



# Creating Next Generation Technologies

India's IT sector is pioneering cutting-edge technology, helping global corporates to launch a fascinating new range of products and services. **Shivkamal** highlights the achievements of the sector

**I**N the 1990s, few countries took notice of India's potential to emerge as a dominant player in the Information Technology (IT) sector. By 2007, the Indian IT industry registered record revenues of \$39.6 billion. The key to this success has been innovation.

Since the beginning, the Indian IT industry has shown tremendous innovation quotient, both in the services space and product domain. This innovative approach has now prompted the National Association of Software & Services Companies (Nasscom), the premier trade body of the Indian IT industry, to forecast \$50 billion revenue in a couple of years.

A number of Indian IT services and product companies have grown into technology giants such as Tata Consultancy Services (TCS) of the Tata Group, India's largest software exporter, by banking on innovation. It is followed by Bangalore-based Infosys Technologies, which has the highest market capitalisation among Indian IT companies.

Third in the list is Wipro Ltd, a traditional product company turned IT behemoth. These three companies are making waves worldwide by acquiring rivals to increase their geographical footprint. Interestingly, their growth has been propelled by innovative services and products, which have become popular among its clients.

Infosys, which is known for its IT and IT-enabled services, has developed a product called Finacle for the banking sector. It empowers banks to transform their business leveraging agile and new generation technologies. This modular solution addresses the core banking, treasury, wealth management, consumer and corporate e-banking, mobile banking, alerts and web-based cash management requirements of retail, corporate and universal banks worldwide.

Finacle has been architected out of years of experience with global banks and offers several powerful and differentiating features, making it one of the most comprehensive, flexible and scalable solutions in its class. Initially, Finacle remained a little known product. But it gained acceptance over the years.

In the recently released Forrester Wave report – Retail Banking Platforms 2006 (November 2006) – Finacle emerged as a leader. In this study, the first of its kind,



**MEETING GLOBAL CHALLENGES:** The IT/ITES sectors have been catering to the needs of international clients

comparing the retail banking platform market, Forrester evaluated five global retail banking platform vendors.

According to the report, "Infosys earns the top slot in the first Forrester Wave of retail banking platforms. Finacle is a good shortlist choice for banks that need a banking platform with comprehensive functionality; want a strong multi-channel solution as part of the banking platform; or are seeking an agile banking platform that is able to cope with changing business needs."

Semi-conductor companies in India are also developing innovative world-class products and working on cutting-edge technology. Hyderabad-based MosChip Semiconductor Technology, started by Silicon Valley veteran K Ramachandra

Reddy, has launched several chips in network connectivity and digital communication.

Reddy, who proudly claims that his is the first Indian chip firm to be listed on the stock exchange, says his chips are used in set-top boxes and data communication devices. His silicon firm is based on a fabless model on which most small chip companies operate. In this model, the company designs, develops and tests the chips but out-sources its manufacturing requirement from fabs (chip manufacturing units). Moschip's clientele include electronic majors like Panasonic and Toshiba.

Bangalore-based Beceem Communications, a start-up firm, has developed the world's first chipsets for mobile WiMax



**RAPID STRIDES:** Indian IT firms are attracting interest from hi-tech companies

platforms. (WiMax is wireless technology that provides wireless broadband connectivity over long distances up to 50 km). Within a short span, Beceem, co-founded by a former naval officer Arogyaswami Paulraj, has attracted a lot of interest from big tech companies.

Intel Capital, the venture capital investment arm for Intel, has made a substantial investment in Beceem. Incidentally, Intel, which promoted WiFi technology on a large scale with its Centrino chip, is now pushing for WiMax.

This is just a sample of next generation innovative products being developed by Indian companies. Many companies are working on cutting-edge technology and creating new chips for the latest products.

Impulsesoft, another player from India's Silicon Valley, Bangalore, has to its credit, unwiring Apple's mobile music player i-pod. In fact, it was Apple, which turned to Impulsesoft, seeking to develop wireless headsets for i-pod.

Founded in 1999, Impulsesoft is recognised as an innovator in Bluetooth stereo solutions worldwide and is an associate member of the Bluetooth Special Interest Group. Its software powers a range of mobile phone and consumer products including naviPlay, the first Bluetooth stereo adapter and remote control designed specifically for the i-Pod. The company's software is optimised for a

range of peripherals and original equipment manufacturers' mobile platforms including headphones, headsets and adapters, remote controls for portable music players, and mobile phone solutions.

The company made rapid strides in such a short period that it became a target for acquisition. It was acquired by SiRF Technology, a Nasdaq listed US company.

The spirit of innovation and the success tasted by innovators has prompted Indian techies to turn into world beating entrepreneurs. After serving global giant Texas Instruments, Srini Rajam ventured out on his own. Today, his company – Ittiam Systems – has become a leading intellectual property licensing firm in the semiconductor world.

Ittiam Systems has successfully blended services and products business. Launched in April 2001, Ittiam, a digital signal processor (DSP) systems software firm, designs applications such as streaming video, portable media player and digital still camera. They run on DSP (chips, which go into a variety of devices like mobile phones, digital cameras, Internet modems and network devices). Among its 40 customers are names like Sony, Premier, VEO and semiconductor firms like TI, ST Microelectronics and Silicon Labs.

The Indian IT sector has not only developed innovative IT products for global customers, but also for the domestic

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market. These products address a wide range of needs. For instance, Zen Technologies Ltd, Hyderabad, promoted by a group of technocrats and senior retired officers from the security services, has indigenously designed, developed and manufactured simulators.

The flagship product of the company is ZEN Small Arms Training Simulator (ZEN SATS). ZEN Interactive Small Arms Training Simulator (ISATS) is a software intensive computer based training aid meant to help trainee's perfect advanced marksmanship skills including skills based on judgment and reflex.

This innovation has made the country self-reliant in the technology of weapons simulators. The system provides trainees with life-size targets, real-life scenarios, and other such practice sessions, which will enhance their reflex and judgment skills. Well-received by paramilitary forces and armed police, this innovation has been patented in India and abroad.

There are also innovative entrepreneurs, who give up MNC jobs to promote a social cause. Suresh Vazirani, for instance, has done that by joining MRA (Moral Re-Armament) for creating awareness amongst the youth about the need to build a great nation. And he showed the way by Building Transasia Bio-Medicals, from scratch to a global leader.

Fired by the vision of its founder, the R&D team of 25 engineers introduced

## INDIA IS DRIVING GLOBAL INNOVATION

INDIA has established itself as a world leader in the IT-ITES arena as firms have successfully dominated the first two phases of evolution characterised by export-led growth driven by factor arbitrage and gaining domain experience and superior delivery capabilities.

The industry, however, is now entering the third phase where firms need to recognise and act on the importance of 'innovation' for maintaining their competitive edge. Traditional factors that led local firms through the first two phases are being fast eroded by rising factor costs, geographical and cultural affinity to other destinations, global firms building sizeable Indian capabilities and future governance and management challenges for firms if they follow the current linear expansion model.

"Focussing on innovation besides differentiating the Indian IT-ITES industry will also allow it to tap additional revenue streams worth \$50 billion by 2012," says a report by Nasscom, the premier trade body of the Indian IT industry. According to Lakshmi Narayanan, chairman, Nasscom, "innovation is the top priority for global corporations today – for growth, differentiation and leadership. If the Indian IT industry can further enhance its ability to service this top priority of global corporations, the market opportunity is inestimable."

While the Indian IT-ITES industry has

shown strong revenue growth over the years largely led by exports, investments in deep domain knowledge and IP creation would help fuel this growth story, adds Narayanan. "To sustain high levels of growth, the industry needs to focus on cultivating and nurturing an ecosystem of innovation and institutionalise it," he points out. According to Nandan Nilekani, ceo, Infosys Technologies, "we are faster, better and cheaper than the legacy players." This would imply that the Indian IT services are giving the run for the money to international giants like IBM, Accenture, HP and are competing at the same level. This would serve as one of best examples of innovation. Dr Sridhar Mitta, ceo, e4e, says four elements are driving India into this cycle of innovation: people, market, track record and scalability. The diversity of India with multiple languages, a large English-speaking population and rapid urbanisation is fueling this process of innovation.

IBM India managing director Shanker Annaswamy notes that India "is driving global innovation." The reasons also are not far to see as people are becoming the source of innovation with MNCs moving from labour arbitrage to mission critical innovation, while Indian companies are migrating up the value chain to offer high-end services.

associated with display systems like quality of colour, incompatibility with streaming video and developed "Outdoor LED Animation Display Boards".

corDECT is a major Indian innovation in the area of broadband wireless communication. It is the only Wireless Local Loop system that provides simultaneous Voice Telephone and Internet at 35/70 kbps to every subscriber. It has the cheapest capital investment and operational cost amongst all the Wireless Local Loop systems.

It is the brain child of TeNeT group of the Indian Institute of Technology, Madras, and Midas Communication Technologies of Chennai. In India, corDECT is manufactured under licence by a few companies

including Crompton Greaves, Electronics Corporation of India Ltd (ECIL), HFCL and Shyam Telecom Ltd. One of most successful and early installations of corDECT has been in the African island nation of Madagascar. corDECT is operational in the city of Tamatave (formerly Toamasina) for over two years now, and subsequently it has been installed in the cities of Sambava and Anthala.

Fiji Telecom installed corDECT to serve its subscribers in the island of Ba, far away from the capital Suva. corDECT has also been tested by telecom standardisation bodies in Argentina, Brazil, Europe (ETSI), Kenya, Angola, Tunisia and Nigeria and was cleared for induction in their respective networks. Currently, there are field trials underway in Iran, Egypt and Yemen.

Commercial corDECT systems are also operational in Argentina, Brazil, Tunisia and Nigeria. Outside of India, corDECT

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is manufactured under license by BBS Access in Singapore and by Omnicom in Tunisia. corDECT will be manufactured soon locally in Brazil too.

Such innovations have brought MNC IT firms to set up their R&D centres in India. US-based Portalplayer's centre in Hyderabad is developing a chip for Apple's next Wifi i-Pod; Insilica, promoted by Vinod Dham, father of the Pentium chip, is creating new microprocessors for wireless and multimedia devices and Advanced Micro Devices (AMD) is working on its new server chip. There are several other examples to indicate that India has indeed emerged as the global R&D hub for innovative products. 🌟

in quick succession a series of globally accepted products that meet the need for quality blood analysis. The latest is ERBA XL-600 (Automated Random Access Analyser) with throughput of up to 600 tests/hr and capability to perform 213 reagent tests.

India is a cricket crazy nation. But just 20,000 people watching a cricket match made news, because they watched the World Cup in one place, at Chennai's Marina beach, on a giant 12x20 ft digital video screen.

This is one of the innovative products developed by MIC Electronics Ltd, Hyderabad, a R&D based company, promoted by technocrat Dr M V Ramana Rao. The firm overcame limitations traditionally