Transparency in design

Transparent displays may allow designers to see through the challenges and explore opportunities. By **Simon Fogg**.

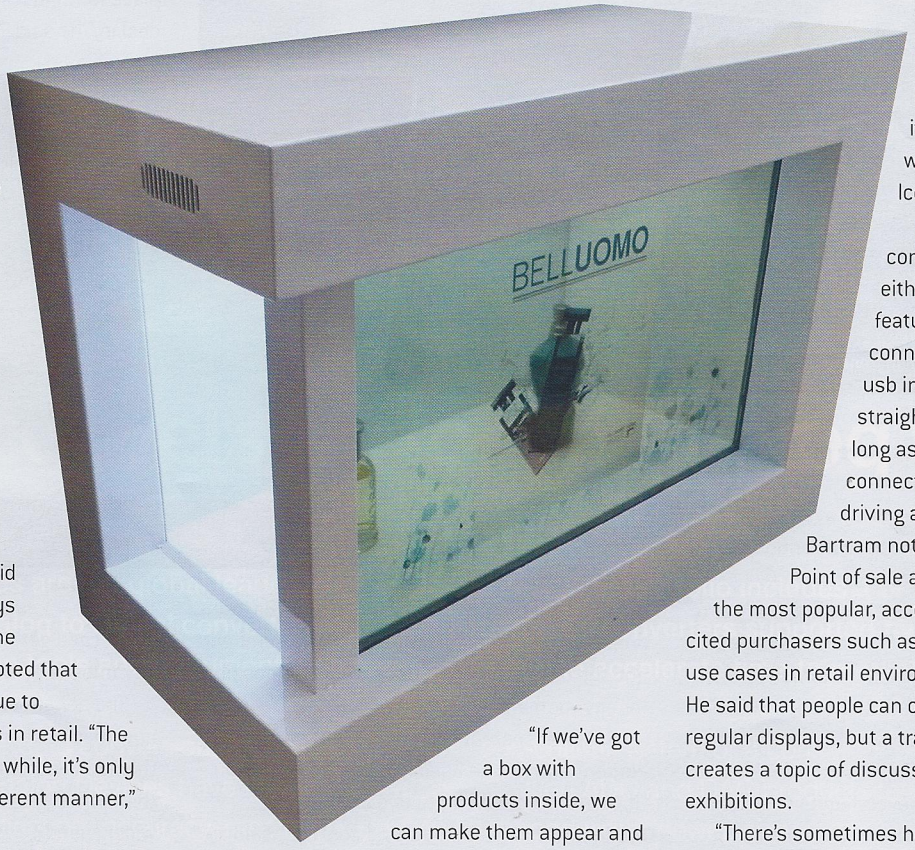
Earlier this year, HP was granted a US patent for its see through screen technology, sparking interest among consumers in the future of transparent displays. To many, the concept seemed futuristic, but in certain applications, it is already a reality. Transparent oleds are arguably still constrained to laboratory prototypes, but according to Crystal Display Systems (CDS), transparent tft displays are now commercially appealing.

Chris Bartram, md of CDS, said the technology for these displays has existed since tft lcds became popular in flat screen tvs, but noted that development has accelerated due to increased use of digital displays in retail. "The technology has been there for a while, it's only now that it's being used in a different manner," he said.

The company's latest Samsung tfts rely on the same components as those designed for laptops and desktops which use a white backlight – the same white that appears on the screen. With the backlight removed, what would appear white on a regular display becomes transparent and lets light through.

"The easiest way to understand how the transparent tft works," said Bartram, "is to imagine your flat screen tv at home and then you take away everything that's behind the glass – the backlight, electronics and the plastic housing."

The result is that when the display shows black pixels, the user can't see through it, but with white pixels, they can. Using this spectrum, colours in between appear more or less opaque.



"If we've got a box with products inside, we can make them appear and disappear, or gradually appear, depending on the content that's actually on the screen," said Bartram.

CDS supplies the individual components – from the panel to the power supply – but also provides 'plug n play' solutions. The ClearVue 220 is a 'transparent showcase' – essentially a display box featuring a fabricated steel enclosure, 22in transparent lcd screen and internal led lighting. The display has a resolution of 1685 x 1050pixels, a brightness of 250cd/m2 and an integrated standalone media player. There is also an optional touchscreen.

"We've got two main types: 22in and 46in," explained Bartram. "The 22in version has the electronics built on the bottom of the display, so you literally plug the display into the HDMI port of a pc or a media player. On the 46in unit, it's an lvds connection, which is standard on a tft lcd."

In order for the latter to communicate with a pc, either an interface kit featuring a pcb and connectors is supplied or a usb interface to play content straight to the screen. "As long as you've got an HDMI connection, then it's like driving any other display," Bartram noted.

Point of sale applications have been the most popular, according to Bartram, who cited purchasers such as ESPN and Disney and use cases in retail environments and museums. He said that people can often be oblivious to regular displays, but a transparent display creates a topic of discussion, particularly at exhibitions.

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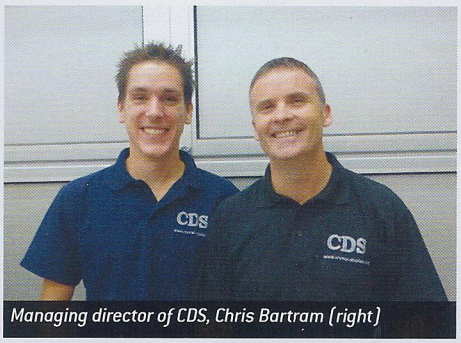

Managing director of CDS, Chris Bartram (right)