

# Orthopedic Surgical Robots and Surgical Robotic Assist Robots Market Shares, Strategies, and Forecasts, Worldwide, 2016 to 2022

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## Abstracts

Robot assisted medial knee arthroplasty: orthopedic surgical robots are poised to take knee and hip surgery quality far beyond what has previously been available. The quality of knee arthroplasty is improved with robotic capability. All the advantages of surgical robots carry into the Stryker Mako orthopedic reconstruction surgical products. When the knee and hip surgical robots are used, patients have less bleeding, reduction of post-operative pain, fewer re-admissions to hospital and faster recovery. Robots support high-precision surgery. A clinic in Switzerland, La Source, has reported a reduction in the average days of hospitalization from 10 to 6.

Surgical robots provide consistent reproducible precision. This capability is so significant for implant surgery that the robots are positioned to become the defacto standard of care for knee and hip surgery within five years. Any one getting a knee or hip replaced will demand clinician attention to quality of life, to maintenance of lifestyle provided by a robot when they have a joint replacement.

As next generation systems, hip and knee robotic units provide a way to improve traditional orthopedic hip and knee replacement surgery. Total hip replacement surgery has evolved dramatically as advances in technology have brought improved surgical techniques. Surgical robots and robotic assist devices are a significant part of that advance.

Once, the penetration achieves a 35% level, all orthopedic surgeons will demand that hospitals offer robotic orthopedic surgical capability because the outcomes are more predictable and better. If the hospital does not offer the robot, the surgeon will move to a more modern facility. Once some hospitals are offering superior outcomes, all hospitals

must come up to that standard, the good physicians will migrate to the good technology and the patients will follow. This market has exceeded the threshold of 100 paid successful installations, that is the watermark for strong technology growth.

Knee and hip surgical robot procedures and robotically assisted surgeries have been impacted by the reduction in insurance payments. Payment reductions have forced hospitals to start acting as businesses. The cost of delivering care has become as much a factor as providing quality care when making decisions about patient improvement in condition. Cost-cutting has been made in the supply chain. Suppliers were examined closely for quality and cost.

The number of suppliers is reduced to put pressure on the ones that remain. Those remaining are pressured to improve prices and efficiencies. Hospitals, physicians, and care providers have been financially incentivized to create accountable care organizations (ACOs). Coordinated patient care plans and value-based purchasing were rewarded. The med device buyer shifted from physicians to the ACOs and smart buying groups.

Stryker has thrived in this cost efficient environment with a surgical robot that permits faster surgeries, more cost efficient surgeries. In addition, Stryker offers an integrated system. The ability to include a Mako total knee application with Stryker Triathlon total knee system is anticipated to increase market share for Stryker. Stryker market leading Triathlon total knee system is helped in the market by the robot simply by the improved surgical technique possible. Surgical robots are proving themselves in a variety of disciplines, lending credibility to the Stryker robotic initiative.

According to Susan Eustis, lead author of the study, "Use of the robot with the orthopedic implant represents a key milestone in reconstructive surgery. Robots provide an opportunity to transform orthopedics. By furthering the growth of robotic-arm assisted surgery, patients can get better treatment. By enhancing the surgeon and patient experience it is likely that the entire orthopedics implant market will grow more rapidly than it would otherwise."

Stryker uses the Mako to perform partial knee resurfacing and is happy to add robotic capability to total knee resurfacing. Technology is enhancing a wide variety of procedures in many surgical specialties. Omni has had remarkable success with its robotic assist device. Joint stiffness and joint instability are eliminated with the use of the Omni device.

The aging US population has supported demand, since the occurrence of health issues that require medical devices is higher in the elderly population. Buoyed by strong demand and sales, industry profit margins have increased considerably during the past five years. The aging of the population worldwide is anticipated to trigger further growth of these markets.

Hospitals are adopting robotic surgical devices to improve their outcomes numbers. Hospitals are measured on outcomes, robots for surgery, when used by a trained physician are improving outcomes significantly. Hundreds of universities worldwide have research programs in robotics and many are awarding degrees in robotics. These “roboticists” are increasingly being hired by Global 2000 organizations to link mobile robots (mobile computers) into existing IT systems.

Robot-assisted surgery gives the surgeon better control over the surgical instruments and a better view of the surgical site.

Hip and knee orthopedic surgical robot device markets at \$222 million in 2015 are anticipated to reach \$5 billion by 2022 as next generation robotic devices, systems, and instruments are introduced to manage surgery.

The complete report provides a comprehensive analysis including procedure numbers, units sold, market value, forecasts, as well as a detailed competitive market shares and analysis of major players’ success, challenges, and strategies in each segment and sub-segment. The reports cover markets for knee and hip robotic orthopedic surgery medical specialties and sub-specialties.

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