Is Big Data Big Business in Healthcare in India?

Big business will only come when there is adequate risk capital coming to develop this sector

By: Kapil Khandelwal

With close to 90 percent of the world's data created in the last two years, healthcare industry cannot watch these developments in big-data (see box) on the side lines. The opportunities and challenges that big data provides health and life sciences organisations are not unique and there are lessons learned in other industries that can be leveraged as best practices. As I look back to the run up to big-data explosion, I have mixed feelings on whether it will be a big business in healthcare in India. Here is why.

In the pre big-data era, around 2006, I was interfacing with my client who was the CEO of a large billion-dollar healthcare analytics arm of a large payor out of the US. Interestingly, his key business issue at that point in time was the monetisation of terabytes and terabytes lying on the servers of its company that contained data on their consumer health status and their claims history to provide better service to all the stakeholders in the healthcare value chain and use India as a destination for making his services cheaper, better and faster (more relevant) to his customers in the US and elsewhere.

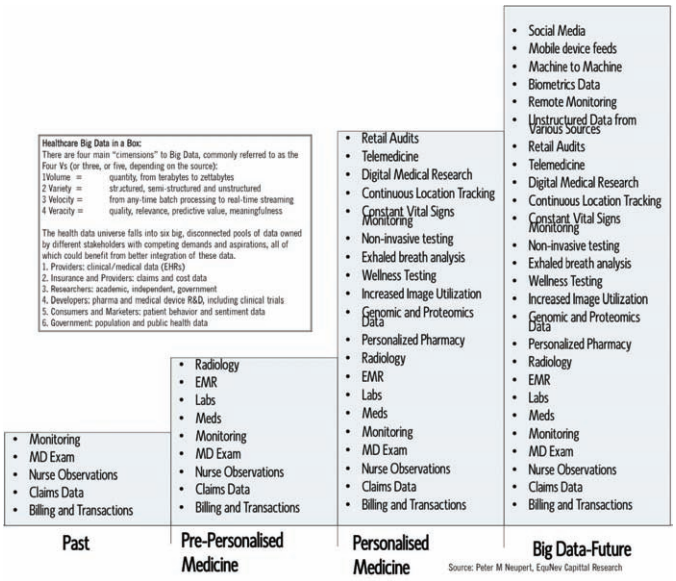
Another larger multi-billion dollar corporation in healthcare solutions company has since acquired the company, which is trying to solve the healthcare conundrum. Moving to India and fast forwarding a couple of years ago, I was interacting with the Chairman of IRDA (Insurance Regulatory and Development Authority) as part of the Healthcare

Big data opportunity in India is fairly diverse and consists of providers, health insurance, researchers, pharma and medical device R&D, including clinical trials, consumers and marketers and lastly the Government, which would be laggard in the adoption curve. It is evident that clinical development and pharma are the two mature sectors in healthcare leveraging on big data. Other noteworthy segments that could emerge due to big-data opportunity in Indian healthcare are healthcare finance, medical education, med tech innovation and discovery, health retail, and wellness

PPP Commission, the issue echoed was same as that of the US Healthcare Analytics Company CEO, how do we use the information sitting on our regulator's servers on the healthcare claims to make the insurance products and services better for the consumers.

Then, we had the big bang, Aadhar, allowing for tapping citizen information to help a healthcare organisation understand the demographics better. With the 3G and mobile internet, we have seen a range of healthcare business models emerge in India addressing different areas of healthcare delivery to the consumer. This also included our 108-type emergency services being rolled out in different states of India. Last year, as Vice Chairman of the Personalised Healthcare and Genomics Committee at FICCI, one of the issues that was discussed in front of me was the enormity and complexity of genomics data that would sit along with the phenotypic data of the patients and how it needs to be made available at the right time for patient care and other providers of wellness services.

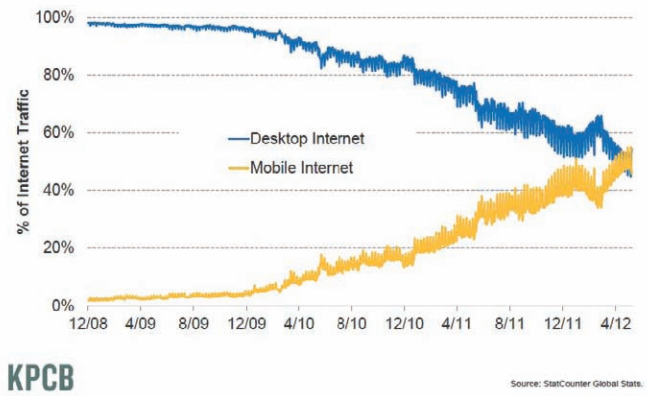
Over the last year, we have seen a big hula over 'big data' and how it is going to transform the way we live, do business and deliver consumer products and services, including healthcare. The transitions to big data in healthcare in India is graphically depicted here under Healthcare Big Data in a Box. The first article in my column discusses the whole issue about Big Data around healthcare and the hype around it and whether it is likely to take off in India as a big business.



What is Big Data in the Indian context?

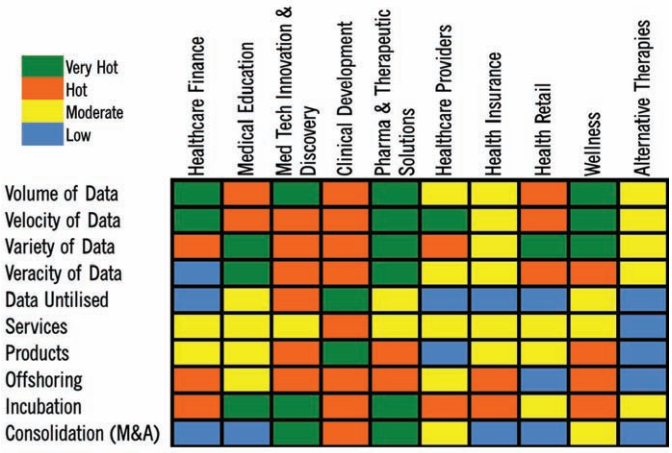
For the first time in world's internet's history, in December 2012, India led the way in the mobile internet convergence over desktop internet and that is the big data generator with over 862 million mobile connections in the hands of its people. (see figure). The cellular network data traffic more than doubled in 2010 and is expected to increase by more than 13 times to 25,000 Petabytes per annum by 2015 in India. Never ever seen in India's history!

In terms of healthcare, this sector in India contributes less than 12 percent of the volume of data generated in India, however, it is anticipated that this opportunity can grow to around 25 percent of the overall data generated by 2015.



Big data business opportunities

The heat map for big data business opportunity in healthcare in India is graphically summarised in the graph. Let us look at two key segments: offshoring big-data analytical services in healthcare to India; and products and services development to captive audience in India market.



Source: EquNev Capital Analysis

Offshoring big-data in healthcare services to India

On June 5, 2012, The Centers for Medicare & Medicaid Services (CMS) announced a new data and information initiative to be administered by the newly created Office of Information Products and Data Analytics (OIPDA). As a new CMS unit, OIPDA will be charged with managing the CMS health data portfolio. As part of this initiative, OIPDA announced several new big data and information resources to be available. This is an opportunity.

In its report "Big data: The next big thing", Indian IT services industry group Nasscom expects the country's big data industry to grow from US$200 million in 2012 to US$1 billion in 2015. The biggest challenge — and opportunity — is to satisfy the demand for data scientists. India's competitive advantage in STEM (Science, Technology, Engineering, and Mathematics) Education is clearly giving it a head start over its rival countries in the offshoring business. As per McKinsey, US alone would require close to 200,000 big-data scientists by 2018 for crunching the big data in its enterprises. Healthcare alone in the US would require an additional 66,000 biostatisticians, big-data scientists and health professionals to address the opportunity.

In healthcare, this big-data outsourcing opportunity is going to be around US$ 5.6 billion by 2018. The emerging healthcare big-data offshoring services could include:

Healthcare consumer intimacy: Loyalty analytics, customer life time value, propensity analytics, churn analytics, customer segmentation, upsell/cross sell, integrating clinical, purchasing, and behavioural profiles of consumers to understand demand for healthcare products and services, how to influence decisions around new product development and ways to improve the customer experience.

Insurance and financial risk management: A few healthcare payors in the US are using big data analytics to feed insurance risk models to underwrite and improve pricing, fraud and other deviant behaviour by the consumers. Another area that big data is used is in consumer intimacy in selling and retaining them. Profiles. A new healthcare financing segment could emerge that would lead to different and innovative healthcare financing models based on big data. Another area is fraud prevention and detection.

Individual and population health management: There are early encouraging signs of big data's nascent but growing impact on health care. Going forward, big data technologies and techniques are expected to drive decision making at the individual patient, group, and population levels.

Improving standardisation and quality of care: Analysing big-data that include consumer preferences, device data capture and the cost and outcomes of treatments can help in identifying the most clinically and cost-effective treatments to apply. Various predictive tools and resources can be leveraged to inform quality of care improvements with enhanced clinical insights derived to support and finance the significant increase in big-data initiatives.

Better revenue cycle

> Hospitals and service providers are using big-data to increase efficiency of service delivery

Pic courtesy - www.blogging.avnet.com

management: Hospitals and service providers are using big-data to increase efficiency of service delivery and enhance revenue cycle management to be able to offer and sustain lower unit costs for services.

Can India stand up to the opportunity?

During my presentation at the World Education Summit in 2011, I mentioned that we are going to face extreme skill shortages in the key areas where offshoring for healthcare big-data is concerned. As a country, India would only be able to produce around 12,000 trained professionals in the next three years and ready to deploy bio-statisticians, doctors and data scientists to service the high-end big-data outsourcing services.

Products & services to captive audience in India market

Big data opportunity in India is fairly diverse and consists of providers, health insurance, researchers, pharma and medical device R&D, including clinical trials, consumers and marketers and lastly the Government, which would be laggard in the adoption curve. There are five key areas where we are seeing some action in products and services side in India. These include:

Personalised healthcare genomics and beyond: There are around five start-ups in India in this space, which could become candidates of big-data products and/or services as they mature into consumer genomics space in India.

Transform data to information: Some of the incubating M2M and machine learning product companies are trying to verticalise into healthcare in India. Given the growing flood of healthcare data, and the late-adopting nature of the field, a big unmet need is to better manage this data.

Support self-care or mobile care: This space has shown maximum traction in terms of leveraging big-data analytics. Mobile telecom service providers are also launching some of the value added services in healthcare through third-party vendors in this space. However, no real big-data winning candidate has emerged in healthcare so far.

Increase awareness: There have been sporadic successful public health programs that have been leveraging big-data to increase health awareness in India, however none of the initiative has been successfully at the national level impacting the lives of millions of Indians. Some of the start-ups working on Aadhar platforms for public health have either failed or pivoted due to the delays in roll-outs of the schemes.

Sectors heating up

From the heat map in the article, it is evident that clinical development and pharma are the two mature sectors in healthcare leveraging on big data. Other noteworthy segments that could emerge due to big-data opportunity in Indian healthcare are:

Healthcare finance: While there are no ventures specifically selling products for financing or lending for healthcare expenses, we have come across ideas at incubation stage that are funding healthcare expenses as a bridge. These include ventures that are for profit and in the social sector. RBI regulatory clarity in healthcare financing NBFCs is will very much be helpful in opening this sector. Big-data based products and services could help in analysing risks and

fraud by the borrowers for healthcare expenses.

Medical education: The future generation of professionals needs to be adequately exposed to big-data scenario. The sector has yet to warm up to the reality. The profiling of students and counselling for foreign medical education has started using big data to identify traits that signal an applicant's long-term quality. There are couple of ventures or ideas being explored in this space. Medical research using big-data is yet to touch Indian shores.

Med tech innovation and discovery: Med tech innovation and drug discovery has started using big-data. There are a couple of ventures in the consumer genomics space in India are exploring this and are showing maturity in discovery informatics and using large data sets.

Health retail: Health consumerism would fuel in creating this segment in big-data. There are firms that are conducting consumer analytics as offshoring services provider,

I believe that these players could extend specific services and products to Indian market.

Wellness: The competition in the US$10 billion Indian wellness industry is now well aware about the big-data challenge and has been working on leveraging it for consumer analytics and product development.

In conclusion

Indian healthcare industry is waking up to the big-data business opportunity as it touches Indian shores. The immediate business to attack will be the low hanging offshoring piece. However, we do face manpower shortages as the trained workforce for this nascent sector is going to be hard to come by. Big business will only come when there is adequate risk capital coming to develop this sector, else it will not be big business in India.

Kapil Khandelwal has earned recognition as an angel investor, venture capitalist and expert in health sciences, education, agri, clean tech and information communications and technology (ICT). His expertise positions him as one of the thought leaders in India, Asia Pacific and emerging markets. In his 25 years of his career, he has carried out over 30 transactions including cross-border and buyouts. He has chaired various committees at various industry bodies. Kapil runs an early stage investment fund and his own investment banking and advisory services company EquNev Capital Private Limited.

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