

# Collaborate or die

If you subscribe to the Darwinian view of 'survival of the fittest', then collaboration and capitalism do not sit easily in the same sentence. It's 'dog eat dog' out there, and survival strategies mean that the leanest meanest dog gets to bite the hand that is foolish enough to feed.

The enlightened thinker Dr W Edwards Deming, whilst remaining at heart both a capitalist and an American, was one of the first to recognise the pitfalls of the isolationist stance of companies. Trained as a statistician, his expertise was used during World War II to assist the US in its effort to improve the quality of its war materials. He advocated

## Myles Cummings looks at collaborative virtual networking and the impact it is having on product development

ful economies, with more quality products per capita head than any nation on earth. Clearly Deming was onto something.

Sixty years later, and globalisation has become the new force to be reckoned with, along with 'outsourcing' as the new corporate trend. First it impacted product manufacturing, then IT. Now product design, with 66 per cent of US manufacturing companies currently outsourcing some part of their design. However, this shift in manufacturing and production can be viewed as the defining catalyst for exciting new kinds of global collaboration.

Collaborative product development (CPD) is one example of newly emerging global trends. This is the development of a new product, or product iteration in conjunction with one or more strategic partners.

affect 80 per cent of a product's life-cycle cost, and for many manufacturers components produced by external suppliers constitute around 60 to 80 per cent of the finished product. Product development cycle time reductions of as much as 50 per cent have been achieved through collaborative design efforts, in particular where design engineers are able to use their suppliers' expertise in the development of a product. For the moment, however CPD is the exception rather than the norm. With many companies still unwilling or unable to use their suppliers' expertise in the development of their products. How can these barriers be removed?

## Impact

The Internet is an obvious tool as the global network goes hand in hand with the global economy. The ability to relay important design data to/from designer/supplier/manufacturer is clearly crucial to successful collaboration. Yet conventional methods of Internet working, with its heavy reliance on e-mail and websites are not always the most effective when it comes to working in global partnership on a new product design. Different languages, operating systems, web browsers, CAD/graphic/document file formats, are just a few of the barriers to successful e-collaboration.

collaborative approaches to both production systems and their management. At the end of the War he was invited to Japan by Japanese industrial leaders and engineers who asked him how long it would take to shift the perception of the world from the existing paradigm that Japan produced cheap, shoddy imitations, to one of producing innovative quality products.

## Contribution

What he told them is more or less summarised in the following quotation: "What we need to do is learn to work in the system, by which I mean that everybody, every team, every platform, every division, every component is there not for individual competitive profit or recognition, but for contribution to the system as a whole on a win-win basis."

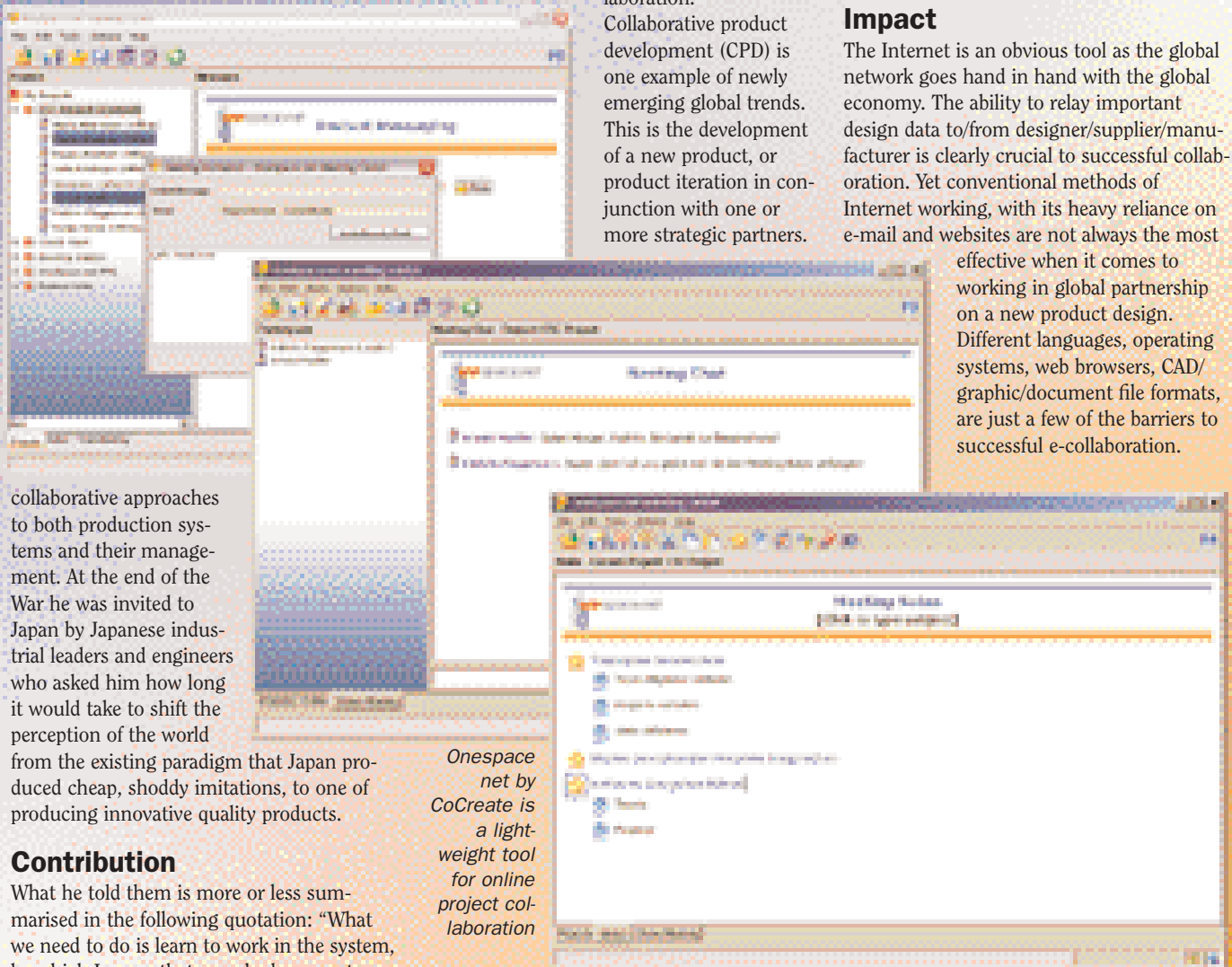
He told the Japanese that if they applied this 'formula' they would achieve success within five years. They were sceptical but obedient, and in fact it took only four. Today Japan is still one of the world's most power-

*Onespace.net by CoCreate is a lightweight tool for online project collaboration*

Companies are increasingly linking suppliers and partners into product-definition processes to leverage external expertise, shift internal investment, and optimise performance. Manufacturers may choose to partner for many reasons, including innovation, speed to market, and cost effectiveness.

Collaboration with suppliers early in the design process has been demonstrated to

Software companies are attempting to produce solutions, which offer the possibility for a more integrated, homogenous approach. Onespace.net by CoCreate, for example is a lightweight tool for online project collaboration designed for product development teams and their contributors. It combines architecture for web services with familiar concepts like organised projects, secure messaging,

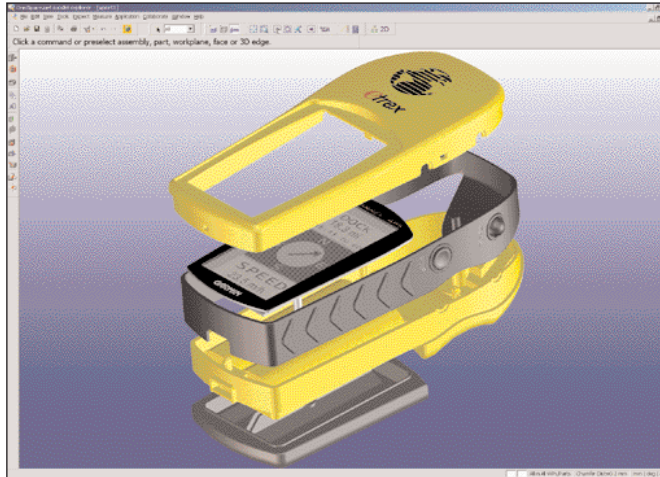


*CoCreate's collaboration products are successfully used by product manufacturers*

presence awareness and real-time online meetings, enabling design teams, marketers, supply-chain partners, manufacturing experts, and customers to share ideas and resolve problems across the web.

Essentially it has three components; an online project team workspace, a meeting centre, and 3D model explorer. The project team workspace is at the heart of the package, and will be immediately familiar to anyone who has ever used a bulletin board. The workspace is used to create projects, find and store documents, drawings, models and data; set subscription and change notifications; initiate and respond to threaded discussions. Access privileges are provided based on pre-defined roles for project managers, members and guests. The project team can share their engineering designs and related files in a controlled and secure manner.

The meeting centre is just that; online meetings are scheduled, and real-time collaboration on engineering applications (such as



MCAD, ECAD and CAE analysis) is possible. Documents can be marked up, with results captured automatically as Adobe PDF documents. Individual tasks can be assigned and tracked using Microsoft Outlook.

**Visualise**

The 3D model explorer is the neatest touch. Here team members can visualise, measure, modify, and mark up rich engineering data

such as 3D models and 2D drawings with complete accuracy. Import formats include IGES, STEP, PKG, ACIS, DXF and DWG as well as view 2D drawings. Export formats include VRML and STL. Optional converters are available for moving 3D CAD models from popular MCAD systems into the online OneSpace.net environment.

CoCreate has a long-standing portfolio of collaboration products which have been adopted and successfully trialed on collaborative projects by a string of product manufacturers, including Philips and CDI Aerospace. For example, Philips Medicals Cardiac & Monitoring Systems Division began the design phase of a new medical product. But as the project progressed, design issues, big enough to delay the release date, frustrated them.

The trouble lay with the exchange of design information. Philips Medical, based in Andover, Massachusetts, worked closely with a German supplier, Amphenol-Tuchel

# ANNEX

## TECHNOLOGY LTD

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Electronics in Heilbronn. The two companies tried to communicate design issues over the phone and e-mail. Annotated screen shots were e-mailed back and forth, but issues were often missed, solid models had to be reworked, and a lot of time wasted. Face-to-face meetings would probably have produced better outcomes, but were expensive and time consuming to set-up with only a few engineers able to attend.

It was decided to use CoCreate's collaboration product. Philips Medical Amphenol's engineering manager Dr Christian Pohl found that after a few minutes of installation and a short orientation session, the team was using the product very effectively in discussing deep technical issues.


"We can now discuss an entire problem and how it relates to everything else, not just an isolated 2D screen shot," says Ed Parnagian, development engineer for Philips Medical. What would have taken three to four days could be done in a single collaboration meeting. The product saved the company time, money, and rework and avoided costly travel associated with face-to-face design meetings.

**Tautology**

With cost no longer an issue, all engineers were able to attend the online meetings. Amphenol invited an expert on mould design who identified a flaw in the design that if not found, would have caused a faulty prototype of \$20,000 to be built. Of course while this kind of virtual networking offers a huge improvement in potential e-collaboration, sometimes it is good to be able to chat and share knowledge over a coffee, face to face. It may seem a tautology, but this kind of localised globalisation, is the concept behind a new development based in Newcastle; The 'Knowledge Campus' is to be the physical nucleus of a global product development community. Its intention is to provide a stunning physical presence based on a University campus model.

Sleek new architecture, will house a diverse, world-class development community collaborating successfully on new product introductions. In purpose-designed workspaces, communications, branding and promotional activities, and partnership development, will be an integrated whole and not a tacked-on extra. Existing partnerships with

local and global manufacturing firms will be encouraged via a host of shared business services, such as marketing, legal and Intellectual Property Rights. Access to interdisciplinary project teams experienced in Project Management, Quality Assurance, Procurement and Supply Chain Management will be available. Collaborative information technology too, of the kind discussed earlier in this feature. It is anticipated that the Knowledge Campus will contain and create the kind of synergy and dynamism, which will increase the global profile and partnering capability of the organisations who choose to locate there.

It is appropriate that this experimental development is being fostered in Newcastle. A recent survey showed that the Geordies are a more optimistic bunch than the rest of us here in the UK. And successful product collaboration requires a degree of optimism and faith in other people's skills and abilities. We could all learn from this approach. As Deming put it "Learning is not compulsory... neither is survival." 

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