

Independent Design Houses in India: Challenges and Keys to Growth

Independent design houses (IDHs) in India need to identify and work with not just large OEMs but also mid-tier and interesting startups. Many a times, new ideas and products come out of startups and it would be in the interest of IDHs to align with these companies to foster growth



UMA GUPTA

Independent design houses (IDHs) create designs and intellectual property (IP) for multiple clients, leveraging on their core competencies. Sometimes, these make and sell IP components independently. Sometimes, they create the designs commissioned by a client. At times, they work hand-in-hand with captive India design centres (IDCs) of one or more component-makers to, in turn, create

end-products for their clients. In these and many other ways, they try to act as a one-stop shop for their clients' IP and design needs.

Starting an IDH requires a business environment that provides opportunity, talented and skilled human resource that is affordable, and regulatory environment that is conducive. Barring the last one, others are available in India and that's the reason why we see a lot of IDHs catering to various industry needs in India.

Design houses require combination skillset of hardware design, firmware and software design, and product life-cycle knowledge. Since most IDHs have limited resources, preference is to have many 'all-rounders.'

Major customers for IDHs in India

"Major part of revenue for IDHs in India comes from the domestic market. Indian design houses are yet to mature to be able to offer quality services to foreign customers. I see it happening in the next two-three years," informs Hari Nallan, experience strategist, co-founder and CEO, Think Design Collaborative.

Speaking of the overseas market, he adds, "Most of the customers for Indian IDHs come from English-speaking countries. Among them, USA holds the highest rank in terms of percentage contribution to business revenue. It will be difficult (and too fragmented) to discuss percentage share, however, we could say that of 100 per cent revenues from foreign countries, USA contributes about 50 per cent."

Specifically, "Most of the new products are being developed for overseas customers. The majority of customers are based out of North America and EU," says Srinivas Panapakam, general manager-PES Sales and Business Development, Mistral Solutions.

However, there are IDHs catering to customers from other countries as well. Citing the case of Robert Bosch Engineering & Business Solutions (RBEI), R.K. Shenoy, senior vice president, Powertrain Electronics, RBEI,

shares, "RBEI started 20 years ago with design for European, USA, Japanese and Korean customers. Eighty per cent of our work is still for these customers. Meanwhile, BRIC (Brazil, Russia, India and China) has been our special focus. We are responsible for doing platforms for these OEMs."

Target application areas

Indian IDHs cater to a wide range of industry segments and verticals.

"Being a large country with ample human resource, India offers enough business opportunities for IDHs. You will find design houses catering to needs in product design and development (including electronics, appliances, entertainment, packaging and machinery), application design and development (applications covering a wide array of Web and mobile applications, enterprise applications, utility applications, embedded applications, lab and hospital information systems, etc) and new product innovation," informs Nallan.

"Most of the IDHs work as offshore design centres for some of the major Tier 1 OEMs. Indian IDHs are now transforming from being just a product sustenance/maintenance provider to complete product inception to design to production partners. IDHs in India are involved from architecting the product to market rollout and sustenance," adds Panapakam.

"The target application areas are semiconductor (ASIC design, hardware design, firmware/embedded software and middleware), automotive, telecom and networking, medical electronics and industrial automation. Major strengths are in the areas of ASIC design, hardware design, embedded software and vertical specific software design and development," he shares.

However, areas differ from company to company. For example, "Calixto Systems is focusing on the Internet of Things (IoT) and microprocessor-based designs. There are a lot of companies in India working on multimedia-based designs," says Jithu Niruthambath, director of Calixto Systems.

Strategies for growth

1. Mindset change on working with customers as 'partners' rather than being just service providers

2. Collaboration between OEMs, Tier-x suppliers, government bodies and consumers to accelerate the development and introduction of newer technologies

3. Changing gears from volume growth to value growth, along with productivity focus to ensure long-term sustenance

4. Increased 'product domain' competency by enhancing university cooperation and research at institutes

5. Promoting cross-domain working in matrix teams and fostering innovation alongside an environment that promotes diversity in the workplace (across gender, age, region to name a few)

— **R.K. Shenoy, senior vice president, Powertrain Electronics, Robert Bosch Engineering & Business Solutions**

Specifically talking about RBEI, Shenoy shares, "We are working here in automotive, industrial, consumer and energy domains. Our strength has been working on complex mechatronic systems (software, hardware and mechanics), with close proximity to customers, sales/marketing, manufacturing and purchasing. Working for the Indian market as end users has also been one of our biggest strengths as we graduated from working on extended workbench to take on full responsibility projects with focus on innovation. In areas like low-priced vehicles, we engineer our products with 'frugal engineering/jugaad engineering.' I would like to stress that working on low-cost systems doesn't mean low technology. Rather, it is cost innovation to get the appropriate technology to the market."

Challenges and threats faced

"As IDHs move up the value chain and start doing complete product designs, one of the major challenges faced is the availability of qualified and experienced manpower. Also, many a times IDHs lose these qualified and experienced engineers to captive units of OEMs/MNCs operating out of India.

The option here is to provide generous stock options and ensure that the engineers are continuously occupied with interesting work," says Panapakam.

"Conductive regulatory environment is important for service-driven companies to grow. A startup survives through all hassles because of the sheer energy. However, once a company reaches maturity, it needs to cope up with a lot of environmental issues. Due to policies, Indian companies are compelled to undertake a lot of processes, compliances and paperwork leading to redundancy and frustration. Mid-size companies have to cope up with talent crunch while achieving scale and growth," adds Nallan.

Talking of threats, Nallan adds, "Indian design houses do face threat from their foreign counterparts and this is going to only increase in the future. Substitutes also pose a threat: One-stop shops like China and Taiwan can lure companies into ready solutions and thus not investing in design activities."

"IDHs are usually small in size and require high-calibre engineers. The main issues we have come across are hiring good resources and retaining them due to competition, and R&D funding," shares Niruthambath.

Strategies adopted by IDHs to foster growth

"IDHs need to identify and work with not just large OEMs but also mid-tier and interesting startups. Many a times, new ideas and products come out of startups and it would be in the interest of IDHs to align with these companies to foster growth. Another advantage of working with these mid-tier and startups would be reduced selling time and less red tapism as compared to working with large corporations. However, working with startups requires innovative business practices and also involves a certain amount of risk," says Panapakam.

According to Nallan, keys to growth include "talent acquisition, training and development, and talent retention; offering quality services at affordable cost; building formidable

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Technological trends in design

Since beginning of time, design has been a bridge between technology and its consumer. Hence design as a function always has to keep up with advancements in technology and it always did.

Talking of the current trends, Hari Nallan, experience strategist, co-founder and CEO, Think Design Collaborative, shares:

1. Currently, design innovation has gone social and this trend will define the products of tomorrow. Platforms like Kickstarter allow designers to make their own products and sell to public. Similarly, online platforms like Quirky allow social innovation. This is one trend that will stay.

2. In digital space, mobility is a trend that is catching up like rapid fire. What we understood as usability in the recent past is being challenged by advancements in this space.

3. Homes are becoming smart and we will be seeing rapid mass consumerisation of the smart homes concept. A middle-class user will be able to control his home from his mobile and this is already shaping up currently.

4. Lastly, technology and human interface (analogous to mechanism and product of the past) are rapidly converging. What this means to designers is that they can no more wrap a beautiful skin around technology and call it a good design. They both need to function in unison and that provides enough opportunities as well as challenges.

"IDHs are getting into complex designs in the areas of high-end consumer electronics (wearable gadgets), automotive infotainment, medical electronics and telecom. This involves designing complex hardware with blind and buried micro via, integration of multiple radios, using high-end processors (quad core) on a very small form factor with very good performance at reduced costs. Also, the current processors are very powerful with GHz+ processing power and multi-core architecture, requiring a high degree of proficiency in embedded software to take advantage of such high-end hardware platforms," informs Srinivas Panapakam, general manager-PES Sales and Business Development, Mistral Solutions.

"The trend is shaping towards bridging of multiple technologies. For instance, communication systems and information technology in the present age are too well spread, which enables user a greater experience. IDHs should constantly identify ways to integrate the two technologies in offering solutions to customers, which enables flexibility at multiple levels," adds Ganesh Shankar, co-founder and managing director of FluxGen Engineering Technologies.

The Internet of Things is another simple and impactful trend.

"With the advent of IoT (Internet of Things) and approximately 6.5 billion connected devices predicted by 2016, there would be a lot of advancement in all domains including vehicles, security, telemedicine and energy. There will be lots of opportunities like devices with human appeal, more intelligent machines, autonomous cars, smart towns and so on," explains R.K. Shenoy, senior vice president, Powertrain Electronics, Robert Bosch Engineering & Business Solutions.

"Connecting everything, everyone to the Internet will create huge opportunities. We are investing a lot in that area," adds Jithu Niruthambath, director, Calixto Systems.

Among other trends, "User-experience is gaining predominance over basic functionality and engineering. 3D printing could go mainstream along with virtual manufacturing," informs Shenoy.

capabilities and expertise in design development; and functioning as one-stop shop for design development needs of companies served."

"IDHs in India have to invariably compete with IDHs across countries, especially China. The catch is in identifying the niche and capturing the market where not many have entered that particular area. Sometime it is also about creating the niche which may not exist. The present-day technology advancement is very rapid. Continuously being updated about the indus-

try development is essential to make improvements in quality standards and perhaps developing features that add to the portfolio of the IDHs. Offering value-added service can also lead to a competitive advantage," says Ganesh Shankar, co-founder and managing director of FluxGen Engineering Technologies.

Niruthambath informs, "We are planning to grow by focusing on high-growth verticals, creating reference solutions to reduce customers' time to market and identifying similar markets."

"System/domain competence is a prerequisite for complete product development. This includes not only in application but software, hardware, mechanics and manufacturing as well. High investments are needed both in people and machines to achieve this. Long-term strategy with shared vision is key to success. Increased cooperation with universities to bridge the gap between the industry and academia is important, starting with having industry-relevant syllabus and lab setups. We are steadily increasing our efforts in this area and are also active with NASSCOM to strengthen this effort. Also, strong global managers and worldwide network of front-end technical sales team is becoming increasingly important because of the spread of our customers. This is currently our focus," says Shenoy.

Why not create own products

With all the expertise that IDHs have, why don't they create their own products, under their own brand name?

There are several reasons for this. "IDHs are primarily design houses that do product designs for an end customer, and the end customer owns the IP. So IDHs are more like 'designers for hire.' Also, if the IDHs start doing their own brand products, they cannot really work as a services entity. So the choice here is whether to stay as a services company or become a product company. The strength of the IDHs lies in their technical capability. Being a product company has other associated challenges like doing market survey (typically global), product marketing and branding, and product life cycle, which need significant investment. It is also tough to address the global market based in India. It is ideal to do that out of USA or other western geographies since you need to be closer to the customer," explains Panapakam.

Nallan has a similar answer. "Own-ing and operating a brand is a different ballgame altogether that requires high levels of motivation, will and, most

MAJOR CONTRIBUTORS TO THIS REPORT



Ganesh Shankar,
Co-founder and Managing
Director, FluxGen Engineering
Technologies



Hari Nallan,
Co-founder and CEO,
Think Design Collaborative



Jithu Niruthambath,
Director, Calixto Systems



R.K. Shenoy,
Senior Vice President,
Powertrain Electronics, Robert
Bosch Engineering & Business
Solutions



Srinivas Panapakam,
General Manager-PES Sales
and Business Development,
Mistral Solutions

importantly, deep pockets. Indian IDHs are yet to get there. However, we will see a lot of action in this area in the near-to mid-term future," he shares.

"Owning and operating one's own brand also calls for competencies that are different from the core competency of IDHs (to think disruptively and offer innovative solutions). For example, it requires one to be excellent in operations, sales, marketing, distribution, logistics and many more areas that don't fall under core competencies of design houses," adds Nallan.

"Independent design houses have people who generally have technical expertise in offering a solution to a product development company that wishes to place a product in the market. Placing a product in the market is altogether a different ballgame as compared to offering a solution. The financial gain is involved in taking the risk to place the product in the market, which generally an IDH may not prefer to take. However, there are exceptions. Some IDHs transition by taking such a risk after a proper market study with the help of product consultants. Also, brand building takes quite a lot of time, which is also a hurdle for an IDH to transition," explains Shankar.

A lot of IDHs have their products targeted as business-to-business products. But it is not good to enter into products targeted at end users.

Niruthambath cites two main reasons for this:

1. By doing that IDHs are competing with their own customers.

2. Design and development is only 50 per cent product. One needs a lot of other aspects like marketing and branding to sell it. With limited resources, it is difficult for Indian IDHs.

However, Shenoy feels that moving up from value growth, product development is a logical step.

"We have seen some policy changes, be it for hardware manufacturing or 30-40 per cent localisation of avionics coming from India, which promote this. At RBEI, we have a target for non-linear growth that includes product development. We have some examples like ECU-Prog tool and AUTOSAR solutions; various test equipment are already

out in the market and you will see many more in the future," he informs.

Way forward

"It is very important for the IDHs to understand their core strength and address their market appropriately. This might require them to stay ahead of the curve in terms of technical know-how and, more importantly, look at the right revenue models for different customer segments being addressed," sums up Panapakam. ●

The author is a freelance editor

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