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STRATEGIC REPORT

ROBOTIC ASSISTED SURGERY SYSTEMS FOR ORTHOPEDICS & AUGMENTED REALITY SOLUTIONS



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- Robotic assisted surgery systems for orthopedics and augmented reality solutions & Top 50+ robotic and augmented reality players
- Contract Development & Manufacturing for Orthopedic implants & instruments & Top 30+ orthopedic CDMO profiles report

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Robotic assisted surgery systems for orthopedics and augmented reality solutions

& Top 50+ robotic and augmented reality players - February 2025 – 1st edition

Aim of the Survey and Methodology

I-	Robotic for orthopedics	6
	MAKO from Stryker	
	Navio of Smith, Mazor from Medtronic and Velys from Depuy	
	ROSA from Zimmer Biomet & other systems	
	Navigation Vs robotic assisted surgery: Tools description – Features - End user price – Pros & Cons	
	Mako's acquisition by Stryker boosted the orthopedic robotic market and had a huge impact on instruments market: number of Mako installed base platforms	
	Orthopedic robotics surgeries: Stryker opened the mass market, Smith & Nephew, Zimmer Biomet, Depuy and others followed: date of launch for each systems	
	New generations of Mako for shoulder and spine surgery are planned for the coming years: knee total, knee partial, hip, spine, shoulder, etc.	
	Zimmer Biomet – Rosa: date of launch, history, number of platforms installed base, number of surgeries performed, new applications, etc.	
	Smith & Nephew – Navio & Cori: date of launch, history, number of platforms installed base, number of surgeries performed, new applications, etc.	
	Depuy Synthes – Velys: date of launch, history, number of platforms installed base, number of surgeries performed, new applications, etc.	
	Robotic orthopedic system benchmark: detailed comparison of Mako, Rosa, Navio & Cori and Velys platforms	
	Mako, Rosa, Velys and Cori: acquisition, maintenance and consumables costs	
	Mako, Rosa, Velys and Cori benchmark: acquisition cost, operating cost and number of installed base	
	Products benchmarking regarding the following criteria: Clinical track record & reliability, acquisition cost, operating cost, easy to use, positioning accuracy, cutting guide removal	
	US Robotic-assisted surgeries 2020-2030: the USA is by far the leading country for robotics usage. Knee surgery is the first target	
	After the USA, the geographic growth drivers for robotics are Japan, Australia and Europe	
	In Europe, Germany benefits from a special reimbursement for operations carried out with robots. Italy and the UK have historically been the first to launch the Mako system	
	Number of knee surgeries performed in Australia, Japan, Germany, Italy, UK and France	
	Robotic-assisted surgeries outside the US: between 2023 and 2030, the number of robotic knee operations outside the USA	
II-	Augmented Reality	27
	Augmented Reality (AR): The two main applications are pre-operative planning and, during surgery, to aid implant positioning during surgery	
	Augmented Reality: The 2 main uses are 1- Pre-operative 3D planning to ensure the correct implant type and positioning, by matching the hologram of the implant to be placed with that of the patient's virtually reconstructed joint. 2- In intra-operative surgery, the surgeon overlaps the representation of the implant defined during the planning phase with, the patient's joint	
	Business models description and analysis for augmented reality systems	
III-	Robotic components supplied by CMOs	30
	Mako specific instruments for knee: probe, drill guide, depth gauge, arrays and end effector, etc.	
	Mako consumables for total knee: specific blades, reflective markers, checkpoint screws, and pins, etc.	
	Main specific instruments for a robot in US\$, consumables per surgery in US\$ for Mako, Rosa, Velys and Cori. Annual maintenance cost in US\$	
	Robotics value chain: Robot platforms & softwares, Manufacturing of robot parts and specific instruments & consumables. By players: robot manufacturers, Open platforms, CMOs, Major and challenger orthopedic companies	
	The supply chain for orthopedic robotics. Orthopedic contract manufacturers supply 3 of the 4 families of robotic products: mechanical parts of the robot, specific instruments and consumables	
	A dozen CMOs supply the specific instruments and consumables and also manufacture some of the robot's mechanical parts. Companies specializing in robotics supply the main structure of the robot: Company names by segment	
	Robotic-assisted surgeries market in MUS\$ 2020-2023 by segments: platforms, maintenance, consumables and specific instruments	
	Robotic-assisted surgeries market in MUS\$ 2020-2023 by players: Stryker, Zimmer Biomet, Depuy Synthes, Smith & Nephew and other	
	Orthopedic contract manufacturer markets in MUS\$ 2020-2023 by mechanical parts for robots, specific instruments and consumables.	
	Robotics CMO market shares by player: Tecomet, Intech, etc.	
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	Robotics from Major companies: 6 company profiles	
	Robotics from challengers: 5 company profiles	
	Robotic systems from open platforms: 5 company profiles	
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	Robotic system suppliers & integrators: 12 company profiles	
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	Common reasons why companies choose to outsource manufacturing	
	Specialized CMDOs like Tyber and Resolve have several design pillars: niche products developed mainly for majors and large challengers, and custom development for OEMs who lack sufficient resources in-house.	
	Contract & Design Manufacturing Organization: companies like Tyber and Resolve specialize in the design and development of implants and instruments for orthopedic companies. These companies are outperforming the contract manufacturing market.	
	Only a few companies generate more than US\$10 million in revenues from orthopedic development. Most of these companies are in the USA.	
	Top 30+ players 2023 revenues in MUS\$: Orthopedic development revenues & other revenues	
	With the fusion of Resolve and Tyber Medical with Intech the new group will dominate the CDMO market	
	The core pillar of a CDMO's business is to identify OEMs' need for products missing from their portfolios, and to quickly develop and bring these missing products to market	
	The needs of the majors are focused on the rapid development of new niche products and their improvement, while challengers also need regulatory and certification support	
II-	30+ CDMO player profiles	15
	CDMOs with revenues: US\$5+M (10 company profiles)	
	CDMOs with revenues: US\$5M to US\$2M (13 company profiles)	
	CDMOs with revenues: < US\$2M (8 company profiles)	
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