



Avoiding danger



There has been no shortage of high profile offshore manufacturing horror stories. Sweatshops, disregard for health and safety and tainted goods have all brought disrepute – and worse – to companies who thought they could be more efficient by moving manufacture abroad.

It is important to list the reasons for wishing to manufacture any product offshore. Don't fall into the trap of assuming that simply moving to a low cost economy (LCE) for manufacture will give you a reduced product cost. Whilst Plextek frequently uses UK manufacturing partners, certain projects are obvious candidates for 'offshoring'. In these cases, we need to consider the goals of such a move in order to achieve the objectives.

Typical reasons for 'offshoring' include: a reduction in 'factory gate' prices; the ability to use a skilled and experienced workforce; a significant reduction in BoM cost through local suppliers who are already trading high volumes of

How to navigate the offshore manufacturing minefield.

By Dave Wolfe.

components; and reduced shipping costs and times associated with being close to component suppliers, end users or both.

In order to succeed at 'offshoring', it is vital to design out as much of the labour content as possible, by maximising mechanised assembly. Maximising the advantages of 'offshoring' will require best Design for Manufacture (DfM) practice, combined with selection of the most appropriate locations. Migrating a product to an LCE cannot compensate for the costs associated with poor design.

Evaluate the candidate's employment strategy as part of any audit and ask questions about staff welfare, factory working hours, training and staff development. A factory's staff turnover figures and general conditions of

employment are usually a good indicator of a partner with a longer term vision.

Stable, well trained workers typically provide more reliable output, both in terms of delivery schedules and quality targets, and will be more likely to spot trends and react to production issues.

The offshore manufacturer is also looking for longer term relationships. A stable workforce, producing at high quality and achieving delivery targets, will attract the right long term clients. The manufacturer may be able to charge a premium for this, since such stability will also bring reduced management overheads and improved customer satisfaction.

Conversely, a dissatisfied, poorly paid workforce would have negative impact on the quality and continuity of manufacturing. It is not very efficient having to continually train new staff.

As your chosen 'world class' resource reaches its capacity limits, it might be that it can begin to pick and choose who to supply in the future. It would be



CONSUMERS DRIVE QUALITY IN CHINA

A population of 1.3 billion has a great deal of spending power and Chinese consumers are evolving quickly. A growing and sophisticated consumer class is stamping its collective foot, wanting the best, the latest, the fastest. But how can this benefit European designers and manufacturers? And can it really offer guarantees of quality and technical expertise? **Mike Richardson** explores.

"I guess many people maintained a certain view of China as being content with quite limited manufacturing and quality ambitions," said Cheng Yoe, pictured, managing director of UK based outsourcing specialist Components Bureau (www.componentsbureau.com). "The reality is the domestic market is demanding increasingly sophisticated appliances

and products and, as a result, production has been increased at the quality and innovation end of the market. This will result in the more reputable manufacturers profiting, whilst backstreet sweatshops will disappear. From a design perspective, it offers opportunities to tap into real quality allied to the short lead times on offer. Meanwhile, age old concerns such as IP are being tackled from the government down and, again, it is very much the case that only the strongest and most compliant will survive."



protection. The WTO agreement on IP acknowledges the legal framework will vary between member countries, so acquaint yourself with the situation in countries of interest.

An appropriate analysis should be undertaken so potential consequences are quantified. An initial risk assessment table can be drawn up in minutes and may highlight that risk is lower than originally thought, or may be minimised by moving a key subassembly to another site.

Key functionality may also be contained in secure blocks, preventing key signals and voltages from being measured.

If this is important to your business or product, there is quite a lot that can be done during the design phase to improve security.

Risk reduction

To reduce the risk of things going wrong, it is vital to draw up a formal agreement with your preferred partner so all potential issues are addressed at the outset. Agree the 'terms' and the 'terminations', as well as defining who pays when products do not work as expected or if there are returns or upgrades.

Offshoring is not something to be taken lightly and is likely to go wrong if undertaken at a whim. In order to succeed, it requires knowledge and experience. ■

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"Offshoring is ... likely to go wrong if undertaken at a whim." **Dave Wolfe, Plextek**

beneficial to have 'preferred' status when this threshold is reached.

IP and privacy

Much has been made of the risks taken with IP when 'offshoring'. There is a set of minimum standards adhered to by members of the World Trade Organisation (WTO) to provide international IP

With experience and further investigation, it should be possible to assess the risks and requirements of a project against the capabilities of any preferred geographical location.

Make your design hard to copy. Encapsulation, encryption – and even the removal of device markings – may be used to make it difficult to reverse engineer.

