

Directions:

The newsletter of Codexx Associates Ltd

Issue 2 – March

Welcome to Directions: 2

Welcome to the second edition of the newsletter of Codexx Associates Ltd. This is aimed at executives within European manufacturing businesses. Our objective is to share with readers, 'sound-bites' of the latest business trends and thinking, which we believe are relevant to your business.

Networked Manufacturing

The combination of fierce competition, the access to cheap offshore manufacturing locations and the effectiveness of global communication is driving the emergence of a new model for manufacturing in western economies which we call '**Networked Manufacturing**'. In this model, companies have an increased percentage of manufacturing activities outsourced to suppliers, many based offshore, but with these manufacturing operations closely tied together by responsive processes and web-enabled IT. *Networked Manufacturing* enables the use of **low-cost offshore suppliers** for standard parts, linked to the UK operation, where companies will focus on the design and manufacture of **high value** components, **high variety** products, final assembly and **customization**. This manufacturing hub will also be co-located with Design and Marketing and will have responsibility for supply chain coordination. This is a model that global manufacturing companies are developing – global PC suppliers such as Dell for example. But the improving price-performance of web-enabled IT and development of supply chain thinking is now enabling medium-sized companies to adopt this model as well.

Why is this relevant to the UK? Simply because it offers a **sustainable model** for manufacturing in this country. The recently announced figures of the UK's record trade deficit of £21 billion in 2002 underlined the importance of manufacturing for the UK's economy. Whilst services enjoyed a surplus of £13 billion, this was a long way short of the **£34 billion deficit in goods**. A long term sustainable model for UK manufacturing is required. And it must be based on the realities of supply and demand. Dyson, Dr Martens and Raleigh are just a few of the well known UK companies to have decided to move the majority of their manufacturing operations to the Far East in recent months. They have all cited the major cost savings from using labour in the Far East. Of course low cost labour alone is not a good reason for most companies to make such a move. Typically direct labour accounts for just **10-15%** of manufacturing costs. But if the outsourcing maths are done correctly and the operations being outsourced are not core competencies nor critical to the responsiveness of the operation, then companies must exploit this opportunity. As well as helping cost reduction, it allows them to focus their resources on higher value-adding activities. Such as improved product **innovation** and co-development between Marketing, Design & Manufacturing. Such as providing **high value customization** – which can only be successfully provided through intimate understanding of customer needs, by product modularity and responsive manufacturing. Such as managing the **global supply chain** effectively with improved processes and IT.

Networked Manufacturing recognises low cost offshore manufacturing as an asset to be utilised, by UK manufacturers, rather than to be feared. But it requires companies to take a broader view across both the product lifecycle and the supply chain to harness this opportunity. It also requires an **holistic approach** to optimising the entire manufacturing network, using IT for visibility and collaboration and involvement of all the key players – be they internal or external – for dynamic operation and improvement.

Alastair Ross leads Codexx activities.

Improving engineering collaboration

Why do so many companies fail to bring the right products to market on time? Often the root cause lies in **ineffective collaboration** between design and manufacturing. The key in working together requires integrated activities. However very rarely do design and manufacturing work in this way. Typically product design activities are seen as precursors to manufacturing-process design, while manufacturing requirements and constraints are **not fully understood** in conceptual design. The thinking is independent, not collaborative. Experience in a number of companies has shown that improvement in this area in isolation is difficult. It must be done through **integrated processes**. There are two main reasons why companies struggle in product development: 1. Design and manufacturing objectives for the product are not linked to the key business focus areas (e.g. Time to Market, product profitability). 2. Company structure is still based on the functional elements of the product life cycle. This impacts product manufacturability by forcing the product development process to flow in a serial fashion with limited points where collaboration can occur.

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Engineering Collaboration (continued)

The end result is products arriving late and over-cost to market with high levels of engineering changes.

What can be done? - Working together in an integrated mode and not in a serial one requires agreed objectives, defined processes and a supporting organisation. Let us look at the **key steps** needed to achieve this: 1. Process models need to be established as functions of key design parameters, rather than the other way around. This would allow for **early visibility of process constraints** (e.g. machining precision defined or assembly tool functions known) and early analysis of the robustness of the design itself in development. 2. With standardised BOMs (containing design, production and procurement maturity attributes) designers can build a single integrated functional model, which can be shared, with all participants of the NPD process. 3. A business **product owner** needs to be identified with the responsibility for the product programme ensuring business objectives for the product are met (for instance including revenue responsibility for the first 12 months of the product life).

What are the Business Benefits? - Key business benefits of a collaborative approach include: Improved product manufacturability, faster new product development and reduced costs whilst delivering the best product to the customer.

So why are companies not doing this? - The answer lies in the product development process. Many companies do not have a formal, documented one or if they do, it is ineffective. Some examples: NPD process gateways are completed without all the criteria being met, engineering & manufacturing teams are not working together, **lip-service** is paid to FMEA and product objectives have not been thoroughly defined.

A simple way to assess the effectiveness of a company's New Product Development process and to determine the required improvements is to perform a **'health check'** or assessment on it. In our experience short, sharp pragmatic assessments, covering the process, its operation 'in real life', the organization and skills in design, manufacturing and marketing involved, together with the technology utilized can be very powerful in catalyzing the required changes. *Daniel Quinn focuses on engineering collaboration*

IT value – have you got it?

Is IT still a boardroom issue? At the start of the 90s, you could argue that IT had ceased to be a strategic subject, requiring senior executive attention, in the way it had been during the seventies and eighties. But the next decade changed that. Firstly IT was a key enabler for **Business Process Re-engineering**. That then segued into the ERP replacement frenzy of the late 90s as businesses prepared for Y2K. And then the, all-to-brief, burst of **e-business energy** in 1999-2001 brought the decade to a heady close. After the party was over, hung-over executives walked out into the cold light of a new day. One where the dark clouds of a global downturn threatened their companies' growth and possibly their survival. IT budgets were now under the spotlight. A good indication of this new cost focus is the **growth in offshore IT services**. Last year, India's IT services grew 29 per cent, the fastest in the world but slow by the levels of the past decade. That performance masks great variance: IT services, such as software development, grew 22 per cent but IT-enabled services such as outsourcing expanded 65 per cent. (Financial Times 5/2/03).

It must be recognized that a significant portion of IT development and support will inexorably move offshore in the years to come, as they have in manufacturing. Those resources remaining in the UK will be customer-focused, providing consultancy and high value IT services.

So what does this mean for IT customers and suppliers in the UK. It means that the focus of business customers is currently on **'value' extraction** from IT investment. Not on the latest box or the latest software. Companies faced with difficult business conditions are seeking to eliminate waste from their IT operation (**'Lean' thinking**, as in Manufacturing) and if investing, are seeking to drive the best deal from suppliers. In response, suppliers must focus on delivering value effectively. Their solutions must address real business issues and be able to drive quantifiable business benefit. That's why Supply Chain solutions are of more interest to businesses than CRM at the moment. When the independent US research group, Nucleus, surveyed 66 reference customers picked from Siebel's own website, of the 23 that responded, 61% had not received a positive return on their (CRM) investment. Enough said.

In our view, now is the time for real **business-led IT**. In response we have developed **Verdict**, an assessment approach to help companies assess the effectiveness of their IT investment and operations. Working with companies at the business & IT level, **Verdict** is used to assess fit of IT projects and budget with business needs, the effectiveness of the IT 'conversion operation' (i.e. requirements + resources in, working and business-relevant applications out). The net outcome is to identify potential cost savings and re-alignment of IT resources to better fit business needs. *Alastair Ross.*

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"Last year, India's IT services grew 29 per cent... outsourcing expanded 65 per cent."

"The focus of business customers is currently on 'value' extraction from IT investment."

Innovation – who needs it?

What do you think of when you hear the word ‘Innovation’? Thomas Edison inventing the light-bulb (even though the ‘invention’ was as much structured persistence, as a sudden revelation, as he tested hundreds of materials and methods)? James Dyson entering the mature UK vacuum cleaning market with a revolutionary new product and becoming market leader? Dixons entering the UK ISP (Internet Service Provider) market with a free offering when the established market was based on monthly charging (and then selling out in a timely fashion)? A continuous improvement team working to reduce cycle time in a manufacturing process? Many people will initially think of innovation as describing revolutionary new products. But a **coherent view** of innovation needs to cover products, services and business processes.

Successful innovation is more critical to companies now than it ever was. Why? Simply because global competition demands **sustainable differentiation** for survival. For most companies based in Western Europe and the US, cost-based differentiation alone is not feasible, given the presence of low cost offshore competitors. Instead they must seek to develop **higher value** products and services and innovation is a foundation of this. Leading companies recognize the innovation imperative: Look for ways to destroy your business. Another force in play is the seemingly inexorable **rate of change** of technology which continuously allows competitors to leap-frog established companies with new offerings, exploiting the latest technology. It means that the **‘pause for breath’** between new product/service releases is becoming ever shorter. Laptop lifetimes are typically less than six months. Markets are also being continually fragmented into smaller niches, each requiring different offerings. Small, seemingly fringe niches, can become major markets. Today’s lunatic market could be tomorrow’s mainstream business. The development of the PDA market – from the initial clunky Psion Organiser, of interest to a few technophiles to today’s essential executive tool rivaling laptop computers, is an example of that.

What makes companies successful innovators?

Good innovators continually monitor **technology and market signals** which are indicators of future offerings and demand. They must react to them. There are many examples of companies who have ignored them because of conflicts with their established business. IBM did not initially heed the signals on client-server based computing, probably because of the conflict with their mainframe market. But they did respond to the pain companies were experiencing in trying to implement complex IT solutions by developing the world’s largest IT service organization, despite the strong hardware paradigm in the company. Companies have limited resources, so they cannot respond actively to every technology opportunity or market requirement. They must respond to the ‘right’ ones – what is right must be based on their knowledge from intense **customer closeness** and **technological creativity**. They must develop portfolios of offerings, which are consistent and leverage their competencies. They need to operate a robust process for new product and service development. A good way of understanding what makes successful innovators is to look at companies that have been successfully innovating for a long time. Companies like 3M, who have been in existence for over 100 years and have a core competence of innovation. But what about being a **fast follower** instead? Let someone else take the risk of being first to market, and if the demand proves to be there then deploy high resources to quickly follow. Well, the risk is that you may not be able to catch up, particularly in a fast moving technology. At the very least you need to be close to the market and technologies to assess the risk v benefits of such a strategy.

How do companies improve their innovation capabilities?

Start with an audit of current innovation capabilities. This should cover four key areas:

1. *Innovation as a strategic task* – the fit with the company’s knowledge base
2. *Enabling innovation processes* – the effectiveness of the current processes & IT
3. *The innovation culture* – how the organization and culture supports innovation and risk
4. *External linkages* – to innovation stakeholders such as customers, suppliers and partners

A key step is the realization that innovation is a process – this is a paradigm change for many companies. Professor John Bessant is Head of Innovation Management at Cranfield University

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Your comments and suggestions on this newsletter are welcome. Contact us at: enquiries@codexx.com
Codexx provides business improvement services. We define our mission as ‘helping businesses help themselves’. In our experience this is the best way of creating high impact and sustainable improvement. For more information go to <http://www.codexx.com>

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