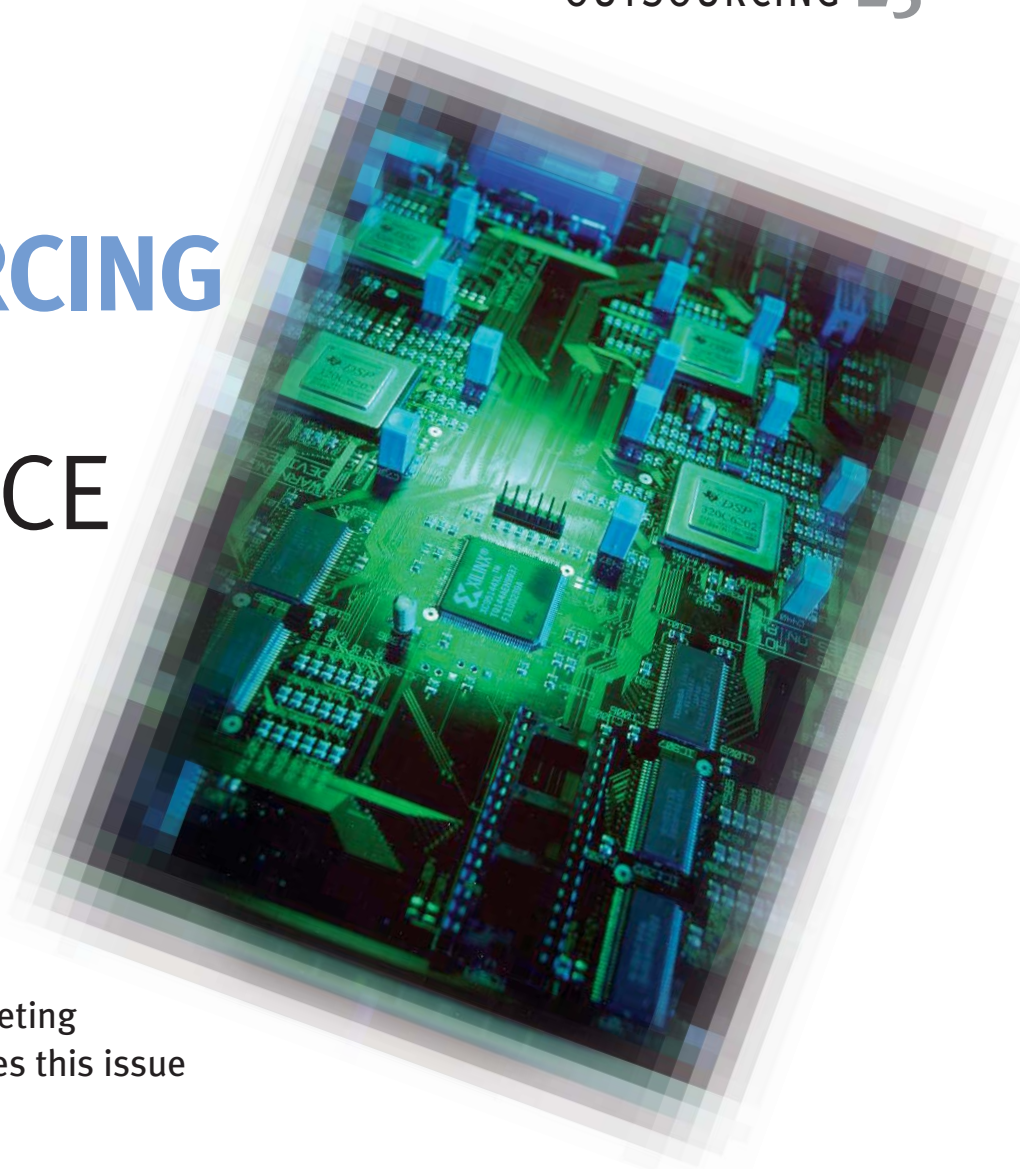


# OUTSOURCING OPTIONS: THE CHOICE IS YOURS

When choosing a manufacturing partner, companies need to think hard about their current and future needs. SMS Electronics' sales and marketing director, Chris Hunt, explores this issue



The electronics manufacturing services (EMS) or contract electronic manufacturing (CEM) business continues to evolve, an inevitable process when you consider the global market and perceived cost benefits of low cost offshore providers. However, there is no 'one size fits all' solution and services need to reflect customers' requirements.

EMS providers have to live up to their name and provide a full range of services, providing customer solutions embracing concept, prototype, design for manufacture, test assistance, production, distribution and lifecycle support.

An experienced EMS provider knows what can be achieved with modern equipment and processes and is focused on producing products as efficiently and as reliably as possible. So, who better to advise on issues such as board layout, component selection and placement, test and final assembly. Let's explore these and other areas.

## Design assistance

Assistance and guidance on concepts, design-for-manufacture (DFM) and design-for-test (DFT) help ensure products are produced and tested efficiently and cost effectively. The manufacturer must be involved as early as possible to achieve a right-first-time result and an improved time-to-market.

Experience is not limited to production methods, component selection is also important. Making a component change at just the right time may, for instance: improve availability of a long lead part; resolve an obsolescence risk; ensure the correct RoHS compliant replacement; or reduce cost.

## Material procurement

An established EMS provider should have a developed supply chain and approved vendor management, providing good material pricing and availability on most common components thanks to economies of scale. They should also have good obsolescence visibility and the skills to manage last time buys and suggest alternative products. This is particularly important following the RoHS directive and disruption it brought to the supply chain.

## Prototyping

Most experienced suppliers offer a fast prototype service, vital to speed design approvals. Preferably, prototypes should be machine built as the finished product will closely reflect normal production methods, thus speeding pre-production, full production and time-to-market.

## Build capability and capacity

Modern manufacturing plant is costly to equip and staff, needing continued investment to keep pace with technology. Choosing the right supplier lets customers access expensive facilities on an activity based cost basis: if you don't need it, you don't pay for it. Technology availability is important and customers are more likely to find a wide range of processes in an established EMS provider as they will already service a range of customers. Customers should also consider where technology is taking them. Does the supplier's investment roadmap plan for new technology such as 01005 devices and high density BGAs? ❖



Calculating capacity is not as easy as just counting surface mount production lines, it's how fast and flexible those lines are

This holds true for new processes. The RoHS directive required the development of new processes and will continue to do so until the technology matures.

Capacity is always an issue. When a quick ramp-up is needed, capacity linked to speed of placement is critical. It's not as easy as just counting surface mount production lines, it's how fast and flexible those lines are. For example, three lines placing 50,000 to 80,000 components an hour offer a capacity exceeding 4,000,000 components a day, while five lines at 20,000 components an hour gives a capacity of just 2,400,000 components a day.

## Test

EMS providers should offer in-house test development capabilities, plus the right test platforms, to ensure a full, low cost, test capability. Test investment often means EMS providers can offer a range of solutions typically unavailable to design engineers, such as flying probe, AOI, ICT (including on-board programming and JTAG) to full product testing. This illustrates the importance of early DFT advice.

## Full product assembly

EMS providers should be able to offer a full product build service, from a PCB in a simple case to enclosure-based multi-PCB systems, fully customised and configured to customer requirements such as loading software, generating product IDs and applying logos.

## Shipping and dispatch

Increasingly, customers require full service solutions, with products shipped directly to end users. The supplier should have the ability to ship products to customers' specifications which could require reusable packaging and associated accessories including instruction books, warranty cards and software.

## Warranty and field return services

If a company has opted for full service, they will also need to cover warranty returns, service and repair requirements. There could also be a requirement for an in-service lifetime support guarantee, possibly five-years or more. This is another area where the EMS provider that built the product is probably best placed to support it. Material obsolescence and last time buy

SMS Electronics' sales and marketing director, Chris Hunt, believes that after considering the true cost of ownership, the UK offers competitive manufacturing solutions



service levels must be considered to cover repair or replacement products.

### Summary

So, have you considered everything before you make that important decision? Finally, it is important to consider true cost of ownership. Customers should weigh the benefits of UK support and capabilities (where you can visit vendors and communicate efficiently in real time) against the perceived benefits of low cost offshore assembly. By choosing the right supplier you can source a cost competitive product in the UK, as many other companies have done and continue to do so.

❖ [www.smselectronics.co.uk](http://www.smselectronics.co.uk)



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