THE INVESTOR'S GUIDE TO:

ROBOTICS & AI IN HEALTHCARE

Understanding the robotics & artificial intelligence landscape from an investment perspective

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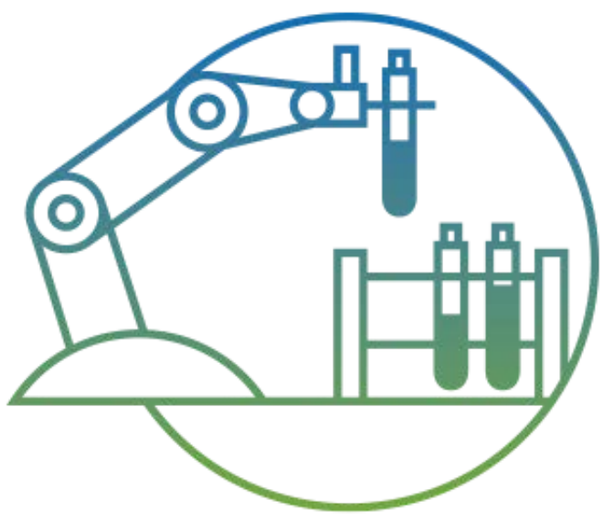

HEALTHCARE

HEALTHCARE ROBOTICS:

How the tech will transform hospitals, life sciences, and medical care as we know it.

Here's the thing: robotics and AI are already an integral part of our lives. It's hard to find an area it hasn't touched, and we often don't even realize it. In 2017, Amazon delivered over 5 billion Prime items in two days or less—an accomplishment that hinged on robotics-driven factory automation and AI. Siri and Alexa help us do everything from voice-to-text transcription to picking the perfect music playlist, to discovering a great place to eat... and then avoiding traffic to arrive there on time. Just as the internet transformed how we work and communicate, robotics and AI is revolutionizing how we live, work, and play.

Across industries and around the globe, companies are revising and rethinking their own strategies to cement their futures in a world that is dictated by robotics, automation, and artificial intelligence (RAAI). The financial markets have already recognized this shift and have begun to reward those who are placing their bets on the future. For investors who are seeking a strategy to capture those rewards—and truly future-proof their portfolios—the time is now to invest in all that RAAI has to offer.

MEDICAL APPLICATIONS

Surgical Robots
Hospital Automation
Genomic Sequencing
Eldercare
Exoskeletons
Clinical Documentation
Cryogenics

Mapping the Publicly Traded Universe

Inside the Index: 9 Healthcare Companies with headquarters in four different countries.

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GROWTH DRIVERS

The healthcare robotics market is expected to reach

$13.9 BILLION BY 2023

That's a CAGR of 28% over the next six years

Source: Orian Research

WHY NOW?

Aging Demographic

Over the course of the next few decades, we can expect to see an outstanding increase in the 65+ demographic. With this increase, automating homecare and healthcare will be obligatory rather than optional in order to tend to the elderly.

Decreasing Tech Costs

As technologic capabilities continue to develop, robotic operating systems are becoming more and more accessible. With this access, tech costs are driven down, allowing more rapid developments across the healthcare space.

INDUSTRY DEVELOPMENTS

RAAI technologies are enabling earlier, more accurate diagnoses; reducing the invasiveness of a multitude of surgeries—brain, spine, heart, vein, and more; delivering unmatched insights to radiology and pathology processes; and significantly reducing the cost and negative implications of misdiagnosis.

Surgical robots can now perform complex surgeries with sub-millimeter accuracy, enabling surgeons to achieve far better patient outcomes. Artificial intelligence is being used to view and expertly analyze medical images containing millions of cancer cells—within minutes and at a level of accuracy not possible by humans. Automation is creating enormous efficiencies across administrative and clinical research to improve and accelerate workflows.

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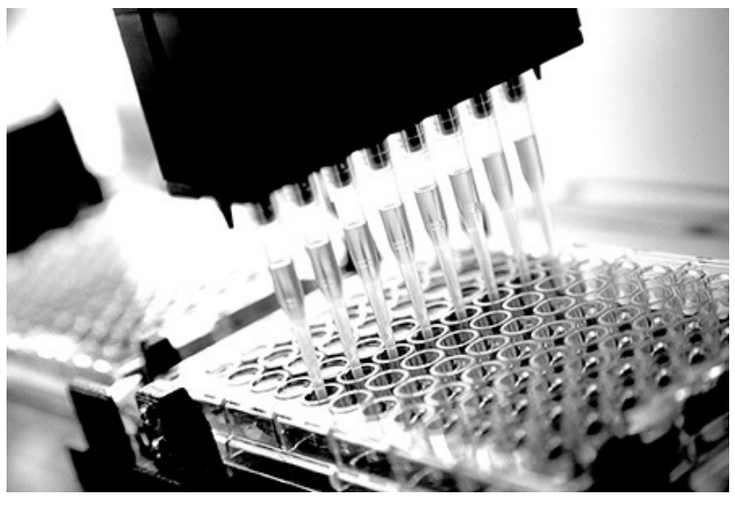
Investment Case for Healthcare Robotics:

As global healthcare costs continue to rise, robotics and automation is poised to provide a countering force to this trend. Through rehabilitation, diagnostics, exoskeletons and elderly care, using robotics and autonomous systems promises to drastically reduce costs, while improving quality of life. In addition, robotics and automation can transcend cost-cutting by using robots for difficult surgeries and neurological treatments that were previously unfeasible.

AI & BIG DATA AT THE CENTER OF HEALTHCARE DIGITIZATION



Advancements in data analytics, AI, and IoT will completely transform how patients are diagnosed and treated, how medical facilities operate, and how health issues are predicted and prevented using next-generation genome sequencing. Starting from clinical trials where you can manage your entire study in one place with an integrated, intuitive and intelligent platform, applications of AI and big data analytics are accelerating the science and business of research.

Advancements in genome sequencing and genetic profiling means healthcare providers will already know how they will treat the patient even before they are diagnosed using molecular diagnostics and AI-powered applications.

AI can also automate administrative tasks that could result in an $18 billion in savings for the healthcare industry as it will help physicians with tasks such as voice-to-text transcriptions to order tests, prescribe medicine and record medical notes. Intelligent virtual assistants using speech recognition, one of the foremost technologies, is gaining popularity among patients and will undeniably help physicians to improve their working efficiency and productivity. AI-powered virtual assistants market is poised to grow over 30% CAGR according to Global Market Insights Inc.

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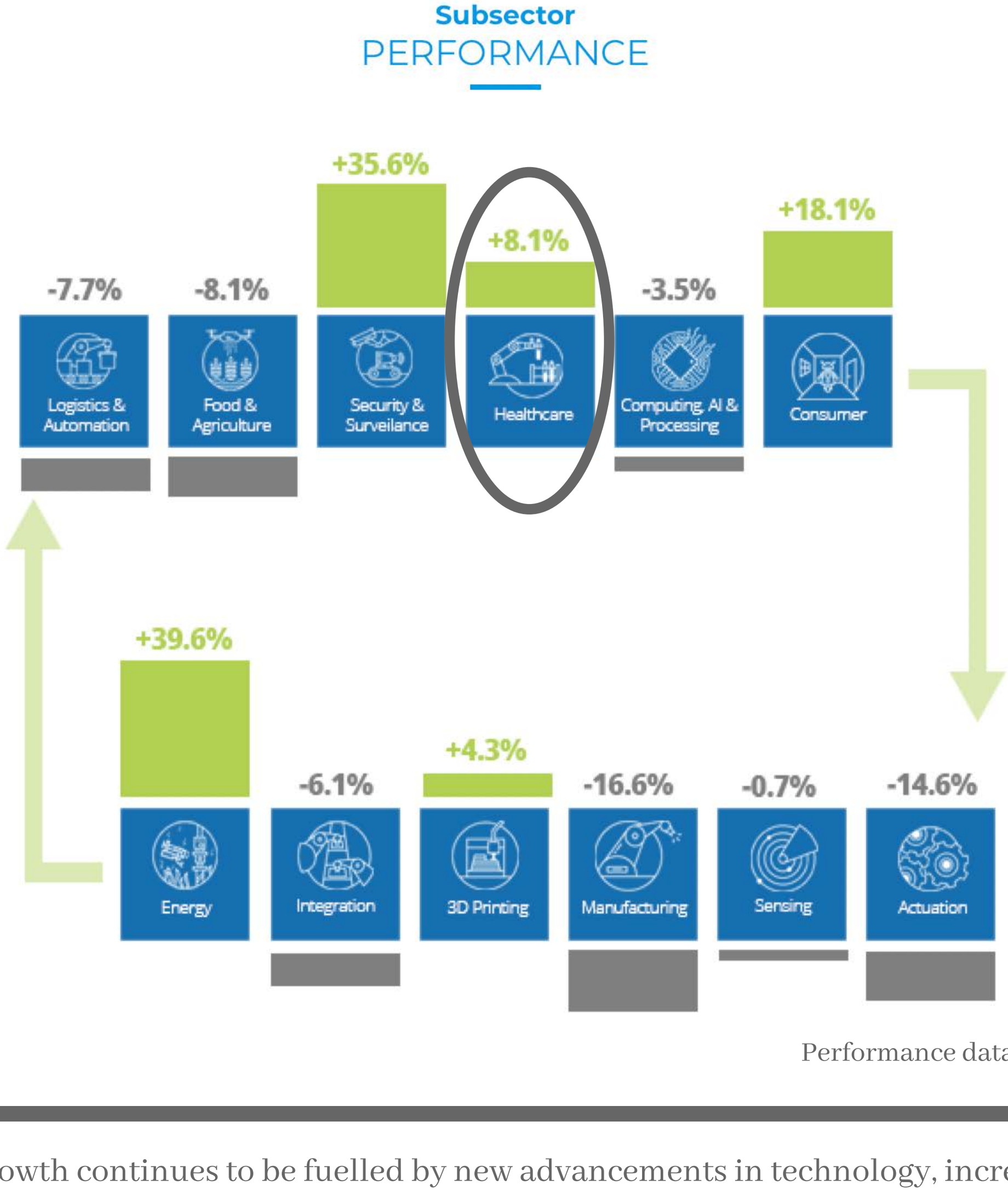
MARKET PERFORMANCE & GROWTH STATS

The growth across the space has been spectacular. Since the inception of the ROBO Global Robotics & Automation Index in August 2013, the healthcare robotics subsector alone has grown 139% (cumulative.)



Performance data as of 2Q18

That growth continues to be fuelled by new advancements in technology, increases in research and development spending, and an exponential rise in demand for minimally invasive surgical procedures.

These Index members are poised to make use of RAAI in ways that we have never seen before, and we are excited as we support these companies transform the healthcare industry with robotics and AI.

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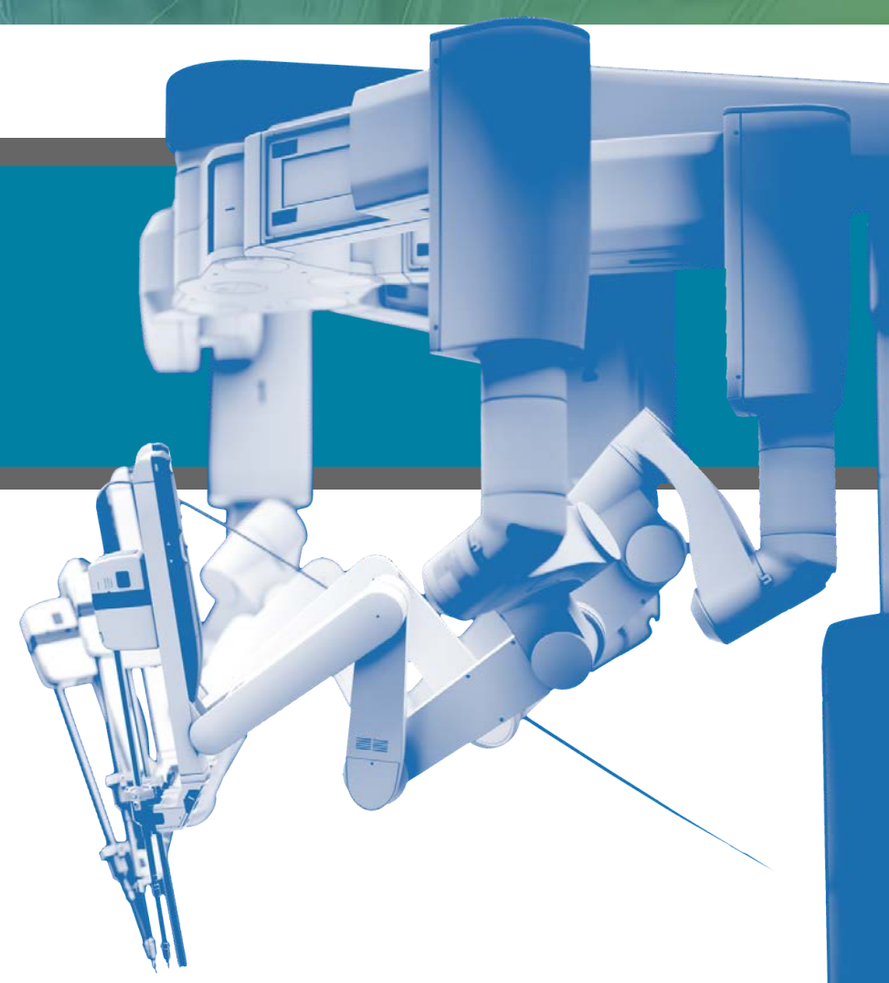
ROBO Global Index Company Spotlight

INTUITIVE SURGICAL



Ticker: ISRG
Headquarters: California, USA
Subsector: Healthcare

Historically, analysts have far underestimated the true growth potential for the surgical robotics market. Just look at Intuitive Surgical. Back in 2003, analysts called the company's stock overvalued and warned investors that buying shares at a price tag of just over $5 was a risky proposition. Today, Intuitive Surgical is trading around $500/share but we believe they are still in the early innings of a sustainable growth story.

Intuitive Surgical has a virtual monopoly on surgical robotics with its da Vinci Xi®system which uses 3D vision and intuitive motion to improve minimally invasive procedures and help surgeons deliver better outcomes for cardiac, thoracic, urology, gynecologic, colorectal pediatric and general surgeries. In terms of the ROBO Global Robotics & Automation Index Classification System, Intuitive Surgical is considered a "pure-play" or bellwether company in the industry—a well-established leader whose core business is directly related to robotics and automation and that typically operates on a global scale.

ROBO Global Strategic Advisor Insight

"Two facts are clear: there will always be a need for regular nursing teams, and there will also be a severe shortage of such skilled labor. Advancements in robotics and AI are turning healthcare support and virtual nursing from concept into reality at just the right time. Augmenting human teams via eldercare robotics and AI is one of the most efficient ways to increase the quality of care for the elderly and fill that gap."

-Dr. Manish Kothari, ROBO Global Strategic Advisor & President of SRI Ventures

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M&A Continues in Broader Healthcare Theme:

Robot-assisted surgeries will continue to improve surgical outcomes and increase the career-span of the most experienced surgeons. One Index member, Mazor Robotics (MZOR) was acquired by Medtronic in late 2018 for $1.6 billion as the company expands its portfolio of surgical robots. The evolution of robotic-assisted surgery is long term as robotics with an emphasis on visualization, diverse imaging compatibility with cloud infrastructure will lead the way as advancements in product design and workflow capabilities will further push the industry's adoption.

Another Index member, Illumina (ILMN) made two compelling acquisitions in 2018 to accelerate the pace of genomic data discovery. Edico Genome uses field programmable gate array (FPGA) and software algorithms to accelerate data analysis for next-generation sequencing and to allow greater emphasis on interpretation and reporting while Pacific Biosciences' technology will allow for a higher degree of sequencing accuracy while driving down the costs.

Meanwhile, automation and cryogenics specialist and an Index member, Brooks Automation (BRKS) acquired Genewiz, which provides gene sequencing and synthesis services for more than 4,000 customers worldwide for $450 million, its biggest transformative move yet in its strategic plan to focus on its Life Sciences business. According to the management team, Genewiz will immediately boost Brooks' earnings following the close of the deal.

About ROBO Global:

ROBO Global is the creator of the ROBO Global Robotics & Automation Index series, which provides comprehensive, transparent and diversified benchmarks representing the value chain of robotics, automation and artificial intelligence.

With the expertise of our leadership team and strategic advisors from the industry, we help investors capture the growth and return opportunities presented by this megatrend across industries, from healthcare to industrials to consumer products. Our indices are used by a variety of investment vehicles listed on multiple exchanges around the world.