

**Topic:**  
Outsourcing

## Outsourcing the Indian Way

### A view of the growth of the engineering services sector in India

*iCAD is produced by Business Advantage, a B2B research, business development and marketing consulting practice operating in the global IT, Digital and Telecommunication sectors.*

An increasing number of companies based in India are offering engineering services to international markets. *iCAD* spoke to **Ramesh Pillai, General Manager of European Operations for Pentafour Software (UK) Ltd**, to find out how this particular 'offshore model' for outsourcing is developing.

*iCAD: First, the history lesson; where has the growth in the number of Indian engineering service providers originated from?*

Ramesh Pillai: "Starting at the roots, it was the paucity of skills in the west for tackling the Y2K problem that triggered the growth of the Indian IT industry, which was then sustained by the subsequent Internet boom. This was the crucial period for the Indian software industry, which responded quickly to this requirement, and became known as 'the' software country."

"In the early days, this kind of outsourcing of software related work was confined to the financial sector, e.g. bug fixing and development of code for financial institutions, insurance and logistics companies etc. There has been a continuous expansion however, including the realisation that CAD/CAE design related work could also be outsourced to India equally successfully."

[Pentafour Software \(UK\) Ltd.](#) is the European arm of Pentasoft Technologies Ltd (PSTL). With headquarters in Chennai, India, PSTL has more than 3,200 employees at 25 locations in 15 countries. Their engineering services include concept design, parametric 3D design, FEA, mold design, rapid prototyping, virtual prototyping, tool design, PDM and computational fluid dynamics.

*iCAD: What sort of work is being outsourced to Indian engineering service providers?*

**RP:** "I think that engineering companies have been testing the waters with the labour intensive, but non project-critical tasks. These typically have been legacy data migration projects like CADD5 to IDEAS, or cross migration from UG to PTC etc. However this is now graduating to meshing related work, software development in the CAD/CAE space, and even PDM & CAM related jobs. We're some way off from the really challenging areas, such as wind tunnel design and testing, crash analysis, or farming off the platform of entire engineering projects. But with confidence in the offshore model of outsourcing building up, it won't be long before more ambitious activities are being outsourced here, such as digital prototyping and virtual reality technologies."

"There are currently only a handful of Indian companies offering this type of service, but this will increase rapidly once this concept really takes off and Indian companies realise that the demand is there, and that this segment is an equally lucrative segment to that of the Java, C and C++ kind of development market."

*iCAD: What are the key factors that will drive the growth of the engineering services sector in India?*

**RP:** "The availability of skilled manpower is a big factor. The engineering curriculum remains more or less the same worldwide, and the quality of the engineering graduate in India and that in the USA is more or less equal. This is something which Western companies are slowly realising and taking advantage of. At the last count, in the state of Tamil Nadu in India, there were 110 Engineering colleges, each churning out, on average, 300 engineers every year. Also, there are at least a further 2-3 CAD/CAE training institutes in every town/city in the state. Extrapolate this to a total of 25 States & Union Territories and you have a vast number of available and qualified personnel. Add to this the fact that numerous Western companies are opening or have opened a manufacturing base in India, and you have a wealth of qualified engineers with domain expertise and experience in various industries, be it automotive, aerospace, general manufacturing or whatever."

*iCAD: But getting down to the nitty gritty, isn't this all about cost?*

**RP:** "Absolutely. That's why this whole model is so attractive. Take the UK as an example - the statutory minimum wage there is £4.10 per hour. The minimum wage in India would be, on average, a sixth of that. Now add the fact that the latest technologies available in the USA or Europe are released almost simultaneously all over the world, and you have an excellent combination of latest infrastructure and experienced manpower in a very cost effective environment. No wonder GE is building huge facilities to employ thousands of software programmers in India, including one with emphasis on aerospace and engineering projects. They are not No. 1 in the Fortune 500 for nothing."

*iCAD: What does the current economic climate mean for engineering services sector in India?*

**RP:** "Like many others, the pressure to reduce overheads and investments means that engineering managers are scrutinising all the options for cutting costs. I think it's accepted that engineers and designers generally are loath to part with their designs or ideas outside of their departments, let alone their campus. But this attitude is now changing slowly."

"The tighter the business environment becomes, the more companies will look to outsource and cut costs to provide most value to shareholders. No crystal ball gazer is predicting anything less than 18-24 months before the global economic situation improves. Until such time, any organisation which offers costs savings will be looked at seriously. Now it's possible that the cost/benefits window might move from India to China or Vietnam or one of the East European countries - but hopefully the Indian software & engineering services companies would have matured and gone up the value chain to an expertise based model."

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