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THE BENGAL CHAMBER

in association with

MEDICA *Hospitals*
caring for life

HEALTH
TECH
2018

8th-11th MARCH, 2018 | **HYATT REGENCY** KOLKATA

The Bengal Chamber of Commerce and Industry, in association with **Medica Superspecialty Hospital Kolkata**, is organizing **Health Tech on 8th-11th March 2018 at the Hyatt Regency** JA-1 Sector III, Salt Lake City, Kolkata, West Bengal 700098.

Health Tech; a Summit, bringing technologies applicable in healthcare industry together on one platform; will feature:

- International Participation
- B2B Pavilion
- Seminars
- Exhibitions

Objectives of the Health Tech

- The only dedicated event in Eastern India region for the healthcare & wellness industry

- To showcase and demonstrate best-in-class technology solutions tailor-made for the healthcare sector

- To promote & showcase medical devices/equipment

- Opportunity to do B2B meetings directly with industry professionals

- Ideal platform to introduce new products & applications

- Meeting business partners under one roof

- Expand business opportunity in a region with tremendous growth in healthcare market

- Explore new business opportunities

- Ideal platform to enhance brand image and build awareness

- Evaluate the competition

From electronic records in the doctor's office, to robotic instruments in the operating room, information technology is redefining how healthcare functions in our society.

The use of technology in healthcare in the forms of **Artificial Intelligence, Robotics, Analytics, Tele Medicine, AI** to name a few, is gaining popularity with passing time and improving with scientific advancements. Use of **healthcare mobile applications** are increasingly gaining popularity. According to industry estimates, about 500 million smartphone users worldwide would be using a health care application by 2015, and by 2018, 50 percent of the more than 3.4 billion smartphone and tablet users will have downloaded mobile health applications.

Some of the cutting edge technology applications which are shaping the healthcare today and creating the pathway for healthcare in few years to come are captured below :

ROBOTICS IN HEALTHCARE

- **Robotic surgery**

The use of robotic surgery is predicted to grow exceedingly in the future years. It is reported that robotic surgery is said to aid in precision, control and flexibility when it comes to minimally invasive procedures. "Using robotic surgery, surgeons can perform delicate and complex procedures that may have been difficult or impossible with other methods." Although robotics is not widely used now, they are beginning to become more popular and will continue to grow.

- **Telemedical Network is Key in Accessibility**

In case of an accident, the medical professionals may not be able to reach the sight in time. Even in 2017, billions live without an access to conventional emergency services. With patients in remote areas have access to high-quality emergency consultations for emergencies such as stroke, cardiovascular, and burn services. From the patient's side it can be accessed on a hand held device, and clinicians can also be connected.

- **The Power of Exoskeletons**

 With the help of these, rehabilitation of stroke or spinal cord injury patients becomes easier. These can enhance strength in order to allow a nurse to lift an elderly patient. While they have many interesting uses, it's important to remember that currently they are expensive to make and power. Appropriate business model will create opportunities.

- **Disinfectant Robots in Healthcare**

It is found that some specialized Robots are more effective in causing cellular damage to microorganisms than other devices designed for disinfection. It reduces the number of hospital acquired infections. It's yet another example of how robotics in healthcare helps hospital staff to decrease workload and will lead to a much friendlier environment.

- **Robots come in all shapes and sizes**

Microbots are just as impressive as a large super strong carrier one. When swallowed, the capsule containing it dissolves in the patient's stomach and unfolds itself. Controlled by a technician with the help of magnetic fields it can heal wounds in the stomach lining or safely remove foreign items such as swallowed toys. There are numerous projects in the works to develop microbots that can travel through bodily fluids to deliver medication exactly to where it's needed, or even to restore damaged cells. Even though most of these are only theories at present, in the near future it could be fighting off infections with the help of nanobots that are built to mimic our white blood cells, only doing a much faster and effective job of destroying bacteria.

- **Pharmabotics**

Pharmacists are occupied with tasks that could be eliminated by utilizing the advancing robotics in healthcare. Heavy lifting, as always, is a big help, more importantly, a robot could process information much faster and much more accurately than humans. This way it could make more accurate recommendations after scanning the patient's available medical data.

ANALYTICS IN HEALTHCARE

Health care analytics is often defined as the healthcare analysis activities that can be undertaken as a result of data collected from four areas within healthcare; claims and cost data, pharmaceutical and research and development (R&D) data, clinical data (collected from electronic medical records (EHRs), and patient behaviour and sentiment data (patient behaviours and preferences, (retail purchases e.g. data captured in running stores). Some of the areas on which this industry focuses on the areas of clinical analysis, financial analysis, supply chain analysis, as well as, fraud and HR analysis.

Health care analytics allows for the examination of patterns in various healthcare data in order to determine how clinical care can be improved while limiting excessive spending.

There are three fundamental challenges to be addressed: (1) variation in how standards are tested and implemented; (2) variation in how health IT stakeholders interpret and implement policies and legal requirements; and (3) reluctance of health IT stakeholders to share and collaborate in ways that might foster consumer engagement.

- **Protecting privacy and security**

- **Establishing common technical standards**

- **Increasing confidence in safety and safe use of health IT**

- **A national communications infrastructure is necessary to enable the sharing of electronic health information between stakeholders, including providers, individuals and national emergency first responders.**

- **Stakeholder collaboration**

Telemedicine is the use of telecommunications technology such as phones and computers to provide clinical services to patients over long distance communication. This can be done using phone calls, emails, mobile apps, and even video chat, health care professionals are able to diagnose and treat patients without the need for long travels or in-person hospital visits.

Apart from connecting patients and medical providers, telemedicine also offers a way for health care professionals to consult with other physicians or specialists in the diagnosis or treatment of a patient without having to leave their own facilities.

Telemedicine has been around for decades in some way or another. But with the giant leaps in technology that the world has experienced over the last two decades, it is only now that telemedicine is really beginning to take a place in the field of health care delivery.

A fast-growing field in the healthcare industry, telemedicine holds a lot of promise in solving various challenges that health professionals and patients are facing today. Providing a range of benefits for both patients and medical providers, it offers:

The original goal of telemedicine is to deliver health care services to patients in remote or rural areas, offering a solution for problems such as shortage of medical professionals and health care facilities. Smaller hospitals in rural places are also able to provide intensive care services with the help of specialists in other facilities via remote patient monitoring systems.

The use of telemedicine has also expanded to reach patients even in urban areas who are leading busy schedules and lifestyles. Less willing to waste their time travelling to the hospital or clinic and waiting in line at the doctor's office, patients are looking for more convenient ways of accessing on-demand and immediate care.

Homebound patients or those dealing with chronic conditions are also able to benefit from telemedicine technologies that allow them to share real-time medical information such as blood pressure, heart rate, and other vital signs to their physicians in case of emergencies.

- **REDUCED HEALTH CARE COSTS**

Telemedicine helps patients, medical providers, insurers and even employers reduce health care costs and save money.

Unnecessary and non-urgent ER visits or physical check-ups for diagnosis of simple health issues like sore throats, skin rashes, colds or flu may be eliminated through the use of telemedicine which, in turn, help patients save on transportation expenses and higher costs of in-person visits.

More expensive hospital visits can also be significantly reduced for patients with chronic conditions through the use of remote analysis and monitoring services. The American Hospital Association (AHA) previously reported about a in Pennsylvania in the US that saved 11% in costs and even increased the return of investment (ROI) by over 300% for the investors.

Telemedicine services can also help businesses and employers as well as their employees save time and money by reducing absences from work and billable expenses incurred from hospital visits.

Aside from cost-savings for patients and employers, telemedicine can also benefit medical providers. Instead of providing free over-the-phone consultations during non-clinic hours, doctors can now turn their on-call hours to billable time.

- **Human genome project**

Data driven medicine started with the that aimed to map and understand all of the genes in the human body by collecting DNA from countries all over the world. It spawned a multitude of spin-off projects with a growing number of research institutes around the world specialising in DNA sequencing and a research agenda to understand the genetic basis of disease.

In the 13 years since the Human Genome Project, the computing power and quantity of data generated by it has increased dramatically, creating the foundation for data driven medicine. For example, the produces more sequences of DNA today in one hour than it did in its first ten years.

This allows them to work on five or six sequencing projects concurrently. The Institute makes its results available to the international research community. Its website is to get 20 million hits each week.

- **Personalised medicine**

At the other hand of the medical data continuum, we now have plenty of personal-level health data. Devices synced to smartphones can monitor your heart rate, distance covered, calories burned and so on. It's like having your own physician on hand to give you helpful advice and warnings when you need it. For example, your blood glucose may be dangerously high.

The of AI come down to three broad issues; programming errors, cyber attacks and taking instructions too literally.

- Programming errors, often called "bugs", are a result of poorly developed software. They creep in because the development and testing process has not been properly performed. Malfunctions could range from minor to serious, but software has been used for several decades in safety critical situations like hospitals and aviation. We would expect no less for medical AI applications.

- Cybersecurity is a well-funded area of research that is doing a generally good job of staying ahead. While we must not be complacent, there is no reason why medical AI, or any AI, could not be safely protected from attack.

- Taking instructions too literally can also similarly be managed by building in safeguards, as is standard practice for any safety critical system. It's highly unlikely a hospital would leave an AI in charge of life or death decisions, such as whether to turn off life support.

While risks exist, they can be managed as it has been been done in other domains of computing for decades.

Taps into the expanding databases of genomic, clinical, imaging (scans and x-rays), and molecular data. Advanced algorithms are put to work that learn from repeated cycles of enquiry, and all of this takes place on affordable computer hardware. We can now sift through billions of records to find answers, taking minutes to do what might take years for humans.
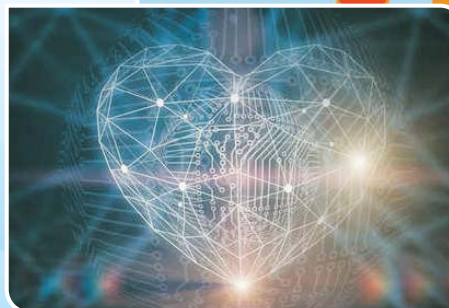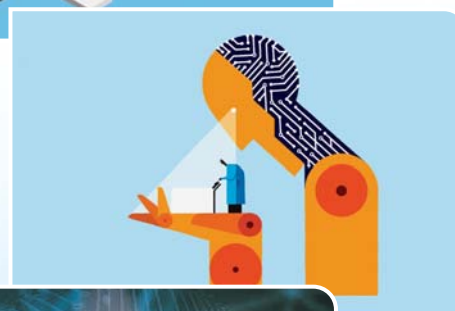
10 Naturally moving prosthetic limbs

9 Cell-free fetal DNA testing

8 A life-changing antibiotic

7 Three-dimensional printed body parts

6 Robotic surgery

5 Wireless brain sensors

4 Food scanners

3 Virtual reality for medical experience
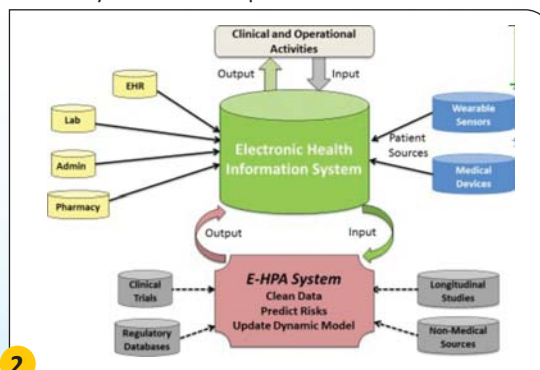
2 Algorithms to merge wearable data
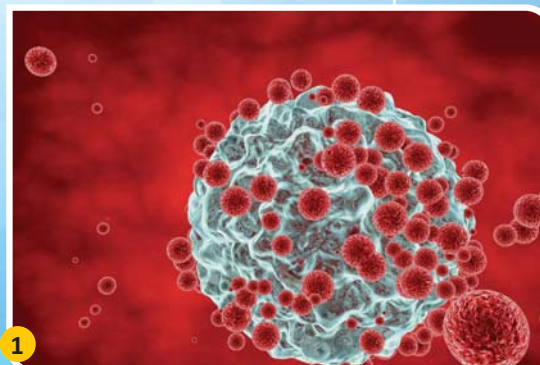
1 Cancer nanotherapy

The Bengal Chamber of Commerce and Industry, India's oldest institution of its kind, traces its origins to 1833. The Chamber has played a pioneering role as a helmsman, steering the evolution of Commerce and Industry in India. The Chamber reviewed and commented upon some of the most critical legislations in the country.

The Bengal Chamber has managed to remain both young and relevant simply because it is quick to recognize and value the only constant in time – change.

IN HEALTHCARE

In keeping with this practice, The Chamber has pioneered a number of initiatives and programmes in new directions in the past which have brought the cutting-edge offerings in healthcare services to the common man and included lectures on health issues by leading and iconic personalities in health like doctors, entrepreneurs and policymakers.

The Bengal Chamber's Health Committee has been playing an important role in addressing the critical aspects in the field of healthcare in the State and has been catalytic in bringing about significant corporate consciousness in healthcare management. It has organized Health Expos, Panel Discussions, and Lectures on Health issues by leading and iconic personalities in Health from the fraternities of doctors, entrepreneurs and policymakers. The Chamber's National Health Debate also deserves special mention, which were addressed by national and international personalities. The Committee also organizes quiz on health & lifestyle to create awareness on healthy living. The Committee's activities also include B2B Meet with the IT companies to discuss latest offerings relevant to the healthcare sector, Medico Legal Workshop involving doctors, lawyers and hospital administrators to learn and share the experiences on medico legal issues & guidelines, Blood Donation Camp, Seminar on Deceased Organ Donation as a gesture of our responsibility to our Society. The Committee also celebrates Doctor's Day in a unique way by organising Panel Discussion, Quiz with the Doctors of our Society.

TECHNOLOGY

The Chamber has a vibrant IT Committee comprising of all leading developers, consultants and corporates. The focus has always been to communicate and create a bridge between the technology users and the developers on how the applications can make enterprise planning and manufacturing processes simpler, faster and less complicated – achieving all this at a lower cost. Most importantly, as a catalyst, service provider, initiator of sector specific activities, facilitator of business and spokesperson for the State Government, the Chamber envisions itself to be the most valued partner of our members in promoting and facilitating sustainable growth.

Our signature programme is Business IT Conclave, the eighth edition of which was held on 24th May 2017 on Bridging Automation and Society. The presentations shared by speakers, photographs, YouTube links of video are available on our website http://www.bengalchamber.com/events-gallery-business-it-conclave.html The archive of the earlier editions is also available here. The Conclave brings together stakeholders of IT to discuss, brainstorm, share best practices of the latest happenings in the realm of technology

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