Leveraging Technology in Healthcare

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Abstract:

The advent of Covid-19 has brought Healthcare Information technology to the forefront. Organizations across the globe have been forced to look at different options to keep their revenues (especially outpatient) going. Telemedicine was conceptualized in 1920s, till few months ago it was considered as a target market for only rural areas. In many countries it was still in the nascent stage. The current world situation has forced organizations to consider telehealth/telemedicine very seriously. BCBS Massachusetts announced in April 2020 that it processed 250K telemedicine claims, overall a 3600% increase over Feb 2020 and 5100% increase over 2019. The growth seen is explosive, but to truly monitor a patient the vitals (viz, SpO2, BP, Sugar) are needed to be captured, hence we could also see a growth in home medical devices.

Healthcare Innovation has also seen some rapid growth in the past few months. Kaggle for example had more that 100k downloads for its Covid-19 hackathon. Every organization is trying to solve some or the other problem using technology nowadays. Consider pharma & life sciences, it takes anywhere between 10 to 20 years for a new drug to be launched in the market. The current situation has forced organizations to see how this time can be reduced using technology. Organizations like aicures.mit.edu have been working towards using AI in the space of Biotechnology. They have developed a machine learning algorithm (SAMPN: Self-Attention-Based Message-Passing Neural Network) which can help in predicting molecular lipophilicity and aqueous solubility of a molecule. The advantage of SAMPN is that it leverages chemical graphs to predict the property and is not dependent on a black box machine learning algorithm. Clinithink harnesses the power of NLP to identify patients for clinical trials using some of its CLiX tools. Google's DeepMind predicts the 3D structure of a protein just based on the genetic sequence. There are many other examples to cite in the pharma space, but overall technology can be leveraged to reduce the drug discovery time for any disease and not just Covid-19.

In Sept 2019, GE won its first FDA approval to use AI algorithms to detect pneumothorax, thereby reducing the time from 8 hours to as little as 15 mins. Organizations like Geisinger and Cleveland have been Machine Learning and AI to find out the risk of a patient getting sepsis. A similar logic can be leveraged to identify the risk of a patient getting any chronic disease which can help prevent the same. As per World Health Organization more than 1.1 billion people worldwide suffer from Hypertension and is a major cause of premature death in people.

Biography:

Harish C. Rijhwani is an IT professional with 17+ years of experience, particularly working with US-based entities in the healthcare sector, delivering value to clients through technology and business services. He helps organizations to leverage technology to meet their business goals and optimizing business processes. Owing to his domain expertise, Harish has been a speaker at multiple conferences, such as at NASSCOM, Tata Institute of Social Sciences (TISS) and at Indian Institute of Health Management Research (IIHMR) University, where he has spoken extensively on the theme of how healthcare delivery organizations are using technology as a game-changer. Harish completed his Bachelor's in Engineering (Electronics) from Thadomal Shahani Engineering College and MBA in Systems from SVKM's Narsee Monjee Institute of Management Studies – Mumbai, India. Given his passion for teaching and knowledge-sharing, Harish is a visiting faculty and judge at various institutes viz. Welingkar Institute of Management, KJ Somaiya Institute of Management, Symbiosis Institute of Management. Teaching since 8+ years and counting, Harish teaches subjects like Healthcare Informatics, Business Analytics and Advanced Analytics to 1400+ management students

Recent Publications:

- Primer on Technology, Business & Management for technologists, innovators and aspiring entrepreneurs

- Technology to Business' bridges gap between technology and business

- A self-attention based message passing neural network for predicting molecular lipophilicity and aqueous solubility