

The CES Report - English Summary

This report published every year since 2006 is a condensed view of the year's innovations in the consumer electronics space leveraging the offering presented at the Consumer Electronics Show in Las Vegas in January. It covers all CE product categories: audio, video, photography, mobility, computing, gaming, home automation and greentechs. It can be viewed as a complement tool to blogs and media covering the CES which are usually broadcasting product-by-product news.

Content comes from various sources: the CES show visit itself, pictures taken on the show floor and in press conferences, vendors press kits, blogs and news sites and at last the invaluable "CES Daily" published by TWICE during the show. The report covers not only the wealth of stuff presented at the CES, but also specific offerings to the French market, particularly in the TV space. It also highlights the French CE industry presence at the CES, how to get there and what can be learned from trying to reach the US and worldwide markets from the CES. The author also keeps an eye on the way CE companies do market their products, trying to decipher marketing messaging and communication styles, identifying the best and the worst of marketing practices.

This year's edition is focused on the various options for enjoying connected televisions, on the technologies behind 3D television, on the wherabouts of ebooks, smartbooks and netbooks, on the Android vs iPhone battle, and on greentech progresses. This report makes also a point on the components industry which drives a lot of the hardware innovations seen at the CES: mobile CPUs and GPUs, LED backlighting, digital television middleware, etc.

The author of this report is Olivier Ezratty, a freelance consultant working with digital media startups in the web and consumer electronics spaces as well as with large corporations who want to watch CE trends and integrate it in their strategies, whether they are content companies or large companies reaching their consumers through digital means. He is particularly focused on the way companies can develop their third party product ecosystems, from the technology as well as from the marketing and business standpoints.

The report is published under Creative Commons and is available for free and as a PDF file in the author's blog (<http://www.oezratty.net>). It's published in French language although it can be automatically translated by services like Yahoo Babelfish.

Components

Just like microprocessors in data processing, it is the components that enrich the televisual experience and allow contents of varied origin to be integrated.

For cost reasons the performance of the CPU's in TV's and STB's has been limited until now, hence very poor user interfaces in 2D and too slow. Who has not sworn at the set top box, whether it comes from a telecoms operator or Channel+?

The cost constraint is due to the need for the operators to supply low cost STB's (less than \$100) that are financed by subscriptions.

The new generation of processors intended both for STB's and televisions incorporates what was missing to enrich the user experience: supporting 3D graphics interfaces (of the Flash type, for example, via the BlueStreak software player), management of the "Full HD" 1080p video, with several incoming and outgoing flows at this resolution enabling multi-room solutions to be created, supporting a wide variety of audio and video codecs, and the network connectivity that comes with it, sometimes including network routing.

All these functions are integrated in multipurpose components of the type SoC or "System on chip". These are multi-function processors that generally incorporate an "ARM" based CPU, plus other integrated circuit elements for video flow management, connectivity, memory, inputs/outputs. The more functions the SoC incorporates the fewer components there are on the motherboard of a set top box or a connected television. This has a positive effect both on the electricity consumption and on the cost of the box.

2008 STB chipsets revenue

This market is dominated by Broadcom, the world leader supplying STB's, closely followed by ST Microelectronics, then Sigma Design, NXP, Taiwanese MediaTek and also Samsung. It is one of the rare growing component markets, despite the crisis affecting purchases of capital goods. The selection is huge and the service providers and manufacturers are very much wooed by the component suppliers.

This components market is highly fragmented in terms of demand, and therefore supply. This is due to a number of specific characteristics and variants between regions and countries: the position of the different players (between cable, satellite, IPTV, TNT), the weight of the free to view television relating to pay TV, the standards used such as those in access control and the position of local industries.

To put this in perspective, 131 million STB's were sold in 2009, according to iSupply, and 200 million will be sold in 2013. Compare this with around 300 million PC's and 160 million smartphones sold in 2009.

Note that this may very well enter into the technical jargon. If you are interested in applications, skip this chapter!

Broadcom

Broadcom is number one in set top box equipment worldwide, but it also maintains a high presence in networks and mobility. It achieved 23% sequential growth in the 3rd quarter of 2009, at \$ 1.195B, but this was down on the 3rd quarter of 2008 (-3.4%).

If you visited the Broadcom stand at the CES you could see how important the ecosystem is to them. All their components are integrated by manufacturers and telecoms operators on their different set top boxes or mobiles. This results in a constant renewal of partners. But Broadcom's strength lies mainly in its solid position in the North American market, the largest in the world. It is less well established in the rest of the world.

Some examples of developments in their supply:

- Their family of SoC chipsets is constantly developing to support all conceivable television standards (DOCSIS and MoCA for cable, the DVB-x's for Europe, the DRM systems).
- Their BCM3556 processor is used in certain TV's from LG Electronics for TNT and a 3D animated interface has been added. Their chipsets intended for televisions support Skype based on on-board software from Trinity Convergence. LG is their main customer in television. Samsung is quite a good customer, but in mobiles.
- Their involvement in the RVU Alliance, which includes Cisco, Broadcom, DirecTV, Samsung and Verizon, and is aimed at standardising the user control interface for TV's and STB's. The initiative, which is very much US-centric, has been taken by the satellite operator DirecTV, which wants to send the user interface of its STB to the "satellites" in bitmap mode to limit the costs of its STB satellites. The technology offered is based on a light web customer and web server approach. The video is transmitted in a classic stream and the menus are sent in the form of bitmaps. This is an approach that competes with the CEA-2014 standard, which is heavier on the client side and poses problems of compatibility (and is used in HbbTV). It also obviates the need for DirecTV to have an NDS software client on the satellite side.
- The adoption of MoCA, the standard that broadcasts media contents on home cable in order to broadcast streamed video from a STB to Broadcom satellite clients equipped with the appropriate chipset. Here again it is an initiative that has been adapted fairly well to the American market.
- The decoding component of the 1080p video, which supplements the Intel Atom on the notebooks. Because of this the Atom CPU is now only used for sound decoding. Even Intel could push the architecture whilst waiting to take over. They have another component for decoding video which is used in pico-projectors.
- Their developer support has a good reputation. They have a lot of reference designs, good drivers and development kits (SDK). Their new chipsets support Adobe Flash Lite, but not yet "full Flash 10", seemingly because of a lack of resources on the Adobe side. They have various 2D and 3D user interface prototypes. It is up to the developers to show self-reliance in creating theirs. Even if they are not exactly making an effort as yet.