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## In good shape

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### UK electronics is in good shape and capitalising on the nation's 'can do' engineering heritage.

The term 'British electronics' tends to impart a slightly faded image, that of an industry which has had its time and is now languishing in the global electronics equivalent of football's Blue Square Conference.

Reality is somewhat different. There are the obvious 'big names' who compete on the big stage – companies such as ARM and CSR. Meanwhile, working quietly and carving out for themselves nice global revenues are companies such as Imagination and Frontier Silicon. There is a successful design consultancy sector, with companies such as Sagentia and Cambridge Consultants, Plextek and Cambridge Design Partnership. And there are innovation driven companies such as Innovision R&D.



The UK's electronics sector is worth £23billion a year – number 5 in the world – and employs 250,000. It is home to more than 30% of Europe's fabless and ic design houses and is Europe's second largest producer of electronic equipment behind Germany. Liverpool based Brainboxes designs and makes pc add on cards. Its products, which provide RS232, RS422/485 and Bluetooth connectivity, have applications ranging from banking to general industry.

Eamonn Walsh is chairman and technical director of Brainboxes, which is celebrating its 25th anniversary this year. The first Brainboxes product was an instrumentation interface for the Commodore 128. Since then, the company has broadened its horizons to a range of connectivity products. Walsh said the company was now launching a product a month. Unlike many other companies, Brainboxes manufactures its own products and has won an SME Manufacturer of the Year Award. Today, it manufactures to order, rather than for stock.

"We supply the likes of HP, Lenova and Acer," Walsh said. "Go to the Lenova site and all the serial cards there are Brainboxes products. It's the number four computer company in the world and it's selling our products." Walsh it wasn't because Lenova couldn't find good products in China. "It has found a better product in Liverpool. But Lenova doesn't want to pay over the odds, so we have to compete with low cost economies."

While Walsh's Brainboxes competes in the pc add on market, some other UK companies are attempting to carve out large pieces of the action in the consumer business; markets which require a steadiness of nerve.

Hossein Yassaie is chief executive of Imagination Technologies, which started out in 1992 as Videologic. "We changed from an innovative product company to an IP developer," he explained. "At the time, there was not too much investment in UK electronics so we chose IP because it required less capital." He readily admits it's taken some time to develop the product families, but the investment now seems to be paying off as the company attracts serious interest from the likes of Apple – which recently boosted its stake in Imagination to 9% – and Intel. While the products were being developed, deals were done along the way, said Yassaie, including a contract with Sega for its Dreamcast video games console.

Now, Imagination is focusing on mobile phone graphics and digital radio –sectors where UK companies normally fear to tread. "We've been able to convince the world that we not only have the technology, but can be a partner for long term planning," Yassaie continued. Imagination shipped 86million units of software last year and Yassaie said momentum continues to build because Imagination's technology is relevant to markets going through change.

Another contender in the consumer electronics market is Frontier Silicon. Chief executive Anthony Sethill said Frontier isn't just a chip company. "We are also a systems company, which allows us to take our technology to any customer."

While Frontier is particularly interested in digital radio and digital audio streaming, Sethill noted the growth in DAB radio has, to date, been 'disappointing'. But he says the market is poised to take off. "There will be a major launch in France next year," he enthused, implying this will be good news for Frontier.

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with slightly less profit, but doing no less good work, is design capability. It's easier, according to managing director Colin Smithers: "The UK has a culture of design. It's as strong -- perhaps stronger -- than other places and this flows from the strong base that has been developed over the last three or four decades."

The problem with which Smithers wrestles is experience. "It has always been a problem getting people and it's getting harder. We are having to 'home grow' more than ever because we need skills that aren't endowed when people leave university."

He says that, while components change and things get smaller, the same problems remain; and top of the list, in his view, is emc. "It catches people out all the time in communications product design. The digital parts interfere with the analogue side and engineers always find that out later in the day. It's been true for the 25 years I've been in the business."

Experience is, therefore, a valuable asset. "A young engineer who hasn't burned his fingers will use the 'latest and greatest' chip and the project will be late because the design is harder than anticipated, the tools aren't right and you can't get hold of the chips."

"It's like buying a kitchen," he contended. "You never get that right first time either!"

Smithers says the UK's design sector is regarded highly enough that it is a net exporter. "But we still rely on the Cambridge brand," he said, highlighting Plextek's proximity to the technology cluster.

#### **Why here?**

"We're in the UK because of the engineering talent and creativity," said Yassaie. "UK engineers are very good at solving technical issues and some of the most successful consumer electronics companies have a lot of UK engineers on their staffs."

Sethill agreed. "UK design skills are excellent. People say there's a shortage -- there is in the rf field -- but the supply is reasonable, compared to Europe."

David Wollen, ceo of Innovision R&D, said it's the number of analogue and rf design engineers and their quality that is attractive. "It's unsurpassed," he claimed. "Countries like China can't create 25 years of expertise in an engineer overnight."

But skills issues aren't the only factor that keeps companies such as Frontier and Imagination based in the UK. Sethill pointed out the end market for his company's products. "While all of our customers are based in Asia," he said, "the products they build will be consumed in the US and Europe. So our main product development is done in Cambridge, even though 40% of our employees are now based in the Far East."

Yassaie pointed to the expected boom in demand for digital radio. "The market was flat for four or five years and needed a kick, so we launched the Pure digital radio for £99 and it became clear that was the start of a long journey. And now the digital radio market is beginning to move outside of the UK."

Walsh said Brainboxes is in the UK for one very good reason: it makes all its products and couldn't survive if they were made elsewhere. "It's not just about design so it works," he said, "you have to design for manufacture. If you have everything under one roof, you soon find out if you can't."

His rationale is interesting. "Big companies won't give you an order before they have one, so it's all about us get products out quickly. We have a high product mix and we couldn't make them quickly if we were manufacturing, say, in China."

#### **The downside**

Despite the many good things, all contributors see some weaknesses. Walsh said education was his concern. "The Government needs to invest in skills -- it's education, education, education. Have we got the skills we need? And we then need to encourage people at all levels that high tech offers fantastic opportunities."

Wollen pointed to a limited supply of engineers and added the UK isn't generating the right number of graduates.

Yassaie cited finance. "High tech in the UK is driven by start ups and nobody is putting money in any longer. If the Government is prepared to pump billions into banks, it should also be prepared to pump millions into the future of UK electronics."

Wollen had a similar view. "A lot of good companies aren't going to make it because they can't get the funding."

Sethill wondered whether enough engineers are being produced. "And are there sufficient rewards to attract the best talent? Investment banking has taken a lot of good scientists, so the industry needs more kudos."

Smithers worries about the drift to the Far East. "Design services are now beginning to move that way," he noted. "And it will be lethal at the national level to allow exclusive foreign ownership."

Walsh finished with a warning, picking up on the skills theme. "The best raw material in the world is between the ears and places like India are exploiting that. If we are not careful, the UK will be left behind."

"We don't have the big drivers -- the Plesseys and the Marconis -- any more," Wollen concluded. "We have to get companies in place, then interest will follow. If we could create a commitment to building a true systems company -- something like an Apple -- that would also pull through the companies needed to support that market. We need to make a conscious effort to create good companies, rather than wait for someone to build the right start up."

### Get a 'company knighthood'

Entries can now be made for the 2010 Queen's Awards for Enterprise. The Awards – regarded as equivalent to a 'company knighthood' – are open to UK businesses of all sizes and from any industry.

Business Secretary Lord Mandelson said: "The UK has some of the most enterprising companies in the world, from large multinationals to dynamic small businesses. The Queen's Awards exist to give national and international recognition to the achievements of those firms. A Queen's Award is the ultimate standard of business excellence, and something I believe all firms should aspire to." In April, 194 Awards were announced by HM The Queen. Amongst these were a variety of companies from the electronics sector.

A survey of last year's winners found that, in the first year alone, three quarters experienced extra press coverage; 82% saw an increase in employee engagement; and nearly two thirds of winners in the International Trade category either increased their recognition abroad or generated new business.

It costs nothing to enter and entry forms can be downloaded from [www.queensawards.org.uk](http://www.queensawards.org.uk)

#### Last chance to enter!

Entries for the British Engineering Excellence Awards close on 31 July. If you haven't entered, there's still time to go to the website (click [here](#)) and fill in the online entry form.

#### Author

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