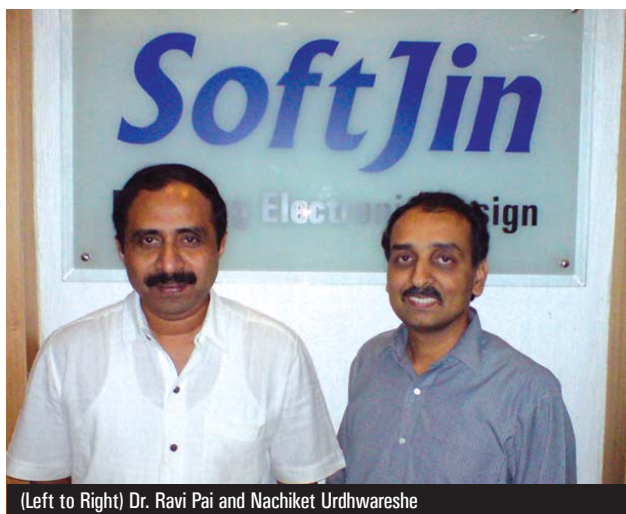


The hybrid play: Enabling next-gen designs

The closest an engineer in India could think of in terms of working in a product company is to join an out-sourced product development (OPD) firm or the development center of an MNC. There too, he'd be given the ownership of only a part of the product development process, and rarely have a chance to know about the marketing and strategy building functions.



(Left to Right) Dr. Ravi Pai and Nachiket Urdhwarshhe

But if Dr. Ravi Pai, Chairman and Managing Director of SoftJin Technologies, is to be believed there already exists an exciting opportunity for engineers of the breed mentioned above. SoftJin is a unique homegrown company in the semiconductor domain that has a hybrid business model, a rather uncommon occurrence in the services oriented Indian industry. The company started by providing high end Electronic Design Automation (EDA) R&D services to the semiconductor industry in the U.S. and Japan. Based on the expertise gathered in these services engagements, it then ventured into the products arena led by its Bangalore based internal R&D in specific domains within the EDA.

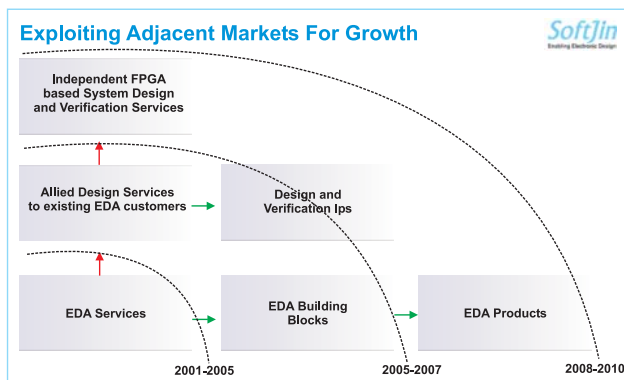
Forked focus

But, how practical is it to have a products focus in the semiconductor domain in India, where the ecosystem hardly exists? Nachiket Urdhwarshhe, CEO of SoftJin, is quick to respond. "That's precisely the reason why the hybrid model

makes sense to us," he says. In places like the U.S., owing to close proximity of customers, there is a lot of industry oriented research carried out in universities and it is much easier to start a product from the very first day. But in India, services business can be the ideation engine for the products' entry. SoftJin's experience in the services domain helped it understand the market potential along with customer needs and pain points, while also providing it with necessary competencies and capabilities in the EDA domain. "The services business also provides cash reserves which are critical investments during the early stages of the product development," adds Urdhwarshhe. The hybrid play also equips SoftJin with an initial customer base to test the products they develop.

“SoftJin has built Nirmaan - a software development toolkit for EDA tool developers for accelerating the development of optimized Post-Layout EDA tools, including DFM tool”

Also, the custom solutions space within the EDA vertical is largely untapped. Pai notes that at present most of the customization is done by the customers in-house, as major EDA players do not offer customization services. He reckons that within the \$4 billion EDA products market, the custom solutions market alone is worth \$500 million. "That's the niche we're looking to target at," he notes.



Growth areas

Close to a decade of experience in the semiconductor industry has enabled SoftJin comprehend the emerging technology trends. The company has identified some of these, and is now pursuing a variety of growth initiatives targeting them. Going forward, the most important focus areas for the company would be:

Tools for advanced silicon design: As more and more designs are adopting 90nm or lower geometry, the need for EDA tools which can address the manufacturing issues after

SoftJin	
Vertical	: EDA, IP and System Design
Model	: Hybrid (services+products)
Focus areas	: EDA Tools for Post Layout and Programmable Platforms IP development, licensing and customization EDA, System Design and Verification Service
Headcount	: 90
Headquarters	: Bangalore
Sales Offices / Channel Partners:	U.S.A., Japan, Taiwan, Singapore, Europe

the layout is complete (also called Post Layout tools) constitute the biggest challenge. Not all the functionalities required by customers are offered by the bigger players. Also, most companies adopting 65nm or lower geometry have their own design and manufacture processes. “They want to automate their Design For Manufacturability (DFM) tools but are not open to sharing their knowledge with EDA companies,” notes Kamal Aggarwal, VP Marketing and Strategy.

SoftJin has built *Nirmaan*—a software development toolkit for EDA tool developers for accelerating the development of optimized Post-Layout EDA tools, including DFM tools. The company has also developed an end user tool *NxCompare* which can be used to compare any two Layout or Mask databases. The next set of cutting edge EDA tools, which are as yet unannounced, are in the drawing board stage.

ASIC to FPGA shift: Industry trends and market research firms point to a shift in design starts from ASIC to FPGA and other programmable fabrics, since with others the cost and time of developing ASICs is very high. EDA companies also need to position themselves accordingly: There exists a growing need for customized design tools, design IPs, and design services targeted at FPGAs. Also, these need to be easily customizable according to the specific needs of particular programmable platforms.

In this context, SoftJin has developed EDA building

blocks that enable emerging Programmable Fabric companies to develop customized Synthesis, Placement, and Routing tools.

In addition, all FPGA and programmable platform companies need customization of Design IPs to their architectures according to the demands of the market. Current trends point towards low power high speed chips and handheld devices that are set to dominate the market in the next few years. Keeping the dynamics in mind, SoftJin does IP customization for a large chunk of its customers besides the regular IP development and licensing activities. Here, the company’s experience in making EDA tools for the programming companies comes in handy, as it equips it with a detailed understanding of the architecture—a must for customizing any IP effectively.

Challenges and opportunities

Since India is well known for its services, pushing the products envelope with prospective customers often becomes a challenge, concedes Aggarwal. Also, the market SoftJin targets is centered in the U.S. and Japan. The distance, coupled with the rapidly changing market landscape, makes playing in the niche vertical challenging. “We must exploit opportunities at the right time,” he quips in this regard.

Also, engineers in India are trained in services; training them to work on products by means of reflection on customer pain points and future possibilities is an issue. “Ideally,” says Dr. Ravi Pai, “we are looking for combined knowledge of electronics and computer science in people we recruit.” The company is in ramp up mode, scouting for the right candidates. But then, why must an experienced engineer working with a major EDA or Semiconductor firm switch to SoftJin?

Engineers in SoftJin work hands-on, not just in terms of executing the architecture of required functionalities, but deciding what those functionalities ought to be in the first place. “The engineering and marketing personnel work under the same roof and jointly decide on product features, timeline, and resource requirement, based upon the expected needs of the market,” says Kamal Aggarwal.

A SoftJin engineer has regular information on the performance of the product, through continual interaction with the marketing team. This helps him define new features or modify existing features in the product. Also, the product group in the company is responsible for ensuring that the product is profitable in the market, over and above equipping it with excellent features and making it work smoothly. 🚀

