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COVER STORY

## HEALTHCARE 3.0

### Evolving Landscape of Digital Health

INTERVIEW



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# ▶ EXPERT INSIGHTS



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# Emerging Trends in Smart Healthcare and Digital Innovations in 2023

**With technology continuing to soar, it is undeniable that the healthcare sector will see dynamic changes, writes Binu Rajendran Chandrika**

**T**echnology has permeated almost every aspect of our lives in recent years as digitization has accelerated across various industries. Businesses recognize the importance of digitization and are increasingly adapting to current technologies to keep up with the changing environment. The landscape of healthcare has drastically changed since the pandemic, and various advancements have taken place over the years ranging from e-consultations, telemedicine, real-time diagnosis, and access to digital therapeutics. With the advent of artificial intelligence (AI), the Internet of Things (IoT), robotics, data management techniques, devices, and their ecosystem are becoming intelligent, and hospitals are getting smarter with enhanced workflows. Healthcare is one of the sectors that will experience significant disruption in the next few years regarding innovations and technologies.

## **Key Trends Driving the Healthcare Industry in 2023**

### **AI in Healthcare**

Artificial intelligence has the potential to revolutionize healthcare by enabling faster and more accurate diagnosis, personalized treatment, and improved patient outcomes. It is already deeply embedded in the healthcare ecosystem and will continue to be adopted through 2023 as evidence of its benefits grows. Some of the critical areas where it can lead to significant impacts are medical imaging, which helps in the earlier detection of diseases like cancer with improved accuracy and rapid diagnoses. AI can be used to develop predictive models that can help improve early detection and treatment, and patient outcomes. AI plays a significant role in drug discovery and development, as it can be used to identify potential drug targets and develop new drugs faster and more efficiently. AI can achieve this



by analysing vast amounts of data and identifying potential drug candidates faster and more accurately than traditional methods.

## Implementing IoT

As IoT technologies evolve, the Internet of Medical Things (IoMT) transforms the healthcare industry by providing real-time patient health data, improving patient outcomes, reducing costs, and enabling remote monitoring and treatment. It is also transforming hospitals into smart hospitals by automating processes and making high-quality medical care

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and optimize patient care. more affordable. For instance, IoT devices can help track and manage medical equipment, track patient flow, and improve patient safety. IoT in healthcare can take many forms- remote monitoring, predictive maintenance, and telemedicine, to name a few.

Some of the key areas where IoT is playing a pivotal role in healthcare are:

- Big data analytics: IoT-generated data can be analysed using advanced analytics tools to identify trends, predict outcomes,





- **Blockchain:** IoT data can be secured using blockchain technology to ensure data privacy, security, and integrity.
- **Artificial intelligence (AI):** IoT-generated data can be used to train AI models to identify patterns, predict outcomes, and personalize treatment plans.
- **AR/VR:** IoT can enable immersive experiences for patients and healthcare providers, enabling them to visualize and interact with medical data in new ways.

These are just a few cases of IoT transforming the healthcare sector. We can expect more

innovative applications in the future.

### **Wearables and Smart Devices**

In 2023, wearables are becoming increasingly popular in healthcare as they can provide a convenient and non-invasive way to monitor patients' health. Wearables can be used to monitor chronic conditions such as diabetes, cardiovascular diseases, and respiratory illnesses. One of the main advantages of wearables is that they allow continuous patient health monitoring, which can help identify potential health issues before they become serious. Wearables can also provide patients



with real-time health feedback, motivating them to make positive lifestyle changes. They can help reduce healthcare costs by reducing hospital readmissions and enabling remote monitoring of patients. Moreover, the data collected by wearables can be shared with healthcare providers, who can use it to inform their diagnoses and treatment plans.

## **Technological challenges faced by the healthcare sector that are worth solving.**

While these technologies have the power to revolutionize the healthcare industry several challenges must be addressed to fully realize their potential:

1. **Growing concerns over data quality and access:** Healthcare data can be complex, unstructured, and fragmented across different systems, making it challenging to collect, clean, and integrate data. AI algorithms require a large amount of high-quality data to be trained effectively.
2. **Integration with clinical workflows:** AI tools must be seamlessly integrated into clinical workflows to be effective. This integration requires close collaboration between AI developers and healthcare providers to ensure that AI tools fit seamlessly into existing clinical processes.
3. **Lack of transparency and interpretability:** Many AI algorithms need to be more precise and easier to interpret, otherwise it can make it challenging for healthcare providers to understand how the algorithm arrived at a particular recommendation or diagnosis.
4. **Cost and Sustainability:** Developing and deploying AI tools can be costly, and there is a risk that the benefits of AI in healthcare may be

uneven across different populations.

5. **Addressing privacy and security concerns in healthcare:** Privacy and security concerns in healthcare will continue to be of critical importance due to the sensitive nature of the information involved and can result in profound consequences, such as legal and financial penalties, loss of trust and reputation, and potential harm to patients if breached.

## **Future of smart healthcare and digital innovation**

The latest trends in healthcare are continuing to increase with leaps and bounds. As trends in technology continue to drive innovation and expand, possibilities, accuracy, speed, and convenience will undoubtedly improve in the years to come and beyond. With technology continuing to soar, it is undeniable that the healthcare sector will see dynamic changes, and we can all look forward to seeing what exciting new developments emerge in the industry. ■

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