

HTEC: Investing in Healthcare Technology & Innovation

Healthcare's digital revolution is changing the landscape for patients and investors

Healthcare is at the very beginning of a dramatic, technology-driven revolution that is transforming the industry as we know it. The convergence of robotics, machine intelligence, and life sciences has enabled breakthrough advancements that touch every aspect of healthcare. While the list of innovations is vast, it includes many applications that seemed like science fiction just a few short years ago:



**AI-powered
diagnostics**



**Minimally invasive
robotic surgery**



**Molecular
analysis**



**DNA
sequencing**



**Genetic cancer
therapies**



**3D-printed
implants**



**Wearable medical
devices**



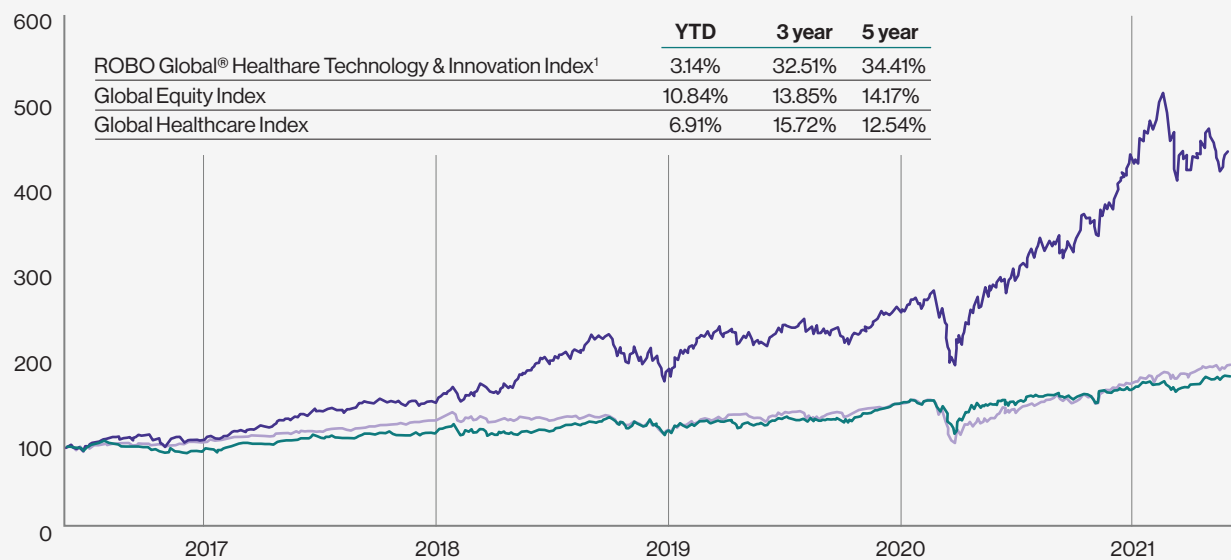
**Virtual
care visits**

At ROBO Global, we anticipate that this technology revolution will profoundly transform the healthcare industry, creating immense disruption in which current businesses will disappear, commoditization will reduce margins, and new sectors will offer new profit opportunities.

As robotics, automation, and AI (RAAI) continues to advance at a rapid pace, winners will identify, invent, and implement technologies that match the right care at the right time, place and cost. As the focus of profitability shifts away from traditional areas of the value chain to the application of new technologies, winners quickly reinvent the value they provide to fit the new model. There will also be huge rewards for rapid growth and consolidation due to the economies of scale that are integral to technology solutions.

For investors, this shift will offer one of the most important investment opportunities in the next decade. This transition to technology-enabled healthcare is still in the early stages, making now the ideal time to invest. Already, the public companies at the forefront of the healthcare revolution have significantly outperformed global equities. A back test of the ROBO Global Healthcare Technology & Innovation Index (HTEC) shows annualized total returns of over 23% and 18% in the three and five years ending in 2018. Today, the combination of exponential gains in performance capabilities and rapidly declining cost curves is creating a key inflection point. Across digital health, biotechnology, and the medical device sector, the healthcare industry is finally bringing medicine into the 21st century thanks to RAAI innovators – the companies that are making that transition possible.

ROBO Global® Index performance



Rebased 100 on May 31, 2016; Total return through May 31, 2021; periods greater than 1 year have been annualized.

¹ Includes back-tested data prior to April 30, 2019.



The ROBO Global Healthcare Technology & Innovation Index provides global exposure to best-in-class companies that are leading the global healthcare technology revolution in key areas such as diagnostics, robotics, genomics, precision and regenerative medicine, lab automation, instruments, data analytics, and telehealth. This research-driven index portfolio of over 80 companies is focused on the technology and market leaders that are helping transform healthcare along four main lines:

- Shifting the model from caring for the sick to preventing, predicting, and eradicating disease, using advancements such as AI-powered diagnostics and remote monitoring through connected devices, and, perhaps most importantly, by collapsing the cost of genome analysis and opening the door to the detection of diseases at very early stages.
- Enhancing physicians' accuracy and productivity with a wide range of automation and robotics technologies that promise to address the looming shortage of physicians, while also reducing human errors and improving patient outcomes.
- Improving the efficacy of therapies by enabling the shift from a one size-fits-all approach to one of custom therapies tailored to individual patients.

- Lowering costs in one of the large economic sectors that saw the least productivity gains in the past decade and also remains one of the least digitized.

Exponential growth

Most investors understand how critical innovation has become to economic growth in all industries. But what many fail to comprehend is that this innovation is now accelerating at an exponential rate. As Ray Kurzweil demonstrated, digital innovation increased exponentially from 1890 to 2010. At ROBO Global, we are strong believers in the power of innovation as a driver of investment returns, and we view healthcare as the next major opportunity.

We define innovation as true technological advancements, such as surgical robots, next generation gene sequencing, personalized cancer therapies, implantable lenses to treat cataracts, painless glucose monitoring devices, and regenerative nerve grafts. We look for long-lasting and large-scale developments for increased efficiency and effectiveness in healthcare – all with patients at the center of the innovation. At the heart of it all, we believe that artificial intelligence is set to play a critical role in the coming years, especially

in pre-surgical planning, radiology, clinical research, genomic analysis, and data analysis of electronic health records. With these innovations on the cusp of widespread adoption, it's no wonder that the pace of innovation and investments is accelerating:

- VC funding of US healthcare companies has grown from \$10B in 2011 to \$30B in 2018, with 32% of the funding going towards Digital Health.²
- Global venture financing of AI companies in healthcare nearly doubled in 2018 from 2017, to \$2.3B.³
- Total public and private sector investment in healthcare AI is expected to grow by more than 10x by 2021, reaching \$6.6B.⁴
- According to IDC, healthcare data is projected to accelerate even faster than sectors such as manufacturing and financial services, delivering a CAGR of 36% through 2025.

At ROBO Global, we were early to recognize that the robotics, automation, and artificial intelligence revolution was coming. In 2013, we created the first equity index series to capitalize on this global technological shift. The ROBO Global Robotics & Automation Index series 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. In researching the universe of robotics and AI over the past six years, we couldn't help but recognize that the convergence of robotics, AI, and life sciences is set to dramatically transform the healthcare industry. To give investors a vehicle to capture this investment opportunity, we have created our newest portfolio index: HTEC.

HTEC – not your average healthcare index

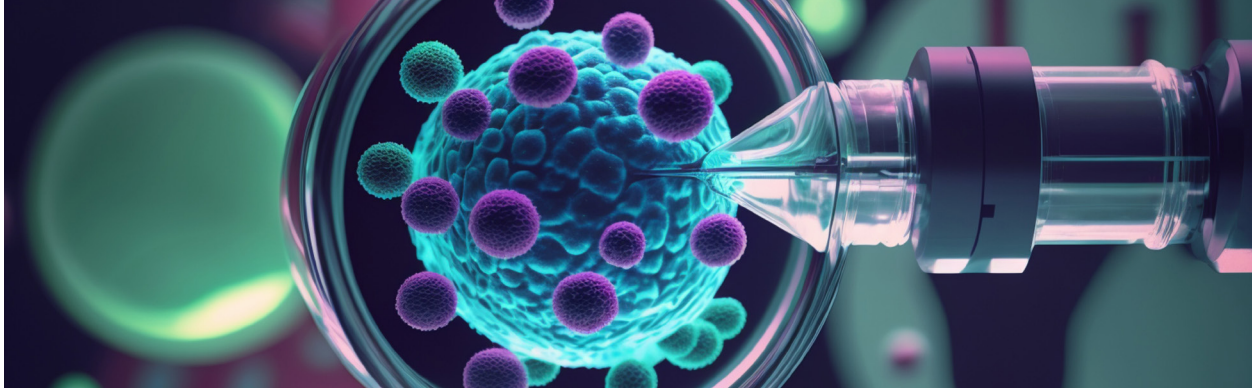
The ROBO Global Healthcare Technology & Innovation Index (HTEC) combines the results of our research efforts with the discipline and quantitative aspects of index investing. The index leverages ROBO Global's deep technology expertise, industry relationships, and extensive research to identify best-in-class companies, both small and large, that are leading the healthcare technology revolution across nine major areas:

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1. Robotics
 2. Lab Automation
 3. Diagnostics
 4. Genomics
 5. Regenerative Medicine
 6. Medical Instruments
 7. Data Analytics
 8. Telehealth
 9. Precision Medicine
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² Source: HTEC Pitchbook, KPMG.

³ Source: HTEC Pitchbook.

⁴ Source: Accenture.



To choose the most relevant companies for inclusion in the index, we evaluate companies in each of these nine sectors for technology and market leadership, as well as revenue and investment exposure. Those with the highest “HTEC scores” that also pass ROBO Global’s Environmental, Social, and Governance (ESG) policy requirements are selected as ROBO Global HTEC Index members. We review suitable companies’ HTEC scores based on ongoing research, engagement with company management teams, and market developments, and we reconstitute and rebalance the index to modified equal weights on a quarterly basis.

The resulting portfolio is significantly different from typical healthcare funds, offering a high active share rather than a broad equity index. In fact, the overlap with world equity indices is less than 2%. The index also has very limited exposure to the traditional pharmaceutical industry, which we expect to be significantly disrupted in the near future and typically accounts for over 40% of global healthcare funds. Instead, HTEC offers much higher exposure to technology hardware and software providers, as well as to biotechnology companies involved in genomics and precision medicine. For investors who recognize the coming impact of the healthcare revolution – and who understand the potential for growth within their own portfolios – HTEC may indeed be just what the doctor ordered.

Conclusion

Healthcare is undergoing a digital revolution, which will create enormous opportunities for investors. Here's an overview of the investment case for healthcare technology:

- Technological breakthroughs are starting to touch every aspect of healthcare.
- Robotics and machine learning are changing how healthcare is done.
- Healthcare is currently one of the least digitized portions of the economy. As the industry pivots, costs will lower dramatically and create additional growth opportunities.
- VC funding in healthcare companies is growing exponentially. In 2011, it was just over \$10B. By 2018 that number had tripled, with 32% of the funding going toward digital health.
- The transition to technology-enabled healthcare is in its early stages, making this the ideal time to invest.

To learn more about VettaFi Indexing click [here](#)

About VettaFi

VettaFi is a differentiated index provider, helping asset managers across the globe build and grow their product suites. With an industry-leading index platform, VettaFi partners with issuers to develop innovative investment solutions and bring them to market. VettaFi's portfolio of investor-oriented media publications and events connects clients' products with investors. This robust ecosystem enables asset managers to effectively reach their target audience, whether digitally or in-person.

Significant investments and the backing of TMX Group have further strengthened our ability to help our partners by expanding our capability set and geographic reach.

Our combined strength and entrepreneurial spirit empowers us to deliver the specialized insights and services that enable asset managers and investors to achieve growth and success.

VettaFi owns and administers the ROBO Global Index Series. For more information, please visit: www.vettafi.com.

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About the Index. The ROBO Global® Healthcare Technology and Innovation Index Series' objective is to provide investors with comprehensive, transparent and diversified benchmarks representing the global value chain of disruptive and emerging technologies in the healthcare sector. The index series benchmark companies that have a distinct portion of their business and revenue derived from the field of healthcare technologies, and the potential to grow within this space through innovation and/or market adoption of their products and/or services. The Index and its trademarked name are the exclusive property of VettaFi.

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