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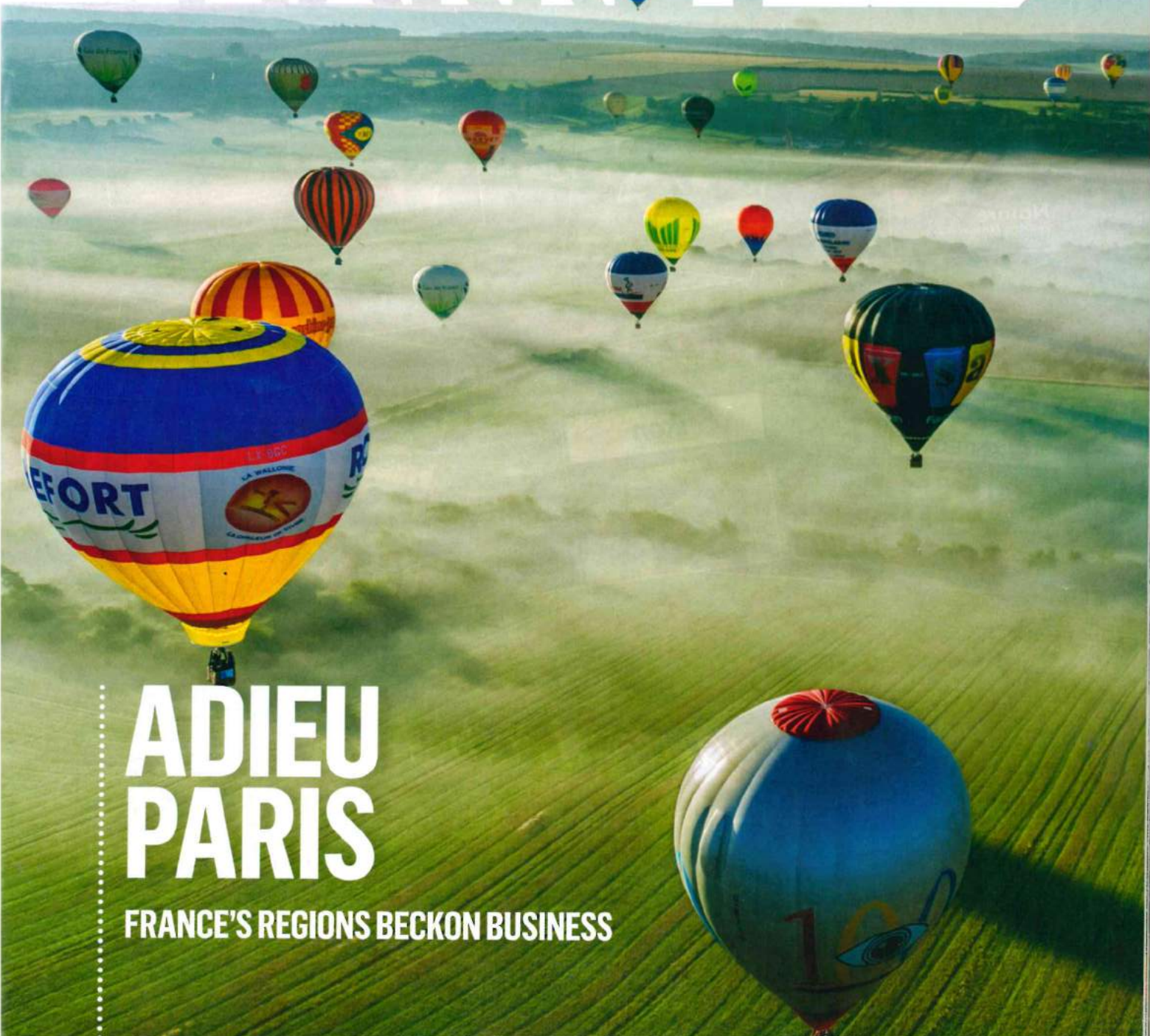
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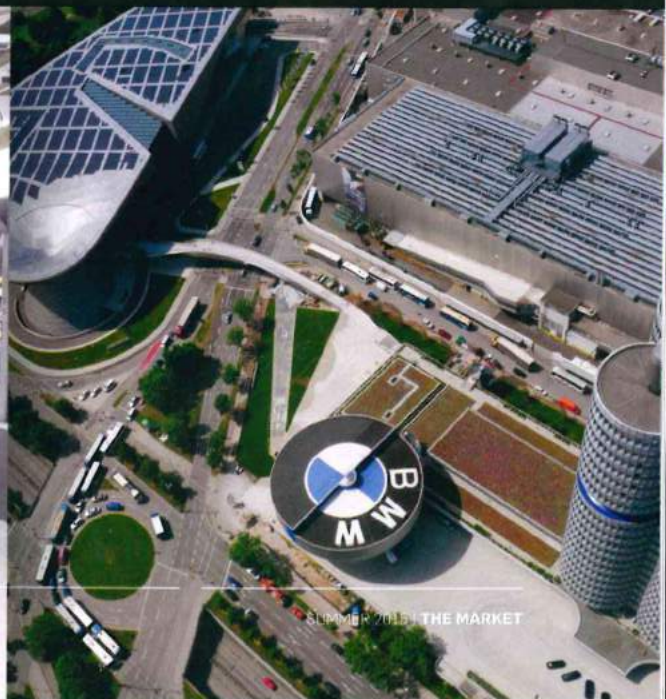
ADIEU PARIS

FRANCE'S REGIONS BECKON BUSINESS



Anthony King caught up with speakers at a European Semiconductor Summit in Dublin this May for insights on winning business with Europe's rebounding semiconductor manufacturers.

Europe's semiconductor market makes a comeback





“INNOVATION IN THE SECTOR IS DRIVEN BY COMPANIES IN EUROPE LIKE BMW, MERCEDES, AND RENAULT. FROM YOUR ENTERTAINMENT SYSTEM TO MECHANICAL-FAILURE DETECTION TO SAFETY AND VISION SYSTEMS, THIS INDUSTRY IS BECOMING A MASSIVE MARKET FOR MICROELECTRONICS.”

Communications, consumer electronics, automotives and industrial applications are today's drivers of demand for semiconductors, as developments determine how we play, work, move and communicate. Although most semiconductor manufacturers have moved fab [semiconductor wafer fabrication] facilities to Asia, Europe retains an edge in specific areas.

“The two areas Europe is, and will, remain strong in are the automotive and industrial sectors,” says Brendan McKearney, past MD and President of Fujitsu Semiconductor Europe, headquartered in Langen, Germany. “Those are the two areas Irish semiconductor companies should be targeting for long-term sustainable business,” he told *The Market* in advance of speaking at a European Semiconductor Summit in Dublin this May. The event subtitled *Exploring Opportunities for Innovation and Collaboration with Irish Microelectronics Companies* coordinated by Enterprise Ireland was aimed at creating new linkages in the industry.

AUTOMOTIVE STRENGTH

The European semiconductor industry commenced its bounce back in 2013, with total revenues of €38bn, and growth is predicted to roll steadily on, increasing by 3.9 per cent annually to reach €46.1bn in 2018. Germany accounts for 28.2 per cent of the market value and offers fertile grounds for Irish companies

to grow exports. In Germany, semiconductor companies are clustered in the Dresden area, so-called Silicon Saxony, which is home to over 1,500 companies within the semiconductor ecosystem.

According to a recent MarketLine Industry Report, *Semiconductors in Europe*, semiconductor demand by the automotive sector is set to outstrip that of the industry generally. Automotives offer a steady tempo, unlike the often roller-coaster ride of consumer electronics, and Germany remains Europe's automotive citadel, driving innovation and supporting a diverse supply chain. There are over 40 OEM sites in Germany, and in terms of production and sales, Germany accounts for 37 per cent of all passenger cars produced in Europe. In 2013, the auto-sector in Germany recorded a turnover of €361 billion, and since 2006, that industry has been the largest purchaser of semiconductor devices in the country.

John Blake is chairman of the industry group MIDAS (Microelectronics Industry Design Association) Ireland and a director with ON Semiconductor in Limerick, a supplier of high-performance silicon solutions for energy efficient electronics.

“Innovation in the sector is driven by companies in Europe like BMW, Mercedes, and Renault, and a lot of the supply chain feeding into that is based in Europe too,” Blake, who also spoke at the recent summit, told *The Market*. “From your entertainment system to

mechanical-failure detection to safety and vision systems, this industry is becoming a massive market for microelectronics.”

It's an industry that is impressively consistent, adds Declan Brosnan of Abrel Products, which tests the lifetime reliability of semiconductors and is also based in Limerick. “We've had customers in the mobile business, in telecoms, in aerospace and in other industries, but we find the automotive industry is the one that stays most consistent, particularly in the German-speaking market. There is no dramatic growth, but single-digit growth, year-on-year.”

Within this, niches on the rise include energy efficiency, connectivity, car-to-car communications, advanced drive-assistance and, ultimately, autonomous drive, McKearney observes. PwC recently noted that regulations covering emissions and safety in Europe will promote an accelerated incorporation of connected devices and components in vehicles to ensure compliance and provide monitoring and reporting. Chip companies specifically serving this market include Infineon, STMicroelectronics, Bosch, EL MOS Semiconductor and Micronas.

Meanwhile, the industrial sector in its broadest sense encompasses such areas as medical applications, factory automation and energy efficiency. McKearney points to the Internet of Things as a key trend, which could throw up all sorts of opportunities for Irish companies. Connectivity and sensing are key, but security is a hot topic too. With more things connected to the internet, there are more targets for criminals to hack. Factories, cars and even companies need to be secured against threats.

Industrial electronics is the second largest microelectronics segment in Germany, with a share of over 25 per cent of the domestic semiconductor industry. Indigenous behemoths include the likes of Siemens, and having German customers is a creditable calling card in France and Italy, where the market is significant too.

GERMAN FAMILY VALUES

With over three decades of experience in the German semiconductor industry, McKearney is well positioned to offer advice to those seeking business in this market. His first pointer is that a huge portion of German industry is family owned, the so-called *Mittelstand*, and they tick to a different tock than stock-market driven companies. “Even huge concerns like Volkswagen, BMW, Bosch have a strong family

influence. The culture tends to be very different from what you see with American-style capitalism. It is far longer-term thinking, and they aim for sustainability, even though there are short-term pressures from the stock market.”

This applies in the automotive sector, but even more so in the industrial sector, where highly innovative, small and mid-sized companies dominate. “Those types of companies are reliable partners, once you earn their trust,” says McKearney.

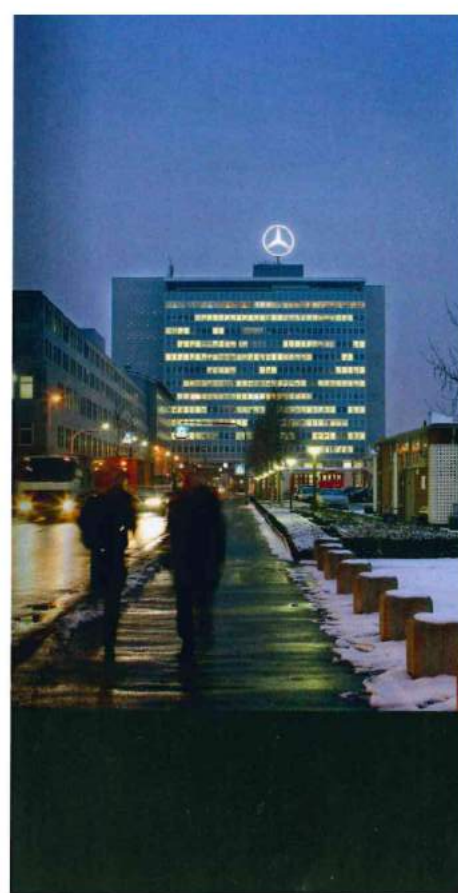
“Our experience in this market is that it's a long process,” adds Brosnan. “You have to take the time to meet them and build up trust. They like to meet customers face-to-face. They like to sit down and meet the engineers.” Regular quarterly review meetings are the norm. Brosnan meets all customer four to five times every year. “That's expected,” he says.

Another given is that you stick to the schedule and the specifications agreed upon come hell or high water. If your company dips its toes in the water and fails to live up to promises, beware: companies in these industries have long memories.

“The golden rule in automotive is ‘thou shall not stop the line’. It has huge consequences,” agrees McKearney. Volkswagen (VW) assembles thousands of Golfs each week at its Wolfsburg factory; selling at around €35,000 apiece, so stopping the line can inflict huge economic damage to VW and its suppliers.

“You've got to show them that they are not taking a risk using a small company in Ireland. Show them you have your risk-management under control and a business continuity plan in place. For the automotive sector, they will want to know how production will be kept running if your factory burns down in the morning,” he continues. And he recommends Irish companies shouldn't be shy about promoting our political stability or the fact that Irish companies typically retain their engineers and expertise, unlike in lower cost countries, where staff churn can be high.

Being comfortable speaking German is another distinct advantage. “It is not mandatory, but it is highly beneficial. They all have good English, but to build good relationships, it is important to be able to interact on a personal level, and speaking with them in a relaxed manner in German is a huge positive,” McKearney says. Moreover, while technical documents will be available in English, meetings are often held in German and English.



Industry events to watch

Key events for suppliers with sights on the auto-industry include SEMICON, a trade show that rotates between Dresden and Grenoble (this year it is in Dresden in October), and Productronica, a trade fair held in Munich in November. VDI ELIV (Electronics in Vehicles) in Baden-Baden takes place in October every two years, while Advances in Automotive Electronics Congress in Ludwigsburg is held during the summer. Meanwhile, for those targeting the industrial market, Embedded World in Nuremberg is one to watch.

Abrel Products: A case study on winning in Europe

Abrel Products was recently named the preferred supplier by Austria Microsystems (AMS AG) for all of AMS's reliability testing. "It's a major coup for us," says Declan Brosnan, CEO of the Limerick-headquartered company.

Brosnan founded Abrel in 1994 and has observed major shifts in the industry over the last two decades. At the start, much of the company's business was in the UK and Ireland, especially the old 'Silicon Valley' of Scotland. That's now changed. "Our biggest export market is Southeast Asia, a market we weren't even selling in 10 years ago," he says. This year, he reckons 30 per cent of Abrel's exports will go to Southeast Asia, to countries like the Philippines, Singapore and Malaysia.

But Brosnan advises against dismissing the European market. "Europe still has a strong R&D and technical development model, and you will find that that doesn't translate over to the low-cost model." Failure to recognise this fact will squeeze business opportunities not only in Europe but in Asia too, he believes. "We find that a lot of the initial R&D work might happen in Europe, and we get involved in the reliability work at that stage. Then, when it migrates to the US or Asia in particular, when it goes into production, if we haven't already been involved, we have missed the boat."

Abrel deals with almost all the major semiconductor manufacturers, but one of its biggest customers is Bosch. "Our strongest export markets in Europe are currently Austria and Germany. This year about 22 per cent of our exports will go there, and a lot will be to automotive-type customers like Bosch, NXP, Phillips and Infineon."

The automotive sector is one companies might be tempted to overlook if seeking a quick market entry, he adds, but balanced against that, it's a strong, stable market. Another area he recommends watching is the upsurge in fabless companies in Europe, which have been increasingly knocking on Abrel's door.

IN AREAS SUCH AS MEDICAL APPLICATIONS, FACTORY AUTOMATION AND ENERGY EFFICIENCY, THE INTERNET OF THINGS IS A KEY TREND, WHICH COULD THROW UP ALL SORTS OF OPPORTUNITIES FOR IRISH COMPANIES.

"We attend meetings where some translation is still required," Brosnan adds. "It would be very difficult to do this remotely or without having a German-speaking salesperson."

To tap into procurement opportunities, McKearney says that Irish companies could consider hooking up with German partners already plugged into the automotive sector. He had personal experience of this while at Fujitsu. BMW wanted to use technology from a small Munich-based company called Inova Semiconductors but were reluctant because of the company's size. So instead Fujitsu, a supplier to BMW, partnered with Inova and integrated their technology.

This is becoming an issue particularly with the rise of the Internet of Things. "Traditionally in microelectronics, you produced a chip, sold it and let the company buying it figure out what to do with it. But more and more, microelectronics is seeing itself as an enabling technology. So it is not straight CMOS chips anymore, you are trying to connect it to other stuff all around," adds Blake.

This involves connecting the digital computing world to all sorts of analogue functions, a trend dubbed 'More-than-Moore' (MtM). The MtM trend sees new, non-digital

functionalities moving from the system board level into the package or onto the chip itself. This includes analogue and mixed signal processing, sensors and even micro-fluidic devices with biological interface capabilities. Ireland has strengths in analogue and mixed signal design, which matters for MtM. "You are connecting the digital smarts in the system to the More-than-Moore stuff. Ireland is good at that; we've got experience built up there," Blake says.

Emer O'Byrne, a market adviser in Enterprise Ireland's German office, and organiser of the recent European Semiconductor Summit, says that a key objective was to facilitate business linkages between Irish suppliers and major European players. Firms such as Toshiba Electronics, e2v, Socionext, ON Semi, Dialog Semiconductor and Renesas attended.

O'Byrne stresses that the German market is the biggest in Europe, shares our currency and has just emerged from a difficult number of years. It, along with the UK and the French markets, promises decent growth rates. "Companies should look to the European market, where the currency is the same and we have a strong affinity in terms of business culture," she advises.