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What's The Future of Big Data In Healthcare Services

by Wrik Sen   Oct 20, 2016

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Big Data has something big or small to offer to nearly every industry with each having its own sets of benefits and healthcare cannot be an exception. When used in a productive manner, either by professionals or patients, it can benefit the healthcare firms on the whole.

While, healthcare has indeed been a bit late in accepting the benefits of big data management, the scenario is indeed changing, as views from within the industry, are undergoing changes themselves.

Prashanth GJ, The CEO & Director at TechnoBind, said, "Traditionally, the healthcare industry has lagged behind other industries in the use of big data. The main reason can be cited as its resistance towards change. In the past few years with converging trends, the healthcare industry has come to a tipping point wherein they capitalize on the role of big data. The adaptation will create a convenient, real-time healthcare experience not just for the industry experts but for the patients as well. Insights drawn from the data will improve the quality and accessibility of care and help foster better treatments for major illnesses."

Predictability and corrective action

Big Data will affect positively, mostly enterprise level setups, in healthcare service delivery. Government for starters, can start aggregating data and interpreting them to predict disease and epidemic outbreaks, before the time it actually takes place, and then take any precautionary measures necessary to ensure that the health and safety are safeguarded. For healthcare service providers like nursing homes, hospitals, and other healthcare centers, will be inclined towards more evidence based care, thus making the process more scientifically accurate.

Anoop Pai Dhungat, the Chairman & Managing Director of Galaxy Office Automation described, "For hospitals, integration of their data across all channels and embracing the use of electronic health records will enable them to deliver evidence-based care and help improve performance in a number of areas, including prevention and reduced number of visits and lab tests. Use of big data can save a lot of effort and time for the research departments of Pharmaceutical companies by solutions to conduct patent searches based on molecular structure and other such identifications against the current methods."

Experts believe, big data will wrap in the concept of smart cities as well, in this regard. He explained, "Future smart cities will rely on big data analysis for managing the population health with hospitals, pharmacies and diagnostics relaying information of relevance back to a controlled repository for analysis."

In the case of Google, their big data capabilities actually allowed them to predict Influenza outbreaks weeks before the scientists at the Centers for Disease Control and Prevention could, and with reasonable accuracy that too, as Dhungat pointed out,.

Kalyan Banga, the Founder and Chief Data Scientist at Fusion Analytics World also pointed out. As Banga said, "Big data has been predominantly utilized to improve quality of life, cure diseases, predict epidemics and escape avoidable deaths. The current initiative is driven

towards picking up warning signs of serious illness in a patient as early as possible thereby reducing cost of treatment and any serious threat to health."

Digitizing records and service delivery management

With big data, comes the application of multiple technology platforms, and sources of information and data, which can then be used for records management and managing the delivery pattern of healthcare services. As explained by Banga, "Technology has been key and with the growth of smart devices including smartphones, they will continue to advance & integrate big data & artificial intelligence to the limit of helping individuals self-diagnose. Today, data is being gushed from all sources be it social media, EMR, mobile apps, fitness tracker or various sensors. There has been a huge initiative to completely digitize patient healthcare records."

Venkatraman Subramanium, Group CTO of Columbia Asia Hospitals, is quick to point at something adjacent taking place, whereby he mentions the after effects of the confluence of data flow. He mentions, "We are seeing a confluence of data from electronic patient records, medical devices and even personal wearables. These data streams come in a very short periodicity, with alternative peaks and troughs and sometimes even with no specific formats." More than just the usual or rather a single source, big data analysis will actually be put to the test, when it looks to synchronize the data flow system from multiple platforms and devices, put it together cohesively so that the end consumer, or healthcare professionals can take appropriate decisions while administering care.

Some of the existing challenges

It is obvious that the management systems of the healthcare industry will have to undergo a major change, which will also require considerable expertise in the area of Data Sciences. Subramium mentioned, "The major pitfalls are creating and validating algorithms for deep patient analysis and information security. There needs to be more data science in healthcare industry especially on the care provider side." A parallel dimension to this issue, is the basic human nature, which shall play a role here, which also brings up the issue of data manipulation, which is what Raman Shukla, the Director of Strategy and Product at Medikoe points out, "Only fear is that we shall not be torturing data that much where it starts giving us answers around what we want to hear than correct one's."

The next issue coming to mind, is the data security and privacy aspect. While advancement in technology has bought together many sources of data, on to a common channel of the internet, or perhaps various individual management systems deployed at healthcare centers, it raises concerns about the security of the data. Common questions arise like, how safe is the data? Where is the data placed? Who is accessing the data? Anoop Dhungat of Galaxy Office Automation pointed out, saying "Major concern is patient's confidentiality and privacy. The extra safeguards (and associated costs) may inhibit the willingness the healthcare stakeholders contribute even sanitized data.

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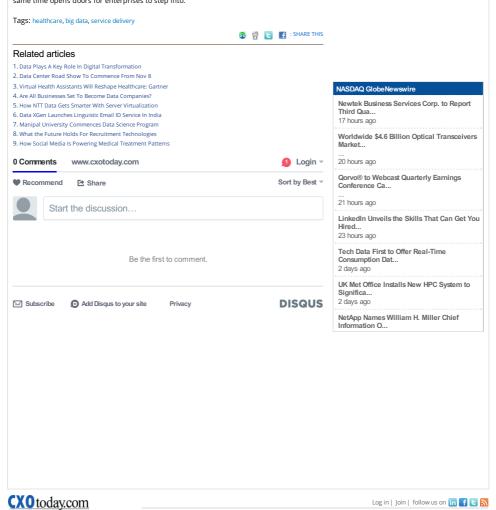Storage Market Expected To Pick Up By 2016-End: IDC

One thing that the healthcare industry really needs to watch out for is companies using or misusing the big data for personal profit. This can result to scare a large part of the population into going for unnecessary expensive lab tests. This would serve contrary to the larger objective of providing better healthcare at lower costs." Kalyan Banga put it out more technically saying, "Lack of robust, integrated security around the entire architecture considering the privacy and security that is associated with patient data." In other words, though big data technologies will be taking strides in the area of better healthcare service delivery, data security and cross-platform secure information sharing will be the next major of attention, and will need considerable work on.

The road ahead

As per data sourced from Fusion Analytics World, the current big data healthcare market in estimated at $10.1 billion. By 2020, this will go up to a net worth of $22.3 billion, following a CAGR (Compounded Annual Growth Rate) of 22.3%. This points out to the huge potential the industry has, for growth and development should all plans fall in place. According to data verified by Medikoe, a 2012 study revealed that data had reached a volume of 400 PB (Petabytes), and in all possibility, will reach 25,000+ PB by the year 2020. From just the industry size, it is the huge data management which will become a challenge, but at the same time opens doors for enterprises to step into.

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