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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!**  
**The Second Edition of The Business of Digital Copyright:** *Content Protection and Management in the Consumer Digital Era*

**Online Media Services:** *Forecasts, Business Models and Analysis*

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

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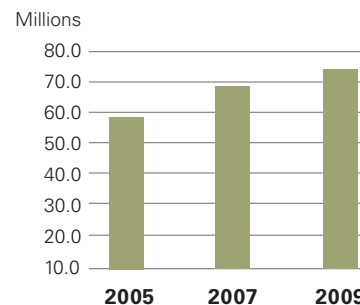
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## Digital STBs Ride a New Wave of Global Growth

Driven by new advanced features, new technologies and new markets, digital set-top box (STB) shipments will see renewed growth over the next five years, according to DTC's latest look at the market. Total combined shipments of digital STBs for digital DTH, digital cable and video DSL (VDSL) are expected to surpass 70 million by 2009 from just under 60 million in 2005.

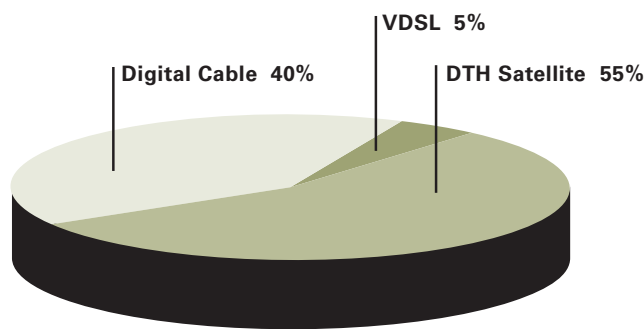
Several growth trends will characterize the digital video market over the period. Cable and satellite will dominate digital STB shipments through 2009. New features, like personal video recording, high-definition, advanced copy protection and VOD, are fueling a healthy replacement cycle of shipments to North American and European systems launched in the mid-90's. With STB prices falling even as features expand, both incumbent giants are eager to expand their range of offerings to preserve and expand market share.

**Subscription Digital Video STB Shipments**



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**Digital STB Shipments: Subscription Video 2005**

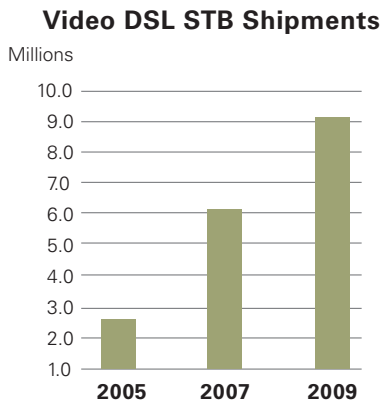


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Video DSL, just a sliver of the market today, will make up an increasing number of sales through the end of the decade, as telcos around the globe expand into "triple-play" services of voice-data-video. The convergence of communication services over the past decade has convinced telcos they can't be content in broadband Internet and phone services alone. To stay viable, they'll need to expand offerings into compelling subscription video packages – a challenge in this already crowded segment.

The last couple of years have seen a steep drop in STB per-unit costs to deploy video DSL and a promising first generation of deployments in several high-profile systems in Asia and Europe, as well as a long list of small rural systems throughout North America. This has touched off a critical wave of serious activity among telcos, from firm hardware orders with vendors to programming licensing deals with studios.

To launch a successful new service will certainly be a challenge in today's competitive market for any player, but telcos will have some key points in their favor out of the gate. Most significantly perhaps, new DSL systems are poised to take advantage of new technologies like MPEG-4 AVC, VC-1, PVRs and HDTV from the beginning. Unlike cable and satellite, which both have billions of dollars and millions of subscribers invested in MPEG-2-based infrastructures already stretched to capacity, telcos, as a "green field" pipeline, will be able to offer the most advanced services in the most efficient way possible from the start.



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Several equipment vendors have made an early mark in this new segment. Pace, with its IP STB, has been a leader, supplying STBs in whole, or part, to most of the larger deployments to date. Samsung and Motorola have tapped into regional niches, in Asia and North America, respectively. Meanwhile, Thomson is seeking to expand its dominance of digital STB shipments across platforms, with several important launches expected in the next year alone.

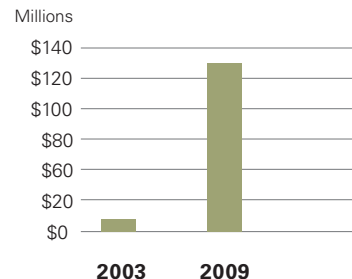
## CDs, Pay TV and Internet Media Services Shape New Content-Protection Technologies

As digital technology sweeps the entertainment content industry, content-protection technology is both an important enabler of revenue for new business models, as well as a growing revenue generator on its own. DTC's newly updated research report, *The Second Edition of The Business of Digital Copyright*, details the next generation of digital content-protection technologies, navigating their rapid evolution to date. The following is a sample of just a few of the digital content pipelines examined in the report.

### CD Audio

Copy-protected audio CDs have had a rocky start since they were initially introduced during 2001 to combat the "ripping" of audio CD content into digital MP3s. A consumer backlash and a wave of lawsuits followed these first unfortunate market experiments, but promising signs have emerged for the future. Advances in technology, such as dual session tracks (two files – one for a regular CD player and a protected one for the PC) and "viral marketing" rights provisions, have enabled a better balance between consumer expectations and content security. DTC expects this continued evolution to push content protection into more than 80 percent of annual CD units shipped by 2009.

### Audio CD Content-Protection Revenues



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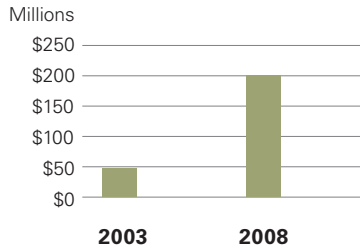
Video DSL Suppliers	Systems
Pace STBs	Chunghwa, SingTel, Shanghai Telecom, Alliant Telecom, Fast Web and several others.
Samsung STBs	Yahoo! BB service in Japan.
Motorola STBs	Through its NextLevel acquisition supplies Bell Canada, Quebec Telephone, Hansol, Telenor and a variety of rural U.S. telcos.
Thomson STBs	CanalDSL, TF1, Monaco Telecom and Chunghwa.
Non-STB Vendors	Amino Communications, Kreatel, NCI, SCI and Thirdspace.

### Multichannel Subscription Video

The increasing demand for expanded TV services enabled by new iterations of digital STBs has put parallel demands on conditional-access technology to secure and manage those services. As operators have sought to integrate more advanced services into their subscription packages, technology companies like NagraVision and NDS have adjusted their own products accordingly. Operators can now add options like personal video recording and VOD to their core conditional-access package, adding a premium to their upfront cost and per-unit conditional license fees. These premium charges will help grow revenues for conditional-access technology vendors, keeping their per-unit revenue steady as the overall digital subscriber base grows.

Conditional-access vendors are also adapting their technologies to accommodate new platforms, like video DSL, in addition to their traditional products for cable and satellite TV providers.

### Content-Protection Revenues: Multichannel Subscription Video

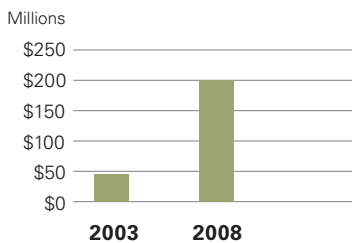


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### Internet DRM

A second generation of content protection through digital rights management (DRM) is gaining traction on the Web, as newly viable Internet media services from Apple, RealNetworks and Napster prove their business cases and consumer appeal. With content-protection license fees assessed as a flat fee (per software version) and a per-transaction royalty, DTC expects that Internet video and music sales will generate content-protection revenues approaching the levels of the more mature conditional-access industry by the end of the decade. DTC forecasts that content-protection fees from Internet DRM (excluding third party transactional and hosting fees) will grow from just \$30 million in 2003 to nearly \$200 million in 2008.

### Content-Protection Revenues: Internet DRM



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## Understanding and Assessing the Market for DVD in China

China is fast becoming the world's electronics manufacturing center, especially for DVD players. How lucrative the Chinese market is for the low-priced DVD players and player/recorders it is producing for the rest of the world remains unclear.

Several Chinese DVD manufacturers have projected total DVD sales in China at around 60 million units for 2005. However, since the secretive Chinese government does not release consumer goods sales figures, it is difficult to ascertain what percentage of these DVD decks are destined for local market consumption and what percentage will be exported.

Further clouding the statistical waters is CEPA (Closer Economic Partnership Arrangement), a free trade agreement between mainland China and Hong Kong that went into effect January 1, 2004. CEPA allows duty-free access to

electronics parts and components between the two entities, making it even more difficult to determine what is "manufactured" in Hong Kong or in the PRC (People's Republic of China). For instance, many of the motherboards used in DVD players manufactured on the mainland originate in Hong Kong.

This lack of statistical information for units shipped, as well as other market trend and demographic data, is a primary roadblock to companies hoping to sell electronics to Chinese consumers. Many industry experts agree that the number one obstacle to importers in developing the Chinese mainland market is a lack of understanding of local market needs.

What is known about the Chinese market suggests vast potential for consumer DVD sales, should it be tapped. With a population of approximately 1.3 billion, it is estimated that fewer than one percent of mainland Chinese households own a DVD player. By comparison, there are 300 million cell phone subscribers on the mainland, a nearly 25 percent penetration rate of the total population.

### Snapshot China (in millions, unless otherwise noted)

Population	1,300
TV Households	386
Cable Households	120
% total TV HH	31%
Digital Cable HH	0.28
Dig. Cable % total Cable HH	0.2%
DVD HH	0.19
DVD % TV HH	0.05%
Cell Phones	300
Cell Phone % Population	23%
Internet Users	96.6
Internet User % Population	7%
Broadband Internet HH	6
% TV HH	2%

\*Sources: DTC research; Chinese Government

While DVD has yet to catch on in a market dominated by the cheaper MPEG-1-based VCD (Video CD) format and MPEG-2-based Super VCD format, Enhanced Versatile Disc (EVD), the new Chinese-developed high-definition DVD standard, has gotten off to an even slower start since its introduction in January 2004.

Two factors make EVD's slow start unsurprising. Pricing for EVD decks has been 30 percent higher than that of standard DVD devices. This higher price, combined with limited content (there will be fewer than 50 titles available by the end of this year, mostly Chinese films with a smaller mix of mainstream Hollywood blockbusters and independent films), will limit EVD to between five to ten percent of total DVD hardware sales this year.

## 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](http://www.dtcreports.com) or call 214.915.0930.

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