



# CES Show Report January 2010

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Company Registration No: 2293034

## Consumer Electronics Show 2010

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## Consumer Electronics Show 2010

### 1. Introduction

CES 2010 drew 2,500 exhibitors (down from 2,700 in 2009) and 113,000 visitors and was not short on innovation from both full range and more focused vendors. As usual, one of the hottest companies around, Apple, did not exhibit, but its presence was felt throughout the show with docking products and iPhone apps. Among these was the Parrot AR Drone, a camera-equipped model aircraft controlled by an iPhone app, which many saw as one of the coolest gadgets at the show.

*Parrott AR Drone  
was on show with  
controlled by an  
iPhone app*



The emphasis of this report is on AV CE products, with a topline review of selected innovations in cameras, phones, PCs and other devices.

Much of the innovation covered in this report was reviewed first hand on the stands by the team of 7 analysts which Futuresource put on the ground for CES 2010. In addition, some significant and relevant innovations from company releases or industry publications are included.

Samsung had the largest stand in-show with leading edge innovation across a wide range of products. A significant change to CES 2010 was the more substantial presence by major Chinese brands, notably Haier, Hisense and TCL.

Futuresource attendees identified several major themes at the conference:-

- 3D (TVs, Blu-ray players and Home Theater, Cameras and Content)
- Connected CE products (including associated content deals)
- An applications push across multiple platforms, including TV
- An ongoing trend towards seamless device and network connectivity
- Continued spread of docking in audio, radio and Home Theater products
- Touchscreen and other control innovation, including mobile phone apps
- Miniaturised computing, Internet products and e-Readers
- Continued performance/feature increases and connectivity in imaging products.

## 2. Build-Up Towards Home 3D Market Continues

*Futuresource comment: the build-up towards Home 3D is in line with the predictions in our 2009 multi-client study 'The Strategic Impact of 3D'. All major TV suppliers showed multi-format '3D Ready' TV and BD-enabled Blu-ray players at CES 2010, with rollouts planned from Q2. Active shutter glasses are the default viewing solution. There is a split in industry thinking about real-time 2D/3D conversion, which is seen as a 'two-edged sword', on the one hand providing more content, on the other giving a diluted 3D experience and perhaps detracting from interest in buying original 3D titles and dedicated 3D BD players. Hollywood is still the key source of content, but the Pay-TV industry is taking a strong interest in 3D as a new differentiator and looking at alternative content like premium sports and music.*

*All our research and analysis leads us towards a very positive outlook for 3D in the home with more than one quarter of US homes projected to own a 3D TV by the end of 2013. Product, market and competitive developments will be closely monitored and reported on as part of our regular tracking, with detailed forecasts updated quarterly where required.*

### Sony 3D at CES



Sony LX900 3DTV

- Sony is making a major commitment to 3D and demonstrated a range of Full HD 3DTVs with 240Hz refresh rate at CES. The top of the range LX900 line will offer 40"-60" screen sizes and bundle two pairs of RealD active shutter glasses. Glasses and 3D transmitter will be optional extras on the lower priced HX900 and HX800 series. A prototype 3D OLED display was also on show on the Sony stand.
- Sony also showed the BDP-S770 Blu-ray player which supports 3D and has built-in WiFi, plus a lower priced BDP-S570 which will need a firmware upgrade for 3D. Also, the firm demonstrated a range of Blu-ray Home Theater products which will be 3D-enabled (see Section 6).
- Howard Stringer confirmed during his keynote that all PS3 consoles will be firmware-upgradeable for 3D, including compatibility with HDMI 1.4 cables (although there are some industry concerns about achievable picture quality on upgraded legacy 1.3 consoles). Sony was demonstrating Gran Turismo 5 on PS3 at 2x120Hz on the stand.
- On the content side, Sony also announced a joint venture with iMax and Discovery Communications for a dedicated 24/7 3D cable channel as well as partnerships with CBS and ESPN (see below). The firm is opening a 3D Tech Centre in Culver City, Ca and Sony Music is planning on shooting concerts in 3D. A 3D Blu-ray release for 'Cloudy with a Chance of Meatballs' was announced, with other unnamed Sony titles slated for 2010.

### *Panasonic 3D at CES*

- Panasonic will be launching 3D on its Full HD 1080p premium V TV series in May/June 2010. Bob Perry, SVO of Panasonic CE Company, described the new plasma series as 're-engineered for Full HD 3D' at the press conference.
- The firm was showcasing 3D in the Full HD Theater it used at CES 2009, CEATEC and elsewhere, using clips like the Olympics opening ceremony. It was also giving an impressive demonstration of DirecTV's 3D channels on its booth (see below).
- Also on show was 3D Blu-ray on a BDT-350 player with HDMI 1.4 interface and the SC-ZT wireless Home Theater.

*Panasonic BDT-350 3D  
Blu-ray Player*



- Panasonic also unveiled the first integrated Full HD 3D camcorder for 'prosumer' use, which will sell at \$21,000.
- Panasonic Hollywood Labs has been at the forefront of promoting Full HD 3D with the studios and has been a key proponent for a Full HD (2x 1080p) Blu-ray standard. The firm has co-promoted Avatar as a 3D showpiece over the last year.

### *Samsung 3D at CES*

- Samsung highlighted '3D Home Ecosystem' heavily in its CES keynote, plus a promotional alliance with Dreamworks Animation and Technicolor. This will feature a 3D Blu-ray version of the 2009 hit 'Monsters versus Aliens' and a selection of content which Samsung will make available on its Internet@TV connected receivers
  - ▶ This includes a short - 'Bob's Big Break' - and trailers for forthcoming Dreamworks Animation titles.
- Samsung's 7000 LED and Plasma series will be 3D-enabled, as will the 750 LCD series. As with several other makes, active shutter glasses and real-time 2D-3D conversion/upscaling will be a feature of Samsung 3D sets, using the firm's proprietary processor. The BD-C6900 3D-enabled Blu-ray player was on show, showing an upconverted (i.e. 2D to 3D) demo of Ice Age. Additionally, a 3D-enabled Home Theater product was on the stand, but was not mentioned by the company in its official publicity.
- In quieter parts of its stand, Samsung was demonstrating upscaled X-Box content in simulated 3D on its sets and a dual-lens camera able to capture 3D content.

## LG 3D at CES

- As Panasonic, LG was demonstrating the DirecTV 3D feed on its stand. A 72" screen showed Full HD with active glasses, another 55" screen used passive (i.e. polarised) glasses showing support for 3D cameras. LG staff cited about \$20 for passive glasses, \$60 for active. LG's first US 3D TV model will be the 47" Infinia LE9500 using active shutter glasses.
  - ▶ In the UK, LG has plans to launch a 47" LED model in April, (provisionally model LD930, to be confirmed), with passive glasses, but it will be significantly more expensive than the standard product (presumably a polarising filter will be necessary on the screen).



LG 55" LCD with support for 3D camera



LG's 3D Full LED Slim 72" 3D LCD TV

- LG showed a 3D Blu-ray player at CES for launch in May, but was emphasizing its Netcast platform and HDD on its flagship BDP model, which did not have 3D (see Section 3).
- The company also showed the first 3D projector, model CF3D, which is slated for the consumer market with a hefty price tag of \$10,000. The single-lens LCoS product is high spec - 2500 lumens, 7000:1 contrast ratio and Full HD 1080p, and uses Sony's SXRD technology in a 6 panel, twin projection system. LG is not a traditional market leader in projectors.

## Other 3D Innovation at CES

- US LCD TV leader Vizio announced a range of three new 3D-enabled sets in its XVT series during CES, dubbed SPS TruLED FullHD3D, featuring 480Hz refresh rates. Vizio sets will support Sensio's 3D encoding and will use XpanD, a competitor to RealD, for Bluetooth-powered active shutter glasses (sold separately).
- During its CES press conference, Toshiba highlighted 3D multiformat capability and 2D-3D simulation on its Cell TV, as well as announcing an agreement with RealD at the show. Like other majors, Toshiba will bundle active shutter glasses with its 3D sets. Cell TV can also undertake 3D gesture recognition from an integrated camera for control, gaming and other interactive applications. Toshiba showed two Blu-ray player mockups on its stand, one of which was planned for 3D, and also announced a third non-3D Blu-ray model for launch in 2010.
  - ▶ The Toshiba Cell TV is already available in Japan, having been launched in December. Priced at the equivalent of Euro 7,000 (about \$10,000), it is generating a lot of consumer interest.

- ▶ In a separate meeting, Toshiba confirmed that Cell TV will be launched in Europe this year but indicated that the specification will be reduced for European consumers (see Section 4, Other TV Innovation, for more detail on Cell TV).
- Mitsubishi unveiled its 3DC-10003D adapter for its legacy 3D-ready DLP sets, of which it says it has already sold half a million. No price was available during the show. The company made a major feature of 3D on its stand with an Experience 3D Tech Zone. Our team was impressed by the 3D images on Mitsubishi DLP sets.
- US DBS market leader DirecTV chose CES to announce a package of three 3D channels for launch in June 2010 - Pay Per View, DirecTV OnDemand and a free sample channel. Movies will be available in 1080p/24. Other content partners will include Fox Sports, CBS, MTV, NBC Universal, Turner Broadcasting and HDNet. STBs will only need a software download to receive the 3D broadcasts.



*DiracTV 3D content was shown on Panasonic and LG stands*

- Staff at the Dish Network stand told us that they are waiting for standards to be resolved before committing to any 3D rollout.
- ESPN is planning a range of 3D programming in association with Sony, including the 2011 BCS Championships and a series of college football games.

*Futuresource comment: the 2010 soccer World Cup in South Africa will also generate premier 3D sports content.*

- Microsoft was not promoting 3D on X-Box on its own stand, instead devoting space to retro games. However, graphics chipset vendors NVidia and ATI (owned by AMD) were both showing Full HD 3D PC gaming on 120Hz monitors, using titles such as Batman Arkham Asylum.
- Both Acer and Dell (under its Alienware brand) were reported to be showing 23" 3D 120Hz monitors in their meeting suites.
- Fuji Film showed its 3D camera and display products at CES (see Section 9).
- At the Monster press conference Noel Lee was very upbeat about 3D, saying the new HDMI cables could handle '4 times the bandwidth needed for 3D compared to a 2D BD player'. Monster is also introducing 55% thinner HDMI cable aimed at mobile devices, camcorders etc and said 'we want 1080p out of cellphones'.

### 3. Connected CE Products and Applications

*Futuresource comment: IP connectivity is sweeping through the CE product spectrum whether consumers want it or not. The standard bundle of websites and widgets includes staples like YouTube, Picasa, Pandora, Facebook, Twitter and, increasingly, Netflix, Blockbuster or Vudu. However, access to what we see as a 'killer' app - online TV sites like hulu or ABC.com - is held back in the US by licensing and potential competition with Cable. Some TV vendors are trying to stimulate 'App Store'-type applications development, others are adding interactive applications like Skype and remote control from smartphones as differentiators.*

- At CES, all TV vendors showed connected TV models from mid-range up, with many now embedding Wireless-N for ease of connectivity e.g. Sony's NX800. Futuresource estimates that 26% of US TV sales in 2010 will be connected products.
- Most CE manufacturers have deals in place for a range of pre-ported content on their connected products, although free Google applications like YouTube and Picasa will not be hard to get. In fact, the content bundle is tending to be common across all hardware brands (following the normal Internet model, computer hardware is rarely differentiated by content - iTunes would not have become the success it has if it was not available on PCs as well as Macs).
- Some players are behind on the content curve e.g. Sharp told us they only have a deal with Netflix at present (with Vudu pending), although 'this will grow' and Polaroid has nothing in place but is 'in talks'.
- Interactive applications like Twitter, Facebook and Skype may turn out to have more consumer pull than other, more passive applications as consumers are so locked into them, despite some industry perceptions that 'people want to just lean back in the living room'.
- Networked Blu-ray players were in plenty of evidence at CES, but 3D capability took the limelight and BD Live was generally low key, most emphasis being placed on bundled web services and IP streaming as added value.
- DLNA-certified products were in evidence on several stands, enabling content streaming from PCs, Media Servers or other IP devices including smartphones.
- LG showcased its flagship connected Blu-ray player, the BD590, which features a 250GB HDD, ability to rip CDs and store online video from Vudu. The product features embedded wireless-N and DLNA compliance and can stream out to other IP devices. However, oddly, it does not support 3D at present as did high-end models shown by other major makers.
- Panasonic and LG both demonstrated Skype on large screen TVs. The processing is in the webcam, which will cost \$100-150 on top of the TV. The microphone system is designed to pick up speech from a distance and the webcam will deliver 720p quality (although capturing only in VGA on the Panasonic stand). Panasonic will offer Skype on its V and G plasma TV Series from Spring 2010. V Series has integrated WiFi, G needs a dongle.
  - ▶ At the Panasonic press conference John Silverman of Skype said that about a third of Skype web calls are now video and hence its potential importance in the living room, not least for older people.



*Skype on TV was shown by LG and Panasonic*

- Vizio was promoting its Vizio Internet Applications (VIA) Connected HDTV platform and Yahoo Widgets on its XVT Pro sets, which include embedded wireless-N and Bluetooth-connected remote control with a slideout QWERTY keyboard. Vizio's connected products will come with a wide range of content including CBS, NBC, CNBC and others.

*Vizio is pushing Internet Apps on TV*



- Samsung announced Samsung Apps, claimed to be the 'first HD' applications platform, as an extension of its Internet@TV connected CE concept. Content partners include Twitter, Accedo Broadband, Accuweather, Associated Press, Blockbuster, Netflix, Rovi, Pandora, Vudu and USA Today.
- Sony continues to build its Bravia Internet Video platform and now has over 25 major content partners. According to Sony Networks President Kaz Hirai in his CES keynote, the firm is looking to leverage Playstation Network as the core of an integrated content platform serving a wide spectrum of products including Bravia TVs, Blu-ray players and Windows PCs, beginning in February. Sony Network Entertainment Company was formed in December to drive this.
- Game consoles also continue to offer added value as networked media players. X-Box is expanding its range of content and has brought all its own video offerings under the Zune brand. During its CES press conference, Microsoft highlighted that X-Box 360 can be used as a media player without a STB or tuner on any IPTV system running Mediaroom (which is mainly AT&T's U-Verse system in the USA). AT&T is launching a Virtual Innovation Lab and two Innovation Centers to stimulate applications development for both Mobiles and its U-Verse IPTV platform.

#### 4. Digital (Networked) Media Adapters

*Futuresource comment: DMAs have been a niche market to date, with Apple TV easily taking the lion's share. Despite the growing availability of connected CE devices like TVs, BDPs and game consoles which can act as Networked Media Players, there is a steady stream of new black box adapters aimed at bringing Internet content and applications into the Living Room, with prices as low as \$99.*

- Aside from existing products like Apple TV, Roku's HD Player and Asus O!Play, new offerings at CES included Creative's Zivo Digital Home Box, a product of its Zii Labs subsidiary, and Sybas Technology's Popbox (successor to its Popcorn Hour).
- Networking specialist D-Link showed the Boxee Box, which attracted a lot of attention as Boxee has already been popular as a download for PCs, Macs and Apple TV. Boxee features a powerful Tegra 2 NVidia chipset, HDMI, embedded wireless-N, remote and miniaturised wireless QWERTY keyboard, plus support for Flash 10.1, opening up a world of web video to users, including popular online TV sites. It will sell for \$199, available in April 2010. Boxee received \$10m of venture capital after CES 2009.



*D-Link's Boxee Box*

- All established networking providers continue to introduce new digital entertainment devices, despite only a trickle of sales in some cases. For example, at CES Netgear announced its revamped EVA Digital Entertainer Express, its third model, which allows consumers to stream 1080p video over a wireless home network to an HDTV. This is available now at an SRP of \$229. Netgear also showed Stora, a 1TB NAS (with bay for an additional 1TB) with 1080p streaming capability, also at \$229, and two new Wireless-N routers.
- Going in the other direction (i.e. broadcast to IP), Sling Media (now a part of Echostar Technologies) bowed its Sling Monitor at CES, an IP monitor which can display HD streaming from Slingbox across the home wireless network. Echostar is also promoting this with its HD Duo VIP922 whole home DVR with TV Anywhere, which was first shown at CES 2009.
- LG showed a Media Hub, able to distribute content across the home network, controlled by a smartphone.
- Amongst many other streaming products was Silicon Dust's HD HomeRun digital tuner/streamer and a neat USB dongle from Canadian firm HSTI which enables peer-to-peer streaming from PCs to HiFi or other AV devices (like Apple's Airtunes with Airport Express).

## 5. Remote Controls and Device Interaction

*Futuresource comment: new products at CES showed that the humble remote control is set for a facelift as CE devices become IP-connected and more versatile. Manufacturers are keen that all their devices can interface seamlessly with each other while growing DLNA compliance should enable inter-device communications from different brands. Smartphone interaction with CE products was featured by several players.*

- Samsung's new flagship 9000 Series LED panels come with a 3" touchscreen C9000 remote which can access streaming video from and to the TV directly via WiFi (the remote also has infrared). The device can monitor one video channel (e.g. broadcast) while the user is watching another (e.g. Blu-ray) and will work in different rooms. The controller may also be supplied with the 8000 and 7000 series although this is not finally decided yet.

*Samsung C9000 remote can stream video to and from the TV*



- Samsung also demonstrated its Omnia II smartphone as an AV remote controller on its stand and, like all multiple platform vendors, is keen to highlight interoperability between different classes of its devices.
- LG was showing Magic Motion Control, a Wii-type controller with internal gyroscope detecting hand movement and translating it to on-screen cursor movement. A button on the remote brings up the Magic UI on screen. The device will be an optional extra in LG's high end sets initially. The idea is not new, e.g. Gyration and Air Mouse, but market receptivity for this type of device will increase as CE moves towards GUI interfaces and cursor control.
- The Bluetooth remote control for Vizio's new XVT TV series incorporates a cellphone-style slideout QWERTY keyboard to facilitate applications requiring alphanumeric input like Twitter and Facebook.



*Vizio XVT remote uses Bluetooth and has a slideout QWERTY keyboard*

- Several manufacturers were showing iPhone applications as both remote controllers and streaming sources for CE devices, including Sony, who was demonstrating iPhone control on its BDVHZ970W wireless Blu-ray home theatre.

- Toshiba was demonstrating 3D gesture control on its stand, leveraging the power of its new CellTV offering (see Section 6 - Other TV Innovations).
- Steve Ballmer from Microsoft highlighted developer support for Project Natal in his keynote, which will use motion and gesture recognition to control X-Box 360. The project is due for lift off in time for Christmas 2010 sales.

## 6. Other TV Innovations

- Panasonic remains king of the hill in the supersize flat panel arms race, showing an experimental 152" ultra-high definition plasma with 4k (4096x2160) resolution at CES.



*Panasonic's 152" Ultra High Definition Plasma Display*

- Competing for the 'thinnest panel in-show' award, LG showed its Ultra-Slim LED, claimed to be 6.9mm (0.271") thick while Samsung showed its 0.28" thin flagship LED model UNXXC9000. Samsung solved the problem of where to put the circuit boards and tuner in by housing them in the pedestal stand, which also doubles as wall-mount.

*LG's 6.9mm Ultra-Slim LED Display*



- Vizio announced a 21:9 aspect ratio model, XVTPro580CD, with a 58" Cinema Wide display and incredible 2560x1080 resolution able to display 2.35:1 'Scope' movies with no black bars. The set features 1 million to one contrast ratio and 'Smart Dimming' (hundreds of dynamic LED backlight zones versus edge-lit LED). In Europe, Philips announced a similar 21:9 model in 2009.



*Vizio's XVTPro 580CD 58"  
Cinema Wide Display*

- Toshiba's Cell Chip TV, first announced as long ago as 2008 and shown as prototype at CES 2009, will come as a two-piece system, similar to Pioneer's Media Box of several years ago, but with the box connected via Wireless HD to the display panel. The 8-core Cell chip is also used in Sony Playstation (it was jointly developed with Toshiba and IBM) and is claimed to be 140 times more powerful than today's TV processors, able to undertake heavy tasks like gaming, 2D/3D simulation and 4k x 2k processing. The box will incorporate a 1Terabyte hard drive, built-in Blu-ray drive, integrated videophone and will upscale all video content including Internet. The domestic version in Japan has multiple TV tuners. In the USA, Cell TV will come in two LED series (5 models in total) - ZX9000 Genesis Design (55" and 65") and Allusion Design (45", 55" and 65"). No US pricing is available yet, but the set is on sale in Japan at the equivalent of around \$10,000.



*Toshiba's Cell Chip TV*

- Sharp showed Quadpixel LCD technology, a yellow filter added to red, blue and green to create 1 trillion colours instead of the normal 1 billion. This is massively beyond the colour sensitivity of the human retina, but may be another tag to try and differentiate product in a highly commoditised field.
- Sony was promoting 'Monolithic' TV design, stressing the minimalist look.

- Wireless HD 1.0 (Wireless HDMI) is starting to appear in selected models e.g. Sony, Panasonic, LG and Vizio. The next generation of the technology is pending standardisation and was being promoted by the Wireless HD Consortium at CES. It will up data rates to 10Gps to support 3D HD formats and higher 2K and 4K resolutions as well as support for point-to-point streaming of uncompressed 1080p video from portable devices.
- Dolby Volume was featured by Toshiba on its Regza TV models, as well as some other brands. The feature controls volume variations between TV shows and advertisements.

## 7. Soundbars, Home Theater, MP3 and Internet Radio

*Futuresource comment: ever-thinner flat panel TVs will generally mean lower quality audio, but the dividend should be strong demand for external sound systems, i.e. Soundbars, HTiB and, for a minority, high quality AV receivers. Blu-ray will also help drive demand for higher quality audio in Home Theater. Outside of this, a thin audio selection at CES was primarily focused on iPod/iPhone accessories like speaker docks, with newer, low cost, brands often driving innovation. Discrete Internet Radio products are trying to establish but have been too expensive until now, although prices are falling.*

### Soundbars

- Soundbars, able to generate psycho-acoustic sound fields, first shown at CES by Yamaha with its Digital Sound Projector more than 5 years ago, were on show by both full range and specialist vendors at CES 2010. Some vendors said they thought the configuration would squeeze the conventional multi-speaker HTiB market. Soundbars come with and without integrated DVD or BD players and offer a variety of value added features, including iPhone docks.
- Yamaha is still in there, showing its YHT-S400 soundbar released in December, which features a novel sub-woofer built-in to the receiver. It incorporates Yamaha's AirSurround Xtreme technology and Univolume, which adjusts volume between TV shows and ads like Dolby Volume. The system carries an SRP of \$599.
- JVC had 3 soundbar models on its stand, all with integrated DVD - 4.1, 5.1 (THBA3, two side speakers and bass) and THVA1, soundbar with wireless sub-woofer.
- LG showed the LLV915 tabletop design soundbar with wireless sub-woofer, 430W output and 2 x HDMI sockets.
- Vizio launched two new soundbar models at CES including its first with Dolby Digital 5.1 surround.
- iPod accessory specialist iLive showed no less than 6 new soundbar models with 'Made for iPhone' certification, including a 37" soundbar with built-in upscaling DVD player and HDMI output for a very affordable \$199.



*iLive's iPod Docking Station Soundbar*

- Sharp demonstrated its BDMCP 41U 5.1 soundbar-based HTiB featuring sub-woofer, rear speakers, iPod dock, Netflix and BD Live.
- Traditional loudspeaker brands like Kef, Polk and Acoustic Research (now owned by Audiovox) are also ranging soundbars to try and break out of a depressed component audio market. Polk's 3" deep IHT3000 product incorporates a matrix-surround decoder, a 100 watt two-way speaker system and an 80 watt sub-woofer at an SRP of \$349.

### *Home Theater Adding Blu-ray, Docking and Connectivity*

- Most vendors showed a strong conventional Home Theater line-up at CES, with Blu-ray featuring prominently, iPod/iPhone docking widespread and wireless speaker connectivity extensively deployed. Futuresource estimates that over 15% of HTiB systems sold in 2009 were equipped with Blu-ray and forecasts at least a third for 2010.
- Sony showed a strong Home Theater line-up including two new models with Blu-ray, Internet connectivity and iPod docks. The BDV-E770 features integrated S-AIR wireless connectivity to rear speakers or a remote amplifier with an S-AIR client, and BDV-E570 which offers the S-AIR wireless as an optional extra.



*Sony's range of Home Theater Systems Showcased at CES*

- Vizio announced a Wireless Home Theater with both Internet Radio and iPod dock. The 2.1. channel VIR200 has audio processing from SRS Labs, 2 x 3" drivers and a built-in sub-woofer. The unit will debut in Autumn 2010 at an SRP of \$299.
- LG showed a 5.1. Full HD Blu-ray Home Theater with Netcast and iPod/iPhone dock.
- Samsung showed its Blu-ray 7.1 HT-6730W Home Theater producing a thunderous 1300 watts with above-the-head sound projection as well as surround.
- Denon launched its S-5BD AV Receiver with built-in Profile 2.0 Blu-ray player at an SRP of \$1799. The product has 3 x HDMI 1.4 inputs, answering the question posed to us elsewhere at the show as to how high end AV receivers will be future-proofed to accommodate Blu-ray 3D.

### *iPhone/iPod Audio Accessories, MP3 Players and Internet Radio*

- As well as pervading Home Theater Docking products, docking dominated a generally thin audio showing at CES, with innovation often being driven by opportunistic 'iXXXX' brands. 'Works with iPhone' certification is spreading, building on the momentum of 'Made for iPod'.
- Amongst other docking products, iLuv showed its first 'App Station', cashing in on the iPhone/Touch App Store boom, providing visual features like clock, calendar and weather, with landscape/portrait rotation of the handheld device possible in the dock.

*iLuv's 'App Station' integrates iPhone/iPod applications into a speaker dock*



- iHome (SDI Technologies) extended its range of speaker docks with a portable products and clock radio (iA5), which also exploits an application to display local weather forecasts and other information.
- iLive (DPI) launched over 30 new products at CES (including the iPod soundbar, see earlier), including a tabletop Internet Radio with iPod dock at an attractive price of \$149 and a wireless iPod docking system supporting up to 20 remote speakers.
- JVC announced 6 new docking products at CES including its first dual-dock speaker system (NX-PN7, SRP \$399) and a docking version of its Kaboom Box, which will sell at \$299.95.
- Sony had a wall devoted to docking products including a speaker dock, multifunction clock radio, boombox and micro HiFi. It also showed a new S-AIR W10T1 iPod dock model with wireless sub-woofer and streaming to remote rooms.
- Panasonic's arch-shaped SC-SP100 speaker dock featured a 2.1 channel configuration at an attractive price of \$129.
- Amongst many other brands releasing new docking audio or radio products at CES were Altec Lansing, Philips, RCA (Alco Electronics and Audiovox both use this brand) and Sharp.
- Samsung highlighted its IceTouch MP3 player with transparent full colour AMOLED display, allowing touch control from the rear side. IceTouch will come in 8GB and 16GB versions, launching in the first half of 2010.



*Samsung IceTouch MP3 player has a transparent AMOLED touchscreen*

- Samsung also showed MyFit, an MP3 player to compete with Apple's Shuffle, which monitors a range of health parameters such as pulse, stress and fat level. It includes a pedometer, calorie counter and customised workout program. The device using single button control with an accelerometer for different functions e.g. held the right way up, volume up, held upside down, volume down.

*Samsung MyFit MP3 player monitors pulse, stress and other health-related metrics*



- Audiovox is distributing XM SkyDock, an in-car unit uses an application to turn iPhone or iPod Touch into an XM satellite radio tuner. There are 20 million satellite radio subscribers, but only about a third on XM network, as opposed to Sirius infrastructure, although the companies are now merged. (Meanwhile, in-car vendors are planning free Pandora Internet Radio using WiFi hotspots, which may constitute a threat to Sirius/XM subscription services).
- UK DAB leader Pure was at its first CES with Sensia, an elliptical design Internet Radio with graphics, photos, and apps like Twitter and Facebook. At \$349 SRP, this product is likely to be too expensive for the standalone Internet Radio market.



*UK DAB leader Pure is entering the US internet Radio market with Sensia*

- Vizio announced an iPod dock with Internet Radio at a more affordable \$189. The product will have a 7" LED backlit screen, WiFi, will interface to websites like Flickr and also act as digital photoframe. It will come bundled with Pandora, Rhapsody and Live365.
- As with Soundbars, traditional Hi Fi speaker brand Acoustic Research (now owned by Audiovox) has resurfaced in Internet Radio, announcing new tabletop models at the show.

- A sign of the times in a depressed component audio market, Pioneer did not show home audio on its stand at CES 2010, focusing entirely on automotive gear, although it did announce some new HiFi products and staff told us they expect home audio to be back on the booth at CES 2011. (Also, in a sign of the times, Pioneer, and other automotive vendors, showed two in-car head units without CD players, promoting instead USB interface to external devices like MP3 players).

## 8. Computer and Cellphone-Related, MIDs and e-Readers

*Futuresource comment: Strategic interest is focused on Mobile Internet, netbooks, applications and perceived latent demand for tablets (or 'slate') computers filling the gap between notebook PCs and smartphones.*

- Steve Ballmer highlighted a HP 'slate' prototype as part of his Windows 7 exposé during the Microsoft CES press conference, along with prototypes from French multimedia player Archos (not a player in PCs) and Pegatron, a Taiwan-based DMS (Design, Manufacturing and Services) company spun out from Asus in 2008. 60% of Pegatron's \$17bn turnover (with sister company Unihan) is PC-related, and the firm supplies motherboards to a number of PC brands. Windows XP Tablet Edition failed to make a dent in the market several years ago, but the ubiquitous spread of multi-touch screen technology and wireless broadband internet may make the market more receptive today.



*Steve Ballmer showed Windows 7 on tablet-style prototypes PCs from HP and others*

- In addition to its Mini 3 Android phone (see Cellphone-Related later), Dell also gave a glimpse (i.e. a slide) of a 5" 'slate' PC concept at its press conference, but with no firm statements as regards taking the product to market. Significantly, it looked as though this will use Android and looks more like an evolution of a cellphone than a PC. On the stand, Dell was showing upgraded versions of its Inspiron notebooks powered by Intel's latest Core i3 and i5 processors and a beefed up version of its Mini 10 notebook with a built-in digital TV tuner.



*Dell's 5-inch tablet/slate concept*



- Asus showed a multi-touch 8.9" netbook (model EeePC T91TMT). Asus pioneered netbook PCs in 2006.

- Acer, which also brands Gateway and e-Machines in the USA, showed 4 new notebook and netbook models at CES. Its Aspire One netbook range has been upgraded to Intel's N450 processor (see below), features 10.1" LED-backlit screens, designer case styling and materials.
- China-based Lenovo, who acquired IBM's PC business, showed a hybrid two-piece IdeaPad U1, in which the multi-touch screen detaches to form a standalone Linux-powered tablet weighing just 1.6lbs and then docks back to form a fully featured Windows 7 notebook with all the connectivity. The IdeaPad U1 will retail at \$999.



*Lenovo's IdeaPad U1*

- Lenovo also showed a prototype 10.1", 2lb 'smartbook', dubbed the Skylight, for launch in the Spring. Reportedly, this will not use Windows and will be powered by a Qualcomm 1.8GHz Snapdragon (which also powers Google's Nexus One Android phone, but in a 1GHz version). The initial model will use a 16GB Solid State Drive (expandable through a foldout USB port on the keyboard), comes with WiFi and has a SIM card slot for embedded 3G (*Futuresource comment - we estimate that over 30% of netbooks shipped worldwide in 2009 came with a wireless service contract*). Skylight will also have mini-HDMI output. Price is expected to be around \$500.
- Lenovo also showed its first multi-touch screen netbook, the IdeaPad S10-3t. This 10.1" product can flip between clamshell and tablet, with 180° screen rotation, and will have a suggested price of around \$499.
- HP showcased its third generation netbook at CES, the 10.1" 2.7lb Mini210 (or mini-note), featuring what HP calls the Cloud Drive, which appears as just another storage icon to users, but in fact is 100GB of online storage, free for 3 months, after which a service charge will be applied (yet to be decided, but in our view it will need to be really cheap to compete with a \$60 portable hard drive). The Mini210 embodies HP's Quickweb technology which allows fast boot up (15 sec) in Linux (e.g. for web access) but can then load Windows 7 for heavier applications.
- HP also chose CES to launch its Windows 7-powered HP Touchsmart tm2, which uses a reversible 12.1" multi-touch screen and will launch in January at \$899. A novel feature will allow users to write on a virtual notepad with a stylus.



*HP Touchsmart tm2*

- Sony showed a revamped Intel-powered Vaio line at CES and a 'green' addition to the W-Series netbook made from recycled compact discs (perhaps a deliberate choice of icon to underscore the impending death of CD?) which is targeted at kids as young as 6 years old, with embedded parental controls and Norton's Online Family Software. The product will ship in January at \$479 SRP.
- Sony introduced a Blu-ray drive, Full HD capability and HDMI output in its higher spec F-Series Vaio notebooks, and shifted down to a 16.4" screen from the previous 17" and 18" sizes. The product will also feature Transfer Jet Digital Near Field docking from Cybershot cameras and other devices (see also Section 9 on cameras).
- Sony also announced a 7" touchscreen Personal Internet Viewer - 'dash', which will launch in April at \$199. The WiFi connected product is powered by a Marvell processor, has stereo speakers and access to free Web apps such as weather, news, sports and social networking websites. It has an accelerometer to enable alternative viewing positions and the design is more geared towards household use than the Mylo personal communicator which Sony launched 3 years ago, which was not a success.



*Sony "dash" Personal Internet Viewer will access free web apps*

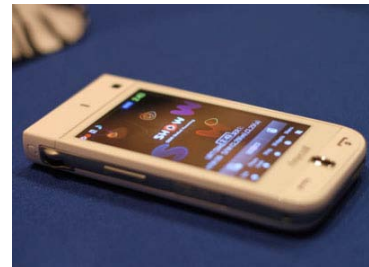
- Intel's Atom chip has powered the bulk of netbook PCs to date, and at CES it was promoting its Atom N450, which has integrated high spec graphics, which might the need for graphics chipsets like NVIDIA's Ion, which has been incorporated into some high end models.
- Intel CEO Paul Otellini used his keynote to announce a beta launch for AppUp Center, an online storefront for netbook applications, suggesting that companies could build their own versions and also port apps over to mobile and TV platforms.
- PC peripherals and audio specialist Logitech introduced Lapdesk, a notebook accessory featuring a padded base, cooling fan and twin USB-connected 2" neodymium speakers. Lapdesk will retail at \$79.99.
- At CES, Seagate introduced a version of its external Black Armor drive using USB 3.0, which will support data transfer speeds of up to 4.8Gbs, 10 times the speed of USB 2.0. It also showed a new, shorter version of its Free Agent Go and enhanced performance in its Free Agent Plus drive, including the ability to download and view YouTube video and several news and other video feeds. Seagate also said it is planning to announce a partnership with a well known VoD provider in the near future.

## Cellphone-related

*Futuresource comment: CES is not really the show for the US wireless industry (CTIA is) but several handset vendors had stands, again excluding Apple. Ironically, the impact of the iPhone on the CE industry was evident everywhere at the show in the shape of docking CE products and applications. Embedded cellular is starting to show up in e-Readers, netbooks and some other products.*

- Google was also not exhibiting at CES, but announced Nexus One during the show, drawing huge amounts of media coverage.
- Samsung, the 2009 US handset market leader, did not announce any new mobile products at CES but showed lots of wireless innovations e.g. a W9600 handset with built-in pico projector, a prototype phone with single-chip ATSC Mobile TV decoder, an 'Olympic' phone and app and a Omnia II smartphone controlling TV and streaming video. Samsung is pushing applications development for mobile and fixed platforms with Samsung Apps.

*Samsung's W9600 smartphone has a built-in pico projector*



- Nokia also focused on existing products at CES, including the N900 smartphone and applications from Ovi Store such as Ovi Maps Racing and Climate Mission (Ovi only went live on N900 two weeks before the show). Applications demonstrations on the booth also featured Nokia's 2lb Intel Atom-powered Booklet 3G netbook, announced at Nokia World in August 2009 (and now on sale in Europe), which features built-in 3G and 12 hours of battery life. CEO Olli-Pekka Kallasvuo's CES keynote focused on emerging markets and improving people's lives, rather than products.
- Motorola showed 3 new mobiles at CES, but seems to be betting on Android as a renaissance platform and now has 5 models. Motorola's Droid smartphone made a splash when launched in Q4 2009.
- During CES, AT&T announced 5 new exclusive Android models for launch in the first half of 2010 from Motorola, Dell and HTC. Dell's Mini 3 Android Smartphone is its first venture into the handheld world since pulling out of PDAs a few years ago. Taiwan's HTC is fast becoming a world ODM leader in smartphones and is trying to develop its own brand.



*Android-powered Mini 3 is Dell's first smartphone*

- RIM showed a \$199 adapter, The Presenter, which interfaces between micro-USB output on Blackberries and VGA or S-Video inputs on display screens or projectors, enabling Powerpoint presentations without need for a PC.
- Qualcomm's FloTV unit, which provides Mobile TV content aggregation and transmission services via its own 700MHz network into modified wireless handsets or adapters, was introduced for in-car use by Audiovox at CES.
- FloTV announced that it will also embrace new ATSC free mobile TV broadcasting, slated for US consumer trials the first half of 2010. In addition to prototype ATSC phone from Samsung, LG also showed \$249 portable DVD player equipped with an ATSC Mobile TV tuner. Broadcasters have been working through the Open Mobile Video Coalition (OMVC) with CE companies and wireless operators to develop Mobile TV broadcasting.

*LG DVD player comes with ATSC Mobile TV built-in*



## e-Readers

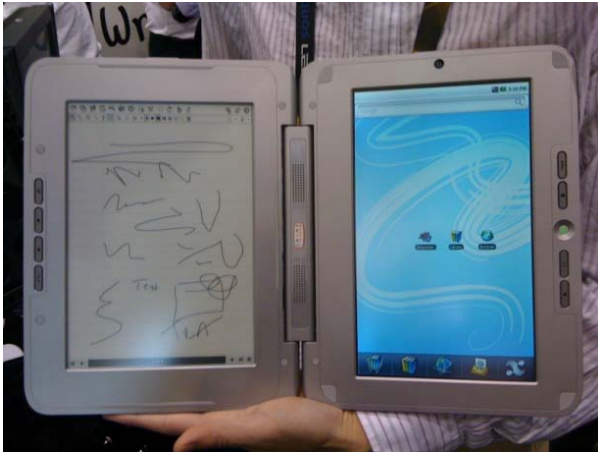
- Several new e-readers are being launched to compete with Amazon's Kindle and Sony's e-Reader, with prices for basic LCD units perhaps going as low as \$60.
- Samsung showed two new e-Reader products, a 6" version (E6) and 10" E101. These devices feature 2GB of storage (1200 books), WiFi connectivity, Google as content partner, touch screen QWERTY keybar and handwriting recognition.



*Samsung entered the e-reader market at CES with two models*

- Audiovox (RCA brand) announced two 6" e-reader models featuring e-Ink display.
- Plastic Logic's e-reader boasts a 10.7" screen but is only one third of an inch thick, with embedded 3G wireless (AT&T).

- Entourage showed the first e-reader/netbook combi with the eDGe, a novel foldout configuration with two screens - one a 9.7" e-ink (mono), the other a 10.1" colour screen, supported by a Linux OS, WiFi and embedded 3G, delivering a full feature set like Web, e-mail and word processing. Battery life is put at 68 hours. The product will be priced at around \$400 and be available in first half 2010.



*Entourage e-reader/netbook combi features both mono e-Ink and colour LCD screens*

- Spring Design and Alex also both showed twin-screen readers, but with only smaller LCD screens under the e-Ink displays.
- Other e-reader products released at CES included iRiver, Astak, Interead and Aiptek, who have an LCD -based concept that may allow products as cheap as \$60, aimed at the children's book market.

## 9. Cameras, Video and Related Innovations

*Futuresource comment: PMA is the big show for the camera industry, but most vendors have stands at CES. The camcorder sector is moving at full speed to Flash storage and lightweight, miniaturised form factors. Pocket Video is hot despite cameras in mobiles and widening range of products. Digital still camera resolution and zoom performance benchmarks have risen 2x since CES 2009. Camera vendors are exploiting a wide range of design and features like touchscreen for differentiation. More players are rolling out hybrid mirrorless 'SLR-like' products, and first 3D imaging products are on show.*

### Video

- Canon unveiled 12 new camcorder models at CES, including 8 in HD. The company is transitioning all 2010 products to flash storage. All models in the top-of-range Vixia HF-S high definition series will feature 24Mbps AVCHD recording, dual SDHC card slots with automatic switching from internal memory to card, a new image stabilisation technology (Powered IS) and 3.5 LCD touchscreen LCD with 'touch and track' for auto focus on moving objects. These cameras are also compatible with 'Eye-Fi' wireless SD cards (see Other Imaging-Related later).
- Panasonic's latest camcorders at CES epitomised the trend to ultra lightweight, high performance High Definition video products e.g. the SDR-750, offering 3 hours 1080p Full HD, 4GB internal memory + SDHC card, 78x optical zoom, tracking autofocus, face detection etc.

- Panasonic also showed an integrated 'Prosumer' 3D camcorder at \$21,000.
- Sony launched 17 new camcorders at CES, mainly upgrades of existing products, rolling out its Exmor-R back-illuminated CMOS sensors to products lower down the range, adding wide angle lens to some models and other enhancements. Top of the range will be the HDR-XR550V, with a 240GB hard drive for up to 101 hours of HD video (LP mode); and the HDR-CX550V, with 64 GB of embedded flash memory for up to 26 hours of HD video (LP mode).
- Sony also released 'Bloggie' at CES, a web-connected 360° videocam to compete with Flip in the pocket video sector. There will be 3 models in the range, priced from \$170 to \$200.



*Sony Bloggie video camera will compete with Flip*

- Samsung's S16 camcorder shown at CES uses a 64GB SSD and can transmit directly to TV via WiFi.
- Cisco highlighted strong sales for Flip in its CES keynote, also growth in Flip Video uploading and usage of Flipshare web resources. 1 million videos were uploaded in December, 400% increase year-on-year.

### **Digital Still Cameras**

- The pixel count 'arms race' continues, with the new resolution benchmarks 10-12Mp for entry level cameras and 12-14Mp for mid-to high end. Somewhat ironically, given soaring digital resolution, optical zoom (with stabilisation) is moving up from 3x to 5x. State-of-the-art in compact cameras is illustrated by Olympus' FE-4020, announced at CES, which offers 14Mp and 5x optical zoom, as well as advanced features like subject focus tracking at an affordable price of around \$150.

- Touchscreen cameras were on show on several stands at CES, for example Kodak's ultra-thin Slice Touchscreen, which comes with a 3.5" widescreen LCD, 14Mp resolution, 720p/30 fps video and 2GB of internal memory for \$349 SRP. Other vendors showing touchscreen models included Canon, Sony and Panasonic. Olympus showed its Stylus Tough 3000, an all-weather camera with Tap Control, allowing users to wear gloves.



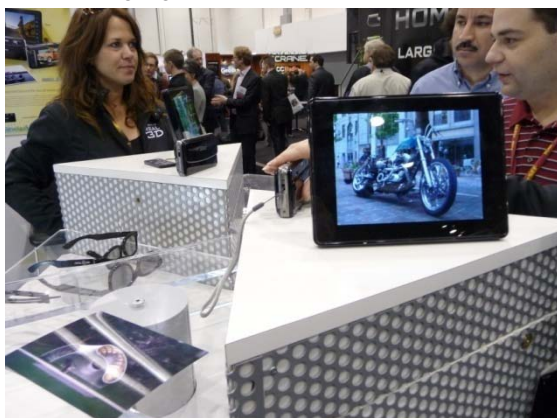
*Kodak's ultra thin Slice camera features a touchscreen*

- Nikon showed its CES 2009 award-winning Coolpix S1000pj, the world's first camera with built-in pico projector, which can project an image of 40" for instant sharing of pictures. This 12.1Mp product is already available with an ASP of \$450.

*Nikon's Coolpix S100pj has a built-in pico-projector*



- Fuji Film showed its FinePix REAL 3D system comprising camera, viewing tablet and prints. The camera, which is already on the market, uses twin lenses and 2x 10Mp CCD image sensors with a user choice of high quality 2D or 3D images for both still images and video. The 8" viewer delivers 400x600 images in 3D (800x600 in 2D). The camera is pricing at \$600 in the USA, and \$500 for the viewer.



*Fuji Finepix 3D system: Camera, viewer and prints*

- Samsung also showed a 3D dual lens camera prototype on its stand, but no prices or launch dates were available.
- Panasonic has making been making waves in 2009 with its hybrid mirrorless Micro Four-Thirds cameras with interchangeable lens (a format developed with Olympus), and, although not announcing any new products in this range at CES, showcased the latest model GF1, which features a 12.1MP Live MOS sensor and AVCHD Lite high definition recording and movie effects.
- Samsung unveiled its first hybrid mirrorless camera at CES, the NX10, featuring a 14.6Mp APS C-sized CMOS sensor, KMount interchangeable lens system, a 3" OLED screen and built-in HDMI. It also showed the CL80 compact camera with built-in wireless connectivity, DLNA compliance, direct Web uploading, e-mail and Bluetooth 2.0.
- Canon announced 4 new entry models in its PowerShot A series, all of which will support SDXC cards, which have the potential to reach 1 Terabyte of storage, compared to the 32GB maximum supported by the SDHC format.
- Sony unveiled 7 new Cybershot compact cameras at CES including the DSC-HX5V, which has 10x zoom with 25mm wide angle capability, Full HD(1920x1080 60i) capability and will be available in March at \$349 SRP. It also announced two 14Mp models with a Sweep Panorama feature (DSC W-370 at \$270 and W-350 at \$200). Sony also announced a new Web sharing service for the Spring, integrated into Facebook, adding to existing facilities on YouTube and Picasa.
- Sony is pushing camera/PC TransferJet Near Field wireless connectivity and will introduce the feature in the Cybershot range from February, as well as a TransferJet station (TJS-1). The camera is simply put on the left hand side of the wrist rest on the PC for the two devices to sync up ready for data transfer (see also Section 8 on Vaio).
- Sony also announced that its cameras (and other products) will have dual compatibility going forward, supporting SD Cards as well as Memory Stick. Sony will also market its own range of SD Cards as well as continuing to promote Memory Stick.

### Other Imaging-Related

- Although the digital photoframe market has lost its gloss for many vendors, they were still widely in evidence at CES, with an emphasis on value added apps (e.g. calendars, clocks, WiFi and websites) as well as MP3 players, exchangeable frames and other ideas. Audiovox showed a 7" iPhone docking Pro frame which charges the phone as well as playing content. The speaker slides out to reveal the dock. Sony launched its 'dash' Personal Internet Viewer, which can also be used as a photoframe (see Section 8).
- Casio unveiled the world's first hybrid LED/Laser projector. LED projectors are not new, but have historically had relatively low light output, but Casio's product is specified at 2000 lumens, with 10 year life, 10 times longer than traditional projector bulbs. Available in May at \$800. (See also LG's 3D projector in Section 2).

- Eye-Fi Memory Card, the world's first SD card with built-in WiFi, has been around for about a year, and was on display at CES 2010, now supporting upload to web sites as well as PCs. Plugged into any camera with an SD slot, Eye-Fi is able to transmit JPEG, RAW and Video files across the network (after setup). It also includes geo-tagging and hotspot access and comes in several versions ranging from 2GB Home at \$49.99 to new 8GB Pro X2 at \$149.99. Eye-fi is a start up based in Mountain View, Ca, and has a patent pending on this product. Canon has announced camera compatibility with Eye-Fi SD cards.



*Eye-Fi SD card has built-in WiFi*



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