

Contract R&D: Introduction & Challenges

**Kamal Aggarwal, Vice President – Marketing & Strategy,
SoftJin Infotech Pvt. Ltd., [kamal@softjin.com]
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Outsourcing to India as a model has been amply proven in IT and software development service over the last decade and a half. However, these services involved executing well defined and understood tasks using an able and trained man-power. Such tasks were either non-critical ones that the organization did not want to retain as part of the company or those that required the additional capacity provided by the outsourcing partner. These activities included IT infrastructure management, Business software applications and customer service applications & processes.

However, outsourcing of core technology Research and Development activity to India has not been a trend so far. Leading organizations around the world spend a significant portion of their revenues in R&D. However, this activity has seen much lesser outsourcing to India.

We feel that time for the idea of R&D outsourcing or Contract R&D services in India has arrived.

Challenges for R&D

Let's talk about the challenges in R&D efforts that are faced by companies. Any technology company has to invest heavily in R&D activities to remain competitive in business. R&D in any field by its very nature poses many challenges, the most important of them being that, more often than not, it is a speculative effort and an investment in multiple ideas, only a few of which may click. Also, one needs the best of the breed man-power and domain experts to work on it, the more ideas one wants to try, the wider man-power pool is required.

By the inherent nature of R&D, these "speculative" investments must be made irrespective of prevailing market conditions. It can not be curtailed just because the trends in economy are recessionary and common sense logic demands holding onto the cash instead on investing in "speculative" activities. This primarily is an activity that is less oblivious to market forces.

Outsourced (contract) R&D: Time has come for the idea

From the point of view of India getting into Contract R&D into core technology areas, we believe that the time is right, for the following reasons:

Contract R&D involves higher level of co-ordination between the customer and vendor as well as cutting-edge engineering capability availability with the

vendor. To begin with, Indian companies have mastered and proven the art of global delivery and of working together with customers in complex and large outsourced projects.

The eco-system for undertaking such activities is emerging:

- ✓ Talented and Experienced man-power who have been involved in R&D either in parent companies abroad or captive MNC centers in India are available
- ✓ Fundamental research that is happening in Indian academic institutes and universities now are much closer to cutting-edge industry practices
- ✓ Growing interaction between industry and academia/research institutions.
- ✓ Development of local market for high end technologies with growing integration of local economy with global economy.

Also, India still being a "reasonable cost" geography, the organization that out sources R&D here gets more ROI on R&D spend and is able to smoothen the impact on R&D budgets during "bad" or recessionary periods

In fact, early success stories in outsourced R&D are already well known in India, in the area of Life Sciences, Automobile components, Semiconductor and Software industry. For example, SoftJin is working with a large Japanese giant with interest in semiconductors, to develop design tools to support its innovative manufacturing technology. These tools will play a key role in popularizing this technology, and the project is a very research intensive one, in which SoftJin's engineers are collaborating with research labs in India for developing a solution.

Challenges to outsourced (contract) R&D

Though there are operational challenges to make the concept of contract R&D work, it is the IP related issues that play a significant role in the minds of many an organization while contemplating outsourcing their R&D. A strong track record and enforcement of laws in IP protection in India will go a long way in assuaging these fears.

Other operational issues include Technology transfer at the end of the project to the customer and Research capability demonstration to new prospects, since most of the previous projects done by the company would be confidential in nature. Business issues include estimation, pricing, scheduling and the Business models for sharing the revenues and risk involved in the R&D effort.

Ideal organization

The ideal Organization that provides such services needs to be structured differently than the regular services vendor - The key value add that the vendor provides is no more operational efficiency but knowledge and IP. New age paradigms of management such as a "knowledge intensive" culture need to be instituted within the organization so that revenue growth and knowledge base growth of the organization are hand-in-hand. The twin objectives of knowledge base growth and revenue growth may be contradicting each other in the short run and might need to be managed to achieve a balance. However, in the long term, increase in knowledge base can only lead to increase in profitability and thus both goals in fact, may be complementary.

Culture of learning that exists inside the organization is of paramount importance to achieve this goal. Any organization which intends to provide such services must have, among other things, a strong, institutionalized learning culture.

In the business context of R&D outsourcing, the specific problems that the company will work on are typically the problems for which no known solutions are available. This is mainly due to the fact that these problems are related to cutting edge and upcoming technologies. In order to service these requirements, it is imperative for the contract R&D services vendor to be a "learning organization", whereby they are abreast with the developments in their technology domain and are in a position to respond to any technology challenges swiftly.