

DIGITAL DIGEST

A Quarterly Journal Providing Market Research From Digital Tech Consulting

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NEW RESEARCH

This market research digest is designed to give you a glimpse of some of the research that Digital Tech Consulting is preparing for publication. Here is some of the research currently available from DTC:

NEW REPORT!

Online Media Services: Forecasts, Business Models and Analysis

U.S. Digital Terrestrial TV Market: From HDTV to Multicasting

The Business of Digital Copyright: Content Protection and Management in the Consumer Digital Era

For more information, please visit us online at: www.dtcreports.com.

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Digital Subscriber Snapshot: Double-Digit Growth

Digital media services realized strong growth in 2003, reaching more than 98 million subscribers worldwide, an increase of almost 20 percent from 2002. DTC's most recent research on digital media subscribers shows a growing momentum behind the transition from analog to digital media consumption throughout the globe.

Two fledgling digital media pipelines, DSL video and premium Internet media subscriptions, which together make up just 3 percent of the total market, realized the greatest growth. DSL video subscribers jumped more than 150 percent and premium Internet subscribers doubled over the year. The more mature pipelines, digital cable (about 35 percent of the market) and satellite (more than 60 percent), also experienced double-digit gains fueled by the continuing trend of analog systems transitioning to digital.

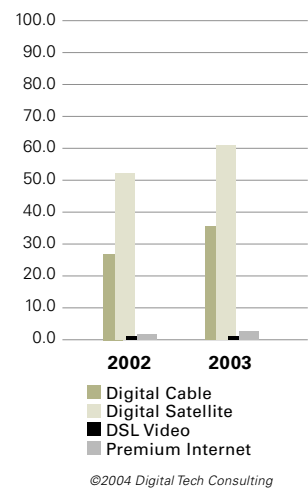
Digital Cable and Satellite

Digital cable and satellite growth rates are slowing in the more mature markets of North America and Europe. Despite this, these markets continue to garner new digital subscribers, as existing analog subscribers migrate to digital platforms. These relative slowdowns, however, are clearly outweighed by growth in developing international markets like China and India, which have large analog subscriber bases that have only recently begun offering digital services.

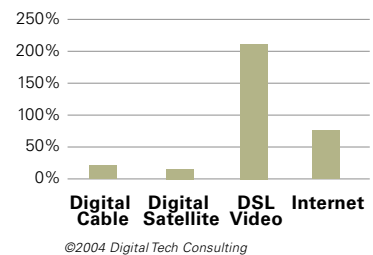
DSL Video

DSL video has reached a tipping point in deployments, despite years of false starts (see table on next page), primarily in international markets. Systems like FastWeb in Italy, Chungwa Telecom in Taiwan, Softbank in Japan and SingTel in Singapore are building subscriber bases in the tens and hundreds of thousands, helping to refine technology and drive down overall prices. A growing number of these are services built on an operator's existing broadband Internet infrastructure and subscriber base, contributing to a rapid service uptake in these systems.

Digital Media Subscribers Year End 2003



Percent Change: Year End 2002 to 2003



Major DSL Video Deployments

Operator	Region/Service Area
New Brunswick Telephone	Moncton, New Brunswick
Maritime Telephone & Telegraph	Halifax, Nova Scotia
Quebec Telephone	Quebec
Bell Canada	Toronto, Montreal, Ottawa, Quebec City
SingTel	Singapore
Chunghwa Telecom	Taiwan
Hansol	Seoul, South Korea
Shanghai Telecom	Shanghai, China
Softbank	Japan
Elisa Communications	Finland
Telenor	Norway
Canal Plus	France
FastWeb	Italy
TF1	France
Monaco Telecom	Monaco

Source: Digital Tech Consulting and company reports

Premium Internet

Premium Internet media services, which reached nearly 2.5 million, also turned a corner in 2003, buoyed by better digital rights management technology and the worldwide proliferation of broadband Internet access. RealNetworks with its RealOne video content subscriptions remains the market share leader, but newer niche content services, like Sony's Web rebroadcasts of network soap operas are also finding success.

The Digital Subscriber Snapshot is a regular periodic feature of Digital Digest from Digital Tech Consulting. The Snapshot reflects DTC's comprehensive digital subscriber database which tracks entertainment audio/video subscribers from cable, satellite, DSL video and Internet pipelines. For more information on DTC's Digital Media Subscriber database, contact DTC at +1-214-915-0930 or www.dtcreports.com.

India Poised for Digital TV Growth

As digital cable and satellite TV growth wanes in developed markets like North America and Western Europe, emerging markets will bolster worldwide digital TV growth. India is a case in point.

As the third largest worldwide cable TV market, it holds special promise for digital TV because of its large installed base of TV households (85 million) and analog cable subscribers (more than 40 million). Further, the establishment of new direct-to-home (DTH) satellite government guidelines, which allow for some foreign investment and a more open market, will go far to ignite this nascent market. The table below outlines major digital TV deployments in India.

Major India DTV Deployments

Service	Service Owners	Platform	Markets served
RPG Netcom	RPG	Digital cable	Kolkata
Asianet	Asianet Satellite Communications	Digital cable	Kerala
InCablenet	Indusind Media Communications Ltd.	Digital cable	New Delhi, Mumbai, Bangalore, Nagpur, Ahmedabad, Indore, Belgaum, Agra, Hyderabad, Mysore, Vadodara
Hathway	Hathway Cable and Datacom Pvt Ltd.	Digital cable	Mumbai, Chennai, Pune, Ahmedabad, Hyderabad, Bangalore
Siticable	Zee Telefilms Ltd.	Digital cable	New Delhi, Mumbai, Chennai, Pune, Ahmedabad, Hyderabad, Bangalore, Kolkata
Doordarshan	State-owned	Digital terrestrial	New Delhi, Chennai, Kolkata, Mumbai
Dish TV	ZEE Network	DTH	India
Doordarshan	State-owned	DTH	India

Source: Digital Tech Consulting

DTH Satellite

India's digital satellite industry has been slow to take off due to a government ban (ended in 2000) and restrictive foreign ownership rules (foreign equity of a service not to exceed 49 percent).

Last year, Zee Network bagged the first DTH license and launched its pay DTH service, Dish TV, in October 2003. As of May this year, the subscriber count was only about 100,000. The company is targeting regions in India that do not have cable access with a package of close to 60 channels.

Currently, the service's entry-level DTH set-top box (STB) costs about Rs 7,000 (about US \$155) and a high-end STB costs about Rs 15,000 (US \$ 330). The company's STB is based on open architecture, complying with the interoperability specifications of the government.

Under India's new guidelines, STBs are mandated to have an open architecture to allow customers to shift between operators. But most potential industry players have been slow to launch a service with an open architecture receiver.

In additional developments, a joint venture between News Corp's Star TV and the Tata group of India could create competition for Dish TV and incumbent cable providers. Tata Sons will hold 80 percent stake and Star, 20 percent. The company is vying to be India's largest digital TV service provider and is expected to be modeled after Murdoch's UK DTH flagship service, BSkyB. The venture is still subject to government approval, though, which has been somewhat slow in coming.

Meanwhile, Doordarshan (DD), India's government-owned operator, is employing a different approach by launching 40 digital free-to-air channels on its DTH satellite platform this month. Consumers must only purchase a digital STB, priced at just Rs 3,000 (US \$70) to receive the channels.

Digital Cable

There are currently about 48 million analog cable subscribers, growing at an annual rate of 15 percent to 20 percent. Cable operators in India are aggressively pushing their digital cable initiatives and many operators are offering digital cable. Operators, such as Hathway, have introduced interactive digital radio and have plans to introduce interactive TV in the future.

Digital Terrestrial Television

Doordarshan (DD) commercial DTT service began during 2003 in the four metro areas. The STB is available for about Rs 6,000 (US \$132). Wider marketing has been put on a hold to upgrade features of the service. Towards this, DD has plans to make the service accessible to mobile customers and is in talks with some Japanese and Taiwanese car TV manufacturers for introducing DTT service in cars. Following on the footsteps of digital satellite radio, DTT in cars is expected to be a big success in India.

Mobile DRM Making Strides

Current mobile media content is dominated by "limited value" offerings, such as ringtones and screensavers. But music and video can now be delivered to smartphones over newer networks.

A robust copy protection scheme will be essential before programmers will provide their "high value" property to move over mobile networks. Industry players are scrambling for effective DRM solutions. Competing solutions come from both proprietary and standards camps. Among proprietary solutions are Microsoft's Windows Media 10 DRM and NDS' latest version of VideoGuard. RealNetworks' RealOne Media player has also been used in select mobile trials.

Meanwhile, the standards group, Open Mobile Alliance (OMA), comprised of about 200 companies recently released the 2.0 version of its mobile DRM specification. The table below is an overview of the basic specification.

OMA DRM Overview

Basic levels of functionality covered within OMA DRM

- Forward Lock; prevents content from leaving device
- Combined Delivery; adds rights definition
- Separate Delivery; provides content encryption and supports superdistribution

Forward Lock is designed to prevent peer-to-peer distribution of low value content available through a subscription service. The plain-text content is packaged inside a DRM message that is delivered to the device. The device is allowed to play or display the content, but not forward the content.

Combined Delivery prevents peer-to-peer distribution, but also controls the content usage. The DRM message contains two objects – the content and a rights object. The rights object defines permissions for content use. Neither content nor the rights object can be forwarded from the target device.

Separate Delivery enables superdistribution, which allows the device to forward the content, but not the usage rights. This is achieved by delivering the media and usage rights via separate channels. The content is encrypted into DRM Content Format (DCF); the DCF provides plain-text headers describing content type and encryption algorithm. The rights object holds the symmetric Content Encryption Key (CEK), which is used by the DRM User Agent in the device for decryption.

Source: OMA documents and Digital Tech Consulting

The recently released OMA 2.0 version is designed for more powerful devices that can play higher-resolution audio and video, and send content to other devices.

The Second Edition of the Business of Digital Copyright: Content Protection and Management in the Consumer Digital Era will be published in the fourth quarter. The new edition will include a section on content protection for mobile devices, as well as updated forecasts from 2004-2008. For more information, please contact Myra Moore at +1-214-915-0930 or myra@dtcreports.com

ABOUT DTC

Digital Tech Consulting is a market research firm providing strategic information and analysis to help companies succeed in the consumer digital marketplace. To learn more about DTC and how our analysts might help your company, please visit us online at www.dtcreports.com or call 214.915.0930.

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