



"In the End, R&D Has to Get Products to Market"

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Ramesh Emani, president of Wipro Technologies' Product Engineering Services business unit in Bangalore, has seen India become an information technology powerhouse in nearly two decades at Wipro. Now the country is moving up the value chain toward research and development services to create new products that will be launched globally. Although it's early in the race, Emani and Wipro Technologies, a unit of Wipro, one of India's top IT services companies, are likely to play a big role as global companies move R&D to India. Knowledge@Wharton spoke with Emani about trends in R&D, competition from China and the management of offshore research facilities.

Knowledge@Wharton: You work across a lot of different domains -- automobiles, consumer electronics, telecom, medical devices, and so on. Within this wide range, what would you regard as Wipro's most significant R&D projects in the recent past?

Emani: In the telecom industry, we have been working in two areas. One is in the field of training with large product portfolios for our customers.

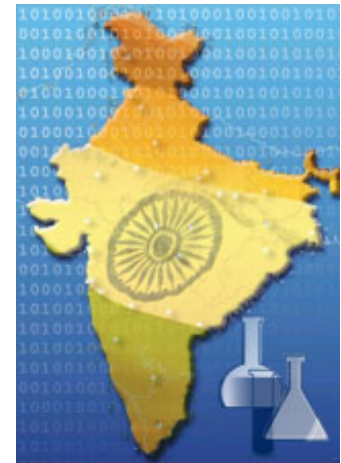
Because our customers are able to transfer the engineering to us, we feel they are able to keep their products alive. Otherwise, they may have not been able to maintain or run these products profitably given the price erosion and other challenges to their costs. The second category is developing new concepts such as the whole new voice over IP (Internet Protocol) infrastructure and software as well as new DSL (digital subscriber line) products. We're also working with many semiconductor companies.

Knowledge@Wharton: Wipro did a survey in March about the global sourcing of R&D which found that 13% of the respondents were extremely satisfied and getting more value than expected. That's exactly the same percentage as those who thought it was extremely disappointing. Could you comment on what's going on and the challenges you encounter?

Emani: First, let me make a general comment on outsourcing. If you consider customer satisfaction with outsourcing in general, whether it is IT or R&D, you'll find the same percentages. The main reason is there are companies that are extremely active managing their own operations, and sometimes it's not easy to transfer those to a new company and new set of people who may not get the whole process. It all comes back to us not having the context for what they were doing, and their not sharing what they do in the development of products. It's a lack of communication and context and a lot of changes in the process that create these challenges. Sometimes you have to make a number of dynamic changes within an organization.

Knowledge@Wharton: Have you put any processes in place to overcome these problems?

Emani: Absolutely. If you ask me about the No. 1 challenge we face, it revolves around change control -- how well we are able to manage a change so that we work proactively with the customer. In the R&D context you have a lot of changes. The second aspect is program management -- how we synchronize what we're doing with what the customer expects. That is important because many times we don't do an entire piece of development. We do one piece while the other pieces are done in the U.S. or in Europe.



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How do we bring all that together? There are processes for continuation control, change control, testing and handoffs. We have focused a lot on that. It comes down to communication and how you share information on the product and other things.

Knowledge@Wharton: Are there more challenges to offshoring R&D compared with outsourcing business processes or maintaining legacy applications? R&D takes time and it's not like you can just hand it over. Is there an immediate payoff?

Emani: My answer is yes and no. Many R&D processes are just like any other IT system or outsourcing processes. I don't think they are any different from other outsourcing arrangements. There are a lot of processes making sure the system works well, and many of them are based on standards. The real core is having good knowledge about the market, the people and the domain and setting standards. We have to make sure we work well with the customer in terms of architecture and high-level designs.

Knowledge@Wharton: How would you describe your R&D activities? Do you handle full products or more basic research to support other labs?

Emani: I wouldn't focus on the "R" (research) that much. What we do is more of the "D" (development). There are very few firms that only do the research. When it comes to development, we do what is necessary to make it work. We're doing designs using the latest software and new technologies. That's especially the case in telecom and information technology.

Knowledge@Wharton: A lot of Western firms have built their own R&D centers in India. Do you regard them as competitors or as customers?

Emani: There's a distinction between offshoring and outsourcing. A lot of companies view them as one and the same because it's work that is going to India. What we tell the customer is totally different. In offshoring, you're just trying to create a low cost center to reduce R&D costs. With outsourcing you're handing off development to someone that may have better processes and be more efficient than you are. You're also trying to get dynamic in terms of ramping up and down resources to meet the market. We don't see those India centers as competition. We work with them. A lot of the India centers work really closely with us.

Knowledge@Wharton: When it comes to R&D where would you put offshoring --Intel building a center in Bangalore -- vs. outsourcing? Are they at different stages?

Emani: There are different areas where I'd say the Indian centers of Western firms are very advanced and others where we are more advanced. I'm not sure you can compare the two. Texas Instruments has been in India since 1987 or 1988. They have a lot of knowledge. There are many smaller companies that think they can set up here and make it work well. But I'm not sure they can attract the best talent.

Knowledge@Wharton: The companies doing R&D the most in India seem to be the information technology, bioscience and pharmaceutical firms. Why?

Emani: If you look at R&D in businesses such as electronics or IT, it is clearly an offshoot of what has been happening. These industries have had a lot of experience with doing work offshore, and that is now being extended to R&D. Many universities have Indians in R&D in the other industries you mentioned. Companies work with so many people of Indian origin that they find it easier to come here and work with Indian companies.

Knowledge@Wharton: What's driving companies in the U.S. and Europe to move R&D to India? Could you name the three main reasons?

Emani: The first reason is to speed up the pace of production. As product cycles shrink, companies are under pressure to launch products faster. There's a need to work and deliver results rapidly. Some of our clients want to cut their product cycle time by half. The second reason is cost. As the prices of products decline, and companies seek to sustain affordable prices, lower R&D costs become important. The third reason is the availability of talent with competence and research skills.

Knowledge@Wharton: Do you see the same factors at work in the kind of R&D work that is moving to China? Is there a difference?

Emani: My customers tell me that India has an advantage in terms of IT production, the English language and ability to work with people and things like that. IT skills and English are the key reasons people come here.

Knowledge@Wharton: Compared with China, how much is the risk to intellectual property an issue in India?

Emani: No customer has ever told us they had intellectual property issues in India, but they have mentioned those concerns exist in China.

Knowledge@Wharton: You said that India's advantage in R&D lies in IT experience and knowledge of English. What happens in a generation when the Chinese speak English just as well?

Emani: English has developed in India over the past 100 years. It takes time to build such skills. China may be able to converse in English, but to say it can reach the level of India, I don't see this happening that quickly.

Knowledge@Wharton: In the U.S. moving R&D to India or offshore can be a touchy subject. What are the political realities you have to face when dealing with customers?

Emani: Many of the companies we deal with are global. Even if they are not, their markets are global. So we don't face the political reaction. Our customers are global, and they have to do work on a global basis. They are worried about it, but there is no hesitation. They say they are global companies, and there is no choice in this.

Knowledge@Wharton: If a company is moving R&D to India, whether it's sourced or outsourced, what does it have to do internally to make it work?

Emani: Make sure you are actively involved and engaged. Our best customers are the ones who work closely with us, who travel to India regularly and have strong metrics and processes. Don't think you can do it once and go, particularly with R&D, which is a continuing activity. If a company is not actively engaged it shouldn't outsource.

Knowledge@Wharton: What's the best way for a company to measure its returns on outsourcing R&D to India?

Emani: In the end, R&D has to get products to market. How many products can India get to the market and at what price and what quality? All three parameters are important.

Knowledge@Wharton: Where India is concerned, what's the market? Is it India or the world market? In

China, R&D is focused almost entirely on adapting products for the Chinese market. Is that the case in India?

Emani: That's one of the distinguishing factors of R&D in India compared with China. We do some work for the Indian market, but mostly the products we work on are for the global market. In the telecom industry, some projects focus on applications for the Indian market. But normally that is not the case. Customers don't come to us only to focus on the Indian market.

Knowledge@Wharton: In China, R&D is used to certify suppliers and make sure they comply with company standards. Is that an issue in India?

Emani: In India, we don't work with local standards. There is nothing such as India standards so that isn't a concern. We don't have that issue since India standards are global standards.

Knowledge@Wharton: You said talent is a major reason why R&D has been moving to India. How is India shaping up in the war for R&D talent? Is there still a price advantage or is it disappearing?

Emani: Yes, there is an advantage, although in the last two years fears have emerged that the price advantage might disappear. But we have such a huge gap globally that I'm not worried about it. We also work long hours in India and we focus on quality. All that enhances productivity.

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