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â??Biomedical engineers need greater interaction with clinicians to increase medical technology adoptionâ?•

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In a landmark achievement that could redefine the future of surgery worldwide, a world record in medical history was established this year, with the successful completion of a robot-assisted cardiac procedure across nearly 20,000 kilometres of fibre network distance between Guyana and India, making it the world's longest-distance robotic cardiac telesurgery ever conducted. Prior to this historic event, the longest robotic cardiac telesurgery done was from Strasbourg, France to Indore, with a communication distance of 10,000 kilometers utilising the Made-in-India SSI Mantra Surgical Robotic System. Adding to these achievements, Gurugram-based MedTech firm SS Innovations International clocked in a revenue of Rs 479 crore during FY 25-26, with a target of reaching Rs 800-900 crore in next fiscal. To find out more about the companyâ??s growth plans, BioSpectrum India spoke to Dr Sudhir Srivastava, Founder, Chairman and CEO, SS Innovations International.

What are the major plans at SS Innovations International in 2026 to strengthen the medtech ecosystem in India?

2026 is a defining year for SS Innovations International because our focus extends well beyond building surgical robots. We are working towards creating an integrated medtech ecosystem that connects innovation, clinical practice, training, manufacturing and digital healthcare. The objective is to make advanced surgical care available closer to where patients live rather than limiting it to a handful of metropolitan centres.

A major priority is expanding the footprint of the SSI Mantra platform across hospitals of different sizes while simultaneously strengthening surgeon education through structured simulation, proctorship and robotic fellowships. Clinical adoption depends as much on confidence as it does on technology. Building a skilled user community therefore remains central to our strategy.

At SMRSC 2026, we also showcased how healthcare delivery can evolve beyond conventional operating rooms. Innovations such as PROJECT OPERION, our mobile operating room, SSI AERO and KAYA reflect our broader vision of taking technology to locations where infrastructure is limited or emergency response is critical. KAYA represents our continued effort to explore intelligent autonomous healthcare support, while drone-enabled logistics and mobile surgical capabilities could transform trauma response during disasters, remote expeditions and even battlefield medicine by ensuring that expertise and critical equipment reach patients much faster.

We are equally investing in indigenous manufacturing, clinical research and stronger collaborations with hospitals, academic institutions and technology partners.

What are your key priorities for the next five years regarding technology development, product launches, market expansion, partnerships, and investment growth?

The next five years will be centred around building a comprehensive digital surgery ecosystem instead of developing individual products in isolation. Surgical robotics is evolving rapidly, and the future lies in connecting robotics, artificial intelligence (AI), imaging, analytics and communication networks into one intelligent platform that continuously improves patient outcomes.

From a technology perspective, we will continue advancing the SSI Mantra platform with enhanced instrument capabilities, improved ergonomics, greater automation support and software-driven upgrades. AI will increasingly assist surgeons through workflow optimisation, anatomical recognition, predictive safety alerts and objective performance assessment while always keeping clinical decision-making firmly under the surgeon’s control.

Our product roadmap is expected to extend beyond robotic systems into complementary digital solutions that strengthen the perioperative journey. This includes simulation technologies, advanced training platforms, intelligent operating room integration and connected healthcare infrastructure capable of supporting remote collaboration and telesurgery at scale.

Internationally, we see significant opportunities across Asia, the Middle East, Africa, Latin America and selected developed healthcare markets where hospitals are looking for high-quality robotic platforms with a compelling value proposition.

Partnerships will play an equally important role. We intend to deepen collaborations with hospitals, universities, telecom providers, semiconductor innovators and government institutions.

From an investment standpoint, our priority is sustainable long-term growth. Capital will continue to be directed towards research and development, advanced manufacturing, global regulatory approvals, clinical evidence generation and talent development.

How is SS Innovations addressing the challenge of making robotic-assisted surgery more affordable and accessible for hospitals?

Affordability has been embedded into our philosophy from the beginning. For robotic surgery to become mainstream, hospitals should not have to choose between clinical excellence and financial sustainability.

By designing and manufacturing the platform in India, we have been able to significantly optimise costs without compromising precision, reliability or safety. The result is a robotic system that delivers advanced minimally invasive surgical capabilities at a substantially lower acquisition and operating cost than many imported alternatives. We are proud that around 85 per cent of the components used in our medical equipment are manufactured in India, with only about 15 per cent sourced from overseas.

Accessibility, however, goes beyond pricing. We are expanding surgeon training, strengthening after-sales service, improving instrument availability and leveraging telesurgery to extend expert guidance across geographies. A surgeon in a smaller city should have access to the same level of expertise as one working in a leading metropolitan institution.

Our SSI MantraM mobile telesurgical unit further extends this vision by taking robotic surgery, specialist training and tele-mentoring directly to underserved regions. It serves as a mobile platform that can help bridge critical gaps in access by bringing advanced surgical technology closer to hospitals and communities that have traditionally lacked such capabilities.

This decentralised approach has the potential to reduce patient travel, improve surgical outcomes and accelerate adoption across Tier 2 and Tier 3 cities. We believe technological innovation achieves its true purpose only when it reaches the patients who need it the most.

What role do artificial intelligence (AI), machine learning, and data analytics play in your future roadmap?

AI will not replace surgeons. It will make them better informed, more consistent and better supported throughout the surgical journey. That distinction is important because surgery will always depend on human judgement, experience and accountability.

Our vision is to integrate AI across multiple stages of care. Before surgery, intelligent algorithms can assist with patient selection, operative planning and anatomical mapping using imaging data. During surgery, computer vision and machine learning can help recognise anatomical landmarks, monitor procedural workflows, identify deviations from standard pathways and provide contextual safety alerts in real time. After surgery, data analytics can generate meaningful clinical insights, enabling hospitals to evaluate outcomes, optimise recovery protocols and strengthen quality assurance.

As robotic procedures continue to grow, anonymised surgical datasets will become one of healthcare's most valuable assets. Responsible analysis of these datasets has the potential to improve surgical education, refine robotic workflows and accelerate evidence-based innovation.

Looking ahead, we also see opportunities in digital twins, predictive simulation and intelligent surgical assistance. These technologies will not make autonomous surgery the objective. Instead, they will help surgeons prepare more effectively, anticipate challenges and deliver safer, more personalised care.

What are your views on upskilling the medtech workforce in India to align with new technologies?

India has an extraordinary pool of medical and technical talent. The next step is bringing these disciplines closer together. Surgeons should be exposed to robotics much earlier during training. Biomedical engineers need greater interaction with clinicians. Operating room nurses, technicians and service engineers must also receive specialised education because robotic surgery is built on multidisciplinary teamwork.

We believe simulation-based learning will become increasingly important. Surgeons can practise complex procedures repeatedly in controlled environments before entering the operating theatre. Continuous digital assessment can then provide objective feedback, helping shorten learning curves while improving consistency and patient safety.

Industry, universities, teaching hospitals and government institutions all have a role to play. Together, they can create an ecosystem that prepares the next generation of healthcare professionals for an increasingly technology-driven future.

As medical technology evolves in India, what are your expectations regarding government regulatory approvals over the next two to three years?

India has made encouraging progress in developing a stronger regulatory framework for medical devices, and we expect this evolution to continue over the coming years.

As technologies become more sophisticated, regulatory systems must evolve accordingly. Areas such as robotic surgery, AI-enabled clinical software, connected medical devices and telesurgery will require clear, science-based pathways that maintain patient safety while encouraging innovation. Predictability and transparency are equally important because they allow companies to invest confidently in long-term research and product development.

Another important area is international harmonisation. As Indian companies increasingly compete globally, alignment with recognised quality standards and regulatory practices will simplify market access while reinforcing confidence in products developed in India.

Ultimately, an efficient regulatory environment benefits everyone. Patients gain faster access to safe innovations, clinicians receive advanced treatment options and domestic manufacturers are encouraged to invest more aggressively in research and development.

What are the current challenges facing the medtech R&D and manufacturing sector in India, and how are you addressing them?

India has demonstrated remarkable innovation capability, but building globally competitive medical technology remains a complex undertaking. High-precision manufacturing, specialised electronic components, medical-grade materials, advanced sensors and sophisticated supply chains all require sustained investment over many years.

Another challenge is translating research into commercial products. Clinical validation, regulatory approvals, intellectual property protection and global market access demand significant resources before technologies can reach patients.

At SS Innovations International, we have addressed these challenges by pursuing an integrated approach. We design, engineer, manufacture and clinically validate our technologies within India while maintaining close collaboration between engineers and surgeons. This continuous feedback loop allows us to improve products rapidly based on real clinical experience rather than laboratory assumptions alone.

We also continue investing heavily in research, talent development and manufacturing capability because innovation is not a one-time achievement. It is an ongoing process of refinement driven by clinical evidence and patient outcomes.

How can we reduce the import dependency within the medtech sector and gain leadership globally?

Reducing import dependency is not simply about replacing imported products. It is about building an innovation ecosystem that is capable of creating technologies the world chooses to adopt.

That begins with sustained investment in research, advanced manufacturing, semiconductor capability, precision engineering, medical-grade materials and intellectual property. Strong collaboration between academia, clinicians, industry and policymakers is equally essential because breakthrough innovation rarely happens in isolation.

India also has unique advantages. We possess one of the world’s largest and most diverse patient populations, highly skilled clinicians, exceptional engineering talent and a rapidly expanding digital infrastructure. Together, these strengths create an ideal environment for developing, validating and continuously improving next-generation medical technologies.

If we continue supporting indigenous innovation through forward-looking policy, stronger research partnerships and globally benchmarked quality standards, India can move beyond being a large healthcare market to becoming a global exporter of advanced medical technology.

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