The European Eye on the Display World

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Sony Posts Q1 $314 Million Net Loss

Sony's net loss in the first quarter of the year widened to ¥24.6 billion ($314 million) from ¥15.5 billion ($198.2 million) a year ago, though turnover improved slightly to ¥1.5 trillion ($19.2 billion) from ¥1.4 trillion ($17.9 billion). Sales in Sony's home entertainment and sound business were down 26.2% to ¥251.8 billion ($3.2 billion), primarily because of a decrease in LCD TV unit sales in Japan, North America and Europe. The company shipped 3.6 million units in Q1, 26.5% down on the number of TVs shipped in the first quarter of last year, generating revenue of ¥157 billion ($2 billion), 35% lower than a year earlier.

The company announced a major shake-up of its business in April, saying it would cut 10,000 jobs worldwide and reduce the number of TV models sold by 40% (Display Monitor Vol. 19 No 15). The reorganisation of Sony's businesses began in Q1 and the company has now revised its forecast for the year, predicting a net profit of ¥20 billion ($255.8 million), down 33% from the previous estimate of a net profit of ¥30 billion ($383.6 million), while turnover is now forecast to be around ¥6.8 trillion ($86.9 billion) from the previous estimate of ¥7.4 trillion ($94.6 billion). Sony has also cut its TV sales target to 15.5 million units, from 17.5 million and reduced the number of anticipated PC sales to 9.2 million from 10 million.

Financial analysts were not impressed with this set of results from new boss Kaz Hirai, who recently stepped down from his role at Sony Computer Entertainment as part of his move to look after the whole of Sony. (BR)

Sharp Widens Annual Loss by 88%, to Cut 5,000 Jobs

New Sharp president Takashi Okuda has been challenged to improve the company's finances following his promotion in April

Sharp saw its first quarter net loss widen significantly to ¥138.4 billion ($1.7 billion) from the previous year's Q1 net loss of ¥49.3 billion ($630.2 million) and said it now expects net loss for the year to reach ¥250 billion ($3.2 billion), 88% higher than Sharp's annual net loss last year of ¥30 billion ($383.5 million). The company described a "severe business environment" as the reason for its first quarter performance, citing "greater-than-expected" demand decline in the Japanese and Chinese LCD TV markets", production adjustments at large LCD panel plants resulting from worsening supply/demand

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Editor's comment

I wrote last week's editorial just at the same time that Samsung was releasing its results, so had not had time to absorb it. This week, there have been lots more results and so our front page is dominated by bad news in this area. Both Sony and Sharp published results that disappointed investors as did AUO and LG Display last week. The contrast was particularly strong with the results from Samsung.

Samsung said that its profits are 'stable' in its TV business and that although volumes were broadly flat on a year on year basis, profitability improved as the proportion of LED TVs improved and as the company has widened its product range to have more optimal designs for the developing world. The firm's panel business returned to profit and posted strong sales increases from last year and last quarter, although sales of tablet displays were the most important factor, rather than TVs or monitors. In contrast, AUO saw sales falling and losses getting bigger. We expect CMI to also report losses next week.

I get the feeling that we are at a turning point in the LCD and display business, at least for Samsung. For the last several quarters, everybody was making losses and suffering. It seemed amazing to me that Samsung and LG, in particular, could not protect the profitability of their businesses, despite their dominance in market share. However, Samsung seems to be sorting this out. It has made major changes in the structure of its business to bring all of the panel business into a single unit. To turn the business around at the same time is, once again, a great example of Samsung's ability to 'execute'.

In contrast, financial analysts have been very unimpressed with the first quarter for Sony under the new leadership of Kaz Hirai. Analysts have pointed out how long the malaise at Sony has gone on with four years of losses and that the reasons given for the problems continue to be the same. Some analysts have also given Panasonic a hard time, saying that there is a recurring pattern to the changes in the current restructuring, with the same comments and strategies seen four years and eight years ago.

So, can Samsung now pull away from the rest? The company's success in smartphones and TV has been spectacular against tough competition. I continue to believe that the company is a long way ahead of its competition in the new world of OLEDs.

Samsung will face significant challenges, not least in managing its channels. As it increasingly dominates the TV business, there will be more and more resistance to its dominance from its reseller partners. The company also faces challenges in adapting to becoming stronger in software - I have written in the past about the culture changes that will be needed to compete with Google and Apple.

However, at the moment, it would be hard to bet against Samsung overcoming these challenges. The cash position of Apple is widely remarked on, but Samsung also says that it has about $22 billion in cash in its balance sheet. That's a pretty strong position to be able to deal with challenges!

Bob

Company News

AUO Affirms Plans for AMOLED Mass Production in Q3

AU Optronics' (AUO) president, Paul Peng, recently reaffirmed the company's intention to commence AMOLED mass production in the third quarter of this year. AUO will make 4.3" panels featuring 257 pixels per inch (ppi) and also plans to introduce large-size AMOLED panels by end of the year. According to reports, AUO has been working with Japan-based customers to develop large-sized AMOLED panels using oxide TFT backplanes at a 6G experimental line. AUO is also reported to be planning to increase shipments of 4096 by 2160 (4Kx2K) high resolution panels in the second half of 2012 to compete with Korean companies' AMOLED TV panels.

Last week, AUO posted its second quarter results (Display Monitor Vol. 19 No 30) reporting a 3.6% sequential rise in shipments of small and medium sized panels. The company has since said that it remains optimistic about this part of its business and has predicted a 60% increase in shipments of panels for tablet applications this year.

Roku Receives $45 Million Strategic Investment

Roku has received $45 million in a new strategic investment from News Corporation, British Sky Broadcasting, Menlo Ventures and Globespan Capital Partners, as well as an unnamed strategic investor. Roku said that the new relationships formed through the investment include both financial and business agreements. The company will use the funds to build further brand awareness through advertising, develop new international markets, and increase engineering and production to support sales growth of both hardware and digital media services. Roku is also planning to launch the Roku Streaming Stick later this year, a wireless, dongle-sized streaming device that integrates with newer TVs and consumer electronics devices.

Best Buy Founder Hiring Team for Takeover

Richard Schulze, the founder of Best Buy, is reported to be recruiting a management team to lead the electronics retailer if he is successful in his bid to take the company private. Schulze, who holds a 20.1% stake in Best Buy, resigned from his role as chairman in June (Display Monitor Vol. 19 No 24). Since then, he is reported to have been in talks with banks, including Credit Suisse, to explore a potential private takeover of the company he founded. One report named former Best Buy CEO Brad Anderson as one executive Schulze has approached but there has been no confirmation of Schulze's intentions.

GDS to Acquire Hantarex

Global Display Solutions Spa (GDS) has signed an agreement with Sambers Italia Spa to acquire the Hantarex brand of professional displays, monitors and digital signage products. GDS will establish a new business, GDS Hantarex Srl, which will be overseen by GDS Spa.

Hantarex is a long-established and well known name among European integrators and could be a good addition to the strength of GDS. (BR)

Cisco Completes NDS Acquisition

Following the European Commission's approval of Cisco System's acquisition of the UK's NDS Group last week (Display Monitor Vol. 19 No 30), the company says it has now completed the deal. NDS's employees will now join Cisco's Service Provider Video Technology Group (SPVTG), led by senior VP and general manager Jesper Andersen. Dr Abe Peled, formerly NDS chairman and CEO, becomes senior VP and chief strategist for Cisco's Video and Collaboration Group, of which SPVTG is a part. Cisco announced in March that it intended to buy the former News Corp. company for approximately $5 billion (Display Monitor Vol. 19 No 11).

Netgem Sales Down in First Half of Year

French STB manufacturer Netgem saw turnover in the first half of the year fall 12% to €38.2 million reflecting a decrease in the French market. However, international revenue for the first six months of 2012 increased 15% year on year to €22.3 million, contributing 58% to the company's total turnover. Netgem's net profit for the half year almost halved to €3.5 million from €6.5 million a year earlier. The company reaffirmed its aim to double international sales between 2011 and 2014, saying it believes that the connected TV market continues to show high growth potential globally.

Carphone Warehouse Europe Sees Sales Rise 5.7%

Carphone Warehouse Europe, the joint venture business of Best Buy and Carphone Warehouse Group (CPW) saw sales rise 5.7% in the first quarter to £776 million ($1.2 billion). The result excludes the now defunct Best Buy UK which closed its stores at the beginning of this year (Display Monitor Vol. 19 No 2).

Sharp Announces Further Delay to LCD Filter Merger

Sharp has announced a further delay to the completion of the planned integration of Toppan Printing and Dai Nippon Printing's LCD colour filter operations into Sharp Display Products. The completion date has now been rescheduled for the end of August, after Sharp announced in June that it needed more time to complete the process but hoped to begin operations on 1st August 2012 (Display Monitor Vol. 19 No 27). The companies had originally set a completion date of the end of June 2012 (Display Monitor Vol. 19 No 15).

Samsung in Strong Position Halfway Through Year

Samsung announced its Q2 results late last week, recording a 21% increase in turnover to KRW47.6 trillion ($41.7 billion) and a 48.5% increase in net profit to KRW5.2 trillion ($4.5 billion) (Display Monitor Vol 19 No 30). We have now had a chance to look at the news behind those results in more detail.

Samsung said that its Display Panel segment achieved a 16% increase in sales year on year and despite weaker than expected panel demand due to the economic slowdown in Europe and low seasonality, the company's total TV panel shipments increased in the low 10% range. This was particularly helped by strong sales of high, value-added products such as panels for 3D TVs and LED TVs. Looking ahead, Samsung says that demand for TV panels is expected to grow in the next quarter as TV makers prepare for the end-of-year high-demand season and the Chinese National Day holidays. The effect of an energy saving subsidy in China is also expected to stimulate demand for LED TV products.

For Samsung's IT panel sector, the continuation of weak demand for panels used in notebook PCs and monitors was offset by strong demand for tablet PC panels. Launches of new smartphone products also contributed to continued profitability in OLED panels. In the third quarter, economic uncertainty in developed markets and the sluggish market demand for notebook PCs and monitors is expected to dampen overall demand. The expansion and diversification of the tablet PC market, however, is forecast to fuel an increase in demand for tablet PC panels and Samsung will aim to expand sales of LCD and OLED panels for smartphones.

The Consumer Electronics Division, which covers the Visual Display and Digital Appliances businesses, also saw growth in both sales and profitability compared with the same period last year, although demand for TVs remained flat year on year. Increased sales in developed markets for Samsung's premium TVs, such as the flagship ES7000 and ES8000 models, together with expansion of region-specific LED TV models in emerging markets, spurred a significant lift in earnings compared with the same quarter of last year. This increase in demand saw Samsung increase its portion of LED TV sales from the mid 60% range to a mid 80% share, quarter-on-quarter. Heading into the third quarter, although growth in developed markets may stall, Samsung aims to expand its presence in emerging markets with region-specific products and entry-level LED TVs. The company will also look to continue its leadership in Smart TVs in developed markets with continued cooperation with media and content providers.

SES Reports Strong Six Months

SES has reported a strong start to the year, with turnover up 4.8% in the first six months of the year to €892 million and net profit for the period up 1.2% to €298.7 million. SES cited successes in winning business from new markets as being partly responsible.

The company also announced a significant increase in the number of paying households using the HD+ service offered by its German affiliate HD PLUS. The HDTV platform attracted over 120,000 new paying households between April and June 2012, the most paying households HD+ has ever acquired in one quarter, taking the total to 634,290 paying households which has more than tripled year on year. Wilfried Urner, CEO of HD PLUS commented: "Given the excellent performance in the first half, we assume that HD+ will reach one million paying households before 31 December 2012".

Arrow Electronics Inc. reported a second quarter net profit of $114.3 million on turnover of $5.1 billion, which compares with a net profit of $156.2 million on turnover of $5.5 billion in Q2 of last year. For the first six months of the year, Arrow posted a net profit of $228 million on turnover of $10 billion, whereas a year earlier the company's net profit was $292.5 million on turnover of $10.7 billion.

3M reported very little change between its second quarter and half year results in 2012 and its performance in the corresponding period of last year. The company's net profit for Q2 2012 was flat year on year at $1.1 billion, while turnover was down by just 2% to $7.5 billion from $7.7 billion. Similarly for the first six months of this year, 3M's net profit was 2% higher at a little over $2.3 billion from just over $2.2 billion, with turnover flat at $15 billion.

Amazon.com Inc. saw second quarter net profit fall 96% to $7 million as the online retailer recorded an estimated loss of $65 million during Q2 related to the acquisition and integration of Kiva Systems. Amazon's second quarter net profit a year earlier was $191 million. Turnover increased 29% year on year to $12.8 billion from $9.9 billion, bringing turnover so far this year to $26 billion, compared with $19.7 billion for the first six months of last year. Amazon's net profit at the halfway point of the year was $137 million, compared with a net profit of $391 million in the previous year. Amazon said that the Kindle Fire remains its bestselling product since launch and that digital products account for the top 10 selling items on Amazon.com.

Celestica Inc. saw net profit almost half in the second quarter of the year to $23.6 million from $45.7 million in the second quarter of last year, while turnover fell to $1.7 billion from $1.8 billion. In the first six months of the year, the company's net profit declined 11.7% to $66.8 million from $75.7 million a year earlier, with turnover down 4.7% at $3.4 billion from $3.6 billion. Celestica said that as a result of winding down its manufacturing services for Research in Motion (RIM), revenue from RIM is expected to decline to approximately 10% of total revenue in Q3 from 17% in Q2. During the second quarter of 2012, the company recorded restructuring charges of $20.1 million.

Flextronics posted a 20% drop in turnover in the first quarter of its fiscal year, falling



from $7.5 billion to $6 billion. Net profit in Q1 was $156 million, down from the previous year's Q1 net profit of $160 million.

Hitachi Ltd. has reported its first quarter results, posting a net profit of ¥7 billion ($89.5 million), more than double the previous year's Q1 net profit of ¥2.9 billion ($37 million). Turnover was broadly flat year on year at ¥2.1 trillion ($26.8 billion). The company warned that continued volatility in the European market and a slowdown in China could still affect its performance this year, though for now, Hitachi is maintaining its outlook for the year of a net profit of ¥200 billion ($2.5 billion) and turnover of ¥9.1 trillion ($116.4 billion).

Seiko Epson Corporation has reported its first quarter results, posting a net loss of ¥34.5 billion ($440.7 million) on turnover of ¥186.3 billion ($2.4 billion), which compares with a net loss of ¥3.2 billion ($40.8 million) on turnover of ¥217.7 billion ($2.8 billion) in the first quarter of last year. During Q1, Epson's subsidiary Epson Imaging Devices agreed to settle for $150 million civil litigation in the US brought by Motorola and a number of its affiliates, which is reflected in Epson's first quarter results. The company has also now revised its forecast for the year, cutting its net profit estimate by 64.3% to ¥5 billion ($63.8 million) from a previous forecast of ¥14 billion ($178.9 million). Predicted turnover for the year is little changed at ¥870 billion ($11.1 billion).

Fujitsu Limited recorded a first quarter net loss of ¥23.7 billion ($303 million) on turnover of ¥957.3 billion ($12.2 billion), which compares with a net loss of ¥20.4 billion ($260.8 million) on turnover of ¥986 billion ($12.6 billion) in the first quarter of last year.

Mitsubishi Electric Corporation recorded a Q1 net profit of ¥30.4 billion ($388.5 million) on turnover of ¥782.7 billion ($10 billion), which compares with a net profit of ¥27.1 billion ($346.4 million) on turnover of ¥813.6 billion ($10.4 billion) in the first quarter of the previous year. Mitsubishi's electronic devices business contributed ¥39 billion ($498.7 million) to total revenue, a decrease of 22% from the same quarter of last year which Mitsubishi attributed to declines in orders and sales in both the LCD module and semiconductor units.

JCDecaux SA reported a 6% increase in turnover in the first half of the year to €1.2 billion from €1.1 billion in the same period of last year. Second quarter turnover increased by 5.8% year on year to €671.2 million. JCDecaux's net profit in the first six months of the year was €82.4 million, 13.4% down on the previous year's net profit of €95.1 million for the corresponding six month period. The company said that digital now represents 14% of its turnover in the transport sector and 5.1% of its total turnover, at approximately €63 million. Digital activity, which grew by 29.6% in 2011 from 2010, rose again in the first half of this year by 49.5%. JCDecaux currently operates 11,000 screens in 22 countries.

Loewe AG has reported its second quarter and half year results, narrowing its net loss in Q2 to €1.4 million from €5.3 million in Q2 of last year, and taking net loss so far this year to €2.4 million from €7.8 million for the first six months of last year. Loewe's turnover in Q2 rose to €59 million from €57.2 million a year ago, while first half turnover improved to €125.6 million from €118.7 million in the previous year.

Panasonic Corporation returned to profit in the first quarter of its fiscal year, posting a net profit of ¥12.8 billion ($163.6 million), which compares with a net loss for Q1 of the previous year of ¥30.3 billion ($387.2 million). Turnover was slightly lower year on year, falling 5% to ¥1.8 trillion ($23 billion) from ¥1.9 trillion ($24.3 billion). Panasonic said that sales in its AVC Networks segment were down 20% to ¥359.7 billion ($4.6 billion) despite favourable sales of PCs and other products, because of a significant decline in flat panel TV sales in Japan. However, the segment swung to a profit of ¥7.4 billion ($94.6 million), compared with a loss a year ago of ¥3.8 billion ($48.6 million).

Technicolor made a significant reduction in group net loss in the first half of the year to €26 million, from €112 million in the first six months of last year. The media technology company's turnover so far this year also improved, rising 5.6% year on year to €1.6 billion from €1.5 billion. Turnover in the second quarter reached €846 million, up 13.3% YoY.

PPR, the French luxury goods group which includes Fnac, has reported its half yearly results, posting a net profit of €542 million on turnover of €6.4 billion, which compares with a net profit of €433 million on turnover of €5.5 billion for the first six months of last year. Fnac contributed €1.7 billion to group turnover, down from €1.8 billion, with sales of technical products accounting for 55% of the total. Comparable store sales fell 1% and the Fnac business recorded an operating loss of €7.5 million, compared with an operating profit for the same period of last year of €6.7 million. In the second quarter of the year, PPR recorded turnover of €3.1 billion, of which €857 million was generated by Fnac, down 1.6% from Q2 of last year, while comparable sales in Q2 were down 1.2%.

Texas Instruments Incorporated (TI) announced a second quarter net profit of $446 million on turnover of $3.3 billion, which represents a 33% decline in net profit from a year earlier of $672 million and a 3.5% drop in turnover. In the first six months of the year, TI reported a net profit of $711 million on turnover of $6.4 billion, which compares with a net profit of $1.3 billion on turnover of $6.8 billion for the corresponding period of last year.

Toshiba Corporation swung to a first quarter net loss of ¥12.1 billion ($154.6 million) from the previous year's first quarter net profit of ¥470 million ($6 million), while turnover declined to ¥1.27 trillion ($21.7 billion) from ¥1.32 trillion ($16.8 billion). Toshiba's Digital Products business contributed ¥340 billion

Company News

($4.3 billion) to total turnover in the first three months of the year and recorded an operating loss of ¥3.6 billion ($46 million). Toshiba said it experienced sluggish sales of PCs in the US and falling demand for TV products in Japan, though overall, the restructuring which has begun in its visual products business (Display Monitor Vol. 19 No 29) has largely improved operations compared to the fourth quarter of last year.

Medium Expands UK Management Team

Medium UK has expanded its management team with the addition of three new people. Darren Leavens joins Medium from Insight UK as projector business manager. Scott Harper has been appointed to the newly created role of business development manager for the East of England, covering the South East up to the East Midlands. Harper joins Medium from Midwich. Ben Rooney has been promoted to the position of marketing manager, replacing Sarah Jones who has moved to Ricoh.

Viewsonic Names New Managing Director for Europe

Viewsonic has appointed Mark Lufkin as managing director for the European region. Lufkin will be responsible for the entire Viewsonic product range across Western and Eastern Europe and Russia. He joins Viewsonic from Lenovo, where he most recently served as director of the software and peripherals business unit for the EMEA region.

Market News

Sharp Widens Annual Loss by 88%, to Cut 5,000 Jobs

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balance and an ongoing price drop for products and devices. Turnover in the first three months of the year was also down, falling 28.4% year on year to ¥458.6 billion ($5.8 billion) from ¥640.3 billion ($8.2 billion). In Sharp's consumer and information products unit, sales of AV and communication equipment were down 55.9% YoY at ¥134.1 billion ($1.7 billion), while sales of LCD TVs fell drastically below the same period of last year. The electronic components segment reported sales of LCDs down 18% YoY at ¥98.8 billion ($1.2 billion).

Sharp said it will reorganise its current business units into four new groups - Digital Information Appliances; Health; Environment & Energy Solutions; and Devices. The company is also aiming to achieve savings in fixed costs by the end of March 2013 of ¥100 billion ($1.3 billion) and as a result, will cut around 5,000 jobs, approximately 10% of its workforce.

The company announced earlier this year that it was reorganising its business sites in Europe (Display Monitor Vol 19 No 18) and also restructuring its LCD business to work on mass producing LCD panels at the Kameyama No. 2 plant using IGZO technology (Display Monitor Vol 19 No 17).

As a result of these initiatives, the company recorded charges in Q1 amounting to ¥14.3 billion ($182.8 million).

DisplayPort Logo Made More Accessible

The Video Electronics Standards Association (VESA) has released new compliance test specifications (CTS) for DisplayPort cable adaptors. The new CTS documents allow VESA members to have their adaptors tested for compliance at VESA's authorised test centres worldwide, or by completing a new self-testing and reporting option. The documents cover dual-mode DisplayPort-to-HDMI and DisplayPort-to-DVI cable adaptors.

Several companies, including Apple and Lenovo, have already completed the adaptor certification process and are shipping products now. The certification allows companies to include the DisplayPort logo on their adaptors.

Video Walls Demoed as Future of TV Viewing

The National Association of Broadcasters (NAB) has demonstrated the 'Fresco' project for industry stakeholders in Washington, DC. This project was developed by the UK-based NDS Group - it is not for a specific product, but is NDS's vision of what TV viewing could be like in the future. An entire portable room was mocked up for the demonstration, intended to simulate a domestic space such as a living room.

The focus of Fresco is the large screen. NDS believes that TVs will continue to grow in size and could eventually cover entire walls in a home. Of course these are not currently feasible as a single display, and so it is envisioned that a person will in the future use what would be - in effect - a video wall as a TV 'set'. The progress in OLED displays, which have a very thin bezel and are extremely light, is seen as key to this movement. Simon Parnall, VP for technology at NDS UK, notes that this could also lead to other developments such as 'freedom' from aspect ratios. Different parts of the screen could also be used for different applications at the same time.

Parnall believes that, despite the size, a display such as this would blend into the background of the room; it could be used to display items that today are shown as physical pictures on the wall, or even use the design of the wallpaper as a background (as seen in the picture). It would also be ultra high-definition (4K) and immersive (due to its size).

The display in the demonstration room used six 55" LCD TVs with 5mm bezels because of the lack of available OLED TVs. They were fed by a single PC sending HTML5-formatted data and controlled by WiFi from a tablet or smartphone. The use of HTML5 allows various elements on the screen to be resized and configured. In addition the display could be mirrored on a mobile device, which would then interact with it on a personal level. The example given was of a news headline shown on the screen which, when clicked on the tablet, would take a user to the full story on the tablet, rather than 'hijacking' the main screen.]

Attendees agreed that the demonstration was useful in helping them to envision some of the options available for the future of TV.

The acquisition of NDS Group was completed by Cisco this week, after the company announced its intention to buy in March (Display Monitor Vol. 19 No 11). NDS's technology will accelerate the roll-out of Cisco's VIdeoscape platform, which provides on-demand video for mobile devices.
For more information see this week's Company News section. (TA)

Nvidia Backs Miracast

Nvidia has announced its full backing of Miracast, the upcoming open wireless AV streaming standard that - it is suggested - could challenge Airplay and WiDi. Nvidia says it will implement Miracast on its ARM-based Tegra products.

Miracast is a wireless display standard from The WiFi Alliance allowing mobile devices to stream AV content - including films - directly to HDTVs without cables or a wireless network. It is expected to be launched in the next few months.

Miracast is underpinned by WiFi Direct, a specification designed for peer-to-peer direct wireless connectivity between devices. It is this that allows the devices to connect without a wireless network. One device becomes the source and the other becomes the 'sink' (receiver). Content is encoded into an H.264 bit stream before being transmitted.

The standard is backed by, among others, Texas Instruments, Marvell and Qualcomm. (TA)

Effectively, Miracast is an open version of Intel's WiDi and Apples' Airplay technologies. Like other display standards based on using the same spectrum as WiFi, we expect to see some difficulties with interference and spectrum overload. Subscribers to our DisplayCast service will receive a full overview of wireless display technologies very shortly. (BR)

OLED Prices will Compete with LCDs Soon

Barry Young, MD of The OLED Association, has said that he believes OLED prices will become "very competitive" with LCDs in the next two or three years. The comments were made during a preview webcast before the OLED Summit, run by the Association in San Francisco in September. Young also indicated that small-medium OLED panel capacity would double, from about a million square metres to two million this year, and rise to more than eight million by 2016 as a result of new fabs.

The large panel market is less clear, however. The speed with which companies are able to adopt OLED technology and achieve cost efficiencies could affect large panel capacity. The Association has predicted four million square metres of capacity for large OLED panels by 2016, primarily from Samsung and LG. AUO, which it is believed will produce 32" OLED TVs from its G6 fab, will also contribute. Most fabs will be adapted from LCD to OLED rather than be new builds, Young believes; although this would take at least a year to achieve he says that it will be the most cost-effective way to produce OLED sets.

Regarding OLED pricing, Young said that Samsung and LG are producing their current TVs "almost like prototypes" as they don't expect a lot of volume. When OLED sets enter the mainstream, which is at least four years away, they could cost between 10% and 20% less than LCD sets to make. It is believed that this will be achieved by moving away from vacuum thermal deposition methods and towards printing technology.

Young went on to disparage the reports that OLEDs command a significant price premium over LCDs. He pointed out that last year an AMOLED panel was around 21% more expensive than a comparable LTPS LCD panel, but this year that has dropped to just 7%. In the next three-to-four years this could result in LTPS LCD panels having a price premium over OLEDs. He doubts that many OLED manufacturers will go below LCD pricing, but notes that "they certainly can match it". He points to Samsung's experiences with small-to-medium OLED panels, which have margins above 10%, as an example.

Samsung currently owns the small-medium OLED segment, and is competing with LG in the mid-size area. Young notes that new entrants this year will include CMI, AUO and Japan Display, all of whom are likely to have OLED panels next year. The partnership between Sony and Panasonic (Display Monitor Vol. 19 Nos 20 and 26) could also produce OLED TVs by 2013 or 2014, and 'a number' of Chinese companies currently experimenting with OLEDs may do the same.

Young ended with speculation that Apple's partnership with Hon Hai, which has links with Sharp, could result in an OLED product in the future. Currently Apple has no presence in the OLED space, having walked away from a partnership with Kodak in 2005.

This follows on from the speech that Young made at the SID Business Conference and reported on in (Display Monitor Vol. 19 No 23). In that talk he highlighted that the biggest problem for OLEDs is that 'Apple doesn't use them'. (BR)

USA Stays on Top in IPTV Revenue to 2017

Digital TV Research (DTVR) has forecast that the number of IPTV homes will grow rapidly to 165 million by the end of 2017, up from 51 million at end-2011. Almost half (77 million, or 47%) of these will come from China, up from 14 million (28%) in 2011. The USA will remain in second place although will have significantly fewer subscribers (14.4 million or 8.7%).

Top 10 Pay-IPTV Countries at End-2017

Households (000s)		Penetration (%)	
China	77,155	Singapore	43
USA	14,380	UAE	41
India	7,270	Hong Kong	38
Japan	6,840	Slovenia	35
Russia	6,536	South Korea	35
France	6,418	Taiwan	34
South Korea	6,131	Cyprus	32
Germany	7,313	Qatar	30
Taiwan	3,013	Croatia	30
Brazil	2,563	Estonia	28

Source: Digital TV Research

Of the new 114 million new subscribers, 86 million (75%) will come from the APAC region. India will supply 7.2 million of these.

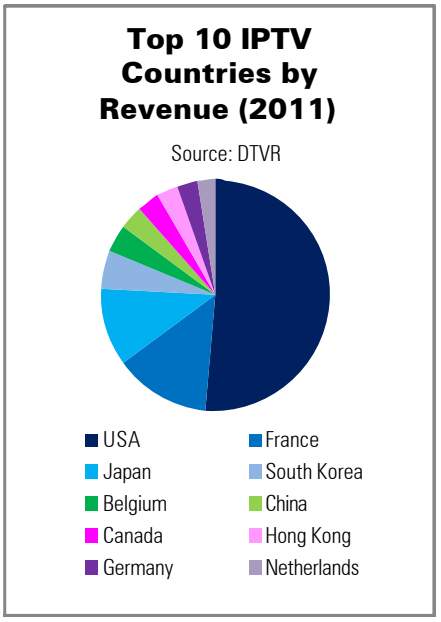
Global IPTV penetration will grow from 3.7% of TV households at end-2011 to 10.8% at end-2017. It will remain low in Latin America and MEA, but will be as high as 14% in APAC. The worldwide highest penetration rates will be in Singapore (43%), UAE (41%, the exception to MEA's rule) and Hong Kong (38%).

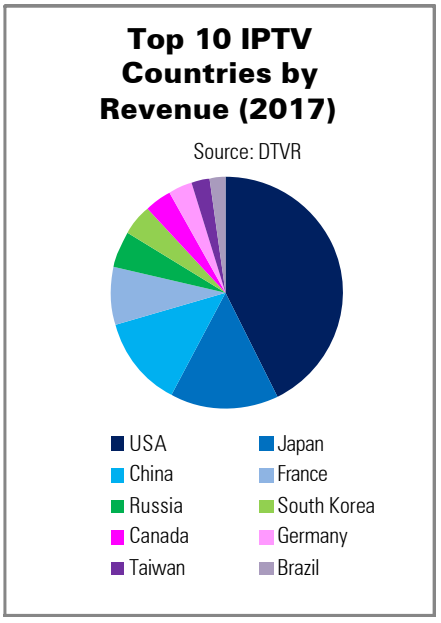
In line with the subscriber growth, revenues will also increase. They will climb to $21.3 billion in 2017 from $9.7 billion in 2011. Although China will have the highest subscribers the USA will generate the most revenue, at roughly 30% (down from 41% in 2011). It will contribute $3 billion of the $11.6 billion additional revenues generated between 2011 and 2017, beating every other country. The APAC region as a whole will generate an extra $5 billion led by China and Japan ($1.8 billion and $1.6 billion respectively). France will fall from the second-highest revenue generator in 2011 to fourth in 2017, while Russia will climb to fifth from a 2011 spot outside the top 10.

Top 10 Countries by IPTV Revenue ($ Millions)

2011		2017	
USA	4,034	USA	6,989
France	1,061	Japan	2,457
Japan	851	China	2,040
South Korea	419	France	1,314
Belgium	298	Russia	817
China	268	South Korea	737
Canada	245	Canada	611
Hong Kong	236	Germany	527
Germany	227	Taiwan	432
Netherlands	201	Brazil	379

Source: Digital TV Research





Consumer Spending Continues to Rise

$2.1 trillion will be spent worldwide on digital information and entertainment products and services (such as mobile phones and other smart devices, the services that connect them to networks, software and content) by consumers this year, according to Gartner. This figure is up $114 billion from 2011, and the firm estimates that the rate of spend will continue to increase at around $130 billion per year. It will reach $2.7 trillion by 2016.

Amanda Sabia, principal research analyst at Gartner, says that the three largest segments of the consumer technology market are and will continue to be mobile services, mobile phones and entertainment services. In addition mobile apps and eText content are small at the moment but have the potential for "tremendous" growth.

Mobile services are expected to generate about 37% of consumer technology spending this year ($0.8 trillion, rising to almost $1 trillion by 2016). Mobile phones will account for 10% of spending ($222 billion and rising to almost $300 billion), while entertainment services - such as cable, satellite and IPTV - will also equal 10% ($210 billion, rising to $290 billion).

Spending on apps and mobile content will rise from $18 billion to $61 billion by 2016, while eText content will rise from $5 billion to $16 billion.

The relationships between segments of the consumer technology market are becoming increasingly important. Gartner's example is of new multi-device rate plans being launched in the US; these will result in more mobile devices being connected and will increase the value of the entire ecosystem.

Sport Encourage Home Projector Growth in Q2

Pacific Media Associates (PMA) has released its latest research into the Q2 worldwide projector market, which totalled 2.3 million units in the quarter.

PMA notes that Q2 is traditionally a slow one for home projector sales; however, this year the UEFA Euro 2012 football tournament and run-up to the Olympics created strong growth for 1920 x 1080 units in Europe. China, which was seeing strong growth in the mainstream professional market, experienced a slowdown; however, education tenders led the ASEAN countries to see 20% YoY gains.

High-end projectors sold well throughout Q2. The US continued to lead the market, reaching a record-setting high for volume. Growth continued to be high in the digital cinema sector but was overtaken by projectors used in conference room and large venues - the segment was up 20% QoQ.

The 'New Era' (sub-1,000 lumens) category saw its worldwide total fall QoQ. PMA blames this on lower shipments of modules embedded in mobile devices. It expects this trend to reverse itself 'sharply' in the second half of the year, however. Standalone models (including pico projectors) grew slighty QoQ, and PMA also expects this segment to grow later in the year.

PMA also posted June results for its 'Top Selling Projectors' data (this covers the North American market only). Epson, Infocus and Optoma were the top brands by volume in the 'High-End' (4,000+ lumens), 'Mainstream' (1,000 - 3,999 lumens) and New Era categories respectively.

Four of the five top-selling models in the High-End segment were Epson projectors (PL Pro G5450WU, PL Pro G5750WU, PowerLite 1945W and PL Pro G5650W). Hitachi's CP-WX4021N was the second most-popular projector by unit volume.

In the Mainstream sector, Infocus took the second, third and fourth spots with the IN114, IN112 and IN1112. Epson's Powerlite 93+ was the most popular model and NEC's NP-V260X was the fifth most-popular.

Finally Optoma's PK-320, PK-201 and ML500 took the second, third and fifth spots in the New Era category. Acer's K11 was the top-selling model while the M2 Micro from Aaxa took the fifth spot.

Apple Continues to Dominate Tablets

IDC has announced that record sales levels of Apple's iPad boosted the overall media tablet market in Q2. Total shipments grew from 18.7 million units in Q1 to 25 million units, up 33.6% QoQ and 66.2% YoY.

The launch of the new iPad with a retina display and LTE broke sales records on its opening weekend, selling the equivalent of 700 every minute for the first 72 hours it was available (Display Monitor Vol. 19 No 12). Q2 represented Apple's best-ever quarter for tablet shipments, as the iPad continues to be favoured by consumers and is also seeing interest from vertical markets such as education. Tom Mainelli, research director for IDC's mobile connected devices unit, notes that while iPad shipments are slowing slightly in mature markets the gains in emerging markets are "more than making up the difference".

17 million iPads were shipped in Q2, up from 11.8 million in Q1 and clearly beating Apple's previous record of 15.4 million in Q4'11. However, it was not the only company to increase shipments; four of the top five vendors managed to do this. Samsung took second place with very high growth levels, increasing shipments from 1.1 million units in Q2'11 to 2.4 million. Amazon reached 1.2 million unit shipments (IDC's figures include ereaders) and Asus shipped 855,400 tablets, up from 397,000 in Q2'11. Only Acer, which placed fifth, saw a decline in YoY shipments; they fell from just over 629,000 in Q2'11 to 385,400.

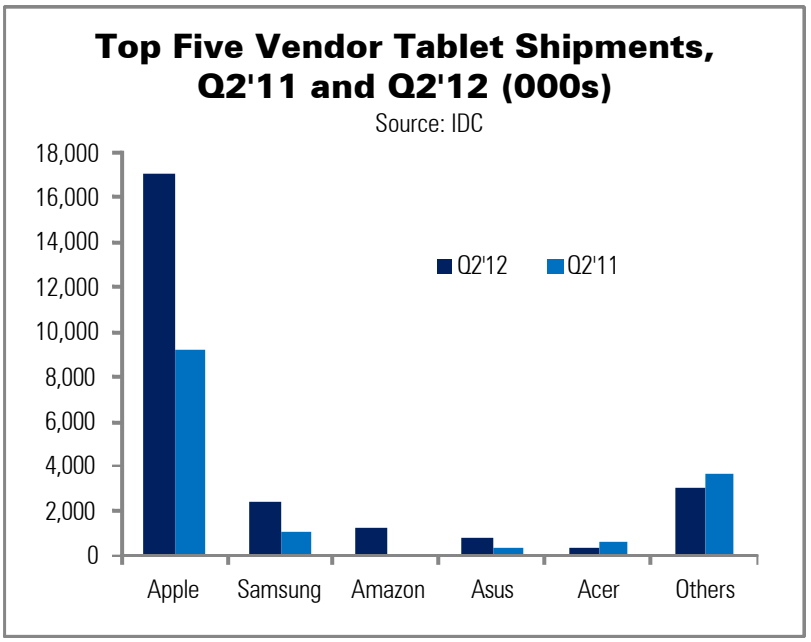
Tablet competition is expected to rise as we enter the second half of the year. New products will be launched by Amazon and possibly Apple, as well as a wide range of new Windows 8 and Windows RT tablets launching in October. Bob O'Donnell, program VP for the clients and displays unit, notes that this could result in a very fragmented market in the Christmas season. Consumers who are confused by the different versions of Android and Windows may choose to default to Apple, or remain out of the market until it becomes clearer.

IDC notes that shipments of the co-branded Google/Asus Nexus 7 tablet are not represented in the shipment figures as it did not launch in the channel until Q3.

Top Five Vendors, Preliminary Worldwide Media Tablet Shipments in Q2'12

Vendor	Q2'12 Shipments (000s)	Q2'12 Market Share (%)	Q2'11 Shipments (000s)	Q2'11 Market Share (%)	Q2'11-Q2'12 Growth (%)
Apple	17,042	68.2	9,248	61.5	84.3
Samsung	2,391	9.6	1,099	7.3	117.6
Amazon	1,252	5.0	0	N/A	N/A
Asus	855	3.4	397	2.6	115.5
Acer	385	1.5	629	4.2	-38.7
Others	3,067	12.3	3,668	24.4	-16.4
All Vendors	24,994	100.0	15,042	100.0	66.2

Source: IDC



Modest Growth Precedes 2013 STB Decline

According to a new report from Infonetics Research, the worldwide set-top box (STB) market will reach $14.7 billion this year. This represents modest growth, although revenues are expected to begin declining next year due to falling ASPs. This will be partly offset by a shift from cable STBs to hybrid IP/cable STBs and from satellite STBs to hybrid IP/DVB-S STBs (the fastest-growing segment of the market). Motorola was the worldwide market share leader and North America the 'most lucrative' market, with STB ASPs over $150.

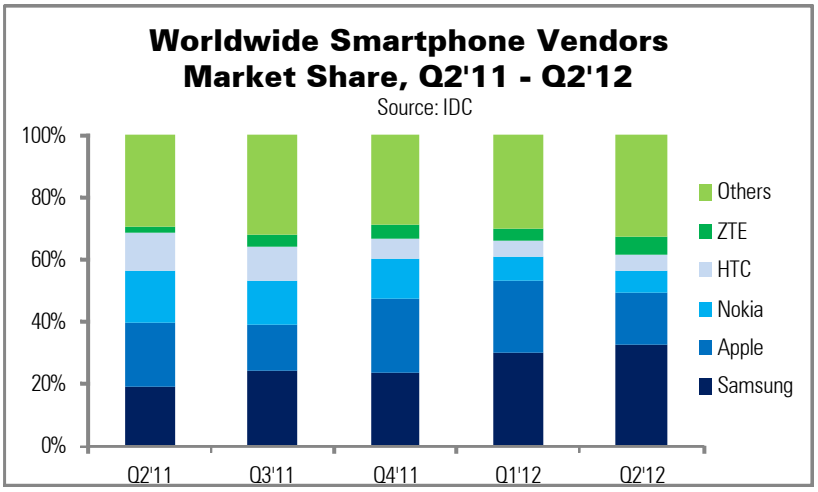
Mobile Phones Show Modest Growth

The worldwide mobile phone market grew 1% YoY in Q2'12 to 406 million units, up from 401.8 million units in Q2'11 according to IDC.

Top Five Smartphone Vendors Shipments (Millions) and Market Share in Q2'12

Vendor	Q2'12 Unit Shipments	Q2'12 Market Share (%)	Q2'11 Unit Shipments	Q2'11 Market Share (%)	YoY Change (%)
Samsung	50.2	32.6	18.4	17.0	172.8
Apple	26.0	16.9	20.4	18.8	27.5
Nokia	10.2	6.6	16.7	15.4	-38.9
HTC	8.8	5.7	11.6	10.7	-24.1
ZTE	8.0	5.2	2.0	1.8	300.0
Others	50.7	32.9	39.2	36.2	29.3
Total	153.9	100.0	108.3	100.0	42.1

Source: IDC



Top Five Total Mobile Phone Vendors Shipments (Millions) and Market Share in Q2'12

Vendor	Q2'12 Unit Shipments	Q2'12 Market Share (%)	Q2'11 Unit Shipments	Q2'11 Market Share (%)	YoY Change (%)
Samsung	97.8	24.1	75.4	18.8	29.7
Nokia	83.7	20.6	88.5	22.0	-5.4
Apple	26.0	6.4	20.4	5.1	27.5
ZTE	17.7	4.4	16.3	4.1	8.6
LG	13.1	3.2	24.8	6.2	-47.2
Others	167.7	41.3	176.4	43.9	-4.9
Total	406.0	100.0	401.8	100.0	1.0

Source: IDC

Apple and Samsung covered almost 50% of global smartphone shipments in the quarter and have more than doubled their combined market share over the past two years, widening the gap between the market leaders and their competition. Kevin Restivo of IDC notes that although the companies use different strategies (Samsung 'shotguns' the market with a wide variety of models while Apple focuses on a limited number of high-profile phones) both have been successful: he calls them the "global smartphone heavyweights". Restivo believes that the companies will inevitably come into increasing levels of conflict in the future.

Looking ahead, market share will be harder to increase in the worldwide smartphone market if it continues to grow at similar rates. Growth slowed to 42.1% YoY in Q2'12, the lowest level since Q4'09 and one percentage point lower than IDC's forecast. Vendors shipped 153.9 million smartphones in the quarter compared to 108.3 million in Q2'11.

Vendors have begun to look ahead to 2013 and the state of the world's markets. The effectiveness of recovery efforts in the Eurozone are still to be seen, while emerging markets will continue to be strong players due to their growth momentum and size. However their potential to offset declines in other countries is unclear.

Despite this, IDC believes that the worldwide mobile phone market will continue to grow due to the central role the devices have in peoples' lives today.

It was a good quarter for Samsung, finally managing to climb past Apple to become the world leader in smartphone shipments. It took advantage of the launch of its Galaxy S3 phone and the popularity of the Galaxy Note 'phablet', as well as the unannounced iPhone 5 to do so. Samsung shipped more than 50 million units and set a new quarterly smartphone shipment record.

Apple posted a sequential decline, as expected and in line with previous years (it has now been six months since the launch of the iPhone 4S). The once-a-year release cycle of the iPhone means that there are generally two quarters of low volumes leading to the release of the next model. Despite these declines Apple managed to penetrate

Mobile Phones Show Modest Growth

(Continued from previous page)

new markets and segments including smaller regional carriers and prepaid service providers.

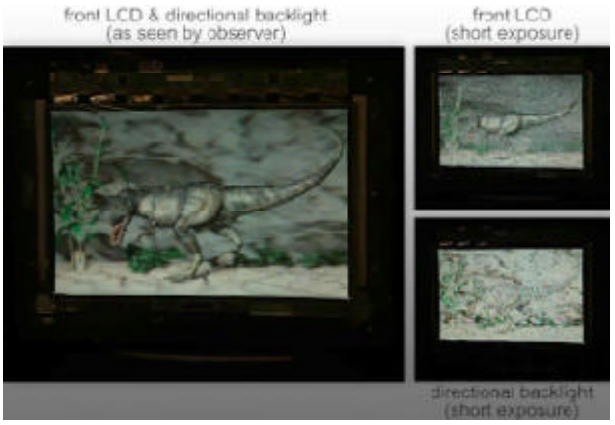
Nokia's smartphone business continued to move towards Windows Phone, causing Symbian and Meego unit shipments to fall to levels not seen since 2005. Shipments of Windows Phone devices (Lumia) more than doubled QoQ, however. IDC says that Nokia's sales of Lumia phones were not significantly affected by Microsoft's announcement that current Windows Phone users will not be able to upgrade to the newest version when it launches. Sales remained steady, although Nokia has a 'long path to travel' before it approaches its previous volume levels.

HTC rebounded from its previous two quarters to reclaim the number four spot. It performed well in APAC and streamlined its portfolio, meaning that its future success will depend on the HTC One phones. ZTE reached the top five smartphone vendors for the first time due to shipments of entry-level phones in China. However, its international sales, particularly in the US and Latin America, have also grown. IDC believes that despite its gains, the fact that ZTE is selling its phones under other brand names could cause a problem for the company in the future due to a lack of brand recognition.

Siggraph to Have Improved Tensor Display

Researchers from MIT Media Lab's Camera Culture Group, whom we last saw at SID (Display Monitor Vol. 19 No 24), will be showing an improved version of their tensor display technology at Siggraph 2012.

The tensor display is an autostereoscopic display based on light-field principles. It uses several (three in the existing prototype) layers of LCDs with high frame rates and a low-resolution directional backlight. The layers do not show different images with different depths; rather, patterns in the foreground (i.e close to the plane of the panel) are reproduced in more detail, while patterns in the background are distorted in both colour and brightness.



A user will perceive the 'time average' of the displayed sequence; the images, viewed together, provide the same colour and brightness that would be seen if a viewer were looking at the image from a specific direction.

The decomposition of the 3D image into the patterns to be shown on the LCD panels is a complex computational task. Currently MIT uses an Nvidia GPU running OpenGL software to accomplish it, although each frame of the 3D image still takes about one minute to be generated. The computed images are then stored - uncompressed - on HDDs and played back on the display in real time. Panel speed is more important to the technology than resolution, according to Ramesh Raskar, who worked on it at MIT.

The images cannot be digitally compressed because the redundancies in the image have already been used to compress it in optical space; further compression would just destroy the effect of the image. This has led to the display's other name, the 'compressive display'.

The key property of the display is the way the light emitted from pixels varies with the angle a viewer sees it at. This allows an image to be reconstructed in space, as described above. The layered LCDs control the angle of the light in the tensor display.

The tensor display is designed to allow a user to see a 3D image over a wide range of viewpoints without needing special glasses.

We feel that the tensor display has the potential to be a very significant technology in the ASD 3D field although it may take several years to come to a commercial level.(TA)

The Tensor display builds on the work done by Japanese and US researchers at HP, that use huge numbers of pixels to create AS3D images. This means banks of projectors to create small images. The 'optical compression' of the Tensor display dramatically reduces the number of pixels needed to create the effect. Getting multilayer LCDs down to the right price is also likely to be a challenge, but is more acheivable. However, the technology relies on high frame speed and transparent displays, so could be a natural fit with OLED technologies. (BR)

Market News

Olympics See First Trial of MPEG-DASH

The first full-scale trial of the MPEG-DASH adpative streaming standard has been launched by the European Broadcasting Union (EBU) and Belgian broadcaster VRT.

A live video stream of the London 2012 Olympic Games was encoded using the standard's ISO base media file format live profile and delivered through Belgacom's network to a variety of devices. These included tablets, smartphones and PCs running various operating systems and the stream is the first large-scale multivendor deployment of the standard.

The trial is based on an early version of the DASH-264 interoperability guidelines. This provides a general interoperablity framework aligned with HbbTV 1.5 and 'other consortia recommendations'.

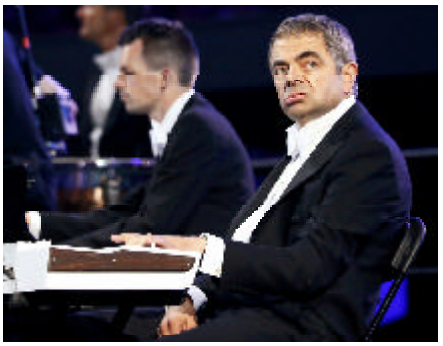
Following the announcement of the trial on 31st July John Withnell, product manager for Irdeto Mediamanager (a video platform for the distribution of TV Everywhere) has written a new blog post (http://tinyurl.com/d283b66) warning that it is not a "silver bullet" for the industry. Apple has not yet given its support for DASH, which could weaken the standard. He also notes that DASH users will still have to create multiple streams using multiple codecs; although the standard will work with both H.264 and WebM, neither is universally supported by all HTML5 browsers.

In Brief - 3D, Channel

3D News

3D Viewing Low in Opening Ceremonies

The Olympic Opening Ceremonies received a peak of 27 million UK viewers last Friday, equivalent to around 81.94% of the viewing audience. Only a very small number - comparatively - were watching the event in 3D. 113,000 3D viewers tuned in, representing just 0.34% of the UK audience. A lack of promotion surrounding the 3D broadcast has been criticised.



3D viewing peaked when Rowan Atkinson appeared as his famous Mr. Bean persona

3D Olympics Key to Acceptance

Panasonic's CTO Eisuke Tsuyuzaki has announced that the 3D broadcasts of the London Olympics mark the "end of the beginning" of the company's movement to drive mainstream acceptance of 3DTV. He also mentioned that he expected the majority (80%) of 3D TVs sold this year to be active, with the remaining 20% passive. Finally Tsuyuzaki urged consumers not to delay purchasing 3D TVs because of future technologies such as OLED, 4K and autostereoscopic 3D.

Dolgoff's 3D Converter Works with 'Any' Content

Eugene Dolgoff, inventor of the LCD projector and a 3D pioneer, has announced a new system called the Instant 2D to 3D Converter. It will turn any source (including video games and older films) into 3D via HDMI, using 'patented technology'. Dolgoff has partnered with crowdsourcing website Fundable.com to raise awareness of the product.

LG Expands 3D Offering

LG has made 3D games available to download on its Cinema 3D Smart TVs worldwide. Five games have been launched that were previously only available in 2D; they include Frisbee Forever, Air Penguin and Burn The City. More will be released in August.

Channel Chatter

Avnet Acquires Electronic Components Business of CRG Electronics

Avnet says it is to acquire the operating assets of the electronic components distribution business of CRG Electronics Ltd. (CRG), an Israeli company supplying the electronics industry in Israel. The acquired business will become part of Avnet Israel, a business region of Avnet Electronics Marketing EMEA.

Kesa Changes Name to Darty

Kesa Electricals has confirmed that, with immediate effect, it has now changed the legal name of its business to Darty, the name of its main brand in Europe.

EHT Remains Leader for John Lewis

John Lewis reported another strong week of sales in the seven days to 21st July, with sales across the group rising 11.2% year on year to £63.8 million ($99.5 million). Electricals and home technology (EHT) dominated, with sales well ahead of the other buying directorates, up 32.5% from the same period of last year. Sales of 'communication technology' products registered an 83.4% increase YoY,

buoyed by demand of iPads, while good availability of TVs and vision products helped drive 18.9% growth.

Kyocera Signs Agreement with Ginsbury

Ginsbury has signed a UK and Ireland distribution agreement with Kyocera Display Corporation. Ginsbury will promote and support a wide range of Kyocera passive STN and active TFT LCD flat panel displays and will also continue to support and manage existing Optrex LCD business brought about by the recent acquisition of Optrex Corporation by Kyocera (Display Monitor Vol. 19 Nos 3 & 14).

Media-Saturn Buys Russian Online Retailer

The Media-Saturn Group has acquired the Russian internet platform 003.ru from the company's founder, Vladislav Oulendeev, for an undisclosed sum. Media-Saturn currently operates 37 stores in Russia and launched www.mediamarkt.ru last year. The Russian retailer will continue to be managed as an independent entity and expanded further under its current, established name.

UK Non-Food Prices Down Again in July

The latest report from the British Retail Consortium's (BRC) Nielsen Shop Price Index shows that prices of non-food items fell again in July, the sixth month in a row, as retailers offered major discounts to generate sales. According to the report, electricals saw deflation slow in the household appliances category but this was outweighed by accelerating deflation in the AV equipment sectors. The BRC said it expects consumers to remain cautious about big ticket discretionary spending, which is why there is no upward pressure on non-food prices at the moment.

Digital Out-of-Home

Commuters Get to See 'the Future'

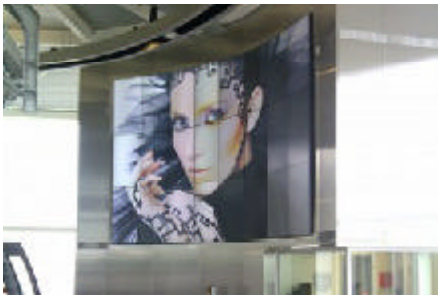
Rail travellers in London will be able to see headlines from the next day's edition of newspaper, The Times, before it goes to print. The paper has launched a DOOH campaign that uses Grand Visual's 'Openloop' platform and screens owned by JCDecaux and CBS Outdoor. The headlines will show from 11pm each evening.

FCB Becomes First in Kenya with DOOH

Smartscreen Limited has announced a new agreement with the First Community Bank of Kenya to implement digital screens in branches across the country. The screens will be distributed by local partner Smart Media. The agreement will make the FCB the first bank in Kenya to use digital screens. *Smartscreen, which is based in the UAE, became a distributor for UK-based Amscreen last year. (TA)*

Samsung Videowalls at London Cable Car

Six videowalls have been installed by Samsung at the new Emirates Air Line, London's first cable car. They are part of Samsung's UD Series of LFD screens and consist of two sets of UD55 displays in a 3x3 format at the entrance, two sets of UD46 displays in a 3x2 portrait format at the gate lines and two more sets of UD55 displays in an 8x3 portrait format at platform level. The platform screens are on curved walls.



Kinetic Launches New DOOH Handbook

Kinetic and Grand Visual have updated their DOOH Handbook (Display Monitor Vol. 18 No 50) to the fourth edition. This provides an overview of all DOOH formats and information needed for companies to provide appropriate copy - such as technical guidelines and interactivity potential. It can be viewed online at http://tinyurl.com/bnwx834.

Olympics Boost UK's DOOH

The Olympic Games have had an extremely positive effect on advertising in the UK. CBS Outdoor has reported 132% growth in DOOH adverts and 50% increased YoY revenue on all London-based sites. It has also sold out its London bus adverts for the duration of the Games. In addition new screens have been installed around the capital, including a new site by Ram Vision at the Stratford Centre.

Ströer Promotes OC Mall Network

German outdoor communication company Ströer is to start promoting its new network for shopping centres, OC Mall, this August. This includes screens previously owned by ECE Flatmedia, which Ströer acquired last year, and new totems. At present OC Mall has 1,067 horizontal screens and 139 digital totems in 59 ECE shopping centres.

Green Gossip

New White Paper Covers Recycling and Copyright

Digital River has released a new white paper that is available for free download. It is

called 'Regulatory Fee Management: Navigating the Complex World of Global Compliance'. The paper is intended to give CE manufacturers insights into recycling and copyright regulations for electronics and electronic devices. It can be downloaded from http://tinyurl.com/cxkz4z9.

Electronics Goes Green Takes Place in Berlin 9-12 September, 2012

Electronics Goes Green 2012+ takes place in Berlin from 9th to 12th September, 2012 and is jointly organised by Fraunhofer IZM and Technical University Berlin. The event provides a forum for discussion on electronics and the environment and will feature a programme of events covering new approaches in green IT, life-cycle engineering, new technologies and all the latest issues in legislation and regulation, corporate social responsibility and managing critical resources and sustainability. TCO Development will present a session about including CSR in the TCO Certified label. For further details or to register for the event visit http://www.egg2012.de/

Supply Chain Latest

Problems Rumoured in iPhone Supply Chain

Following the news that the iPhone 5 may use in-cell touch supplied by Japan Display, Sharp and LG (Display Monitor Vol. 19 No 29), new rumours have begun circulating. These suggest that yield rates are too low to generate profits; Apple has - apparently - offered $10-$15 subsidies per panel to encourage higher production rates.

Toshiba to Start WLED Volume Production

Toshiba is due to start volume production of gallium nitride-on-silicon (GaN-on-Si) white LEDs at its 200mm wafer fab in northern Japan. In May Toshiba collaborated with USA-based Bridgelux to produce a prototype 8" LED chip with a maximum output of 614mW from a 1.1mm-square chip; it will build on this to begin mass production. Production is expected to begin in October.

Tablet Talk

Affordable Kogan Slates Challenge Nexus 7

Kogan has launched its first Android 4.0 tablets. They have 10" displays and an eight-hour battery life; one has 8GB of memory (£100 ($155) excluding VAT) and the other has 16GB (£110 ($170) excluding VAT).

These are extemely affordable tablets considering their size and use of the latest Android OS! (TA)

Leaked Slides Show Tablet S Successor

Leaked slides have shown a new slate known as the Xperia Sony Tablet. It will be the successor to the Tablet S and will be thinner (less than 9mm thick). The slides, which were published by German website Mobiflip, also show an optional keyboard similar to that on the Microsoft Surface. Prices will vary between $450 and $650, depending on storage.

Initial Surface Prices Eclipse Rivals

Webhallen.com, an online Swedish retailer, has listed prices for Microsoft's Surface tablet. It has the 32GB RT version for £600 ($940) and the 128GB Pro model for £1,390 ($2,180). Although these prices dwarf those of rival slates, they have not been confirmed by Microsoft as offical.

The Next Web has previously said that 'sources' told it that RT models would start at the lower price of $600 and Pro models at $1,000 (Display Monitor Vol. 19 No 29). (TA)

OLPC Works with Neonode on XO Touch

The One Laptop Per Child (OLPC) project has continued to develop its sub-$100 XO-3 laptop/tablet hybrid computer (Display Monitor Vol. 19 No 3). The new 7.5" model is called the XO Touch, with touch technology provided by Swedish company Neonode. It will have a sunlight-readable TFT LCD display that will rotate 180° and fold flat over the keyboard.

PC World Slashes Playbook Price

The price of Blackberry's 32GB Playbook tablet has been reduced at UK retailer PC World. It has been slashed from £470 ($740) to £150 ($235) (£125 ($200) excluding VAT). This is part of the retailer's effort to move its remaining stock.

Retina-Challenging Samsung Tablet Leaked

Documents from the Apple vs Samsung court case have shown an upcoming tablet from the Korean manufacturer. Codenamed 'P10', the slate will have an 11.8" display with a resolution high enough to rival the new iPad at 2560 x 1600. It may also include LTE connectivity.

Another mobile device with more resolution than the main monitor on practically every desktop monitor in the world! Pah! (BR)

Rubber Shell Protects Casio Tablets

Casio has announced four rugged new tablets. The V-T500-GE, V-N500-GE (3G and WiFi), V-T500-E and V-N500-E (WiFi-only) have a rubber shell allowing them to be dropped from one metre without damage; they also have an IP54 rating. All four run Android 4.0 and have a 10.1" display with an LED backlight. The N models have a document scanner.

In Brief - Technology

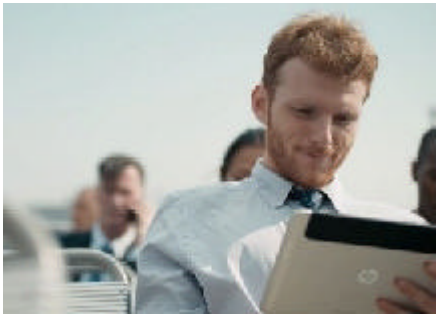
Rumour: Huawei to Launch 1920 x 1200 Slate

Rumours from Asia suggest that Huawei is to introduce a new Mediapad model with a 10.1" IPS display. The Mediapad 10 FHD will have 1920 x 1200 resolution, Android 4.0 and will initially launch in Russia and China, and in Taiwan at the end of Q4.

YouTube Advert Shows New HP Tablet

HP has released a new advert on YouTube entitled 'Make it Matter' (http://tinyurl.com/bugky2y). Although it is thoroughly ambiguous (HP never states what 'It' is), one interesting item did appear: a new tablet. The device is spotted in the video twice, both times from the back, and appears noticeably different from the HP Touchpad.

HP announced it would release a Windows tablet earlier this year (Display Monitor Vol. 19 No 11). (TA)



The Touchpad is black with rounded edges, unlike the new slate

Tablet Roundup

Microsoft has announced that it will launch its Surface tablet (Display Monitor Vol. 19 No 25) on the same day that it releases Windows 8: the 26th October this year. This refers to the RT models only; the Surface tablets using the full version of Windows 8 are unlikely to release until 2013.

Nintendo's 3DS XL (Display Monitor Vol. 19 No 26) is now on sale in Europe. It will cost the equivalent of £150 ($235) excluding VAT. The handheld has a top display of 4.9" and a bottom display of 4.2". Battery life has also been improved.

Android 4.0 (Ice Cream Sandwich) has been rolled out to **Samsung's** Galaxy Tab 10.1 via a firmware update. It is available in the UK now over-the-air; similar updates are expected soon for other Galaxy Tab devices. It is not clear when the update will be available to the rest of Europe.

Technology Update

'Blue-Coating' Offers New OLED Technique

A startup company in China, Stimulated Blue Technology, is working with a new technology it aims to use to produce small OLED panels. It is called 'blue-coating' and was developed by Xinyang Normal University. It appears to use red and green OLEDs with a blue filter. The company is in the process of setting up a G4.5 plant that will be able to produce 360,000 substrates annually.

At SID we heard that Samsung may be using a layer of blue OLED material with colour conversion to Red and Green to create a full gamut. This helps to balance the colours and reduces the cost and waste from patterning. The Stimulated Blue Technology concept could be a similar approach. (BR)

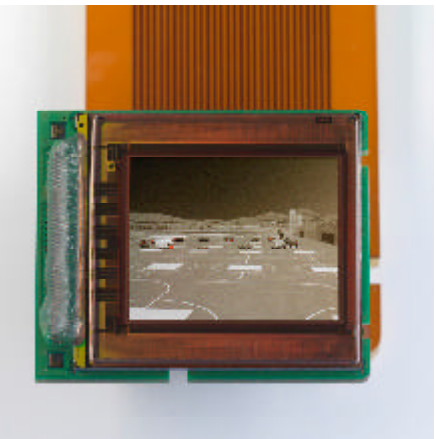
The opening ceremony of the Stimulated Blue Technology OLED project

Apple Patents 3D iPad Gesturing

Apple has filed yet another patent for touch technology after its '5D' filing last week (Display Monitor Vol. 19 No 30). The new document, 'Working with 3D Objects', would allow a tablet to create and modify 3D objects by hand movements (similar to Microsoft's Holodesk in Display Monitor Vol. 19 No 42 - TA). It focuses on the idea of 'pulling' a 2D image off of an iPad screen and rendering it as a 3D object shown on the screen with software. Sensors (included in the patent) would be used to recognise gestures and modify the object.

MicroOLED Develops High-Res Microdisplay

MicroOLED has announced a new high resolution OLED microdisplay. The 0.61" unit offers 5.4 million pixels, or 2560 x 2048 (5:4) resolution and is available in full colour (16 million colours) or monochrome. MicroOLED claims that it is the highest resolution microdisplay in the world today. Depending on usage it is able to perform on just 0.2W of power.



The 5.4 million-pixel density microdisplay comes in full color (16 million colors), SXGA or monochrome formats (2,560 by 2,048 pixels)

In Brief - Technology, TV

Samsung Produces 350 PPI OLED

Samsung is said to have 'perfected' 350 pixel-per-inch (PPI) technology using its 'Fine Metal Mask' (FMM) high-density concept. This is a way of forming OLEDs used as an alternative to thermal deposition. A 'mask' marked with small grooves is placed on a substrate and then sprayed with an organic substance to form the OLED structure. Currently it has only been used in lab tests, and it is unclear when or if it will be used on commercial products.

FMM has limits in the size of mask that can be used. Samsung has previously talked of using 'LITI' (laser-induced thermal imaging) to deposit materials, but this would have been at the kind of pixel densities needed for TVs. (BR)

Voxels Used in 'True' 3D Display

Jason Geng, VP of the Institute of Electrical and Electronics Engineers (IEEE) Intelligent Transportation Systems (ITS) society, has shown a prototype of a monochrome 3D volumetric display based on DLP projection technology. It is called the DLP/Helix Volumetrix system. The display uses voxels, or volumetric pixels; each of these emits light from a physical space so the brain does not see an 'illusion'. This supposedly eliminates the motion sickness some people feel when watching 3D. The system projects light which is reflected by a polarising beamsplitter towards a spatial light modulator. Image patterns in this are generated by a host PC. A helix screen is rotated in sync with the projection; when the screen intercepts a pixel it shows up as a voxel. This process creates a 'true' 3D image without needing glasses. Current resolution is around 150 million voxels, and a full colour version is under development.

TV News

8K TV May Launch by 2016

At a recent event in London NHK's executive director-general for engineering, Keiichi Kubota, said that the company is already considering moving its target launch date for Super Hi-Vision (8K) technology forwards. Previously NHK had targeted a 2020 launch, but Kubota said that it could now be as little as four years away.

NHK completed a succesful SHV broadcast just a few weeks ago (Display Monitor Vol. 19 No 21). It is now said to be considering the HEVC codec for further broadcasts. (TA)

Amino Involved in IPTV Deployment

UK-based Amino Technologies has won a 'substantial' contract to provide MPEG-2 and MPEG-4 IPTV/OTT set-top boxes to a large IPTV deployment in south-eastern Europe. The deployment is being run by an unnamed operator - it has been suggested that this may be Deutsche Telekom.

Lords Support Internet TV Delivery

In its recent 'Broadband for All' report, the UK's House of Lords has recommended that TV services switch from radio spectrum to internet delivery. The House suggests that the government, Ofcom and the TV industry consider the benefits of the switch. The report states that with the spread of IPTV services 'eventually the case for transferring the carriage of broadcast content...from spectrum to the internet altogether will become overwhelming'. It also criticised the government for focusing on broadband speeds, rather than ensuring that everyone in the country has access at all.

HD Plus Aims for 1 Million Subs

SES has announced that subscribers to its HD+ service offered by German affiliate HD Plus have grown by more than 120,000 in Q2. At the end of June there were almost 635,000 paying subscribers, up more than 300% YoY from under 200,000. CEO Wilfried Urner believes that it will reach more than 1 million paying households by the end of the year.

Sky Updates iPad App

Sky has announced that it is to update its iPad app, turning the tablet into a touchscreen remote control. It will work with Sky+ STBs. The feature will be added later this summer.

This will presumably use an internet connection as the iPad does not have an IR blaster. (TA)

Talktalk Offers Free YouView Box

UK ISP Talktalk has announced that its Plus customers will receive a free YouView STB and access to Sky channels. In related news Talktalk has agreed a deal with UKTV that will add its networks and VoD content to the ISP's YouView service.

Telenet Cuts Analogue to Encourage Digital

Belgian telco Telenet has seen a 24% YoY rise in digital subscriber numbers in Q2'12. It has recently pressured its subscribers to move to digital by reducing the amount of analogue bandwidth available. Its total subscriber numbers were up 2% to 4.4 million.

S3D Today in Seefeld

This year we attended the S3D Today conference in Seefeld, near Munich. The event takes place at the 3D Competence Centre that is permanently based there and is intended to help the development of 3D. The conference has been running for a number of years and it's very pleasant to stroll down to the site from the S-Bahn through the Bavarian countryside - especially this year as the weather was very good.

Sadly, the building has limited power feeds and there were a good number of workstations and projectors loading the system, so there was a bit of a delay getting started.

Epson Boosts Frame Rate for Active S3D

Epson was present in strength as a Gold sponsor. Difficult economic times meant a limit to refreshments, but delegate places were free which is a good deal these days!

After the introductions, the first speaker was from Epson, from the home cinema group. Unfortunately, this reporter's German was not really up to the task as the speaker switched to this language, so our comments are broad!

He handed over to a colleague from the home cinema market who introduced the large projectors from Epson - the event models - that use passive technology. He went through the benefits of the Epson 3LCD technology, highlighting the lack of rainbow artefacts. Epson's home cinema projectors use the firm's C2Fine panels to give high levels of contrast.

Resolutions in the company's range go from 1024 x 768 up to 1920 x 1200 and brightness goes up to 7,500 ANSI lumens. The bright projectors use dual lamp systems and colour gamuts supported include sRGB and DCI. The projectors are used in passive mode with the Infitec system used externally for 3D and using integrated filters for DCI colour.

Epson has six colour (RGBCMY) adjustment in its colour management system for balancing and adjusting single and multiple projectors.

Epson's cinema projectors use processors use DCDi technology, marketed under the Faroudja brand, to give good performance when processing video. There is a 'super resolution' mode that helps to recover detail data in the signal by pixel-level processing.

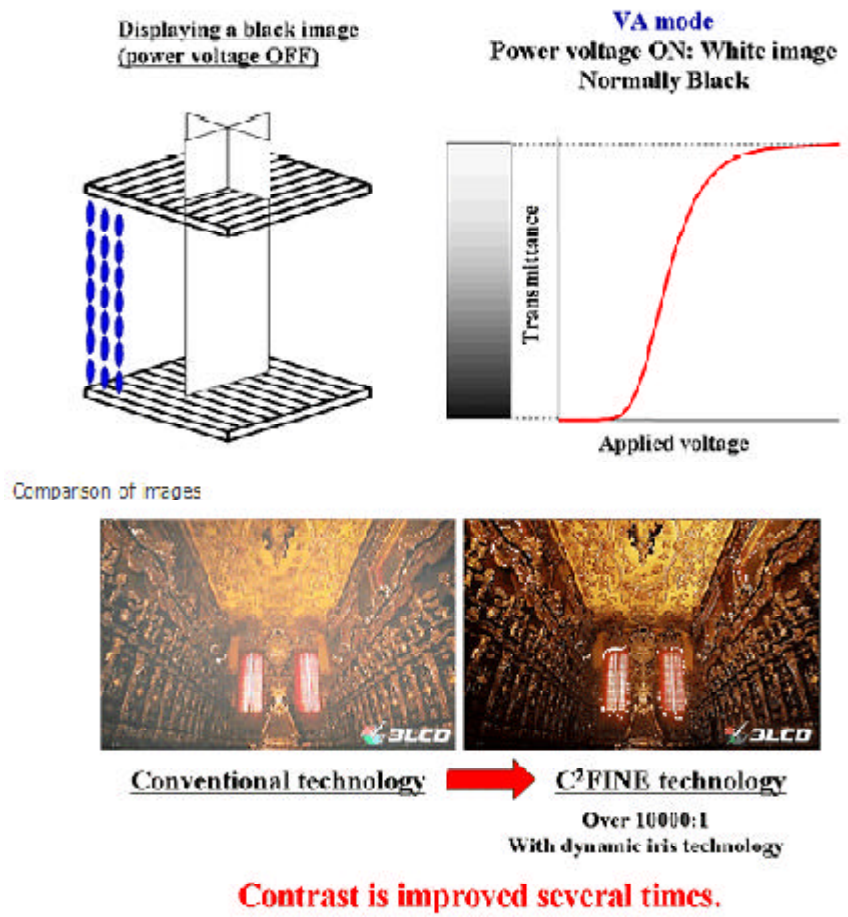
To improve motion performance, 120Hz processing has been included with some motion compensation and interpolation.

The latest Home Cinema projectors use the D9 version of the C2Fine technology and get the aperture ratio up to 65%.

There was then an explanation of the issues of active shutter operation. One of the disadvantages highlighted is the need to blank the display (and/or the glasses) while the panel is being updated to avoid cross-talk and tearing of the image.

By using a refresh rate of 480Hz, the blanking period can be minimised, allowing brightness to be maximised.

Epson is supporting the M-3Di standard for signalling for its active glasses. As well as an internal transmitter, external transmitters can be supported.



Epson's C2Fine technology boosts contrast

Infitec Updates its Technology

The next speaker was Herr Fritz from Infitec, a German company that has been working for some time on S3D using very narrow band filters. The extent of the experience of the company is that delegates said unanimously that they knew about the company!

The latest technology uses the concept of metamerism (that the eye can be 'fooled' in interpreting colours by combinations of other colours. e.g. 460nm light can be emulated by a mixture of 440nm and 480nm.)

We covered the details of this new tech-

nology in last year's report from the conference. To avoid repetition, please contact us (bobr@meko.co.uk) if you would like a copy of this older report.

The Infitec technology can be used with DLP or LCD. Dolby and Barco both license the DLP version of the technology. Unlike polariser-based technologies, the Infitec system does not need a silver screen. The company also works with Projection Design.

Infitec has made a lot of special projects including Universal Studios which is converting its theme parks from polarised solutions to Infitec.

The company has made a splitter for dual projector applications which inputs HDMI1.4 and outputs HDMI, DisplayPort, DVI and VGA. It can also be controlled by RS232. In answer to a question, Fritz said that the company would consider selling the splitter separately from its filters. In answer to a question, he said that the cost goes from around €3,000 to €12,000 depending on the resolution and brightness of the projector.

Marchon Optimistic about Gaming

The next speaker was Guenther Hermann from Marchon, a maker of polarised glasses. Marchon is a major supplier of fashion sunglasses and has been developing S3D glasses for around 8 years. The fashion glasses group makes and markets designer glasses from Fendi, lacoste, Calvin Klein etc.

For big screens and for precision, glasses are essential for consumer applications and also for professional applications. Marchon is currently working with an opera house to use 3D projection as the back drop for operas, which means the use of glasses. Marchon is also working with TV and computer gaming.

One of the aims of Marchon was to move away from the 'flat glasses' of traditional S3D and to move to more comfortable and attractive glasses. Curved lenses are better for the design and style of the glasses, but curved glasses also mean less distortion when the viewer moves his eyes. If the lens is flat, the distance between the glasses and the eye changes as the eye looks around.

The new step for Marchon is to move to M3D photochromic lenses. This was an obvious development as this feature is popular for all glasses, but now they are in the market under the Marchon brand and also under fashion brands such as Lagerfeld.

At IFA, Marchon will show new glasses aimed at Call of Duty, Black Ops][which will be optimised for S3D.

There is a market for special glasses for gamers that have a special colour tint to try to improve the performance for the gamers.

Marchon is trying to make S3D glasses fashionable

Content Session

CRS Creates Autostereoscopic Content

The next session was more focused on content and the first talk was given by Ingo Doser. His company was CRS iiMotion (images in Motion) GmbH which is a spin out from Thomson/Technicolor. The firm develops algorithms rather than hardware. The algorithms are then used in cameras or display processors. CRS iiMotion also is working on the processing needed to convert 2D to S3D and especially autostereoscopic (AS3D).

There are a number of different ways of showing AS3D including parallax barriers and lenticular arrays as well as frame sequential techniques. For single viewers, this is reasonably simple, but is more complicated for multiple viewers. AS3D for multiple viewers means some resolution loss and a restriction in the freedom of movement and the limited disparity can mean a potential for blurring and double contouring. About 0.5% disparity per view is OK, but if this gets to 2% or 3% it becomes a problem.

For AS3D, you need multiview content. For 'life capture' this is today quite impractical. Animation is easier but synthesis of the multiview from 2D or S3D opens up a lot more content. The conversion can also do some correction of some problems in the content. For example, there can be problems from distortion in the original content which need to be corrected. Manual intervention gives the best result, but automatic processing is more efficient.

As well as geometric problems, there can be colour problems in conversion. There can be difficulties with textures, but if there is accurate colour some of those problems can be overcome.

Other issues to be dealt with include artefacts from rolling shutters in cameras, which tend to distort the left and right images dif-

ferently and missing genlock signals which can mean the left and right images can be out of sync.

Once the quality issues have been dealt with, you need to perform depth estimation. This can be done with block matching and other techniques. Next, depth grading is needed and here creative decisions are needed. They can be automated but it is better if there is some interaction. Depth can be compressed or expanded, there can be depth limits and horizontal disparity can be controlled. Each of these factors influences the perception of the viewer.

Depth from the original can be adapted to suit the kind of display and viewing conditions.

Finally, when all this is done, the interpolation of the stereo pair and depth map is processed to create the multiviews needed for the final image. The centre view usually has the best effect, with reduced quality as you go away from the centre.

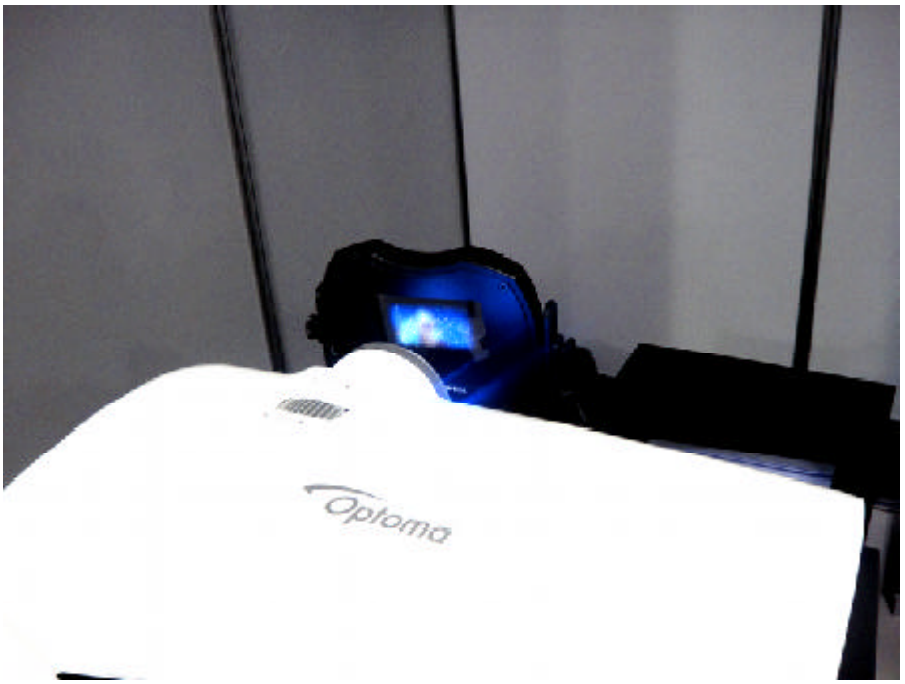
iiMotion has a software package called MVComposer that can be used to perform multiview creation and rendering covering all of the four stages. The software can be used in post production for depth grading.

Herr Reger is from RealEyes which specialises in communications using large format images. The company has developed its own technology that it calls RealEyes which is a way of making hard copy AS3D displays using 250,000 microlenses per square meter of poster. As we only cover 'moving pixels' (and as both the presentation and talk were in German!) we will not report this speaker.

Volfoni to Solve Active Glasses Brightness Problem?

Jerome Hannecke is the Managing Director of Volfoni GmbH. The company is a six year old company based in Paris. It has six offices around the world, including the US and Hong Kong. There are also six R&D staff in Nice in France. Hannecke said that his company can make 3D brighter using glasses. This was the first presentation of this information in Europe.

When the company started, it developed active shutter glasses mainly for cinema applications. The glasses have also been used in other applications.



Volfoni has an active shutter polariser that allows the use of passive glasses

The firm decided to work at the projector end and developed a switching circular polarising filter that can sit in front of a projector and can be synchronised using DLP Link. (We reported on this at CeBIT - Man. Ed.) In April, the company introduced a new cinema system that can support up to 35,000 lumens and works with cinema DLP

In S3D, the efficiency is poor - usually less than 20% and down to 14.5% for DepthQ/LC-Tec. The Volfoni team realised that it might make more sense to work with light that is already polarised and the company is working with DreamVision of France which has an LCOS-based projector. In this case, the light is already polarised and the efficiency can be up to 28%. The company is also working on systems that can use projectors from Epson and others using transmissive LCDs.

The firm is also working on a new system for non-polarised projectors that will sit in front of the projector and the firm believes that it can achieve 40% efficiency. The system maintains the optical length, minimising distortion issues.

Volfoni is working on new active shutter glasses that can switch from around 85% transmissivity, down to a deep black, using LCs. The firm believes that this will be a breakthrough in the efficiency of active glasses.

All of the firm's systems are approved by Walt Disney and can operate in HFR situations. The firm also sells universal active shutter glasses.

Hirzinger is Just Short of a Rocket

The next speaker was Professor Gerd Hirzinger who was the founder of the Robotics and Mechatronics Center of the German Space Centre (DLR) and he is a specialist in S3D and virtual reality. The group started ten years ago by developing 3D cameras for use in aerial photography. His group developed algorithms for pixel matching to produce better images and the system has become a standard in that industry.

The algorithm is used in robotics to enable depth understanding for movement. Daimler will use the algorithm in their new S Class saloons to detect people in the street and to trigger automatic braking. The group is also looking for support to get involved in the Google XPrize to put a robot on the moon, and they already have a robot. The group is

just short of a rocket!

The group has been working with companies making city models. It also has a fleet of flying robots and airships. They can be used, even with mono cameras, to model objects such as buildings. The group has done a lot of working on the internal modelling of buildings and locations. Laser scanners are used to create point clouds which are then aligned to recreate the objects inside the buildings. At the moment, there is a lot of manual work to be done - one model of a church interior took a year to correct the model.

The group is now working on a sub-millimetre model of the theatre in Bayreuth - the last theatre of its period still in existence and the only German site to be nominated as a Unesco world heritage site. If destroyed, the model would allow complete restoration. The technology is developing very rapidly and with new cameras, the professor believes that he can reach his long term target of surveying a site within a day and performing the analysis of the 'dot cloud' within a day. Very shortly, the photography part will take just a few minutes.

After the talks, there was a demonstration of Lichtmond 2 a multimedia music project combining 5.1/7.1 surround sound along with high end animations in S3D. The show has been shown in a variety of resolutions up to 7K x 2K in a 180° panoramic presentation using 128 speakers. The S3D effects were impressive, although there were some significant moments of optical discomfort for me. The aesthetic was a little bit like 1970s Yes album covers, but the sound and vision demonstration of what is possible was very impressive. (BR)

Zeiss Re-Launches Cinemizer

The afternoon session started with a continuation of the professor's work in simulations and rendering of historical buildings in Bavaria. One simulation used 11 million triangles and a gigabyte of texture data to give an incredibly realistic real time rendered view of a historic palace.

Invista Converter is Used for Medical and Entertainment

Karlheinz Gelhardt is from Invista which is a software and internet company. The company's product is called MedLive which is a 3D multiconverter that can take data from stereo capture systems and convert for preview, mixing or for network presentation. This makes it possible to monitor and preview S3D content or use it for live applications such as medical use. It can also be used for live entertainment such as concerts.

The firm also has a product called Trivido which was made in collaboration with a German broadcaster and is used in applications such as sports being recorded in S3D. The website stores S3D content and makes it available for download. The site has a player that can convert content to and from different S3D formats, even the Nvidia formats.

Zeiss Relaunches Cinemizer for Vertical Markets

The next speaker was Franz Troppenhagen of Karl Zeiss who talked about the Cinemizer OLED which was presented last year as a prototype. At the moment, the first mass production is being completed and will ship this week. Zeiss has more than 10 years of experience of making Head Mounted Displays (HMDs). There are lots of ergonomic features to ensure that 'one size fits all'. Side by side, interleaved, top bottom or frame packing are now all supported. The OLED gives an apparent 40" display at an apparent 2m viewing distance. (870 x 500 is the resolution). Zeiss said that its OLED has a high fill factor that improves the apparent resolution compared to LCDs.

The glasses have to have a soft nose area with different adaptors. There has to be a wide range of focus adjustment (-5 - +2 dioptre) and a range of interocular distance covered by a large eye box. There is an 'ear slider' that is slid to the back of the ear to optimise the fit. Most people want HDMI these days, so the iPod/iPhone adaptor is optional. There will also be an eye shield and a head tracker.

The first Cinemizer was positioned as an iPhone add-on, but now there is a wider positioning based on the immersiveness of the experience. In the past the device was sold through channels including MediaMarkt, but people did not recognise the product category. However, there are lots of new applications, such as model aircraft pilots that can use the glasses to make it seem as though they are really flying the plane.

The Cinemizer can be used to distract dentist's patients from the procedure! Zeiss will use a focused sales approach to these vertical markets. The price will be around €650.

CodeOne Specialises in 'First Mile Streaming'

Boris Kantzow is from CodeOne and is one of the founders of the company which specialises in video over IP and dealing with broadcast requirements for distribution. He said the speciality could be called 'first mile streaming'.

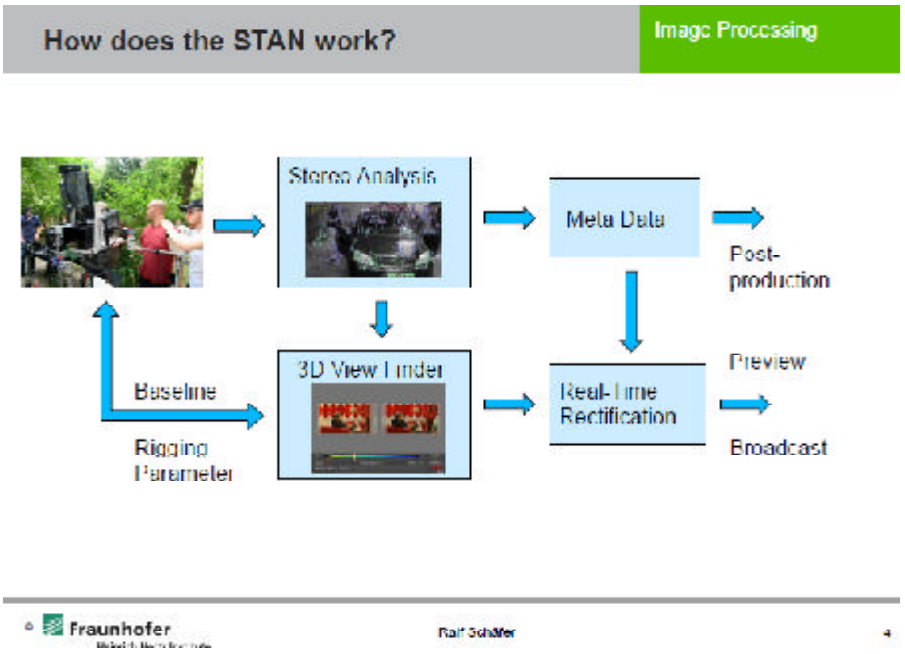
He started by connecting to a live ip transmission from Dusseldorf in side-by-side S3D. This worked well visually, but there was something of a problem with lip-sync. The presenter said that he thought that there are a lot of good opportunities for applications such as 3D concerts. There is a market for projects, but they are expensive, so it is hard to raise money for 3D productions.

The company develops the equipment that it wants to be able to use and that includes a backpack with up to 6 3G or 4G mobile phone channels. The company believes that bidirectional media will be very significant. The company uses OTS H.264 encoders with dynamic bitrates. There is forward error correction and a need to ensure security.

Stereoscopic Developed a Camera Rig

The next speaker, Florian Maier of Stereoscopic Technologies, concentrated mostly on cameras for S3D, especially the high end, and was beyond the scope of this report. The 3D rig that his company developed for use in feature films was built with two Alexa 'film' cameras (they were digital but described as film cameras). There was also an image processor that identified the corrections that need to be made to keep the lenses aligned, when zooming.

There was an interesting discussion about the issues needed for good S3D movie creation. Maier believes that is important to



The STAN Analyser can correct for mis-alignment in cameras

make sure that a stereographer is used all the way through to ensure that the 3D 'works'.

Fraunhofer Develops Analysis System

Ralf Schäfer from the Fraunhofer HHI and talked about the STAN analysis system that he has developed to help align camera systems in S3D. Everything is done electronically, but the data can be used to optimise the hardware. It's always better to fix things in hardware as any processing always causes some degradation. The system uses a software 'feature tracker' that recognises matching points in the left and right images. Real time correction can be made of the images, for example if the cameras are not well adjusted. The convergence plane and the 'comfort zone' can be calculated and adjusted.

The technology was used in a live pop concert that was broadcast in 3D to 92 cinemas in five countries.

Raikes is down on S3D

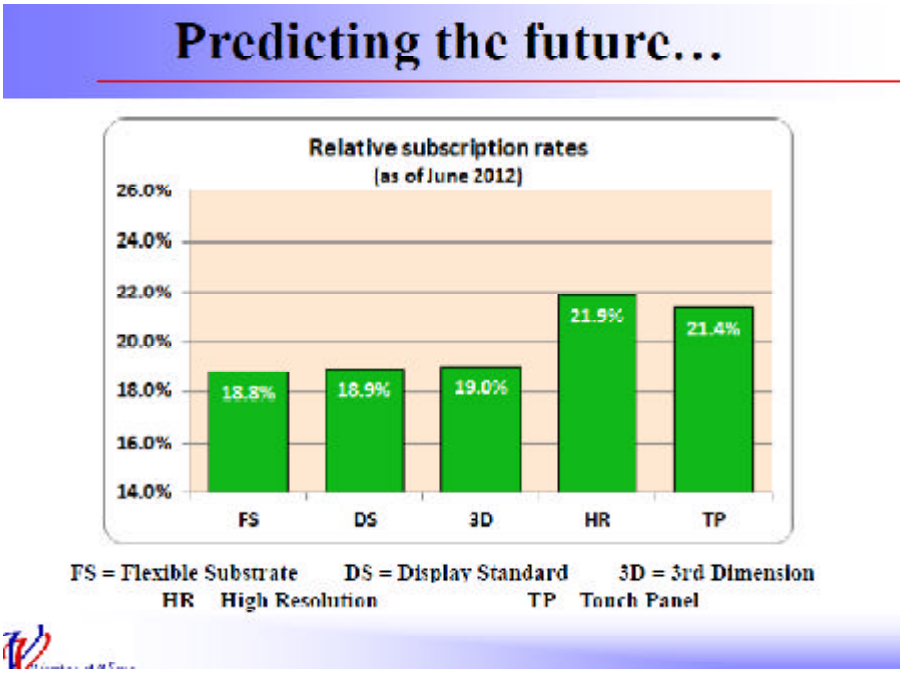
Our own Managing Editor, Bob Raikes, then gave an introduction to the LCD industry and looked at the current status of S3D. Although he believes that S3D will be pervasive eventually, there are a number of signs that the industry is in the 'Trough of despondency' of the 'hype cycle'. He warned that without a significant boost, S3D could take years to get to the 'plain of productivity' in the hype cycle. Sales of S3D monitors have been poor - around 0.1% of the market in Europe in his view, at most. TV sets are being sold with S3D, but penetration is slow and only in larger sizes which are not so popular in Europe.

Raikes sees competition for S3D from 4K content and distribution.

In questions, Schäfer argued that there is no competition between 4K & S3D and that 'there are no issues with bandwidth' to deliver 4K and S3D because of new codecs. Raikes disagreed.

S3D No Longer the Hot Topic

Mark Fihn of Veritas & Visus said that he started five newsletters a few years ago. For a while, the S3D was one of the most popular, but recently its relative popularity has waned. Fihn said that 3D is about 'more than displays' and he gave examples of the uses of S3D from his newsletter, including, even, digital printing.



Mark Fihn said that his 3D newsletter was the most popular two years ago, but no longer

Philips to Show 21:9 Monitor at IFA

TP Vision has announced two new Philips Smart TVs in the Designline Edge Series. They are LCD models using a single piece of glass on the front. TP Vision describes them as 'the largest and thinnest DesignLine Edge Smart TVs ever made' - they have 42" and 47" displays and are 35mm thick. They also have Philips's Ambilight Spectra 2 technology; this shines light from the back of the set, following the colours on-screen to reduce eye fatigue.

The TVs have DVB-T/C dual tuners, embedded WiFi, DLNA, USB recording and voice and video calls via Skype. Users can pause live TV, and the sets also have a feature allowing viewers to adjust the 3D depth shown. There is also a 2D-to-3D conversion mode and a two-player full screen gaming mode using passive 3D glasses.

Both TVs have 1920 x 1080 (16:9) resolution and a 400 cd/m² LED backlight. They have a dual-core processor and two 10W speakers, as well as four HDMI connections, three USB connections and single component and Scart inputs. They also have CI+ and RJ45 ports.

The Designline TVs will be on sale in the EU 'soon', but not in the UK. Pricing was not available at press time.

Philips has also announced it will present four new monitors at this year's IFA show in Berlin. Although little information is currently available we do know that the primary model will be a 27" display and the first to combine 3D functionality with Ambilight technology. A 23" monitor with MHL will also be presented, as well as a PC monitor with a 21:9 aspect ratio and an 'extremely sharp' high resolution display.

Finally the company has added two new monitors to its Blade 2 line (Display Monitor Vol. 19 No 12); a white 23" model and a black 24". Both share specifications with the original 23" that launched earlier this year, although are slightly thinner with a screen depth of 13mm. The 24" model also uses an AMVA panel rather than IPS; it is available in the EU now for €245 while the new 23" model will launch in late August for €210. Both prices exclude VAT.

Intel showed a 29" AIO PC with 21:9 aspect ratio that it had developed with LG Display at the Computex show in June and so we expect that the Philips monitor will also be that size. The AIO had 2560 x 1080 resolution. We were very negative about the prospects for a 21:9 TV, but it seems to me that a monitor of that format makes more sense, although I'd prefer to see more resolution. (BR)

Viewsonic Helps the Environment

Viewsonic has announced two new LCD monitors as part of its eco-friendly VA12 Series: the VA1912m and VA2212m. They are designed for customers looking for a low TCO, primarily in education and business applications. Both have automatic aspect ratio adjustment and eco-mode, reducing power consumption by up to 35% compared to standard mode.

The monitors share specifications, aside from size and resolution. The VA2212m is a 22" model with 1920 x 1080 (16:9) resolution, while the VA1912m measures 19" with 1366 x 768 (16:9) resolution.

Both models have LED backlights providing 250 cd/m² of brightness. They use anti-glare TN panels with 1,000:1 contrast ratio, 170° /160° viewing angles and a 5ms response time. DVI-D and D-Sub connections are present. The monitors will tilt between 5° and 22°.

The VA1912m and VA2212m will go on sale in Europe in mid-September. European prices have not been finalised yet; in the US they will cost $125 and $150 respectively.

Eizo Monitors Self-Calibrate When Powered Off

Eizo Japan has announced five new 'Coloredge' IPS monitors which are designed to offer realistic colour reproduction. They have a special ASIC control chip onboard to achieve this and have the option of Eizo's ColorNavigator colour calibration software. When bundled with this software the monitors are capable of self-calibration even when powered off, due to Eizo's self-calibration sensor. The monitor will power itself on according to a pre-determined schedule and the sensor swings out from the bottom bezel, calibrating the display; it can maintain the monitor's colour calibration after they have been calibrated by an external sensor.

Eizo says that it has reduced the time the CG and CX Series monitors take to stabilise brightness and chromacity after powering on from 30 minutes to seven. The digital uniformity equaliser (DUE) function built in to these models will also keep their colour temperature and brightness stable in an environment where the ambient temperature is changing. All monitors include a 3D look-up table.

The CG Series comes with a shading hood to shield the screen from the ambient light

Three Series are represented in the new models. The CG Series (CG276 and CG246) is aimed at professionals for whom colour is an issue, such as photographers and post-production applications. They come bundled with the ColorNavigator software. The CX Series (CX270 and CX240) is a new lineup targeted at mid-range professionals and 'prosumers'. Finally the CS Series (CS230) is targeted at entry-level users for whom colour is an issue. It covers less of the RGB colour space than the CX Series.

The monitors are 27" (CG276, CX270) 24" (CG246, CX240) and 23" (CS230) models. The 27" units have 2560 x 1440 (16:9) resolution and 350 cd/m² of brightness (CCFL backlight), while the others have 1920 x 1080 (16:9) resolution and 300 cd/m² of brightness (LED backlight). As they use IPS panels they all have 178° viewing angles and a 1,000:1 contrast ratio; their response time is 6.5ms (27") 8ms (24") or 10.5ms (23").

Each monitor has DisplayPort, HDMI and DVI inputs, and a dual-port USB 2.0 hub. They are also capable of dimming. They will tilt to 25° (27") or 30° , swivel 344° and rotate 90° . The 27" models are height adjustable to 152mm, the 24" models to 128mm and the 23" model to 154mm.

The monitors will all launch worldwide in August; they have not had pricing assigned yet.

The self-calibration aspect of these monitors will be very valuable to busy offices. They could be set up to turn themselves on, calibrate and switch off again before employees arrive. As calibration can be a long process, this will undoubtedly save time. The fact that the monitors do not need to be overseen also means that they will be calibrated more often than they might otherwise be if they had manual calibration, preserving their usefulness in colour-critical applications. (TA)

Smarteco Cuts BenQ Power Consumption

Two new DLP projectors are now available from BenQ, designed for small office and home environments. BenQ has again equipped them with its Smarteco mode, lowering power consumption by up to 70% compared to similar models. The projectors consume an average of 275W of power, or just over 160W in eco mode. They also have a long lamp life of 6,500 hours using this mode, which automatically dims the light source when not in use.

Aside from resolution, the projectors share specifications. The MX model has 1024 x 768 resolution while the MS model has 800 x 600 (both 4:3). Both projectors use a 190W lamp (lamp life: 4,500 / 6,000 / 6,500 hours in normal / eco / smarteco modes) to project at 2,700 lumens and have a 13,000:1 contrast ratio. They can display an image sized between 40" and 300", with a throw ratio of 1.86 - 2.04:1.

Both models are equipped with a 1.1x optical zoom and +/- 40° vertical keystone adjustment. They have dual D-Sub ports (one of these is shared with a component port) and single S-Video, USB and RS232 connections. They also have a 2W speaker and are 3D ready, although do not come with 3D glasses.

The projectors measure 287 x 232 x 114mm and weigh 2.3kg. They are available in Europe now for €295 (MS502) and €350 (MX503) excluding VAT.

Conrac to Showcase MPCs at SMM 2012

Conrac will be showing new products at the Shipbuilding, Machinery and Marine Technology (SMM) show this year.

The first is a fully-integrated 13.3" Marine Panel Computer (MPC) designed for ship automation and control applications. It is a moderately rugged display, able to handle up to 10g shocks, up to 90% humidity and between -15° and 55° temperatures. It will have 1280 x 800 (16:10) resolution and a 400 cd/m² LED backlight, which can be dimmed according to maritime requirements using the integrated CONRAC dimming control. The unit also features an 800:1 conrast ratio, 11ms response time and 70° viewing angles. It has a 32GB SSD (expandable to 128GB) and two USB 2.0 ports.

There will also be a 7" MPC with touch functionality. Specifications for this are preliminary and were not available at the time of going to press.

Conrac will also show 22" (1680 x 1050, 300 cd/m²) and 26" (1920 x 1200, 400 cd/m²) models in its its WideECDIS Series, available as either console mount or in a chassis. These have had a system monitoring function added, which will be shown at the event. They have four USB 2.0 ports and single DVI-D, VGA, HDMI and RS232 ports. They have the same durability as the 13" model.

Two other 22" monitors will be at the show. The first, set up in a portrait format, was developed by Conrac for Alewijnse and is intended for river radar applications. It has 1680 x 1050 (16:10) resolution; it can also show a mini-conning display for navigational information. The second is a multitouch display that can be used for marine and POS/POI applications on cruise ships. There is no documentation available about it yet, however.

The new 13" and 7" displays will launch at the show.

Nvidia Provides 3D to Dell Laptop

Dell has announced two new laptops (although it refers to them as 'mobile workstations') in the Precision line. These are aimed at business users and one of the models, the M6700, has stereoscopic 3D. This is provided through Nvidia's active shutter Vision Pro technology, which is specifically designed for business users; additional pairs of glasses are able to be added to the integrated RF hubs easily and it has a long (100ft) range. The M6700 is the first laptop to use Vision Pro.

The two laptops are the M4700 (15") and M6700 (17"). The M6700 also has the option of a 'Covet edition' - a ruby-red model with edge-to-edge Corning Gorilla Glass 2. Due to the design of the magnesium-alloy chassis, Dell says that the M6700 is the lightest 17" laptop available today. In the future, this laptop will have the option of 10-point multitouch support.

Users can customise the units' displays when they order. The standard screens built in to the laptops are anti-glare with LED backlights but can be upgraded to include Dell Ultrasharp (IPS panels with higher resolutions) and (M6700 only) Nvidia's Vision Pro 3D. Resolution also increases correspondingly; the M4700 has a 1366 x 768 option while the M6700 starts at 1600 x 900 (16:9). Upgrading the displays to Ultrasharp will increase the resolution to 1920 x 1080.

Dell has not announced other display-related specifications such as contrast ratio and response times for these models.

Each laptop has the option of Intel Core i5 or i7 processors and up to 16GB or 32GB of RAM. They can have up to 1TB hard drive and have an optional 512GB SSD connected via eSATA. Both have two USB 3.0 and two USB 2.0 ports as well as one combination USB/eSATA port. They also have VGA, HDMI and DisplayPort inputs, RJ45 and a 10-in-1 card reader.

The laptops can power up to three simultaneous displays when undocked and up to five displays when docked. They are available worldwide now with prices starting at $1,650 (M4700), $2,200 (M6700) and $3,580 (Covet edition).

Ultrasharp has in the past only been used to refer to stand-alone external Dell monitors, but after contacting Dell the company confirmed that these displays are built in to the laptops. (TA)

Samsung Continues to Pursue MHL...

Samsung has announced new Syncmaster monitors using the MHL standard: the 27" C27B750X, 24" C24B750X (Smart Station Series 7) and 24" C24B550U (Smart Station Series 5). They differ slightly: the Series 7 models have two 5W speakers each and a wireless connection using UWB with a range of 1.5M, allowing them to connect to a PC without cables. The Series 5 monitor does not have these features.

All models have 1920 x 1080 (16:9) resolution and an LED backlight providing 300 cd/m² (27") or 250 cd/m² of brightness. They have 178° viewing angles, a 5,000:1 contrast ratio and 5ms response time (the combination of high contrast and wide viewing angles means that these are VA monitors - TA). They are fairly light on connections, with each monitor having one HDMI port and a USB hub (two USB 3.0 ports and one USB 2.0).

The monitors are able to tilt between -1° and 21°, but cannot swivel or pivot. They will be available in the EU this month with prices starting at €485 (C27B750X), €395 (C24B750X) and €330 (C24B750X) excluding VAT.

...Produces Sunglass-Readable Display...

Samsung's Syncmaster OL46B 'all-in-one' display (Display Monitor Vol. 19 No 11) will launch in the EU this month. It is a 46" outdoor display that can be integrated into a totem (giving it an IP56 rating), and is visible even through polarised sunglasses. The display has 1920 x 1080 (16:9) resolution, 1,500 cd/m² of brightness and a 4,000:1 contrast ratio. It has an 8ms response time and 178° viewing angles. Along with these the display has D-Sub, DVI-D, composite, DisplayPort and dual HDMI connections. It also has RJ45 and RS232C control ports.

The OL46B will launch in the EU in late August for €7,310 excluding VAT.

...And its Beam Shines a New Galaxy!

The Galaxy Beam smartphone (Display Monitor Vol. 19 No 10) from Samsung is now on sale in the UK. It has a built-in 15 lumen DLP projector that can projector an image sized up to 50" at 640 x 360 resolution, and a 4" 800 x 480 display. The phone comes with Android 2.3 and is available on both T-Mobile and Orange (via Carphone Warehouse) for £31+ ($50) per month, or £335 ($525) (excluding VAT) for just the phone.

Hard Glass Protects Iiyama's Public Display

A new procap multitouch (two points) public display monitor is now available from Iiyama. The Prolite T3234MSC is a 32" 1920 x 1080 (16:9) model using a VA panel and edge-to-edge glass, giving it a 'frameless' design. It also uses hard glass, rated at 7H.

The monitor has a 3,000:1 contrast ratio and an LED backlight providing 315 cd/m² of brightness when measured with the touch panel. It has a 6.5ms response time and 178° viewing angles. It has D-Sub, DVI-D and RS232C ports, and a USB port used for the touch overlay. Two 8W speakers are built in to the monitor.

The T3234MSC is available in Europe now for €1,765 excluding VAT.

The company has also released a computer monitor in the Prolite range, the E2278HD. This comes in two versions: the E2278HDS, which has speakers, and the E2278HD, which does not. It is a 22" model with 1920 x 1080 (16:9) resolution and a 250 cd/m² LED backlight. The TN panel provides a 1,000:1 contrast ratio, 5ms response time and 170° / 160° viewing angles. Like the T3234MSC the monitor has D-Sub and DVI-D connectors, but lacks RS232C.

The E2278HD is available now with prices starting at €125 excluding VAT.

Product News Roundup

Avnet Embedded is now distributing **LG's** LB070WV8-SL01 industrial display in the EU. It is a 7" module with 800 x 480 (5:3) resolution, a minimum lifetime of three years and 450 cd/m² of brightness with an LED backlight. It has an 800:1 contrast ratio provided by the IPS panel, and 178° viewing angles. It will work between -30° and 80° . A touch overlay can also be integrated with the display.

Fujitsu has confirmed that its Q702 laptop/tablet hybrid device (Display Monitor Vol. 19 No 28) will launch in the UK in September. It has an 11.6" display and has a detachable keyboard for business users. Pricing has not been announced. It will launch in the rest of Europe this month, starting at €1,350 excluding VAT.

Fujitsu Q702 laptop/tablet hybrid device

Hitachi Cable has told us that its longer Active Optical HDMI Cables (Display Monitor Vol. 19 No 26) are now shipping worldwide through its sales channel based in the US. Lead-time is currently around six weeks, and the cables are available in 10m lengths. Prices start at $630 for a 20m length and increase by $50 for each additional 10m.

We have been in touch with **HP** to find an update to the monitors we have reported on in the past weeks. The HP Passport 1912nm, 2011xi, W2071d and W2371d (Display Monitor Vol. 19 No 25) will not be launching in Europe, and neither will the Envy 23 AIO PC (Display Monitor Vol. 19 No 28). However we have learned that the Compaq Pro 6300 AIO and Compaq Elite 8300 AIO launched in May (this was not obvious at the time and we had no luck finding the models! - TA). The Pavilion 23 AIO PC will launch this month.

Kyocera has announced that it will release a new series of TFT LCD display modules using IPS panels this autumn. There will be 7" (800 x 480), 8.4", 10.4" and 12.1" (800 x 600) versions. The larger models will all be compatible with each other. Each model will have two versions with either 600 cd/m² or 1,200 cd/m² of brightness. There is no more information at present. Samples are available from the Data Display Group now.

Dynamic Focus - 60" Full HD PDP TVs

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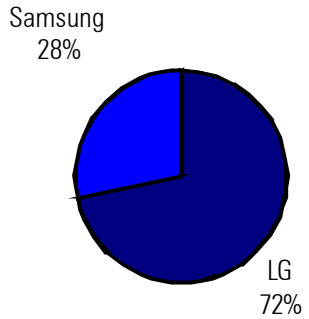

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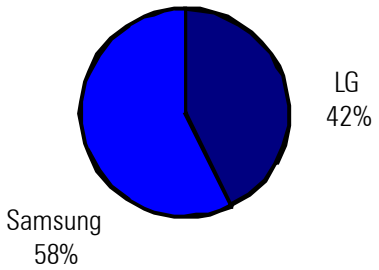

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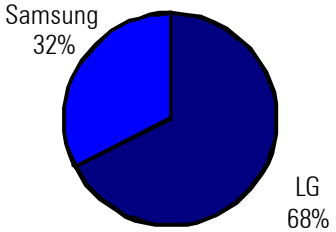
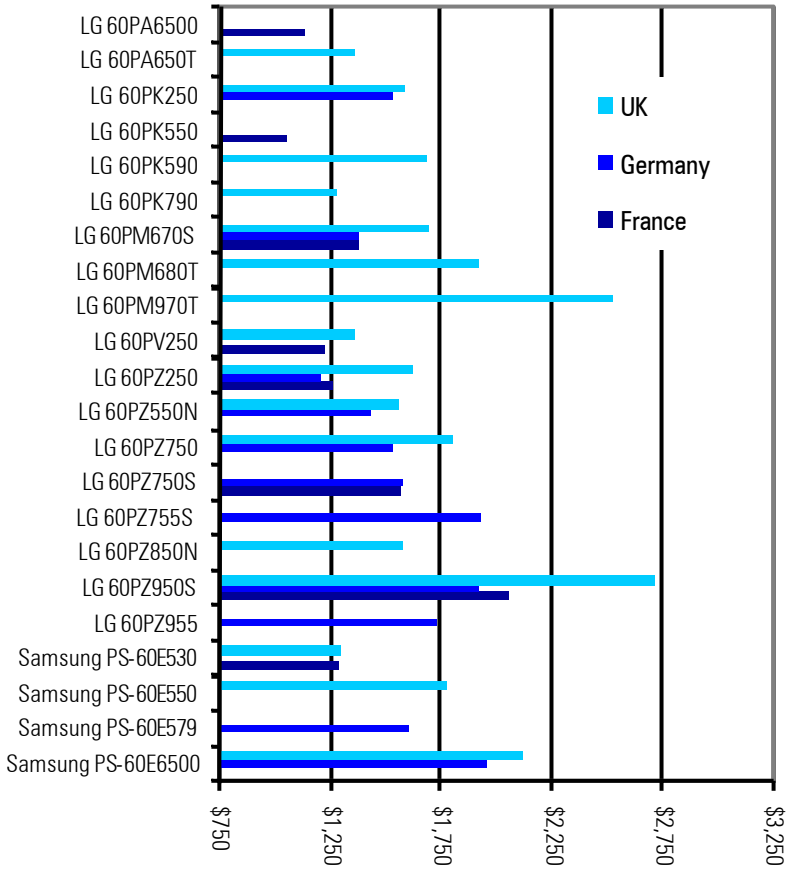
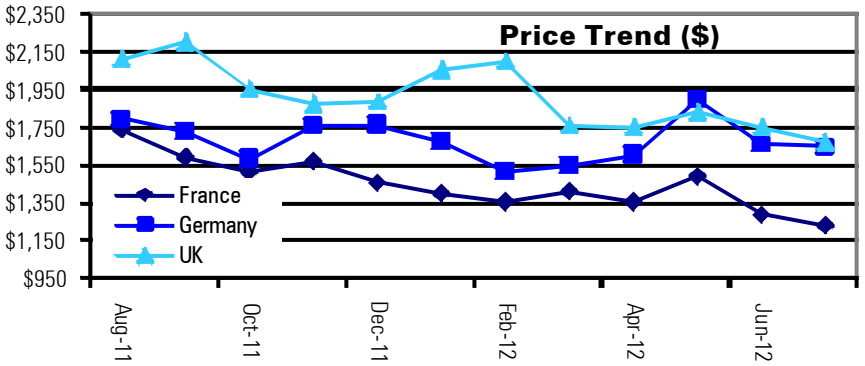


For more information on the DisplayCast service, please call Bob Raikes on +44 (0)1252 835385 or email bobr@meko.co.uk

This week we are looking at PDP TVs in the 60" category with 1920 x 1080 panels, i.e FullHD. There are only two brands featured in the advertising, with LG being the top advertised brand across all three countries, followed by Samsung. The ranking is the same for France and the UK. In Germany, Samsung is top followed by LG. Over the three countries, Samsung's PS-60E6500 is at the top of the PageShare list with LG taking the next two positions with the LG 60PA650T and the 60PM670S. In France, LG is top with the 60PA6500 followed by Samsung's PS-60E530 in second and LG's 60PM670S in third. In Germany, Samsung takes the top two positions with the PS-60E6500 and the PS-60E579 while LG's 60PZ955 is in third, and in the UK the top three models were LG's 60PA650T, Samsung's PS-60E6500 and Samsung's PS-60E550. The average dollar price was down 19% year on year (YoY) over the three countries. The average dollar price in France was down 29% YoY, while in Germany it was down by 8%, and in the UK it was down by 21%. The minimum price in July for 60" Full HD PDP was $996 plus tax. If you want to know how we select products for Dynamic Focus, please check our Dynamic Focus Pricing section at http://www.meko.co.uk/index.php/display-monitor/92-dynamic-focus

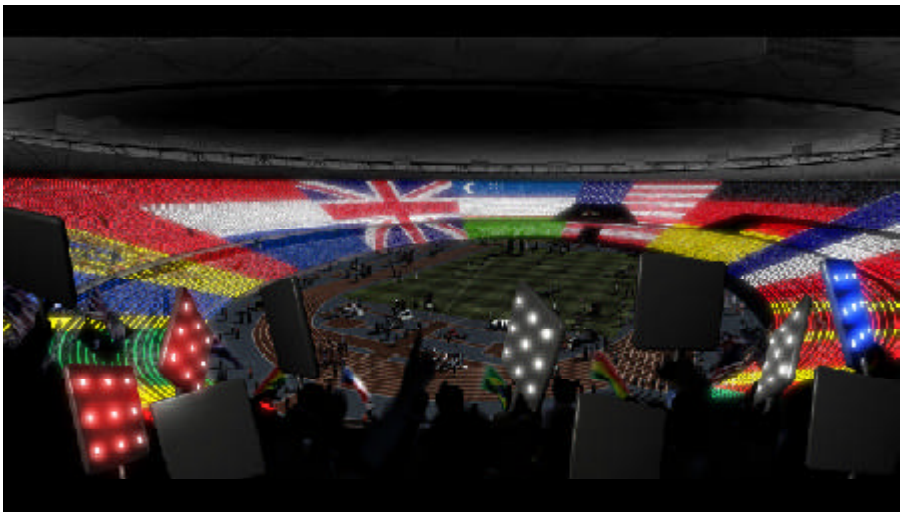




REAR PANEL

One of the company's which contributed to the dramatic opening ceremony of the London Olympics was the UK's **Tait Technologies** , which devised the LCD paddles positioned on every seat in the stadium. Dubbed Landscape Video, the company produced over 70,500 'pixel tablets' for the entire stadium seating grid, using the displays to create three dimensional images and integrating the audience into the show in one of the world's largest video screens. Each hand held video tablet contained nine LED pixels, all of which could be individually programmed and viewed at angles of 180 degrees horizontally and vertically. The whole structure was run on Barco's FLX system and large scale pixel mapping was carried out by Immersive/Avolites. Content for the pixel tablet opening ceremony was provided by Crystal CG International.

Christie has partnered with Canada's Department of Foreign Affairs and International Trade's "Invest in Canada" to provide two striking digital displays featuring its Microtiles and Entero LED rear projection cubes at Canada Olympic House in Trafalgar Square. In addition to being the Canadian Olympic Committee's space for athletes, their friends and families, Canada Olympic House hosts business leaders and government dignitaries and showcases the country's leading industries and businesses. The lobby at Canada Olympic House includes a large display of up to 37 Christie Microtiles and four 72" diagonal Entero cubes, both showing a video and graphical montage highlighting Canada's leading sectors and landscapes.



The Tianjin Electric Power Corporation (TEPC) has selected **Barco's** OVL-815 videowall and TransForm-A controller for TEPC's control centre display system, which is said to be the largest display system in China's electric power generation industry. TEPC's control centre is one of the pilot programmes for the construction of a centralised control and large-scale operation based powers system initiated by China's State Grid Corporation. The videowall makes it possible to display any type of video and data sources on any display configuration in an enterprise environment.

Christie has entered into an exclusive partnership with Crystal CG to supply visual display solutions for the new Bureau International des Expositions (BIE) multimedia exhibition and information centre in Paris, France. The centre will house a permanent exhibition highlighting BIE's accomplishments, presented on a diverse array of digital displays, including Christie Microtiles in the reception area, as well as projectors throughout the facility in the exhibition area, meeting rooms and an immersive first-person experience area.

The 14th annual OLEDs World Summit takes place in September and the organisers have announced that **Panasonic**, **LG Chem** and **Philips** will be amongst the companies presenting at the event. The event is held over three days, 26th-28th September 2012, at the Parc 55 Wyndham in San Francisco and will focus on investment and markets for display and lighting, plus highlight recent advances in R&D from a wide variety of OEMs and research institutes. Other companies giving presentations at the event include **DisplaySearch**, **Fraunhofer**, **Osram Opto Semiconductors GmbH** and **AU Optronics** , as well as representatives from academic and research backgrounds.

The Toronto International Film Festival will once again be using Solaria digital cinema projectors from **Christie** for the festival which takes place over 11 days from 6th to 16th September. This will be Christie's 12th year as the official projection sponsor and its 4K DLP cinema projectors will be used to screen more than 300 films from 60+ countries.

About the publisher...

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