



Engineering solutions

Patni offers end-to-end product engineering services for Industrial Automation.

Artika Shah finds out more about it from **Ajay Chamania**, Senior VP and Head, Embedded Technology Solutions (ETS), Patni

Please discuss the market potential for industrial automation within product engineering services in the Indian context. How does it compare with the global market?

It will be very difficult to comment in the Indian context. Our focus has been to provide the product engineering service for the industrial automation and companies. I won't be able to take the names of those companies. We are one of the 10 big companies in the industrial automation space. When I talk about the industrial automation companies from the product engineering perspective, I am talking about the companies that are creating the technologies. So I won't say that these are our customers but I am talking about companies like Siemens, ABB, Rockwell, Toshiba and so on. So these are the companies that are creating the technology for coming into the Indian market or outside and so on. We provide the product engineering services to these companies.

When we say we are doing product-engineering services for these companies, it is really about the design of these PLCs. If you look at industrial automation there are different layers like the field centres, PLCs, HMIs and so on. So we do a lot of work in all these technology layers in the industrial automation domain. Our customers are really the big names and they are considered as industrial automation players. So we don't go and serve our services to Indian market in that sense. But at the same time one needs to understand that most of the new plants and most of the new industries are coming in India or Asia-Pacific region. I think may be there are a few engineering companies in India but what you get to see are the big names, which I talked about. They have got there on Indian operations. Each one has won a name, have their own subsidies, big budgets and outlets.

Our focus has been to do the product development for all these big names. There is a little

difference between the global market and the Indian market. Same technologies are available in India like elsewhere. GM, Honda, Mitsubishi or Toyota sets up plants like legal plant and automobile plant. There is no difference between the technologies, which is used in the industrial automation in India and abroad. It is nearly the same in India and outside. From the technology perspective, I don't see there is anything different.

Can you tell us something about the kind of high-end work Patni is doing for its clients in embedded technologies?

In the industrial automation companies we are really working on some of the core technologies like the hardware design, complete product or a realisation service. We really focus on electronic side of the market. There are five different domains we are currently focusing and they are industrial automation, consumer electronics, medical electronics, storage and automotive electronics. We

typically work with R&D and engineering team where we are involved in creation of a new product or supporting it through its lifecycle. We are an IT services company. Product engineering services is one of the stern business units in Patni. So industrial automation fits in our product engineering services we operate.

We do the chip design, hardware design, board design, working on the real time operating systems, working on the complex architecture and so on. This is one flavour of high-end work. Second, you are talking about the various domains you are trying to work. When you work on medical domain, then you have different types of complexities involved. When you work in the industrial automation, you are talking about the safety and the various critical applications. So there are different levels of complexities involved. High-end work could involve delivering the complete solutions.

It's not about just making one part of it or writing on the software, but that could be like doing complete end-to-end product development where you are designing the electronics, designing the software and designing the box in which things will be put together. That is the kind of high-end services we are providing. These services are completely an outsourced R&D model where customers are just giving us the idea as to what they want to do and we are doing the complete end-to-end product design for them.

You have 'dedicated labs' to serve your clients. Can you please elaborate on the term dedicated labs? What role do these labs exactly play?

When we use the word 'dedicated

labs', one has to understand when we design things we are designing the electronics, the critical parts. A classic example would be, let's say, we are designing the brakes for electronics for braking systems, that is, for locomotive. When we design it we have to test it right. We cannot test in a real locomotive like the one in the train. Before you put your electronic brakes, you have to verify it in some different environment. So the dedicated labs are basically the labs where we can select our actual environment. Sometimes we do the real simulations and sometimes we do simulations using some kind of a facilitator. These are electronic slabs where we can test the part in a simulated environment and can verify the part before putting in the automobile or in train.

The term dedicated labs would mean labs that are being set up for testing the product through some other hardware infrastructure and nomination of hardware and software infrastructure. For example, we do some work on cardiac rhythm management. So we need hard simulators like we need machines, which can simulate the heart's functioning. In a similar way, we can test our products. That's the meaning of dedicated labs and almost every customer relationship would have some kind of dedicated lab.

These dedicated labs are spread out in three or four different locations where there are 2-3 locations in Mumbai, one location in Navi Mumbai and one location in Pune and Bangalore. These are all customer-specific dedicated labs. Some of these labs are a complex combination of the hardware and software and offer various solutions.

When you talk about dedicated labs, sometimes these labs are fairly huge labs as we say it is very

complex. So it takes a lot of effort and expertise to set up these kinds of labs and you cannot do product engineering work from a remote location unless and until you have dedicated labs. When we set up these labs and when the customers see these kinds of labs, they feel much more confident about the work because it can be even done 10,000 miles away. So it generates a lot of confidence in our customers and our corporates that we can do R&D services in remote locations.

What is industrial automation?

Industrial automation provides the hardware and the software for plant automation. If you are sitting at a cement plant or paper plant, you need the electronics equipment, where we are trying to drive the plant operations. That's the technology which is being provided by all the big names which I talked about, such as Siemens, ABB, Rockwell, Toshiba and so on. So they provide the complete technology, complete software and complete solutions so that you can start your plant. So when we talk about doing product engineering for the plant automation companies or for industrial automation companies, what we are talking about is designing the hardware, designing and implementation of the software and so on.

Please talk about Patni's various offerings in the industrial automation space.

Our focus is to work with the companies who are providing technology for the industrial automation domain. So, as far as service offerings are concerned, we do the hardware design, real-time software development and application development. Specific to industrial automation, it

includes all the layers of industrial automation, which includes the field devices and the sensor layer. The next layer has more to do with the PLCs and so on. The third layer we work on is TCS, HMIs and SCADA systems. So our service offerings are end-to-end product lifecycle service offering where we do R&D work, prototyping work, detail design implementation and provide for lifecycle and support activities. Lots of work that we do for our customers depend more on the R&D activities, which we do. But I can give examples of some companies who are into elevator systems. These are the companies who are into PLC business, companies who are making HMI panels, train control systems, building automation systems and more. So it is a fairly complex grid of working across the whole industrial automation domain.

Please feel free to talk about any other issues that you think are relevant from the industry's perspective for industrial automation.

See, when you say Indian market, it means you are looking at companies like Patni and so on. More and more R&D is getting outsourced to India. From that perspective, to be successful in this market, there are a couple of things, for which we are very important for the Indian companies. One when we are talking about some kind of products and technologies, then these are very critical products for various reasons. First of all, it requires a lot of domain knowledge in addition to the strong technological knowledge. When I say domain knowledge, one needs to know how do we get these products in industrial environment. The second is the quality focus that these products

About Patni Computer Systems Ltd

Patni Computer Systems Ltd (Patni) is one of the leading global providers of information technology services and business solutions. Over 12,000 professional service clients across diverse industries, from 23 sales offices across America, Europe, Asia-Pacific and multiple off-shore development centres across eight cities in India. They have serviced more than 200 fortune 1000 companies for over two decades.

Patni has vast experience in system and application development projects, across all major software platforms and environments. They have major software competency centres throughout India, both their professionals employed onsite as well as offshore projects. They spend a significant part of their revenue on training, ensuring that their employees are constantly updated on new technologies and skills. Patni adds value to client businesses through well-established and structured methodologies, tools and techniques backed by Six Sigma processes. Patni is ISO-9001:2000 certified and is also assessed at SEI-CMMI level 5 and P-CMM level 3.

get or when they are used for control plants. Plants could be a nuclear power plant or some other manufacturing plant. Then if there is a problem of quality, it can really cause havoc, which can endanger life of people.

It is extremely important to protect the plant. There are a few things that are very important, like grasping for the technology, which could be hardware technologies, real-time operating systems, communication technologies, networking technologies and so

on. But two things that are important are domain knowledge and the focus on the quality part. Technology is changing fast in the industrial automation space. One is able to design more powerful control systems.

What I feel is that the word industrial automation was confused with talking more about hardware, capabilities and so on. But now it has become a more powerful process and is dealing with more powerful and complex applications. 📌