the cost of video delivery, a major factor affecting the profitability of online video services (examined further as part of the value chain below).

Average consumer broadband package price in the European 'Big Five' and USA



Broadband-connected households (West Europe and USA)



Changing consumer attitudes towards online content

E-commerce has now embedded itself in the consumer psyche as a secure and efficient way of purchasing goods and services, not only 'physical' content, but also 'digital' content and experiences. The prodigious growth of online music, driven by the cultural phenomenon

of Apple's iPod, and the continued rise in popularity of interactive games applications (whether games-on-demand or online consoles), has seen the consumer become increasingly familiar with 'virtual buying'. Indeed, digital music has very much led the way, with the market value for Western World online music downloads alone reaching €850m in 2006.

This has naturally extended to TV, movies and other video-based content. In October 2005, Apple launched its video iPod, supported by premium TV programming available through the iTunes Music Store. By end 2006, almost 50m individual shows were downloaded, estimated to pass 100m by end 2007.

However, television has traditionally been a virtual and transitory medium. Time-shifting and personal video recorder (PVR) technology aside, viewers are perfectly happy to consume content on a temporary basis, across a wide range of genres --- news, sports, entertainment, children and factual to name a few. As such, this means there is also the possibility of using the Internet as a broadcast platform --- offering streaming, ad-supported content that is free to the consumer, rather than the simple transactional a la carte model offered by online stores such as Apple, Amazon and AOL. This is very much the model adopted by not only the major US networks and European broadcasters for 'catch-up' programming, but also by Internet portals such as Yahoo!, MSN and AOL seeking to expand their portfolio of multimedia content. Indeed, the ill-fated Broadcast.com now underpins Yahoo!'s successful video and TV offering, which as of mid 2006 was experiencing over 812m unique video streamers a month (according to ComScore), accessing news, sports and other genre programming.

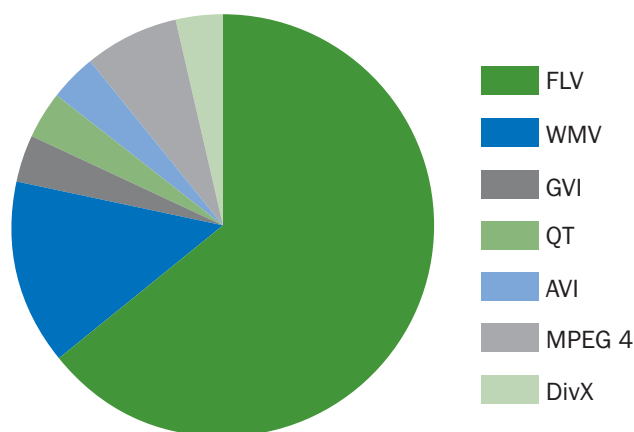
By end 2006, consumption of free video streaming over the Internet was growing prodigiously. In the US, Screen Digest estimates there were over 25bn online videos streamed or downloaded over the Internet in 2006, in contrast to a little over 10bn in 2005, taking in a wide range of content, including user-generated videos, music videos, viral content, clips and trailers, movies, premium TV programming and traditional TV fare such as news, sports, factual and children's programming (excluding downloads facilitated in an 'all you can eat' subscription environment).

User-generated video file formats

Site	File Format
Google Video	FLV, GVI
YouTube	FLV
MySpace Video	FLV
MSN SoapBox	-
GUBA	FLV, WMV, AVI
Grouper	FLV, WMV
eBaum's World	FLV, WMV
Revver	FLV, QT
Break	FLV, WMV
iFilm	FLV
Bebo	FLV
Heavy	FLV
Jumpcut	FLV
Stage6	DivX
Veoh	FLV, MPEG 4 (H.264)
Current TV	FLV
Blip.tv	FLV, MPEG 4
Hi5	FLV
Daily Motion	FLV
MetaCafe	FLV

Source: Screen Digest

User-generated video file formats



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