Volume 4 / Issue 2 / 2009 - Features

Healthcare IT in India

Author

Tosh Sheshabalaya,

The Indian healthcare system, like India itself, straddles the 19th and 21st centuries. But while the country's 19th century face of slums and poverty is better known, the 21st century end is quietly readying itself to gain a major presence on the global healthcare IT scene.

HIPAA and IBM's Health Superhighways

Large Indian hospital groups such as Apollo are playing a key role in terms of bringing HIPAA-compliant EMRs and interoperability to India.

Apollo, whose 45-strong hospital network is soon set to grow to 60 (beyond India, in the Middle East and Africa), is a testbed for pilot projects by IBM for a globally- directed 'Healthcare Superhighway'. The Apollo group's IT spend, at 4.5% of the operational budget, is higher than many hospitals in Europe.

The importance of such a phenomenon is clear. As the US Health Information and Technology Policy Lab notes: "With a maturing private healthcare sector (driven to no small extent by the new middle class and medical tourism – see box), the private hospital chains have become the primary consumers and financiers" of healthcare IT in India. "The aggressive IT sector in India is slowly managing to move large government hospitals", too, towards this, the Lab concludes. Given India's size, when this happens, the knock-on effects on healthcare IT will be significant – and global.

International Health Technology Firms in India

International firms have been locked into Indian healthcare IT for several years. After the recent downturn, the sleight-of-hand previously used to befuddle opponents of outsourcing has also been dropped. In March, IBM (seeking federal government stimulus funds) was criticised for shifting 5,000 jobs to India – not to 'India and China' – a source of much confusion in the past, given that any of the larger Indian IT companies had bigger revenues than China's entire offshore IT industry.

Indeed, as far back as March 2006, Matt Porta, head of the Global Business Solution Program at IBM named its Bangalore, India, center as the "global hub" for the "management and creation of replicable components" for its SOA service-oriented architecture across 17 industries, including healthcare.

Philips: Every product has a Bangalore flavouring *Dr. Bob Hoekstra, the CEO of Philips Innovation Campus until 2006, says that every product having software in it "has a contribution from the Bangalore campus". Indeed, one of Philips' first contributions from India was a series of healthcare products launched in 1997, including a radiology information system and software-based diagnostic radiology equipment.*

Philips has since partnered with Apollo Hospitals (mentioned above) as well as the Indian Space Research Organisation to establish its first telemedicine project in the State of Tamil Nadu. In a now-familiar pattern, Philips is transferring the methodology from the Indian project to China, according to K. Ramachandran, Managing Director of Philips India.

Siemens: From MagicView to biometrics *Siemens is also an old India hand. In 1998, the MagicView telemedicine system was launched out of India. More recently, one of the thrust areas of its secretive Pune campus is on biometrics.*

GE Healthcare: India hosts its biggest engineering lab *GE Healthcare has had a long-running joint venture with Indian IT giant Wipro. However, in 2002, the Indian firm took 100% control – most notably of all intellectual property in their HIRepS Hospital Information System package.*

© For personal and private use only. Reproduction must be permitted by the copyright holder. Email to copyright@mindbyte.eu.

Meanwhile, GE's Indian activities have turned towards design, and more. In February 2009, GE Healthcare reported it was considering acquisitions of Indian companies to add technologies to its portfolio, and a month later announced a trebling of its Indian R&D facilities at Bangalore. Included here is a $25-million 'simulated hospital' to testbed medical innovations for both local and global markets. During a visit to Bangalore, John Dineen, President and CEO of GE Healthcare said that the Indian lab was "the biggest engineering lab for GE Healthcare, and the first of its kind in the world today."

TietoEnator and iSoft

In Europe, the best evidence of the scale of India's looming healthcare IT presence is illustrated by two cases.

Nordic IT major TietoEnator's flagship hospital information system, iMedOne, was developed in India. The 5th generation, EPR-ready product has already been implemented at over 200 hospitals in Europe (especially Germany, Scandinavia and the Netherlands) and offers full mobile device interfacing and functionalities.

More strikingly, the troubled British NHS modernization program (centered on the iSoft Lorenzo e-Health solution) is also turning to India – as we have predicted at Healthcare IT Management two years ago. In September 2008, the Managing Director of iSoft announced: "The entire (Lorenzo) solution … is being developed and rolled out from the India development centre." The announcement followed a 50% ramp-up in iSoft's India headcount to almost 2,000, in less than one year.

Indian IT and the Healthcare Value Chain: New Niches

The US Health Information and Technology Policy Lab (see above) notes that India's key asset in terms of healthcare technology is its ambitious IT industry. With revenues of over 150 billion Euros in just the past three years, its size is now hard to ignore. According to some estimates, Indian BPO services in healthcare alone will bring in revenues of about 5 billion Euros this year.

Knowledge Process Outsourcing in Healthcare

Players in the Indian IT industry range from behemoths like Infosys, Wipro and Tata Consultancy (a key player in the multi-billion pound revamp of Britain's National Health Service) to small, specialized and highly-competitive Indian start-ups –at the top of the value chain. One good example of the latter is marketRx, which employs just 25 people, a majority with degrees from India's elite Indian Institutes of Technology and Indian Institutes of Management. Funded by US venture capital firm Westbridge, marketRx focuses on KPO (or knowledge process outsourcing) for pharmaceutical firms in the US. Its clients include Johnson & Johnson, Bristol Myers Squibb, GlaxoSmithKline and Eli Lilly.

Another example is Strand Lifesciences, a designer of scientific software for the mining of biological data and literature, whose client roster includes Agilent and numerous other biotechnology majors.

Clinical Trials

Like marketRx, the high-value (and in the West, increasingly cost-sensitive) healthcare business is seen as a priority opportunity for Indian business process outsourcing (BPO) firms.

Other areas include clinical trials, where a good example is Siro Clinpharm, India's largest fully integrated clinical trials organization. Siro has made a string of acquisitions in Europe, with its ambitions partfunded by Europe's largest VC firm, 3i. Even after the downturn, 3i has identified India and tech-intensive areas of Indian healthcare, among its highest priorities.

Medical Device Design

The BPO arms of the bigger Indian IT corporations, too, have begun targeting healthcare explicitly. India's HCL Technologies is the first Indian company to have an ISO 13485 certification for design and development of Class I, II and III medical devices, alongside an FDA-standard QMS, compliant to ISO 14971 for risk management.

One of its most ambitious projects, however, is CrosSView, a framework based Computer Systems Validation (CSV) methodology for the development of robust healthcare IT applications.

© For personal and private use only. Reproduction must be permitted by the copyright holder. Email to copyright@mindbyte.eu.

Made in India, Implemented in the US, May Shake-Up e-Health World

Several Indian firms have focused on niche technologies, especially those which adapt Western state-of-the-art technologies to rural India and to the challenges of the wider developing world (see attached boxes).

Of more concern to Europe would be the choice by some Indian firms to test-bed health sector applications in India and sell them to the US (an early case here was the WebMD portal, via its Indian-developed predecessor Healtheon). Michael Nerlich, President of the International Society for Telemedicine and eHealth, noted in March 2007 that low-cost, Indiandesigned e-Health products could transform the future of the industry.

One example here is TeleVital, which claims to be the only one offering "integrated Electronic Patient/Medical Records and real-time telemedicine software modules with unique auto-recognition and configuration architecture that enables plugn-play for a wide variety of medical devices from different manufacturers." Televital's founders include some major Indian-American names from Silicon Valley. The company's clients range from a remote NASA-sponsored anesthesia monitoring program at the University of Virginia, through mobile vital signs monitoring in ambulances in Japan to a host of customers in India, most notably the Indian Army. Recently, the company has begun a major rollout at Indian village e-Health centers.

Such an Indo-US business model also appears elsewhere, for example Voxiva, whose flagship US products include the mHealth solution for hospitals, payers and pharmacies, as well as HealthNet, for managing large health delivery programs via a scalable and secure real-time Health Management Information System (HMIS).

India's 19th Century Challenges and 21st Century Solutions

In spite of its impressive pace of development, the bulk of the Indian healthcare system consists of poorly- equipped general hospitals, owned by the government, and concentrated in cities and larger towns.

Rural India – home to over 70% of its 1 billion population – has even more rudimentary healthcare facilities, with many areas devoid of even basic primary care or doctors. None of this is a surprise. According to the Human Development Report, public health expenditure as a percentage of GDP is 1.3% in India (compared to overall health spending at 5.3% GDP).

Supercomputers and Satellites

The Indian government sees the only way to leapfrog such massive challenges by harnessing IT and leading-edge communications technologies. Within the next year, India will launch the world's first satellite dedicated exclusively to e-Health. The two-plus tonne HealthSat satellite, with more than 20 transponders, has a precedent in EDUSAT, a similar Indian satellite which now links over 50,000 schools across India for distance education.

For mass-scale use, the Indian government has developed two integrated telemedicine systems: Sanjeevani and Mercury, the latter rolled out at the Centre for Development of Advanced Computing (known in the IT world for its PARAM Padma teraflop-class supercomputers). Indeed, the PARAM provides the hub of one of the oldest and most promising e-Health projects (by the government of the Indian State of Andhra Pradesh), through about 6,000 kiosks across the State.

A variety of other rural e-Health projects have already taken off. Some are government-inspired (such as e-Swasthya, a smartcardbased project in one of India's poorest States, Bihar). There also are some pioneering joint State-private sector e-Health projects.

However, the majority of e-Health projects are in the private sector (Apollo Hospitals alone has over 50 across several States). It is on these that the government counts to address the huge challenges of delivering basic services for the hundreds of millions in rural areas. Many such initiatives go back almost a decade.

An e-opthalmology outreach project at the LV Prasad Eye Institute was hailed as far back as 2001 by a group of scholars from Harvard Medical School and Dana Farber Cancer Institute as a model of "excellence, efficiency and equity". It bills at a ratio of 1:1 non-paying to paying patients.

These efforts have continued to grow (as the US Health Information and Technology Policy Lab notes), but there is a long way to go in addressing India's healthcare problems.

© For personal and private use only. Reproduction must be permitted by the copyright holder. Email to copyright@mindbyte.eu.

In spite of the hundreds of thousands of patients treated at the Prasad Institute (and some pioneering efforts in stem-cell applications against blindness), India has more than 37 million blind people, equal to the population of Spain.

India to Africa

While much of the world's attention is focused on the Chinese presence in Africa, India's billion dollar PanAfrica E-network project has been described by Infoworld as "Africa's biggest ICT project ever." Much of this is centered on e-Health, with hundreds of thousands of teleconsultations already implemented. Some transponders in HealthSat, the Indian e-Health satellite, are to be dedicated exclusively to Africa.

Medical Tourism in India

In today's India, hundreds of gleaming private hospitals, equipped with state-of-the art technologies and manned by top physicians, cater to affluent Indians and tens of thousands of so-called 'medical tourists', many of them British and Americans – faced with growing waiting lists back home. Consultants McKinsey & Co. Estimate medical tourism in India as a 2 billion dollar business by 2012.

The first serious awareness of India's medical tourism phenomenon dates back to 2003. In July that year, Britain's 'Financial Times' reported that an Indian hospital in Chennai "successfully conducted a complex heart operation on an 87-year-old American at a reported cost of $8,000," inclusive of airfare and a month's stay in hospital; the patient claimed that a less complex operation in America had earlier cost him $40,000. More publicity was given to a double kneereplacement operation in October the same year, on a Scotsman who sought to avoid a prolonged (two-year) wait for treatment on the NHS, and instead went to a hospital in another Indian city Ahmedabad.

The wave has not abated. In March 2009, CNN's Medical Producer Danielle Dellorto covered the case of Sandra Giustina, an American whose heart condition made her a "walking time bomb". She chose to get treatment at Max, one of the smaller Indian hospital groups. As the report described:

"Walk through a patient wing at Max Hospital in New Delhi on any given day and you're likely to see people from around the world. In one visit, CNN met patients from the United Kingdom, Nigeria, Jordan, Afghanistan and the United States." While the quality of Indian physicians is well-known, especially to Americans, what is being increasingly recognized is the quality of equipment. As CNN described it: "the operating rooms (at Max are) similar to those in many U.S. hospitals. If fact, Max's neurosurgery room had an inter-operative MRI scanner, which is technology hardly seen at hospitals in the United States."

US health insurers Blue Cross and Blue Shield insure patients treated at leading Indian hospitals, as does Britain's BUPA.

Published on : Wed, 4 Feb 2009

© For personal and private use only. Reproduction must be permitted by the copyright holder. Email to copyright@mindbyte.eu.