

A European view of semiconductor markets

Ian Burnett is a director and past chairman of JEMI UK, the Joint Equipment Manufacturers Initiative, an association of companies that supply equipment and materials to semiconductor manufacturers. Burnett also has served as chairman of The Scottish Microelectronics Center (SMC). WaferNews caught up to Burnett recently and asked him about the current state of the industry in Europe, and how efforts such as those by MEDEA+ (Microelectronics Development for European Applications) might help the European semiconductor industry in coming years.

WaferNews: There is a general feeling of guarded optimism about market developments. What is your impression of the current state of the industry?

Burnett: I think the European semiconductor industry, as a whole, is very healthy compared with the rest of the world. This is because projects such as MEDEA+ have given us an applications-focused development program that is much more likely to find new killer applications than programs focused purely on extensions of Moore's law. A key factor restricting our overall business volumes is that much consumer technology does not integrate properly without specialist knowledge. Therefore, the market is largely restricted to those who are able and willing to invest enough time to make it successful themselves. A perfect example was the European focus on electronics for automotive applications. A customer buys a car with ABS, electronic fuel injection, dynamic stability control, and a multitude of crash sensors to deploy passive safety systems, such as air bags. There is never any question that these systems will not all work together satisfactorily and without frequent re-booting to ensure reliable operation. These electronics are now commonplace and rapidly becoming standard fitments. Growth is forecast to rise from 22% of the production value of a car in 2001 to 35% in 2010 (worth some \$250 billion).

WaferNews: Who is responsible for ensuring the integration of all these systems?

Burnett: Responsibility clearly resides with the relevant R&D consortium. By insisting that all members of the supply chain work together, MEDEA+ has ensured that barriers are quickly removed. This chain includes the design and system house through device manufacturers, equipment and materials suppliers, academic institutions, regulatory bodies, and end users. The project includes setting up new standards, as well as disseminating project results to ensure that common ground can be rapidly covered by other companies and consortia. The project is not complete until it is working in a commercial environment.

The outcome of this unprecedented level of cooperation has been that the largest European device manufacturers have increased their revenues to positions four, seven, and 10 in the SIA/Dataquest World ranking list of device manufacturers, from 13, 16, and 10. An important factor has been the concomitant development of the equipment and materials infrastructure, resulting in the growth of a large

number of world-class companies. Additionally, a number of the standards developed have become de facto global standards in such areas as GSM, control bus architecture, WBAN, and photolithography.

WaferNews: What have trade associations contributed?

Burnett: Industry trade bodies, including JEMI UK, the UK National Microelectronics Institute (NMI), and SEMI have become actively involved to encourage participation in these programs, and to channel the efforts of their members through the worst downturn in the history of our industry. European companies have consistently outperformed the market. I am extremely optimistic that we will not only capitalize on the general market upturn, which is now definitely in its early stages, but that we will have an excellent chance of becoming global leaders in key killer applications thus developed. On balance, I am convinced that the highly successful MEDEA+ format will help us grow new markets at a rate that will outperform the rest of the world. This will significantly help us to smooth out future industry cycles.

WaferNews: What has contributed to the strength of the Scottish industry?

Burnett: Scottish Enterprise and the University of Edinburgh have created the Scottish Microelectronics Centre, which serves as a business incubator for startup companies in the microelectronics sector. This unique initiative is another example of the power of open collaboration, as academics and employees of commercial organizations integrate their ideas. The SMC enables the companies to combine technological best practices so as to achieve a short time to market, whilst removing many of the cost and technological barriers of building and operating microelectronics fabrication facilities.

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