

UP THE LADDER



From providing low-end IT services, the Indian software industry has evolved into a sophisticated hub of innovation.

Val Souza discovers new, high-quality global delivery capabilities among software majors

Pick up any international business magazine and, chances are, you will find a feature showcasing India's software prowess or saluting the Indian software engineers' technical proficiency. But is all that hype and hoopla justified? Check out the statistics.

Indian software exporters together command just about two per cent of the global spend on information-technology services, which research firm IDC believes is worth \$ 450 bn. The picture is gloomier if we consider Business Process Outsourcing. Out of a global BPO pie of \$ 773 bn, India's share amounted to a paltry \$ 2.5 bn in the year ending March 2004.

But statistics do not tell the full story. The gung-ho articles reflect the enthusiasm of most software-focused global analysts. They are highly optimistic about the Indian software industry's growth prospects.

Until recently the Indian software industry was just a low-cost option for low-end software maintenance projects, a 'body-shopper' that would send across cheap programmers to US firms to take on work that others refused — porting legacy applications to newer platforms, routine maintenance of enterprise applications and other dull or repetitive tasks. US companies offloaded low-end work to Indian software firms because they offered cost savings and labour arbitrage benefits.

But gradually things began to change. Indian software services grew in sophisti-



PERFECTING THE GLOBAL DELIVERY MODEL: Kris Gopalakrishnan

cation and a greater proportion of the work was done in India. The concept of offshore software services was born. Indian software firms began to acquire process-quality certification and offered cost-effective quality solutions. Then, at the turn of the century, came the Y2K software-bug issue and Indian software services' expertise, which was widely used to sort out Y2K problems, catapulted it into the media glare all over the world. That was the turning point.

So, although India controls a minuscule share of the global IT market on paper, its success in the offshore outsourcing space is considerable. An estimated 30 per cent of a rapidly growing offshore-services market is with Indian software firms, led by Tata Consultancy Services, Infosys Technologies and Wipro Technologies. From plain vanilla onsite application maintenance, Indian vendors have moved up into high-end services like ERP implementation, systems integration and even consulting.

In this evolution from low cost to high quality and then to outstanding process expertise, Indian software vendors have perfected what has come to be known as the Global Delivery Model. This entails a spread across multiple global locations, enabling a service provider to leverage geographical differences in cost, quality and skill-sets, resulting in benefits to a client that would otherwise have been impossible to offer.

When it comes to outsourced IT servic-

es and BPO, global delivery has evolved into a three-tier model with a combination of an onshore/onsite component that's close to the customer; a near-shore component that does lots of the high value-add work; and an offshore arm that executes most of the high-volume but low-end part of the project.

This 'disruptive innovation', brought about by GDM has huge game-changing potential and the Indians now lead the pack. Kris Gopalakrishnan, deputy managing director at Infosys, puts it succinctly: "By making the GDM mainstream, we have shifted the battle to our battleground. From being rank outsiders, we have become heir to the new model of IT services."

While perfecting global delivery, Indian software services firms are addressing the need to verticalise and boost their sales and marketing efforts, while packing in specific domain and process expertise

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across the board. Consequently, they have been bagging IT consulting, smart-systems integration and even strategic consulting projects.

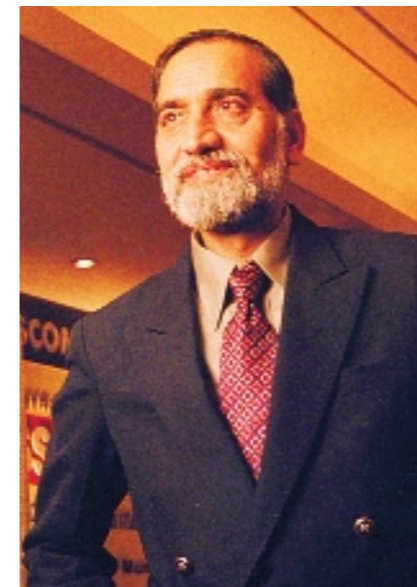
"Unlike earlier years, Indian vendors are pushing the traditional boundaries of what can be done in remote locations," says John McCarthy, vice-president at US analyst firm Forrester Research. "From just application development or maintenance, Indian organisations are now branching out into complex packaged application implementation, database monitoring and maintenance, and infrastructure monitoring and support."

This service capability can be seen emerging even in new-fangled technology initiatives. A large UK retailer uses Tata Consultancy Services as a key member of its RFID (radio frequency identification) initiative. Besides, Indian vendors have sufficient references to show the complexity of work that can be executed using the GDM. For example, in a large project, TCS replaced 300 legacy systems with an Oracle 11i suite of financial, supply chain and order management systems at 70 sites for GE Healthcare. It managed the rollout over three years, at the peak of which 300 TCS employees managed eight software releases.

Wipro demonstrated another big project leveraging global delivery when it deployed an end-to-end integrated broadband service delivery platform for 186K, part of the Lattice group. Besides the complexity of the project — involving multiple technology domains and 350 business processes — Wipro faced an uphill task since it had to complete the project within a tight timeframe in 45 locations.

With 200 people deployed onsite, near-shore and offshore, Wipro executed the project within just four weeks. Small wonder then that Goldman Sachs, in its recent Global Assessment of Offshore Services report, expects the presence and growth trajectory of the Indian software services firms to continue unabated over the next few years, making them a force to reckon with on the global IT map.

While the first phase of the Indian software services industry's development saw companies engage in onsite software maintenance contracts, the next phase took those contracts offshore with high-quality



AN INCREASING THRUST OF INDIAN SOFTWARE COMPANIES TOWARDS IP CREATION: Kiran Karnik

delivery being added to low-cost advantage. The third phase has seen Indian IT players innovating to deliver IT services by leveraging the global delivery paradigm. The fourth wave, which could become the defining phase for the Indian IT industry, is upon us — that of intellectual property creation. Kiran Karnik, president of software association Nasscom, says, "The increasing thrust of Indian software companies towards IP creation and R&D services is a distinct trend."

Statistics corroborate Karnik's statement. Revenues from software exports show a change in the product composition. The contribution of the software services segment, which includes various service lines such as custom application development and maintenance, has come down from about 65 per cent in Financial Year 2002 (ending March 2002) to 58 per cent the following year. The share of R&D services, which includes product development,

design and embedded software increased from less than 16 per cent to about 18 per cent in the same period — a clear indication that Indian software firms are gradually climbing up the value chain.

IP licensing is an option being explored by many Indian software firms, helping them to tread the middle path between pure services and full-fledged software products. The IP is in the form of software, embedded in various digital devices such as mobile phones, cameras or MP3 players. The IP owner licences the embedded software to device manufacturers and earns a royalty for each device sold.

Unlike full-fledged software products, which require a heavily funded marketing plan to succeed in the marketplace, IP licensing can be used as a way to earn revenues and to act as a major competitive barrier, preventing other firms from targeting a niche domain.

Some of India's smartest software

PROMISING INDIAN SOFTWARE DEVELOPERS

Player	Major Products	Key Clients	Revenue from sales of software products in FY 2002-03 (in \$ mn)
i-Flex	FLEXCUBE (Retail and Corporate Banking)	Citigroup, IMF, North Carolina Department of State Treasury	62.5
Infosys	FINACLE (Core Banking, CRM, Treasury)	ABN Amro Bank Singapore, ICICI Bank, IDBI Bank, Cosmos Bank, UTI Bank, Punjab National Bank	37.7
Tally	TALLY (Business Accounting Software)	HDFC Bank, Great Eastern Shipping	20.83
Newgen	OMNIFLOW, OMNIDOCs, OMNIEXTRACT, OMNICAUTURE, OMNIREPORTS (Document Management Software)	BNP Paribas, Citibank N.A., Ford Motors, Global Trust Bank, ICICI Bank, Patni Computer, RPG Cellular	5.1
Kale	VARIOUS SOFTWARE SOLUTIONS (Cargo Solutions, Business Intelligence software, Passenger Solutions)	Continental Airlines, Kenya Airfreight Handling Ltd	1.77
ESS	MAKEESS ERP, EBIZFRAME (ERP Software)	GlaxoSmithkline Pharmaceuticals, Oscar Equipment, West Kenya Sugar, Graphic Systems Uganda	1.45
Ramco	RAMCO e-APPLICATIONS (ERP Software) RAMCO VIRTUALWORKS (Platform for Deployment of Enterprise applications)	US - BemisCurwood, Columbia Helicopters, Hoosier Energy Europe - ETS, Swatch, Unisource Asia - Intel, ANZ Grindlays, ICI, Indian Airlines	10.41
Aditi Technologies	TALISMA eCRM (CRM Product)	Microsoft, Siemens, CitiCorp, Sony, Bowstreet	10.41
Subex	REVMAX (Telecommunications software)	CYTA, AmericaTel, Global Crossing, Sprint, Bharti Mobiles, Escotel, Birla AT&T Tata, Sonatel, Esconet Wireless	5.31

Source: Nasscom Strategic Review 2004



CREATING INTELLECTUAL PROPERTY: The challenge in the software business

firms, giants and start-ups alike, are active in the IP licensing space. Prominent players include Wipro, Patni Computer Systems, Geometric Software, Sasken, Ittiam Systems, Aftek Infosys and Mistral Software.

Ittiam's business model revolves round IP creation. Srinji Rajam, Ittiam's chief executive, says, "Within a short span, we have created more than 30 IPs in emerging segments like digital video, wireless LAN, voice band modems and Voice Over Internet Protocol."

Sasken is one of the first in India to have adopted a hybrid business model, in which a company derives about half its revenues through IP licensing and the other half through design services. Significantly, Sasken is one of only two independent sources for ADSL technology (a method for moving data over regular telephone lines) in the world.

Besides ADSL, the company has several IPs in the 3G mobile telephony space and is ranked as a leading independent provider of protocol stacks conforming to 3GPP specifications.

Not so long ago the names that came to mind while speaking about successful Indian software products were Flexcube from i-Flex Solutions or Finacle from

Infosys. Today, the picture is different — there are several more companies and a slew of new products. Ramco Systems is well known for its enterprise resource planning products and Talisma, for its customer relationship management.

Subex is a leader in the niche of revenue-maximisation software for telecommunications firms. In India, almost all GSM mobile telephony players use Subex's software. Globally Subex is second only to Hewlett-Packard in this category. While HP has an installed base of 69 networks, Subex follows closely with 67. Its clients include some of the biggest telecommunications players, such as Sprint, AmericaTel, Escotel and Global Crossing.

Kale Consultants is writing its own success story in the travel industry, as is Newgen in document management and Compulink in project-management software. Although none of these companies commands clout that's comparable with global software product players like Microsoft, Oracle, SAP or Siebel, a beginning has been made. Indeed, a few years ago, it would have been preposterous to predict that i-Flex would one day command the number-one position in the

world for its core banking software product Flexcube.

Having mastered the software services game, Indian players are capitalising on opportunities in the product space. For example, Zenith Infotech, whose domain expertise was known to be restricted to the banking segment, was quick to spot an emerging opportunity in the remote infra-



Indian organisations are now branching out into complex packaged application implementation: John McCarthy



INNOVATION IS THE KEY TO MOVING UP IN THE SOFTWARE SERVICES GAME: Software professionals at work

structure management tools space — a segment dominated by firms such as HP, IBM and Computer Associates. Within just two years the company signed on 300 customers in India and overseas with its cost-effective product offering.

Players like Zenith and Subex have inspired several new entrepreneurs in various segments — many of whom were brought up to believe by industry analysts that a product play was simply out of reach for Indian software development firms. Yearly revenues from Indian software products have crossed the \$ 300 mn mark. That is a big achievement for a recently developed category. It's not unrealistic to expect many exciting developments in the product sphere in the near future. It would take a couple of big product successes to change the image of the Indian software industry forever.

Hardly a week goes by without an announcement of some global software firm moving some of its R&D or software product development activities to India. Meanwhile, homegrown firms are joining in the fray too, making Bangalore and other Indian cities hotbeds of research in chip design, embedded software and other digital innovation.

The next razzle-dazzle technology in software may be created in Bangalore, according to an expert

The innovation is evident in the efforts of relatively unknown companies, which are challenging traditional ways of IT deployment. Ramco Systems, a relatively small player in the ERP space compared with giants like SAP, sought to redefine the marketplace with a revolutionary new architecture called VirtualWorks, which allows customers to first define business processes and then create suitable applications using automated code development. This is a far cry from traditional practices, in which a business process had to be changed to suit a system. Most analysts have hailed Ramco's architecture as revolutionary and believe its model will be the

norm for future enterprise applications.

A tiny start-up, Powai Labs, is making waves in the high-end Electronic Design Automation tool space. The firm's product helps chip designers to lower the cost of verifying and validating designs by an impressive nine-tenths. Not surprisingly, Powai Labs already boasts a client list that includes three of the top five silicon design companies in the world.

DiviNet Access Technologies has developed an indigenous network architecture that enables applications like video-on-demand, interactive education, interactive gaming and online shopping. Wireless Nova is one of only three firms in the world to have developed technology that enables Internet access and data transfer over ordinary electricity lines.

The laundry list of innovative companies is long and impressive and the world has high expectations. The next razzle-dazzle technology may be created in Bangalore, according to software guru Ed Yourdon. "... Bangalore also has some very hungry, very ambitious entrepreneurs...the next generation of Indian IT professionals firmly believes the US no longer has a monopoly on innovation." The Indian software industry is rapidly coming of age. Get ready to watch the sparks fly. 🌟