

## **Sunshine and Software**

### **Reflections on COFES 2011**

**By Tony Christian**

I recently returned from my first Congress on the Future of Engineering Software, COFES, held in Scottsdale, Arizona from 14-17 April. It's been going quite a few years now (I think that someone told me that this was COFES #11) but this was my first opportunity to attend.

Describing the event is difficult; the overriding impression is one of contrasts. It's a conference but not as you know them; it's intense but in a relaxed sort of way; the organisation is extremely slick yet seems almost casual. What seem to set the event apart are the scope and the format. The scope is sufficiently broad that it is of interest to a wide range of people but sufficiently focused that there is a lot of common ground. The varied format – technical briefings, round table discussions, plenary session presentations and structured networking opportunities – makes the event pass very quickly. Here were the smart people responsible for advancing engineering software and hardware technologies conversing informally and openly with users and potential users of those technologies – and with their competitors - in an environment in which everyone seemed determined to be as cooperative as possible. The attendee list, although inevitably US-focused, included a substantial number of delegates from Europe and Asia.

The take-aways are equally hard to define. The overall atmosphere throughout the conference was one of outright enthusiasm for the technological possibilities and I had the opportunity to hear a number of interesting talks and participate in a series of lively and stimulating briefings, round table discussions and topic-specific workshops. To be frank (and maybe we should expect this as a firm of industry analysts!), there were few industry developments that we did not already know of but I did enjoy learning about the amazing stuff that Joe Juhnke at Tanagram is doing in augmented reality and about Siemens' progress in 'mobilizing' PLM (it brought to mind mobile sales force apps, but with an order of magnitude more complexity!). I also acquired a fantastic 3D mouse, courtesy of 3D Connexions, something that I had not used before (actually, it seemed that I was in the minority here - there are apparently a million of them out there already!).

A common theme through many of the sessions was that, although we have an awe-inspiring array of technologies available to support engineering, manufacturing, architecture and construction, there remains a significant gap between the capabilities of the engineering software and the ability of organizations (or, more commonly, networks of organizations) to exploit them. Of course, this has been an issue with large-scale IT projects for a long time and has been 'solved' in the business applications (ERP) space by deploying legions of consultants to re-fashion the business or wider supply network so that it can take advantage of the software (cynics would say 'to make it fit the software'). With the emphasis in recent years on integration (be it in the areas of PLM, BIM, Digital Prototyping or shop floor operations) the people and process issues are becoming ever more constraining on the exploitation of the technical applications, too. However, I'm not sure that the industry is too keen (nor should it be) to go down the legions of consultants route. It leaves the question, therefore, about whether, as the level of integration and breadth of capability of technical applications continues to increase, the developers can address the 'ability to exploit' issue through the technology itself by directing efforts at overcoming process/workflow/organization issues.

An important aspect of COFES to my mind is that the organizers strive to ensure that the

discussions about the 'Future of Engineering Software' are not limited to technological advances but also encompass the broader economic and environmental context in which the industry operates. In the current times, it would therefore have been surprising if the exciting presentations and discussions about technological possibilities had not taken place against a backdrop of global environmental and economic foreboding. Indeed the COFES conference itself is preceded by a meeting (known as the Design and Sustainability (DAS) Symposium) that considers the environmental questions and provides updates on the various initiatives being undertaken to address them. No less worrying today is the economic outlook and in Cambashi's contribution to the presentation program we set out to combine our traditional worldwide update on the technical applications business with a view of the dangers lurking (and largely unacknowledged by the banking and political elite) in the world economy (although by comparison with the environmental analyses, it felt positively cheerful!). To be sure, the business picture for the engineering software industry has been one of pretty impressive recovery from 2009 with positive results and growth prospects reported by the majority of vendors; our forecasts suggest that this resilient performance will continue – it is certainly important that it does, since the performance of the sector is driven by that of the range of industries that now matter most for the economic future of the US and Europe.

Achieving sustainable growth in high technology, manufacturing and construction is not without challenges though. It is clear that, on a number of fronts, the balance of the world economy is changing. Progress in information and communications technology has supported unprecedented globalization of supply chains, allowing cost-based decisions to drive almost unconstrained relocations of activities with the associated shift in the balance of Western economies. However, if a country is to prosper in the long term, it must run an aggregate long term trade surplus (otherwise all growth is built on unsustainable debt and is short-term and illusory). Ultimately, a balanced world economy is important for all countries to facilitate trade. There is an urgent need right now to address the question of how a healthy balance can be restored for the US and Europe. If, as more and more people are recognizing, the key to a prosperous economy and therefore society is designing AND MAKING things, then it follows that there are major implications for engineering software. Unfortunately the connections between the exploitation of the capabilities of engineering software technology and macro-economic impact are vague, complicated and hard to identify (often, it's hard enough even for a single organisation!). However, a model that enables user organisations to understand how engineering software technology can provide options for the balance of activities in their business (as changes not only in technology but also the inevitable adjustments in economic conditions begin to emerge) would represent a significant step forward in providing a contemporary strategic view of the potential contribution of the technology. We are exploring the development of such models and would hope to report on progress next time!

So, a wide-ranging, thought provoking, informative, constructive and wholly enjoyable few days in Arizona. I hope that I will be able to go back next year; I'm sure that there will be further advances in technology to see and interesting collaborations, acquisitions and industry initiatives to track. But I also hope that by then there will have been some recognition by the economic and political establishment of the need to be proactive in driving industrial recovery.....given that allocating the necessary resources would be in conflict with the continuing need to prop up the financial system, it might be hoping too much.

#### **About Cambashi**

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