

CANDRIAM EQUITIES L ROBOTICS & INNOVATIVE TECHNOLOGY:

BACK TO THE FUTURE



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Robotics & Innovative Technology

JOHAN, TO YOUR MIND, EXACTLY WHAT IS A ROBOT?

'Robots' are not just the machine. That's why we launched a Robotics **and** Innovative Technologies strategy. Robotics cannot be isolated from their related technologies -- machine learning and advanced robotic tasks increasingly require sophisticated data centers. Candriam's conviction is that it is the disruptive element of innovation which shakes the world. For example, it was the mass production of automobiles which changed society and the economy, not simply the invention of the car.

Just as the auto industry includes tire makers, our robotics definition includes the 'parts' – hardware, software, engineering, data, sensors, artificial intelligence, cloud computing, and a host of other technologies.

As an integrated and shifting group of products and services, we do not manage against a benchmark although we use MSCI World as the investment universe in which we will pick the companies (and for the purpose of performance comparison). From this global universe, we define our investment universe as companies with at least 30% of their revenues related to one or more of nine themes, and a market cap over \$250 million.

Chart 1. HOW CANDRIAM DEFINES ROBOTICS AND INNOVATIVE TECHNOLOGIES :

Industrial Robots
Sensors / Mechatronics
Internet of Things/Big Data
Virtual reality

Security
Artificial Intelligence
Leapfrogging Technologies

Smart Factory
Service Robots

WHY ARE YOU SO POSITIVE FOR THE LONG TERM ON A 'ROBOTICS AND INNOVATIVE TECHNOLOGIES' THEME?

These are obvious mega-trends. We expect long-term structural growth of these areas to substantially exceed that of the overall global economy. And let's not forget, robots are not only for industrial solutions. Both figuratively and literally, service and healthcare robots can help with some of the 'heavy lifting' as our population ages. In the post-Covid age, Candriam's strategists expect technology, healthcare, and sustainable energy to be the three stand-out growth areas¹. Our strategy is directly exposed to two of these, and indirectly to all three.

“*«Disruptive innovations» are a virtually immortal theme for human civilization and the economy.*”

For two decades, our Thematic Equities Team has been investing in paradigm changes, including biotechnology, demography, oncology, health care, and more recently, climate change. Our conviction is that enduring structural trends can generate superior growth for well-placed companies. Naturally, technology was among the first of the thematic equities products at Candriam. It is exciting to think that I have been managing technology portfolios at Candriam for 25 years, and yet every day is new.

«Disruptive innovations» are a virtually immortal theme for human civilization and the economy. For example, the development of mass production of automobiles was a disruptive innovation of an already-existing technology, which changed the world when it became a mass market product.

¹ <https://www.candriam.co.uk/en/professional/market-insights/topics/equities/tired-of-the-new-normal/>

Chart 2. ROBOTICS IS A MEGATREND

ROBO Global® Robotics and Automation Index since its launch in December 2002 vs MSCI® World



Source: Bloomberg®

WHAT HAS BEEN TAKING PLACE IN THE THREE YEARS SINCE YOU LAUNCHED CANDRIAM EQUITIES L ROBOTICS & INNOVATIVE TECHNOLOGY?

These last three years have been an epic journey. The rate of technological innovation has accelerated beyond that ever experienced. There are so many examples — advanced robotics, machine learning, artificial intelligence, 'Big Data', virtual reality, cloud computing, the internet of things, automated vehicles – we could go on.

The long-term price performance of robotics equities demonstrates the benefit to investors. Of course we developed our thematic investment strategy because of our conviction in its long-term growth potential. Yet since launching our process, these technologies have exceeded our expectations.

“ Yet since launching our process, these technologies have exceeded our expectations. ”

Investors are taking note, and participating. Within three years, our strategy has reached almost a billion euros in AuM. Incidentally, during the March/April 2020 global equity crash, investors have shown confidence in these disruptive technologies, with no significant redemptions from our portfolios.

Chart 3. PERFORMANCE OF CANDRIAM EQUITIES L ROBOTICS AND INNOVATIVE TECHNOLOGIES

(I share) as of 31 March, 2020.

	1Q and YTD	2019	2018	2017	3 year Performance to march 2020		3Y volatility
					Cumulative	Annualized	
Candriam Equities L Robotics and Innovative Technologies	-16.2%	37.1%	-9.5%	32.1%	36.3%	10.9%	19.4%
MSCI® World NR	-21.1%	27.7%	-8.7%	15.1%	5.9%	1.9%	14.5%
Excess Return	+4.8%	+9.4%	-0.8%	+17.0%	+30.4%	+9.0%	+4.9%

Past performances of a given financial instrument or index are not reliable indicators of future performances.

HOW DO YOU DESCRIBE THE INDUSTRY PERFORMANCE? WHAT HAVE BEEN CANDRIAM'S DRIVERS?

It is important to differentiate between a broad robotics universe and the industrial robotics companies. This is one of the reasons we have chosen to define our strategy *Robotics and Innovative Technologies*, not

just robotics. Most of the funds that are referenced in the Morningstar Equity Technology Universe are dedicated to the technology sector only. Few funds have a holistic approach to robotics. If, in the short term, depending on market conditions, our combination can be detrimental to performance (for example, when there is a rally in the technology sector), over the long term, we are convinced that our approach creates value.

Chart 4. CANDRIAM EQUITIES L ROBOTICS AND INNOVATIVE TECHNOLOGIES SINCE 31 MARCH 2017 VERSUS MORNINGSTAR PEERS IN USD



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The long-term trend of the ROBO Global® Robotics and Automation Index² versus the MSCI® World Index (USD) shown in Chart 2 illustrates two important elements of investing in robotics companies – the long-term growth of the robotics megatrend, but also the pronounced cyclicality. Industrial robotic companies have been among the least interesting robotic investments in recent years, suffering from less-rapid top-line growth, mediocre margins, and the US-China trade war. The better performance of the niche robotic companies such as robotic surgery supports our decision to use a broader robotic universe.

Autonomous vehicles, specialty and advanced robots, computer vision, the Internet of Things, machine learning, all these disruptions incorporate semiconductor and sensor products. For this reason, this segment has historically been one of the most important contributors to our strategy.

We cannot ignore the importance of innovative technologies as an integral part of the robotics field, and as a part of this portfolio. Technologies ranging from artificial intelligence to Big Data to quantum computing are being put to use by, and advanced by, companies ranging from supercomputers to social media. That's why these related disruptive innovations feature prominently in our holdings.

IF «WHAT'S PAST IS PROLOGUE», WHAT INSIGHT DO THE LAST THREE YEARS OFFER US FOR THE FUTURE?

We are convinced that the mega-trends of technological revolution, demographic evolution, and environmental challenges which have historically driven our thematic investment strategies will remain intact over the long term. Post-Covid, we maintain this view, and our strategists have identified technology, healthcare, and sustainable energy as the three areas they expect will benefit most from our changed society.

What about the stock performance? With respect to the Robotics and Innovative Technologies strategy, the equities are not cheap at first glance. : Our view is that the above-average valuations are more than compensated for by higher and more sustainable revenue growth and margins, and attractive net cash balance sheets. The quality of earnings and earnings growth is also high. These are not companies which have achieved their EPS growth through leveraging their balance sheets. High R&D to sales shows high investment in their futures, not companies which are growing through cost-cutting. In an era where topline growth is a frequent topic of conversation, we believe these companies ARE well-positioned to sustain this growth.

Of course, short-term problems and interruptions arise in investing. What could go wrong? Geo-political events such as tensions with Iran, trade wars, and the US Presidential election...

The speed of technological innovation we described above translates into a future of beneficial disruption. Remember, it was not the invention of the car which changed the world, but the decades of mass production which followed. It was not movable type, it was books, information, learning brought to the masses which disrupted the social order. We see these innovative and intertwined technologies as a megatrend.

I have spent the last two decades as part of Candriam's experienced Thematic Investment Team. I have helped organize our dedicated Advisory Board, incorporating academics from around the world on a regular basis to add value to our investment analysis. I have been part of the integration of Candriam's proprietary ESG approach, which offers additional fundamental insights into our company analysis. I have been part of the development and experience of our disciplined thematic and fundamental investment process.

Chart 5. VALUATION VERSUS FUNDAMENTALS

Data as at 20 April 2020.

	Candriam Equities L Robotics & Innovative Technology	ROBO Global® Robotics and Automation Index ³	MSCI World ©
P/E 12 M Forward	24.0	24.2	17.0
FCF yield	4.0%	4.1%	2.4%
Gross Margin	42.6%	38.0%	31.5%
R&D / Sales	14.3%	10.2%	7.4%
3Y expected EPS Growth	16.1%	14.6%	9.6%
Net Debt / EBITDA	-0.9	-0.5	1.6

Source: Bloomberg©

² ROBO Global® Robotics and Automation Index is not the benchmark nor a reference index of the fund. It is presented here for illustrative purposes only. Candriam Equities L Robotics & Innovative Technology is managed actively in reference to its benchmark MSCI World (Net Return) as an investment universe and for the purpose of performance comparison. Please see the fund's KIID for more information on the definition of this benchmark and its use.

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WHAT HAVE ESG CONSIDERATIONS BROUGHT TO YOUR ANALYSIS AND PERFORMANCE?

At Candriam all our investment management thinking, not just SRI processes, is shaped by Environmental, Social, and Governance factors. As for all our investment processes, excludes a brief list of businesses such as tobacco and controversial weapons, and a list of companies which are serious violators of globally-accepted norms in human rights, labor practices, the environment, and corruption.

On the level of this investment process, keep in mind that innovative technologies address megatrends. Global warming, pollution, depletion of natural resources, and waste disposal systems are driving innovation in advanced environmental sensors, semiconductors with lower energy requirements, energy-efficient data centers, simulation software, and advanced recycling technologies, including waste sorting.

“Yet since launching our process, these technologies have exceeded our expectations.”

We also consider the ‘S’ in ESG. On the one hand, robots can perform many tasks which are dangerous for humans, protecting workers and/or freeing them for safer, more creative roles in manufacturing, data processing, and elsewhere. On the other side of the ‘S’, we must be cognizant of the full value chain, including suppliers and customers, so that pockets of the workforce which might be replaced by these technologies are channeled into productive areas, and not pushed aside.

THE QUESTION ON ALL OUR MINDS: HOW DOES THE NEW POST-COVID WORLD RE-SHAPE ROBOTICS AND OTHER DISRUPTIVE TECHNOLOGIES?

Robotics and automation are being accelerated by Covid-19 in both short- and long-term ways. In the short term, possibly a third of the developed nation labor force is working remotely and having food and other supplies delivered to their homes. Logistics robots, fulfillment robots, and delivery robots should benefit. Disinfection robots are a near-term need.

Covid-19 is a wake-up call for automation. Healthcare in particular should benefit in the medium and long term. The dangers of visiting a medical facility have spurred a dramatic increase in the public acceptance of virtual healthcare, and reluctant regulators are likely to notice both the demand and the benefits. Already this means more than just using a phone or laptop to ‘see’ each other; it is backed up by data-intensive applications. In the medium and long term, one might expect more rapid acceptance of the possibilities in long-distance remote surgery. Certain routine work is being multiple thousand-fold. Measuring body temperature, for example at airports. Testing – a blood-drawing robot is in design. In the early days of AIDS / HIV, phlebotomists were terrified. Perhaps with Covid and other testing, the risk per test may be less to the healthcare professional, but the sheer numbers of people to be tested makes all this physical contact almost unimaginable.

JOHAN, ANYTHING ELSE?

Yes! I expect my next twenty years to be every bit as exciting as the last twenty years...

CARACTERISTICS OF THE FUND

Candriam Equities L Robotics & Innovative Technology, a subfund of the SICAV Candriam Equities L incorporated under Luxembourg law.

Legal Form: UCITS - SICAV

Domicile: Luxembourg

Launch Date: March 24, 2017

Management Compagny: Candriam Lxembourg

Auditors: PricewaterhouseCoopers

Depositary bank: RBC Investor Services Bank S.A.

Transfer agent: RBC Investor Services Bank S.A.

Fund administration: RBC Investor Services Bank S.A.

Recommended investment horizon: 6 years

Frequency of valuation: Daily

Subscription: D before 12:00 PM (CET)

Redemption: D before 12:00 PM (CET)

Settlement: D+3

Fund currency: USD

Fund AUM: 272 million

Registered for sale in

All or some of the fund share classes are authorized in the following countries :

AT CH DE ES FR GB IE IT LU NL PT KR

To fully understand the fund's risk profile, we advise investors to carefully review the official prospectus and the description of the underlying risks.

Risk profile : To fully understand the risk profile of the fund, investors are advised to carefully review the fund's prospectus and the description of the underlying risks: Capital loss risk, equity risk, foreign exchange risk, liquidity risk, concentration risk, risk associated with derivative financial instruments, emerging countries risk, risk related to external factors, hedging risk of the share classes, counterparty risk. The value of the investment may decrease due in particular to the fund's exposure to these risks mentioned in the fund's prospectus and in the «Key Investor Information» Document ("KIID").

Benchmark : Candriam Equities L Robotics & Innovative Technology is managed actively in reference to its benchmark MSCI World (Net Return) as an investment universe and for the purpose of performance comparison. Please see the fund's KIID for more information on the definition of this benchmark and its use.

SHARE CLASSES - MARCH 2020

Share classes	ISIN Code	Currency	Management fees (max.) ¹	Subscription fees (max.)	Redemption fees (max.)	Bloomberg ticker
C - Cap	LU1502282558	USD	1.60%	3.50%	0.00%	CERITCU LX Equity
C - Dis	LU1502282715	USD	1.60%	3.50%	0.00%	CERITDU LX Equity
C - EUR - Hedged - Cap	LU1806526718	EUR	1.60%	3.50%	0.00%	CERICEH LX Equity
C - EUR - Unhedged - Cap	LU1502282632	EUR	1.60%	3.50%	0.00%	CERITCE LX Equity
I - Cap	LU1502282806	USD	0.85%	0.00%	0.00%	CERITIU LX Equity
I - EUR - Unhedged - Cap	LU1613213971	EUR	0.85%	0.00%	0.00%	CERITIE LX Equity
I - GBP - Hedged - Cap	LU1613216214	GBP	0.85%	0.00%	0.00%	CERITGI LX Equity

¹ Real fees indicated in the KIID or annual report

We advise investors to check the list of classes authorized in their country of residence.

CANDRIAM



A NEW YORK LIFE INVESTMENTS COMPANY



€130 B

AUM
as of 31 December 2019



550

experienced and
committed professionals



20 years

leading the way in
sustainable investing

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Candriam consistently recommends investors to consult via our website www.candriam.com the key information document, prospectus, and all other relevant information prior to investing in one of our funds, including the net asset value ("NAV") of the funds. This information is available either in English or in local languages for each country where the fund's marketing is approved.

Specific information for Swiss investors: The appointed representative and paying agent in Switzerland is RBC Investors Services Bank S.A., Esch-sur-Alzette, Zürich branch, Bleicherweg 7, CH-8027 Zurich. The prospectus, the key investor information, the articles of association or as applicable the management rules as well as the annual and semi-annual reports, each in paper form, are made available free of charge at the representative and paying agent in Switzerland.

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