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Digitalization in Health Care Sector: A HR Analytics Perspective

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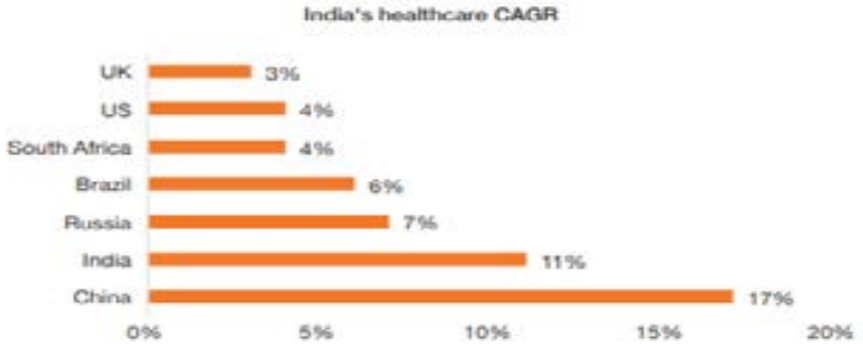
ABSTRACT
Digitalization is being implemented at two levels – for healthcare IT teams and for healthcare providers. Healthcare IT teams need to update themselves with a wide variety of domain/ technology capabilities. These technology teams need to get ready for transformation / modernization to incorporate new types of data as well as a diverse set of users' based cases.HR analytics teams need to cope up with newer trends like- Cloud Migration (lift & shift) Full Stack, Dev Ops etc. This paper makes an attempt to discuss and understand the emerging new Health care technology initiatives/issues with respect to HR analytics, from health care organizations Perspective. An attempt has also been made to understand and discuss the emerging spectrum of applications, tools and platforms available in the related sector. Finally, it may throw light on creating awareness in understanding the complex healthcare needs from HR Analytics Perspective

Keywords: *Digitalization, Technology, Team, HR Analytics, Healthcare Organizations.*

INTRODUCTION
Healthcare Organizations also have to prepare as well as build robust, User Centric Dashboards and relevant tailor made reporting tools for their key decision makers at every level, Right from Top Management to the Final Health Care Delivery point. As Artificial Intelligence applications, redefine the global healthcare market with emergence of Cognitive Technologies, Machine Learning systems, healthcare processes and workflows becoming complex and time consuming day by day. This makes healthcare IT professionals roles more significant and challenging one. On the other hand, Technology Professionals as well as Health care Professionals would need to develop and build their HR competencies. India is the second largest CAGR in healthcare (11%) among all BRIC nations. 26 Healthcare is one of the fastest growing industries and is expected to expand at a CAGR of 18.3% during 2012–20 to reach 280 billion USD.



Source: World Bank data

According to Frost & Sullivan, healthcare has become one of India's largest sectors both in terms of revenue & employment. The industry is growing at a tremendous pace owing to its strengthening coverage, As per the Ministry of Health, development of 50 technologies has been targeted in the FY16, for the treatment of diseases like Cancer and TB. Government is emphasizing on the e-Health initiatives such as Mother and Child Tracking System (MCTS) and Facilitation Centre (MCTFC) Indian companies are entering into merger & acquisitions with domestic & foreign companies to drive growth & gain new markets. The Healthcare Information Technology (IT) market is valued at US$ 1 billion currently (April 2016) and is expected to grow 1.5 times by 2020.

Source: Frost & Sullivan, LSI Financial Services, Deloitte

Growing technologies are help in growing quality and low cost health services. Healthcare market was expected to grow up to 280 billion us dollar in 2020 as compare to 100 billion dollars in 2016. Leading health care start-up in India:

- **Niramai: using Artificial Intelligence (AI) to fight breast cancer.**
- **MUrgency: bringing medical emergency services under one app.**
- **Advance cells: making stem cell therapy affordable**
- **Portia: bringing doctors and medical professionals to the patient's doorstep**
- **Address Health: making paediatrics affordable and holistic**
- **Live Health: making medical reports smarter**

Virtual reality provides a virtual environment similar to real environment for treatment of patients. Applications of Virtual reality in health care are

- Therapy- VR can be used to engaged patients exercise in the way of activity like they are playing any game.
- Phobias- Person suffering from phobia or fear from anything gets treatment with VR to improve in faster way
- Managing Pain- VR helps in reliving from pain by distracting brain sensation that was linked to pain.
- Rehabilitation- VR helps patients suffering from Trumas to get treatment in efficient way.
- Helping Children –VR provides homely environment for children to get well soon while treatment.
- Training-VR can be used to train doctors and nurses in less time and cost as compare to traditional methods.

LITERATURE REVIEW

Bhat, Ramesh and Sunil Kumar Maheshwari, (2004)found that HR practices (HRD) are powerful tools to commit people working in health sector to enhance the quality of care and health sector reforms will have to concentrate on human resource issues and practices more than ever before in near future. **Andrew (2006)** highlighted that ICTs have enormous potential as tools to increase information flows and the dissemination of evidence-based knowledge, and to empower citizens. However, despite all their potential, ICTs have not been widely used as tools to advance equitable health care access.

Aashima Agarwal et. al. (2011) revealed that getting HR policy and HR management right has to be the focus of any sustainable solution to health system performance. A well motivated and appropriately skilled and deployed workforce is crucial to the success of health system delivery

Harold Thimbleby (2013) remarked that future technological innovation is going to keep transforming healthcare, yet while technologies (new drugs and treatments, new devices, new social media support for healthcare, etc) will drive innovation, human factors will remain one of the stable limitations of breakthroughs

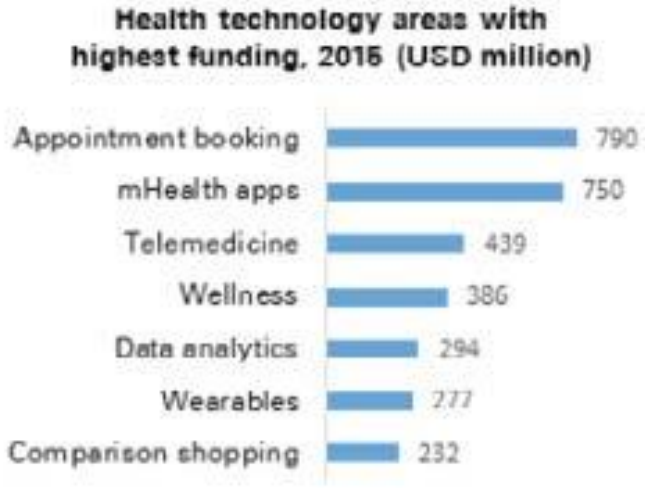
Sanskruti Patel and Atul Patel (2016) stated that the health care sector has generated huge amounts of data that has huge volume, enormous velocity and vast variety. Also it comes from a variety of new sources as hospitals are now tend to implemented electronic health record (EHR) systems. These sources have strained the existing capabilities of existing conventional relational database management systems.

RESEARCH METHODOLOGY AND OBJECTIVES

This paper is based upon review of literature and secondary data collected from various websites, journals, magazines, newspapers and reference books. Informal discussions and observations about HR Personnel working in Health Care Systems have also been incorporated. The main objective of the present study isto discusses and understands the emerging new Health care technology initiatives/issues with respect to HR analytics, from health care organizations Perspective. An attempt has also been made to understand and discuss the emerging spectrum of applications, tools and platforms available in the related sector.

INDIAN SCENARIO

Indian Healthcare market scenario is transforming steadily. With an estimated market size of100 billion USD in 2015, one of the fastest growing industries in India is healthcare. The Indian healthcare market is (estimated) worth US$ 100 billion and according to industry estimates likely to grow US$ 280 billion by 2020, with a CAGR of 22.9%.On the other hand, Healthcare Information Technology known as HIT market is presently estimated worth US$ 1billion, likely to grow 1.5 times by 2020.According to ASSOCHAM Reports(2016-17) India's telemedicine market presently growing at a CAGR of 20%+, has full potential to cross US$ 32 million mark by year 2020.In March 2018, the Union Cabinet of India approved the continuation of National Health Mission with a budget of Rs 85,217 crore (US$ 13.16 billion) from 1st April 2017 to 31st March 2020. Ministery of Health and Family Welfare, Government of India, launched initiatives such as LaQshya, for Labour Room Quality Improvement, a mobile application for safe delivery, and operational guidelines for obstetric high dependency units (HDUs) and intensive care units (ICUs).



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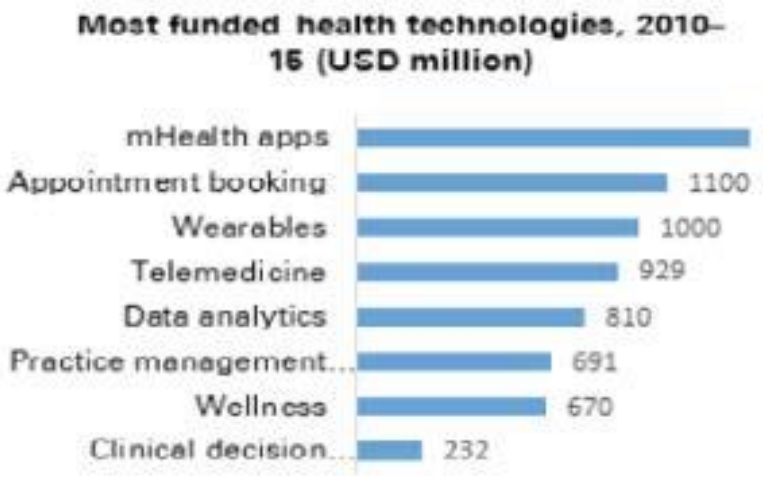
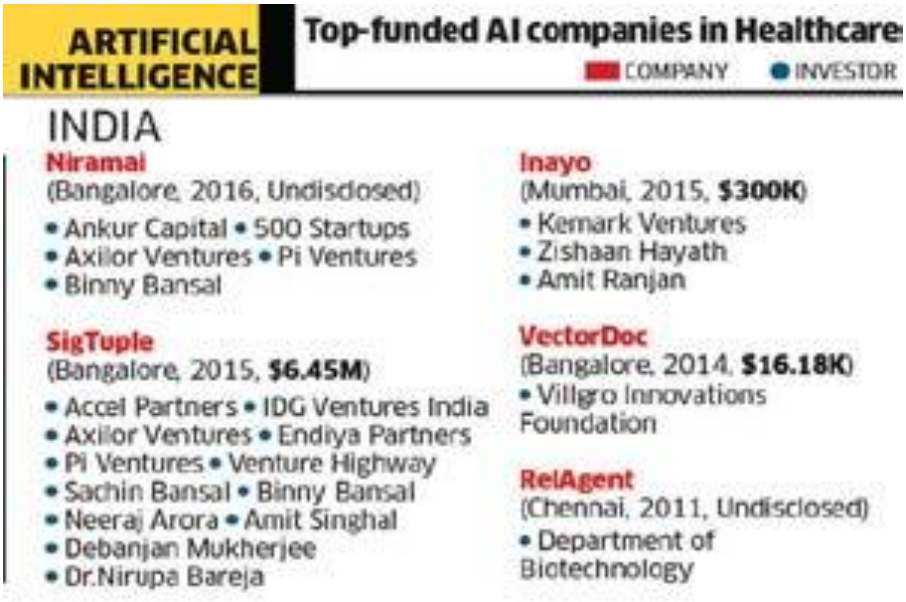


Source: http://www.kpmg.com/content/

In India the use of Artificial Intelligence in Heath care Industries are rising with accelerating growth rate. Many Organizations providing AI Solutions provided to fulfil the gap between skilled doctors and patients, to improve the job efficiency of doctors and for providing personalized health care solutions especially in rural areas of India. Top Funded AI Companies in India are:



Source: https://economictimes.indiatimes.com/small-biz/startups/

AI Programs allows to screen the samples collected for cancer detection and if Computer point out presence of Cancer in sample then only samples are passed to experts for further detail examination so that human work and involvement were lessen with help of AI programs. With the help of AI programs low skilled doctors can themselves took hard decisions at the time of treatment.

ROLE OF HR ANALYTICS

It is now a well-established fact that "Treatment space" is changing, from Clinics/Nursing Homes/Hospitals to comfort zones of Patient's homes, with Quality Expectations at Par. A new product namely "Swasthya Slate "providing multiple medical tools to carry out maximum 33 tests, covering Blood sugar, Dengue, Haemoglobin, Malaria and even Urine tests. Cloud computing facilitating healthcare organizations to offer:-

(A) Smooth Business Processes
(B) User Friendly Software's for Multiple Data Collection,
(C) Transforming Analytics services.

Digitization has to ensure timely and quality treatment reaching to citizens across the globe.

Initiatives:-Open Source Platforms-

Like Compare being used in more than 50 countries by following reputed Organizations:-

- Bill & Melinda Gates Foundation,
- Public Health Foundation of India
- UNICEF
- WORLD Bank

It has benefited Human Resources like anything in Counselling, follow-ups, monitoring and similar activities.

Technology has transformed the healthcare landscape over the last few years. Healthcare sector has seen emerging technologies like Cloud Computing, Mobility, Predictive Analytics and machines enabling, facilitating hospitals, life science organizations, insurance companies etc. Healthcare technology companies need to create:-

- Specialized Solutions
- End to End Solutions
- Remote Rural Access Reporting
- Disease Driven Dialogue Through Portals

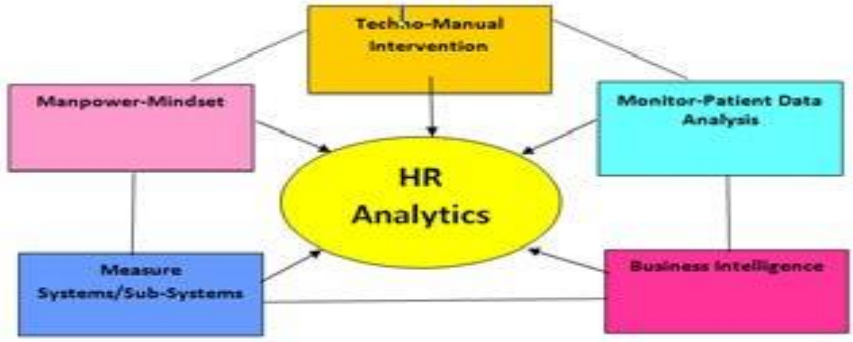
Incredible amount of data is being generated everyday inside the healthcare organizations and outside the organizations. Within organizations following types of data is generally available:-

- HR Data
- Operational Data
- Patients' Records
- Clinical Data
- Financial Data
- Other Categories

CONCLUDING REMARKS

Healthcare in India is a top destination for investment, especially through digital interventions, and this trend is already gearing up. Let's not forget that the second most populated country on the earth is really riding and gearing up itself to emerge as a Global Leader in Digital Healthcare by way of Acceptance of "India's Health Resolution at WHO in May 2016,as approved by 30 countries. Here, It is very much relevant to share the data of McKinsey Global Institute (Dec.2014) Report which states," A Dozen Disruptive Technologies may likely add up to US $ 1 trillion in GDP by year 2025.Indian healthcare sector is much diversified and is full of opportunities in every segment which includes providers, payers and medical technology. .Digitization ensuring Quick admissions, Electronic completion of procedures, Fast claim settlement, Easy Hospital Discharging, Minimal Invasion, minimum possibilities of infection, minimum loss of blood, Less amount of pain, facilitating dentistry, 3D printing, easy implants, dental restorations providing comparatively stress free fastest possible recovery.

PROPSED 3MBT MODEL OF HRAH FRAMEWORK



Source: Developed by Authors on the basis of Intensive Study of Literature Review

If the above said digitalization efforts and HR Analytics interventions as proposed are being implemented then a new Healthcare horizon may be truly ushered in Medical Technology driven Industry. Finally, healthcare IT Teams and HR Teams should quickly learn wide varieties of domain/technology capabilities get hands on exposure towards cognitive technologies machine learning to build robust, user centric dashboard, enduring several care points.

User Experience (UX),test automation product management, with Cloud migration, Patient Live Data analysis ,Patient Economic Profile, Medicine Procurement /Availability Analysis , National Health Mapping Data Generation with emergence of Talent Analytics practices need to be undertaken/understood by respective organizations and stakeholders.

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