



Wipro iX Solutions

Extended Reality is Transforming
How We See Healthcare

Healthcare has always been complex, but the 21st century has brought unprecedented changes. Soaring costs, demand for more personalized patient experiences, and an increased effort to deliver care to remote and underserved populations pose a litany of new challenges.

These new complexities might be exacerbated further with a shortage of 12.9 million physicians, nurses, and other health workers worldwide predicted by the World Health Organization (WHO).¹ As in many areas of our lives that have encountered modern challenges, technological innovation offers some of the most promising answers.

An area of medical technology that is both intriguing and a potential game-changer, is extended reality, which augments elements from real life by adding visual information after recognizing the environment. Extended reality includes technologies such as augmented reality (AR), virtual reality (VR), and mixed reality (MR), aided by artificial intelligence, computer vision, and connected devices like mobile phones, wearables, and head-mounted displays. Incorporating voice, gestures, motion tracking, vision, and haptics, this new technology is transforming the way services are delivered, improving the quality of patient care, and redefining the experience of healthcare for everyone.

Goldman Sachs expects investments in the use of extended reality in healthcare to rise to \$5.1 bn by 2025.² The impact of these technologies can be felt from the operating room to the billing office and are affecting the lives of doctors, patients, and everyone in between. They're changing how medical professionals are trained and how surgeons prepare for surgery, aiding patients in understanding their treatment and recovery, and becoming an essential part of patient care for conditions like post-traumatic stress disorder (PTSD). These technologies also provide small hospitals with access to the resources of larger ones and help facilities with lean operations optimize the resources they have.



Application of Extended Reality for Payers

Engaging customers and explaining insurance plans

Allow customers to engage with immersive, clear, and informative experiences. Providing interactive conversations cuts through complexity and highlights offerings, educating existing customers while also becoming an effective marketing vehicle for engaging with new ones.

Marketing and customer engagement Virtual customer care

Give policyholders real-time guidance on filling out claims forms, resolving billing issues, and satisfying other service requests, without contacting insurance agents or a service desk.

Remote guidance and employee training

Bridge the distance between new and experienced employees allowing the sharing of data, supporting in-field staff, enabling real-time training, and empowering technical experts to provide a second pair of eyes from wherever they are.

Application of Extended Reality for Promoting Healthy Lifestyles

Fitness instructors

Training anywhere-anytime can give users access to professional trainers, insights into proper techniques and use of equipment, and monitoring of training regimes.

Healthy eating

Encourage good habits by providing nutritional information, motivating the users to follow recommended diets, and monitoring progress.

Physical therapy

Offers immersive, interactive artificial environments that motivate patients to complete exercises and the ability for therapists to collect data relating to recovery.



Application of Extended Reality for Providers

Surgery virtualization

Create digital models for planning operations and working out possible scenarios, allowing surgeons to optimize sequences, create a detailed course of action, and prepare contingencies.

Patient insights

Using virtualized experiences, patients can be familiarized with their medical conditions and procedures, and the effects of medicines they're prescribed—raising awareness and encouraging proper dosage, encouraging recovery, and putting them at ease.

Patient rehabilitation

Provide guidance and support for patients recovering from surgery, and also simulate controlled environments to assist the treatment of conditions such as PTSD or anxiety.

Medical training

Extended reality allows us to offer immersive interactive learning experiences, such as a layer-by-layer study of human anatomy and complex body mechanics, that provide deeper insight into nuances of body functions.

Therapeutic/procedural training

Using compelling stories, life science companies can help illustrate the impact of diseases at different stages and show the effects of treatment.

Telemedicine

Using technology to decentralize specialized care (including neurology, dermatology and pediatrics), enabling a shift from specialized large setting services to more community-based and cost-effective locales³ and providing substantial savings for users.

Addressing global epidemics

Extend the speed, reach, and collaboration of providers without creating the strain on resources often caused by outbreaks. Extended reality allows specialists to do remote inspections, visualize vitals, and prescribe treatment instantaneously.



Application of Extended Reality for Medical Devices

Device operator training

Promote more thorough, sophisticated learning experiences by providing remote digital support and expertise anytime during the course of training.

Device maintenance and troubleshooting

Assist field engineers with calibrating devices, providing preventative maintenance, and offering overlaying step-by-step instructions via mobile or head-mounted display to help troubleshoot problems.

Marketing materials

Give sales representatives the ability to let healthcare providers experience products, deep dive into the technical specifications, and get a 360° perspective of the device and its operations.



Conclusion

Extended reality has incredible potential to transform healthcare.

The use of extended reality, augmented reality, and virtual reality is already helping battlefield medics save lives, assisting first responders in critical rescue situations, improving the quality of patient care, changing lifestyle habits, ensuring life-saving medical devices are properly serviced, and making care affordable and accessible to millions of individuals who are now underserved. With upcoming technologies like 5G, IoT, and nano sensors, we can expect these technologies to soon appear more and more in our daily lives.

References

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- ³ www.forbes.com/sites/quora/2018/07/31/what-are-the-latest-trends-in-telemedicine-in-2018/#6f96c4556b9e

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About the author

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Kartik is a digital transformation consultant for interactive experience (iX) solutions at CTO, Wipro. He has 13 years of experience in digital technologies and is responsible for innovation in emerging technologies, consultation, solution design, pre-sales and market research.

