Re[as]shoringly expensive...

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In the same way that the big buzzword for small microprocessors and electronics is currently "Internet of Things" (end shameless name-dropping), a similar buzzword revolution is taking place in terms of designing and building the systems – so-called "reshoring".

What is "reshoring"?
Reshoring is one of those made-up words which is designed to engender a warm, fuzzy feeling about bringing back work to our shores – in essence it's the opposite of off-shoring, or out-sourcing abroad. As is often the way with such fabricated verbs, it hails from the US, where there has been an initiative for some time to educate companies in the true costs associated with out-sourcing manufacturing and design work overseas; this has had variable success depending on a number of factors, the main one being exactly what you are trying to achieve by out-sourcing in the first place.

PCB manufacture
Things have come a long way since the first years of out-sourcing contract manufacture of PCBs to China; the quality has improved, manufacturing cycles have become more consistent and UK companies are partnering up with Chinese manufacturing plants to improve traceability and end quality. However the communication and time zone difference can still be a problem and in particular where low-volume development prototypes are involved, the trend is still to produce these on-shore anyhow; reshoring can only hope to compete on quality, not price, although the gap is narrower than it used to be and if the cost of replacing failed boards is very high it may still make financial sense to manufacture even high-volume systems in the UK. For example at Hitex UK we manufacture cheap, non-complex LCD boards in China, but complex hybrid vehicle development platforms are built in the UK.

PCB Design
Design work is a different story. Here communication and consistency is key, together with quality systems such as ISO9001:2008. This is why designing PCBs is a prime candidate for re-shoring; local project groups working together geographically within a quality system will always result in a higher quality result than disparate groups working via often inadequately-defined specifications. Even when we are flat out at Hitex and use external hardware contractors, we still keep to using ones within the UK for this reason.

Software
Software development is like PCB Design, only even more extreme – the specification and communication must be very tightly-defined, together with finding a common cultural approach to development. For more straightforward work, out-sourcing abroad can bring considerable financial benefits, but the trickier, more involved bits of development benefit from closer working in groups with regular face-to-face meetings. Again, we have got this down to a tee at Hitex with all complex development being carried out in-house or with partners in the UK.

Striking a balance
Effectively it comes down to what you are trying to achieve; low-value, low-complexity jobs will always be cheaper in countries with lower overheads, but where the cost of getting something wrong and having multiple iterations of design can make a product unviable, bringing the work home to roost – a.k.a. "reshoring" – will pay dividends.