

The FutureList

MediXR

Innovation Memo

Innovation In Words



A note from the Co-founder, Jean Robert Gatwaza:

MediXR's long-term vision is to redefine global medical education, addressing pressing healthcare challenges in Africa, including cancer, infectious diseases, and demanding surgical procedures. MediXR aims to reduce human errors by improving education through lifelike simulations, enabling experiential learning without real-world consequences.

MediXR

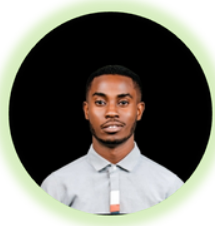
Executive Summary

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Health
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Medical Training & Education (VR/AR)
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medixr.org
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US \$ 65,000 Grant
- 
2022

MediXR is an educational healthtech startup aiming to revolutionise medical education and training through its innovative use of virtual reality (VR) and augmented reality (AR) simulations. The startup is developing a software platform, Medi Sim, replicating real-world medical scenarios, enabling medical students and professionals to practice complex procedures, develop technical skills, and cultivate emotional preparedness in a risk-free environment. MediXR's core features include an Anatomy Lab with 3D visualisations, a Surgery Lab for practising surgical techniques, AI-powered performance analysis, access to recorded live surgeries, and multi-user collaboration capabilities for remote learning and knowledge sharing.

While MediXR's approach holds tremendous promise, the startup may face technological limitations, regulatory hurdles, user adoption, and resistance to change from traditional training methods. To mitigate these risks, MediXR must invest in ongoing research and development, collaborate with hardware manufacturers and technology partners, conduct extensive user research, and implement robust security measures.

Despite the potential challenges, MediXR's innovative approach to medical education and training through VR/AR simulations can be a game-changer, positively impacting societal health, fostering global collaboration, and driving sustainable practices in the medical field. By democratising access to high-quality training opportunities, MediXR can contribute to developing a skilled and competent healthcare workforce, ultimately improving patient outcomes and addressing healthcare disparities globally. As the demand for healthcare services grows, MediXR's solutions could be crucial in training and upskilling healthcare professionals in Africa. With a commitment to staying at the forefront of innovation and addressing evolving healthcare challenges, MediXR is well-positioned to shape the future of medical education and training, leveraging advanced technologies and expanding its offerings beyond traditional boundaries starting from Africa.



Jean Robert Gatwaza
Co-founder

Jean is a passionate professional in machine learning and software engineering. With experience at PearsonVUE under WEC Supervisory, he advanced remote education through innovative software infrastructures. Now at MediXR, he's driven by the question: What lies beyond this era of human-machine intelligence?



Eseosa Kay-Uwagboe
Co-founder

Eseosa is a technology innovator, serving as CTO, Lead 3D Artist & Designer of MediXR. With a focus on revolutionizing the intersection of health and technology, Eseosa is helping to develop the groundbreaking solutions in medical education using virtual and extended reality technology.



Isaac Rudasingwa
Co-founder

Isaac is a software developer and entrepreneur contributing to the development of MediXR's innovative platform. Isaac brings a wealth of technical expertise to the table, ensuring that MediXR delivers top-notch immersive learning experiences for medical practitioners.



Wendy Ruzindana
Managing Director

Wendy is an entrepreneur and Managing Director at MediXR. With a background in International Business and Trade, Wendy brings a unique perspective to her role, driving the strategic vision of MediXR forward. She is committed to leveraging technology to overcome barriers in healthcare training globally.



Nwalahnjie Akumawah
Co-founder

Nwalahnjie is a computer graphics engineer with a passion for leveraging technology to solve health issues globally. He specialises in computer vision and has expertise in game engines like Unity and Unreal Engine, along with proficiency in programming languages such as C, Python, C#, and C++.

Innovation Spotlight

Core Features

MediXR is developing Medi Sim, a software platform that leverages virtual reality (VR) and augmented reality (AR) technologies to provide immersive medical training simulations. The key features include:

- **Anatomy Lab:** This site offers complex simulations and 3D visualisations of human anatomy, allowing users to explore and interact with detailed body parts.
- **Surgery Lab:** Virtual environments for practising various surgical procedures, with step-by-step guidance and performance tracking.
- **AI Training:** Real-time feedback and performance analysis powered by artificial intelligence (AI) to enhance the learning experience.
- **Surgery Recording Labs:** Immersive access to recordings of live surgeries for observational learning.
- **Multi-User Collaboration:** Enabling remote learning and collaboration among students and experts across different locations.

Design and User Experience

MediXR emphasizes creating a realistic and engaging user experience through immersive VR/AR simulations with at least 98% texture and feel likeness. The platform aims to replicate real-world medical scenarios, allowing users to practice in a risk-free environment.

The user interface is designed to be intuitive and easy to navigate, facilitating seamless interaction with the virtual medical environments.

Performance Metrics

As a software platform, Medi Sim's performance metrics include:

- Ensuring smooth and lag-free simulations for an optimal learning experience.
- Maintaining a stable and accessible platform for continuous learning.
- The ability to handle increasing numbers of users and simulations without compromising performance.

Compatibility

MediXR emphasises the seamless integration of its platform with various Learning Management Systems (LMS) and other educational technologies medical institutions use. This compatibility allows for a cohesive learning experience and easy integration of Medi Sim into existing curriculums and systems.

MediXR's operational aspects primarily revolve around the accessibility and compatibility of its simulations. The platform supports various VR/AR hardware devices, including the Meta Quest 2, Meta Quest 3, and Meta Quest Pro, providing flexibility and accessibility for medical students and institutions. The Meta Quest series of devices are more affordable and offer a range of options based on the level of sophistication required by our customers.

Safety and Compliance

While MediXR operates in a virtual environment, it still needs to ensure compliance with relevant regulations and guidelines for medical education and training. The startup is implementing policies requiring continuous upgrading of its systems to meet industry standards, so they are always looking for the next big technology to improve its simulation experiences.

Innovation in Business Model

MediXR's business model provides VR/AR medical training solutions to hospitals, clinics, medical schools, and individual health professionals. The company works closely with these institutions to tailor its offerings to their needs and curricular requirements. This collaborative approach ensures that MediXR's solutions address medical education institutions' challenges effectively.

Scalability of the Innovation

MediXR's simulations and platform, Medi Sim, can be scaled to meet increasing demand or future advancements in several ways:

- Expanding the range of simulations and medical scenarios, catering to diverse specialities and educational needs.
- Integrating new VR/AR technologies and hardware as they become available enhances the realism and immersion of the simulations.
- Leveraging cloud computing and distributed systems to handle more significant numbers of concurrent users and simulations.
- Continuously updating the platform with new features and functionality based on user feedback and evolving medical education requirements.

Market Impact & Future Outlook

Potential Market Impact

MediXR seeks to disrupt the traditional medical education landscape by introducing immersive VR/AR simulations to train medical students and professionals. This innovative approach could revolutionise how healthcare education is delivered globally.

MediXR's platform seeks to address the growing demand for hands-on, practical training opportunities in medical education, which has traditionally been limited by factors such as access to real-world scenarios and the availability of expert instructors. By fostering collaboration and knowledge-sharing among students and experts worldwide, MediXR can contribute to disseminating best practices and advancing medical education globally.

Future Outlook

- As VR/AR technologies evolve, MediXR's simulations could become even more realistic and immersive, further bridging the gap between virtual training and real-world scenarios.
- Integrating advanced technologies such as haptic feedback, gesture recognition, and artificial intelligence (AI) could enhance the interactivity and personalisation of MediXR's simulations, tailoring the learning experience to individual needs and preferences.
- Cloud computing and distributed systems could enable seamless collaboration and remote learning opportunities, transcend geographical boundaries, and facilitate access to expert instructors and resources worldwide.
- Medi Sim platform could potentially expand beyond medical education and into continuing medical education (CME), surgical planning, and patient education, providing a comprehensive suite of tools for healthcare professionals and institutions.
- Through its collaborative approach and integration with existing educational systems, MediXR has the potential to become a valuable partner for medical institutions, hospitals, and clinics seeking to enhance their training programs.

Societal & Environmental Impact

While MediXR's primary focus is improving medical education and training, the startup's work can contribute to societal well-being by improving access to quality healthcare and promoting sustainable practices in the medical field. MediXR can positively impact societal health and environmental sustainability by leveraging innovative technologies and fostering global collaboration. Here are some implications of MediXR's work:

- **Improved Patient Outcomes**

Well-trained healthcare professionals are crucial for delivering safe and effective patient care. Medi Sim's simulations will allow medical students and professionals to practice procedures and develop skills in a risk-free environment, potentially leading to fewer medical errors and better patient outcomes.

- **Knowledge Sharing and Collaboration**

Medi Sim's multi-user collaboration features will enable knowledge sharing and remote learning opportunities, fostering the dissemination of best practices and promoting global healthcare advancements.

- **Reduced Resource Consumption**

Virtual simulations can reduce the need for physical resources, such as corpses, medical equipment, and physical training facilities, resulting in lower environmental impact and resource conservation.

- **Sustainable Training Practices**

By leveraging digital technologies, MediXR promotes sustainable training practices that can contribute to a more environmentally conscious medical education system. MediXR's platform can help minimise the carbon footprint associated with traditional medical education methods, such as travel and physical infrastructure.

Potential Funding & Partnership Opportunities

MediXR has received grant support from ALX Ventures and other competitions. The team can consider these funding and partnership sources:

- **Venture Capital Firms**

MediXR can seek investment from venture capital firms focused on health tech, edtech, or emerging technologies. Firms like Khosla Ventures, Flat6Labs, Launch Africa Ventures, Verod Kepple Africa Ventures have invested in innovative healthcare and education startups.

- **Angel Investors and High-Net-Worth Individuals**

Angel investors with expertise or interest in the healthcare or education sectors may be interested in funding MediXR's innovative solutions. Well-connected angel investors can also provide valuable industry connections and mentorship.

- **Crowdfunding Campaigns**

MediXR can leverage crowdfunding platforms like Kickstarter or Indiegogo to raise funds from individuals interested in supporting their mission and vision. Successful crowdfunding campaigns can also generate valuable media exposure and community engagement.

Potential Partnerships

- **Medical Schools and Universities**

Partnering with leading medical schools and universities can provide MediXR with valuable feedback, access to subject matter experts, and potential pilot programs or research collaborations. These partnerships can also be solid references and help establish credibility in the medical education community.

- **Hospitals and Healthcare Systems**

Collaborating with hospitals and healthcare systems providers can provide MediXR insights into real-world medical scenarios and training needs.

- **Technology Companies and Hardware Manufacturers**

Partnering with technology companies and VR/AR hardware manufacturers can enable MediXR to access cutting-edge technologies and develop customised solutions tailored to their needs. Collaborations with companies like Meta and Sand Technologies could provide access to advanced hardware and software platforms.

- **Non-Profit Organizations and Foundations**

MediXR's mission of improving access to quality medical education aligns with the goals of many non-profit organisations and foundations focused on healthcare and education. Partnerships with the Bill & Melinda Gates Foundation or the Clinton Foundation could provide funding, resources, and global reach.

Potential Roadblocks & Risks

- **Technological Limitations**

Current VR/AR technologies may have limitations regarding realistic simulations, haptic feedback, and seamless integration with existing medical equipment.

- MediXR can collaborate with hardware manufacturers and AI technology partners to develop customised solutions that address the specific needs of medical simulations.

- **Data Privacy and Cybersecurity Risks**

MediXR's platform may handle sensitive medical data, which could be vulnerable to cyber threats or data breaches.

- MediXR should implement robust cybersecurity measures, including data encryption, access controls, and regular security audits.

- **Regulatory Compliance and Accreditation Requirements**

MediXR's simulations and training programs may need to comply with various medical education regulations and accreditation requirements across different regions, which can be challenging.

- MediXR can closely monitor and adhere to relevant regulations and standards in the medical education and healthcare sectors across various regions. It can also collaborate with regulatory bodies and accreditation organizations to ensure that MediXR's offerings meet the requirements.

- **Financial and Resource Constraints**

Developing and maintaining cutting-edge VR/AR simulations and supporting infrastructure can be resource-intensive and financially demanding.

- MediXR could explore partnerships and collaborations with healthcare organisations, medical institutions, and technology companies to share resources and costs. It must also implement a sustainable and scalable business model that aligns with the company's growth and market demands.

Conclusion

MediXR is taking a revolutionary approach to medical education and training through its innovative use of virtual reality (VR) and augmented reality (AR) simulations in Africa. By leveraging cutting-edge technologies, MediXR's platform, Medi Sim, has the potential to transform the way healthcare professionals are trained, ultimately improving patient outcomes and addressing healthcare disparities globally.

The startup's core innovation lies in its immersive and interactive virtual environments, replicating real-world medical scenarios with remarkable realism. Medi Sim's simulations will allow medical students and professionals to practice complex procedures, develop technical skills, and cultivate emotional preparedness in a risk-free setting. This approach enhances practical knowledge and fosters ethical decision-making and empathetic patient care.

MediXR's impact extends beyond medical education. By democratising access to high-quality training opportunities, the startup contributes to developing a skilled and competent healthcare workforce, particularly in regions with limited resources or educational infrastructure. Furthermore, MMediXR's emphasis on sustainability and resource conservation through virtual simulations resonates with the growing concern for environmental responsibility.

The future holds exciting possibilities as MediXR continues to innovate and expand its offerings. Integrating advanced technologies such as artificial intelligence (AI), haptic feedback, and gesture recognition could further enhance the realism and personalisation of the simulations, tailoring the learning experience to individual needs and organisational preferences.

Innovation In View

How **MediXR** brings innovation to life



Immersive and Realistic Simulations - Medi Sim

MediXR leverages virtual reality (VR) and augmented reality (AR) technologies to create highly immersive and lifelike simulations of medical scenarios and procedures with its platform, Medi Sim.

The company's Anatomy Lab and Surgery Lab features detailed 3D visualizations and interactive environments that allow users to explore the human body and practice complex surgeries in a risk-free virtual setting.

This level of realism and interactivity significantly departs from traditional learning methods, such as textbooks and static diagrams, enhancing the learning experience and knowledge retention.

Seamless Integration with Existing Systems

MediXR strongly emphasizes integrating its platform with Learning Management Systems (LMS) and other educational technologies used by medical institutions and professionals.

This seamless integration allows for a cohesive and streamlined learning experience, facilitating the adoption of MediXR's simulations into existing medical education curricula and training programs.

MediXR ensures the smooth and efficient implementation of its innovative solutions by addressing medical institutions' compatibility and interoperability needs.



Contributors

The FutureList

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MediXR

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The FutureList

Notes on our methodology

About The FutureList

The FutureList is dedicated to identifying and linking innovative technology companies with the investors, talent and strategic growth partners they need to rapidly scale their innovation. The FutureList leverages its network of local Innovation Scouts, a comprehensive online platform, and curated events to rapidly spot and match opportunities. The FutureList network has already profiled over 6,000 innovative companies, investors and partners globally.

We scout across a broad range of sectors in tech, aiming to identify the most innovative startups globally. This includes everything from AI to biotech, renewable energy, and more. The 10 categories we currently focus on are: Agriculture (farming, food, beverages, crops, forestry, aquaculture, livestock, irrigation, veterinary, etc.), Climate (electricity, energy, environment, renewables, recycling, circular economy, carbon credits, cleantech, etc.), Education (e-learning, school management, assessments, upskilling, tutors, languages, etc.), Enterprise (legal services, AI, cyber security, market research, recruitment, HR, customer success, consulting, SaaS tools, business analytics, etc.), Finance (banking, capital, trading, lending, personal finance, insurance, crypto, real estate, etc.), Health (medicine, biotech, medical equipment, pharmaceuticals, public health, digital health, hospitals, health records, wellness, fitness, beauty, etc.), Infrastructure (architecture, materials, computer networks, safety, law enforcement, construction, data centers, machinery, telecom, wireless internet, manufacturing, etc.), Media (marketing, influencers, animation, arts, gaming, fashion, content, platforms, music, publishing, translation, editing, etc.), Mobility (delivery, transportation, etc.), and Supply Chain (e-commerce, warehousing, logistics, retail, etc.)

About Our Innovation Scouts

Our Innovation Scouts are experienced professionals from diverse sectors with a keen eye for groundbreaking technologies and business models. They undergo rigorous training to ensure they provide maximum value to the startups they work with. They conduct their research on a volunteer basis. We have strict ethical guidelines in place. Any Scout with a potential conflict of interest is recused from the process to ensure fairness and objectivity.

About Our Innovation Memos

Innovation Memos provide a comprehensive profile of an innovator, whether its a startup, hub, investor or more established corporate, highlighting technological and business model innovations. The Memo is written in direct consultation with a verified representative from that entity, and also outlines suggestions around how to rapidly scale their innovation further through use of The FutureList's network. Once published, the Memo accessible to our network of investors, partners, and the general public for free on our platform. The Memo process is completely free for the companies featured as well. The entire process, from initial contact to publishing the Innovation Memo, typically takes about 4-6 weeks, but this can vary based on the startup's availability and responsiveness. Our goal is to promote and scale innovation globally. The FutureList platform and events are sponsored by partners.

Scaling Innovation

How **The FutureList** identifies and scales innovation globally



Ecosystem and sector mapping

Our Innovation Scouts identify the most innovative early-stage and growth-stage tech companies across key sectors in tech hubs around the globe.



Innovation memos and platform profiles

Our Innovation Scouts interview founders and tech executives to publish innovation memos and create a comprehensive company profile on our public online platform.



Introductions to strategic opportunities

Our Innovation Scouts share company profiles with relevant investors and strategic growth partners across our global ecosystem, and facilitate warm introductions where requested.



Private dinners and fireside chats

Our exclusive evening events bring together founders, tech executives and other special guests for networking and interactive discussions around technology and innovation.



Global summits & learning trips

Featured companies will be invited to larger annual events held at the regional and global stage that connect the most innovative companies with opportunities for further visibility.

Sponsor

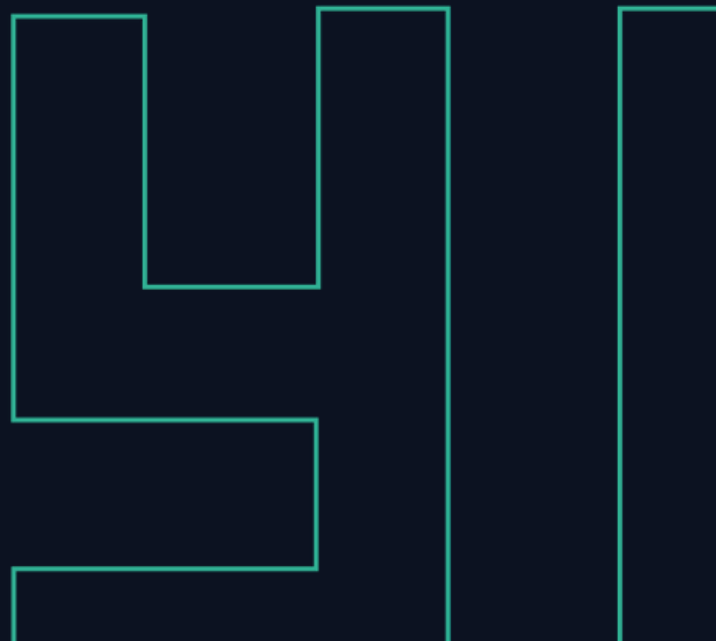
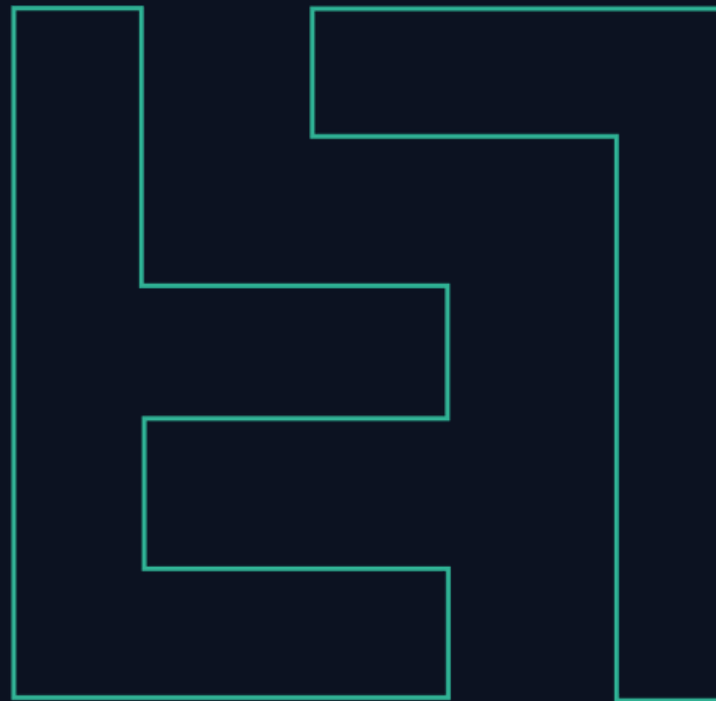
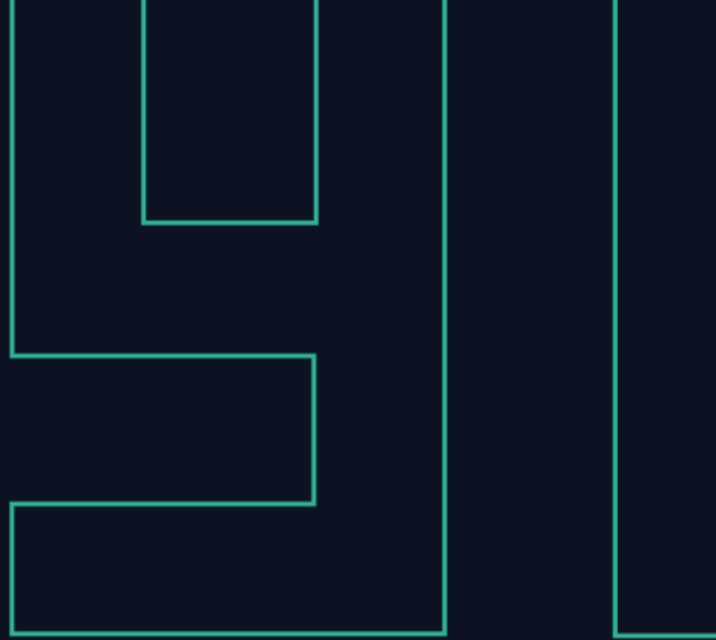
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Sand Technologies, a global technology services company with presence across Silicon Valley, France, the UK, Romania, and several emerging markets, is at the forefront of supporting scale-ups worldwide in overcoming the challenges of rapid growth. We're currently aiding businesses in the United States, New Zealand, Denmark, the Netherlands, the UK, the UAE, South Africa, Kenya, and numerous other locations in developing scalable technology products, constructing world-class tech teams, enhancing revenue generation, and elevating customer satisfaction.

Learn more at www.sandtech.com

The FutureList



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