ROBECO
The Investment Engineers

WHITE PAPER

5 digital innovations to shape a new era of growth

Sustainable Investing Expertise by
ROBECOSAM

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- The cloud-enabled convergence of digital innovations including Artificial Intelligence, Robotics, Internet of Things, Digital Twins and Cybersecurity is poised to accelerate productivity

- Digital transformation can improve quality, lower costs, and facilitate sustainability

- The digitalization of enterprise and industry presents a long-term investment opportunity

Converging innovations poised to lift productivity and profits

An expanding stack of foundational technologies including semiconductors, software, and secure cloud networks are enabling a new wave of innovation.

Cloud-based software, informed by Internet of Things (IoT), enhanced by Artificial Intelligence (AI), is enabling smart manufacturing and logistics services to respond more efficiently to both demand and supply signals. Combined, these digital innovations promise to lift productivity, improve margins, reduce waste and create new products & services.

At the same time, rising interest rates and slowing growth have depressed market enthusiasm for technology and innovation. Against this backdrop, within this report, we highlight five key technologies driving a new era of growth and outline our approach to investing in the long-term opportunity for the digitalization of enterprise and industry.

> *“ Smart manufacturing and logistics services will become far more efficient*

We have reached an inflection point

Built upon a strong foundation of semiconductors, cloud-enabled software, and secure networks we have reached an inflection point for several interrelated technologies including AI, IoT, digital twins, and robotics.

- While the hype around new generative AI tools like chatbots and image generation tools will likely fade, AI holds great promise to enhance robotics, industrial design, cybersecurity, and IoT. Notably, commercial AI applications are already hard at work in mundane and repetitive tasks like data processing and energy management. We expect a proliferation in AI-enhanced software tools as developers race to incorporate the technology in existing applications as well as to build new ones. Further, a jump in AI investments has been a boon for high-performance semiconductors and related software development tools.
- Driven by improved functionality and an enhanced business case, the steady growth of robotics could accelerate. Advancements in mechanical dexterity, machine vision, and on-board intelligence are broadening robotic functionality. Combined with internet-connected sensors to software equipped with artificial intelligence capabilities, smart manufacturing and logistics services will become far more efficient.
- Applications of IoT in the enterprise and industrial space are having a material impact on operations and margins in multiple sectors from factory automation to logistics. With real-time data, IoT facilitates optimized production, predictive maintenance, and resource management. The greatest challenge for IoT resides with implementation and integration. As a result, we take a systems approach, seeing opportunities with semiconductors, communications technology, software systems, and information technology service providers.
- Digital twins enable architects and engineers to simulate both the design and operating phases of physical structures, machines and complex systems. Similar to our systems-based thesis for IoT, we see opportunity within the digital twin market among software vendors focused on industrial design, data analytics tools, high performance semiconductors, and information technology services.
- Tying all of these solutions together is an expanding network of cloud infrastructure services secured by increasingly sophisticated cybertechnologies. While focused point security solutions continue to thrive, we see expanding opportunity for platform solutions that integrate multiple technologies to secure data, manage access, and dynamically respond to an evolving threat landscape.

Conditions are primed

These technologies arrive at a time when enterprise and industry urgently seek new sources of competitive advantage, greater efficiency, and more sustainable production processes. Similarly, production bottlenecks, labor shortages and geopolitical security considerations have driven renewed interest in automation, shortening supply chains and reshoring manufacturing closer to home. For example in the US, corporate reshoring announcements have risen four-fold versus pre-Covid 2019. Further, government policies in nearly all global regions increasingly seek to promote domestic manufacturing and modernize an aging capital stock.

Market opportunity

Although technology and growth stocks retreated in 2022, long-term growth drivers continue to generate profits and build value. For instance, after generating a compound annual return of 21.9% in the five years ended 2021, the MSCI Global Robotics and Automation index fell 29.2% in 2022 as slowing growth and rising interest rates depressed valuation multiples. Across the broader technology sector, sales and earnings declined modestly in 2022 relative to difficult growth comparisons from strong results in 2021.

Looking ahead, growth in the sector is forecasted to resume, particularly for those aligned to key trends including AI, cloud software, and security.

Robeco Digital Innovations strategy & approach

The Robeco Digital Innovations strategy seeks to capture the value creation potential derived from companies supplying foundational technology and enabling the digital transformation of enterprise and industry. The investment universe spans semiconductors, computing hardware, cloud infrastructure, cybersecurity, software, robotics, precision engineering, and information technology services. We focus our investments on three distinct but related themes:

1) Robotics & Automation, technologies benefiting from the structural growth of investment in digital production and processes, 2) Digital Enablers, software and services that facilitate the transformation of business processes and corporate functions, and 3) Secure Digital Infrastructure, providers of critical services and technologies that enable an exponentially growing stream of digital data to be delivered securely across corporate, public cloud, and mobile computing environments.

We focus on long-term themes expected to play out over several years that provide ample opportunity for a broad universe of potential investments. In constructing a relatively concentrated strategy we seek to identify innovative quality companies holding a leadership position in their respective domains and focus on those delivering consistent profitable growth.

“ Global regions increasingly seek to promote domestic manufacturing and modernize an aging capital stock

1. AI could turbocharge productivity

Artificial intelligence (AI) has recently captured the public's imagination with the launch of services like ChatGPT, DALL-E, Midjourney, and Stable diffusion.

Built on large language models (LLMs) trained on vast datasets of online text, audio, and images, this newer branch of AI known as generative AI produces detailed and varied content that is often difficult to discern from human response. Beyond the technical achievement, what is remarkable about generative AI is its accessibility. In contrast to crypto currencies, the metaverse, and web3, use of generative ai does not require any detailed knowledge, specialized hardware, or programming skills to employ its most basic functions.

While the hype around these new generative AI tools will likely fade, AI holds great promise to enhance robotics, industrial design, cyber security, and the internet of things. Further, a jump in AI investments has been a boon for key semiconductors and related software development tools.

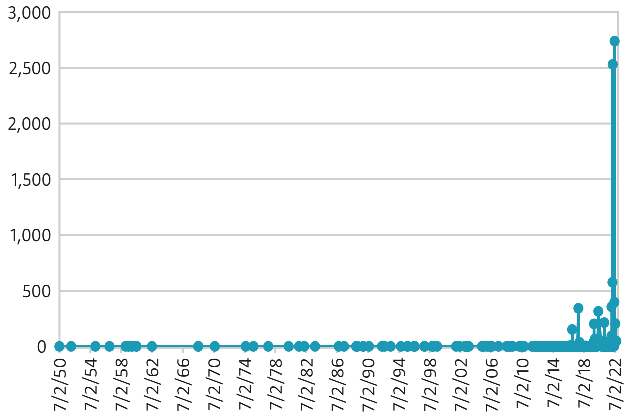
Hype cycle peaking as the real applications develop

Investment in AI startups totalled USD 115 billion in venture funding through 2021 and 2022, double the level of 2019 and 2020. The public excitement, elevated funding, and tangible progress, have also led to increased expectations for AI's societal and economic impact. For instance Goldman Sachs estimates that up to a quarter of all jobs in the US and Europe could be automated by AI, while PWC forecasts that AI will add USD 15.7 trillion to global GDP by 2030. Although the slope of these interest and forecast curves suggests to us that AI is presently closer to the peak of the hype cycle than it is to the plateau of productivity, we see enormous potential for the technology to make a broad range of technologies including robotics, cyber security, and the internet of things, more accessible and usable. The integration of AI into other technologies and within work-flows should in turn power productivity gains across the economy.

Building the AI foundation

The rapid acceleration in the capability of generative AI was preceded by decades of research and development in the key building blocks including statistical inference, expert systems, machine learning, adversarial networks and neural nets. As AI models have improved, the technology has also required increasing amounts of training and computational capacity to power the systems. Before 2010, according to a 2022 paper by the University of Aberdeen's Jaime Sevilla et al., AI training computational requirements increased in a similar pattern to Moore's law, doubling roughly every 20 months. Since 2015 and the development of large-scale machine learning models like those deployed by OpenAi's ChatGPT, there has been a 10 to 100-fold increase in the computational requirements of AI systems – creating tremendous demand for high-performance semiconductors.

Figure 1: AI training computational requirements in petaFLOPs (x 1,000,000)



Source: "Compute trends across three eras of machine learning", Sevilla et al., March 2022

While the computational requirements of AI have accelerated, so too has efficiency of semiconductors. For instance, according to AI-focused research group Epoch, in 2020 Nvidia's RTX 3080 GPU (graphics processing unit) could process 42.6 billion FLOPs (Floating Point Operations Per Second) per USD versus 2.6 billion FLOPs per USD for the GTX 465 GPU in 2010. These improvements, coupled with the emergence of on-demand computational resources of cloud infrastructure services, have greatly expanded the capability and reach of AI software.

Perhaps just as important for AI development has been an expanding ecosystem of software development tools. For instance, Nvidia developed its CUDA (Compute Unified Device Architecture) platform to enable software developers to offload mathematically-intensive operations from the CPU (central processing unit) to the GPU. Today, CUDA boasts 3.5 million software developers using the platform and an expanding set of available tools built by that ecosystem. Similarly, the startup Hugging Face, offers an expanding library of more than 172,000 models and 28,000 datasets enabling AI developers to assemble building blocks from image recognition to translation within their own applications without re-creating those functions from scratch.

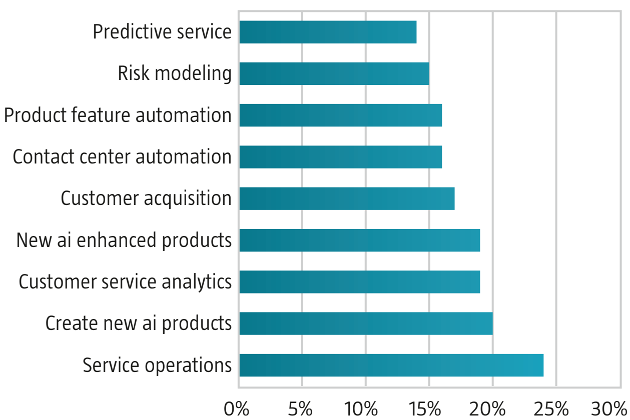
The net result of this expanding set of resources has been an explosion in AI application development solving narrow problems and specific solutions. As we have seen in the broader software market, some of these applications will scale into profitable enterprises and others will not. But for investors this implies the beneficiaries of AI should include both large platforms as well as focused applications.

Putting AI to work

Commercial AI applications are already hard at work in mundane and repetitive tasks that help organizations run more efficiently. Machine learning and AI tools have for years helped spellcheck documents, categorize data, and detect fraudulent banking transactions. We should expect a proliferation in AI-enhanced software tools as developers race to incorporate the technology in existing applications as well as to build new ones. Following the announced expanded partnership and investment in OpenAI, Microsoft's CEO Satya Nadella said on the company's FY23 earnings call that "Every product of Microsoft will have some of the same AI capabilities to completely transform the product."

Behind the scenes, enterprises are already deploying AI across the organization to improve productivity and increase efficiency. According to a 2022 McKinsey report, enterprise adoption of AI has more than doubled over the last five years, with 50% of corporations implementing the technology in at least one function. Customer-related functions are the most widely cited use case for AI. For instance, 24% of AI adopters deploy the technology in service operations, and 19% for improving customer analytics according to the McKinsey survey. However, generating returns on those efforts is not always straight-forward. According to a 2021 report published by MIT and the Boston Consulting Group (BCG), while 75% of firms that implemented AI credited the technology with improving decision making, just 11% generated a significant financial benefit from the initiative.

Figure 2: Deployed enterprise ai application use cases



Source: McKinsey, December 2022

The results of the MIT-BCG report dovetail the findings of numerous other studies of enterprise digital transformation that find most fail to achieve their ambitions. In attempting to adopt digital tools, most corporations fail to re-consider the process and thereby transfer existing inefficiencies from legacy tools to the new. The implementation of AI in corporate processes runs the risk repeating the mistake. As a result, we expect, at least initially, AI tools focused on narrow objectives will demonstrate the greatest return on investment. For example, Google reported a 40% drop in datacenter cooling costs after applying Deepmind's algorithm to optimize system resources.

New horizons

With any new technology there is a tendency to consider how it might enhance or disrupt existing markets rather than consider entirely novel applications. For instance, when the iPhone launched, the initial consideration focused on the impact to legacy phone vendors. Very few people (other than the founders) imagined services like Instagram, Spotify or Uber. Similarly, even fewer industry observers at the start of the smartphone era anticipated the devices would displace hardware from cameras to televisions. For applications like personal banking and email, the smartphone also displaced the computer. For many people, especially in developing markets, the smartphone is their only computing device. In the same vein, we believe the greatest potential for AI likely resides with applications still in development; drug discovery and software development for example.

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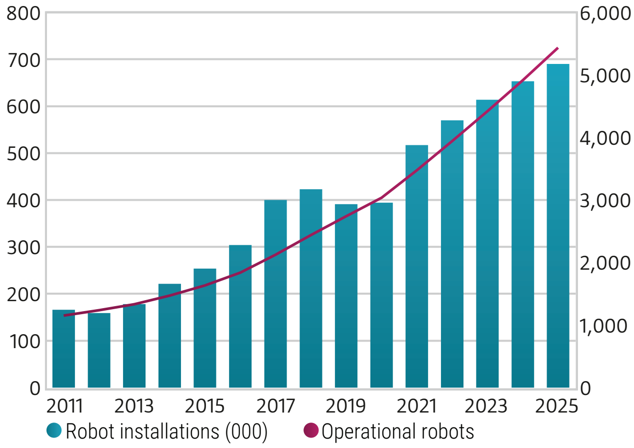
2. Robotics: Evolution is accelerating

When we launched the Robeco Digital Innovations strategy in 2016, Robotics & Automation was one of our core three themes, and in that time global robot density has more than doubled. We think this is only the beginning.

Efficiency requirements, labor supply shortages, and increased focus on reshoring will drive continued growth in robotics & automation. Over the last decade, industrial robotic installations have grown at a 13.6% CAGR. McKinsey expects that over the next five years robotics will account for 25% of industrial capital spending.

Figure 3. Robot installations & Installed Base



Source: International Federation of Robotics

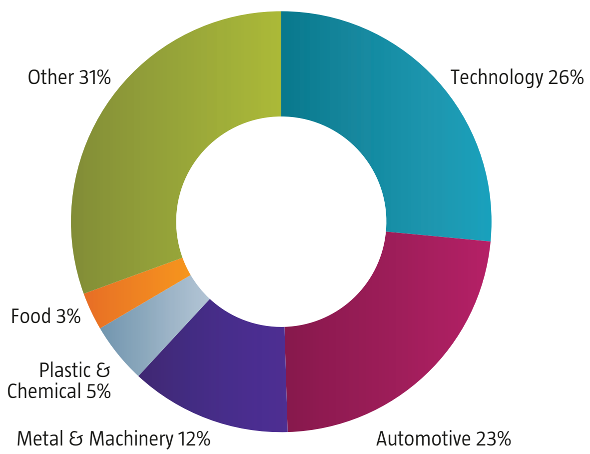
Increased dexterity, improved vision

Advancements in flexibility and mechanical dexterity are enabling robots to facilitate automation in more dynamic environments. Previously confined to fixed locations, for repetitive tasks, modern co-bots work alongside humans in dynamic roles. For instance Athena, a manufacturer of custom parts and prototypes for a range of markets from aerospace to medical devices, integrated Fanuc co-bot arms into their production process, yielding a 40% increase in machine utilization rates and a doubling of output. As a result, while the automotive and technology hardware industries remain the largest end markets for robotic installations, the diversity of addressable industries is expanding rapidly. Moreover, beyond manufacturing robotics are modernizing service industries like food service and retail. Demonstrating the increasing dexterity of robotic technology have been advancements in healthcare, where for example Intuitive's Surgical DaVinci system performed more than 1.8 million procedures in 2022, an increase of 18% year on year.

Machine vision and on-board intelligence facilitated by advanced semiconductors are broadening robotic functionality and enabling continuous learning. Further, linking robotic systems to enterprise resource management systems and augmented by artificial intelligence, the manufacturing process can be synchronized with real-time data from sales channels and the IoT to improve product design, reduce input costs, and balance inventories.

Thanks to these emerging robotic functions, an inflection is taking place. For instance in Japan, the most mature robot market, robot density increased 30% in just 4 years after staying flat for almost two decades. Much of the new adoption is taking place in traditional and labor-intensive industries, like machinery, electronics, and metal products, where the required robotic technologies are far from traditional. The same trend is manifesting outside Japan as well, driving a global robot super cycle.

Figure 4. Robot installations by industry, 2021



Source: International Federation of Robotics

3. Internet of things (IoT): Real time and granular data improve operations

The IoT is comprised of sensors connected by networks to software to enable monitoring & control of hardware, machines, and systems. Put another way, IoT infuses atoms (physical objects) with bits (information technology).

Applications of IoT in the enterprise and industrial space are having a material impact on operations and margins in multiple sectors from factory automation to logistics. With real-time data, IoT facilitates optimized production, predictive maintenance, and resource management.

Keeping the trains running

The use cases and potential benefits of IoT are broad and very attractive for both cost reduction and revenue growth. For example, working with SAP the Italian rail operator Trenitalia installed a set of IoT solutions leveraging onboard sensors and on the ground systems for near real-time analysis of machine health and operations. By implementing a predictive rather than scheduled maintenance system, TrenItalia expects to reduce maintenance costs by 8% to 10% and improve the availability of equipment by 5% to 8%. A similar IoT system deployed by Microsoft at BMW's Regensburg plant in Germany reduced the factory's metal-press shop downtime by 25%.

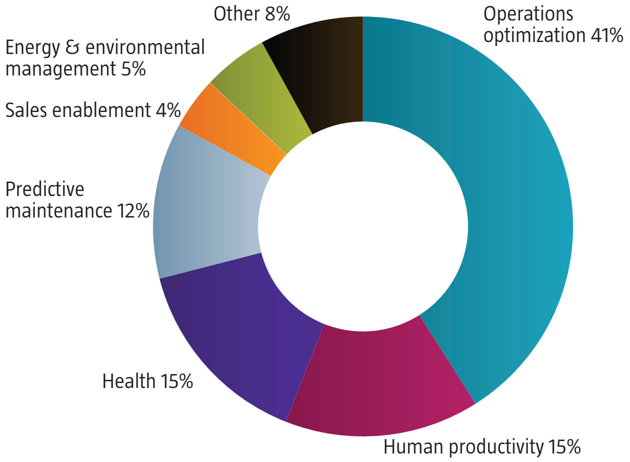
Enabling the smart grid

As we have discussed in a previous Insight, building the smart grid is key to the energy transition to renewables. The smart grid needs IoT infrastructure to ensure dynamic optimization of the energy mix as power is generated from multiple distributed sources, rather than centralized. IoT is also needed to enable load handling and influence usage patterns during times of heavy load. In addition, sensors can help consumers reduce the costs by informing them, or informing the controls systems employed by consumers, when prices are lower.

Creating value, saving resources

Driven in large measure by the potential to improve margins, McKinsey sees increasing willingness by enterprise and industry to implement IoT programs and by 2030, the firm estimates that IoT could enable USD 5.5 trillion to USD 12.6 trillion in value globally. Importantly, the margin gains from everything from reduced material waste to optimized energy usage yield environmental benefits. McKinsey estimates that digital innovations including IoT have the potential to directly reduce fossil-fuel emissions by 15 percent by 2030 and support a further 35 percent reduction by influencing consumer and business decisions.

Figure 5. Distribution of IoT economic value creation by use case



Source: McKinsey

We believe IoT has the potential to revolutionize numerous industries by enabling real-time monitoring, analysis, and optimization of systems and processes and thus reduce errors, increase the efficiency of operations, and decrease overall costs. By blending IoT with machine learning, robotic systems, software, and people, the world of manufacturing can be reshaped.

Installed base expanding, investment continues

Gartner forecasts IoT endpoints will grow at a 13.9% compound annual growth rate (CAGR) through 2028, reaching an installed base of 13.2 billion units. A separate analysis by IoT Analytics forecasts enterprise IoT spend to reach USD 483 billion by 2027 from USD 201 billion last year, a 19% CAGR.

1. Upgrading the grid is an urgent global priority – Robeco September 2022

4. Digital Twins: Digitizing the built environment

Within the software space, one application ecosystem that has demonstrated consistent growth is digital twins, an industrial-engineering tool that provides a simulation of a physical structure, machine or system.

Architects and engineers have long created both digital and physical models to help inform and refine their final designs before construction or production begins. A digital twin extends this process by computer-modelling external data, including expected load conditions, material characteristics, and weather among other factors. Digital twins are not static, but continue to evolve as plans move from the drawing board to construction. For example, an office building designed with a digital twin is updated as change orders impact the final building, providing managers with a holistic view of a facility over time.

Fewer power cuts

Digital twins are created not only in the design process, but also for operations. By integrating internet-connected sensors and monitoring systems, digital twins can provide real-time performance information to improve operations, pinpoint problems, and reduce maintenance costs. For example, Siemens Energy is using digital twins to support predictive maintenance at power plants. This is reducing the need for planned shutdowns, with estimates suggesting this could save utility providers USD 1.7 billion per year.

Reorganized factories

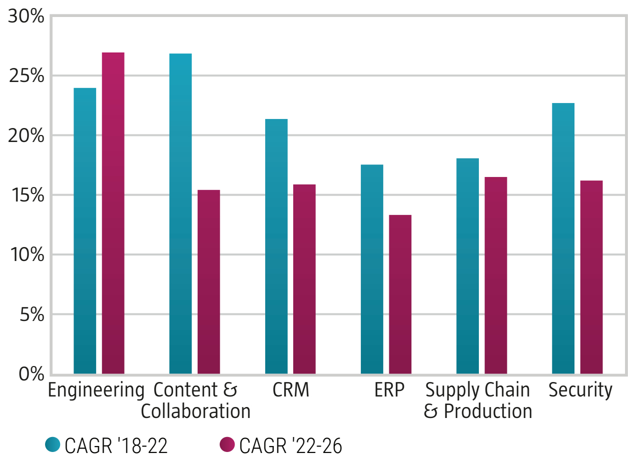
Digital twins help design and operate not only single devices, but entire systems. For instance, the brewing company Anheuser-Busch has employed a digital twin to adjust inputs based on live conditions and the system can automatically adjust production levels as bottlenecks occur, for example when vats become full. With a background in graphical simulation and artificial intelligence, semiconductor designer Nvidia created a software platform they call the Omniverse to model processes in motion. Amazon has used Nvidia's Omniverse to simulate warehouse performance before they are built, in order to maximize throughput. Similarly, BMW has employed Nvidia's Omniverse to design factory-automation systems and train robots before they are put into production.

Figure 6: | BMW Factory automation digital twin

Source: BMW, Nvidia, 2022

Despite several marquee projects noted above, the market for digital twins remains nascent. Nevertheless, demand for digital twin technology is being lifted by the parallel growth of automation, robotics and IoT. Gartner predicts that within three to five years, billions of objects and systems around the world will be represented by digital twins. Similarly, IDC estimates that over the last four years, cloud-based engineering software revenues, which includes digital twin software, expanded at a 24% CAGR and forecasts that will accelerate to 27% over the next four years.

Figure 7: Software as a Service, segment growth rates



Source: IDC

5. Cybersecurity: Critical foundation of the digital economy

More than a decade ago, cybersecurity industry veteran Dmitri Alperovitch quipped in a speech at the RSA conference, a gathering of cybersecurity professionals, "There are two types of companies: those that have been hacked, and those that do not know that they have been hacked". Unfortunately, those comments still ring true today.

In recent years, a veritable cyber epidemic has struck the corporate world. In 2021, the Microsoft email exchange servers of 60,000 companies around the world were compromised. Also in 2021, personal data on 700 million LinkedIn accounts were made available for sale on illicit web marketplaces. In 2019, a breach of First American Financial Corp leaked 885 million records including information on bank account numbers, account statements, wire transfers, and user identities. In 2017, after a ransomware attack struck shipping company Maersk, a third of all traffic was closed in Rotterdam, Europe's largest port. The cost of these incidents can reverberate for years as corporations seek to shore up defences, recover lost business, and retool operations. The World Economic Forum estimates the total cost of cybercrime will rise from USD 6 trillion in 2021 to USD 10.5 trillion in 2025.

Insurance: Acknowledging vulnerability

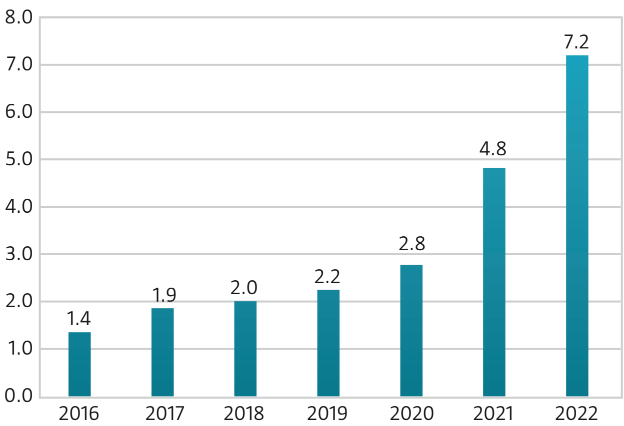
Illustrating the degree of risk and concern among corporate executives, the explosion in network attacks has driven an acceleration in the cyber insurance market. For instance in the US market, direct-written cyber insurance coverage premiums rose 50% year on year in 2022 to USD 7.2 billion, after a 73% year on year growth in 2021.

To directly address these risks, IDC estimates that global spending on security solutions and services will expand 12.1% year on year in 2023 to USD 219 billion and reach USD 300 billion in 2026.

Moreover, supporting the migration of applications to cloud-based systems and in conjunction with the ongoing process of enterprise digital transformation, software-as-a-service (SaaS)-based cybersecurity spending is expanding at a faster rate, expected to rise 19% on year to USD 64.5 billion in 2023.

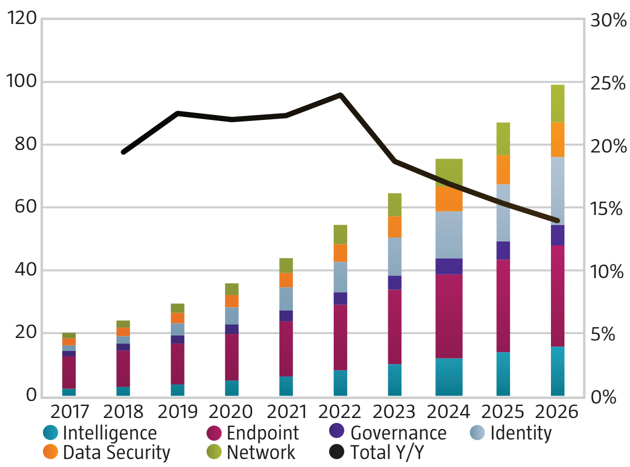
Enterprises are not only spending more on cybersecurity solutions, but differently. Expanding digital footprints entails a broadening of security solutions. Security solutions were previously split between networks and endpoints, but the market has become more complex. Over the last five years the fastest areas of cyber security spending growth have been with solutions that focus on authenticating and protecting user identities. For instance identity and privileged access management systems like Cyberark and Okta allow IT departments to control and monitor which employees or customers have access to which applications and which datasets and on what devices. Security is not only about protecting against threats from the outside, but entails managing resources within the organization.

Figure 8: Direct-written premiums for insurance against cyber incidents is growing rapidly in the US



Source: Fitch Ratings, 2023

Figure 9: SaaS cybersecurity spending, USD billions



Source: IDC 2023

Constant evolution of capabilities and threats

While the expansion of cloud computing initially presented a threat to legacy network firewalls protecting on-premise computing resources, the embedded protocols and algorithms have proven to be more dynamic. For instance hybrid firewall platforms from providers like Fortinet and Palo Alto Networks enable security to be enforced across workloads on-premise, in private clouds and on public cloud environments. These virtual firewalls have become network-architecture agnostic.

The nature of security software has also continued to evolve. In the early days of cybersecurity, software and hardware systems employed signature-based detection techniques to identify potential viruses and malware hidden within the code of software and data traffic. As new threats were identified and marked within industry database systems, security software systems required regular updating and patching to account for the new risks. As security software evolved into an ongoing service, those signature updates shifted from an occasional update to a continuous process. Over time, as the rapid growth of new threats outpaced the ability to identify, catalog, and update signature databases, new techniques emerged. Today's cyber protection system employ behavioral analysis to detect threats based upon actions rather than signatures alone. As progress in the field of machine learning has recently accelerated, new artificial intelligence driven solutions have emerged. For instance, noting a shortage of cyber security professionals, Microsoft recently introduced their Security Co-Pilot that has been trained on the companies suite of cyber solutions to improve the detection process, and speed the response to inbound threats.

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The Prospectus relates to a private collective investment scheme which is not subject to any form of domestic regulations by the Autoriti Monetari Brunei Darussalam ("Authority"). The Prospectus is intended for distribution only to specific classes of investors as specified in section 20 of the Securities Market Order, 2013, and must not, therefore, be delivered to, or relied on by, a retail client. The Authority is not responsible for reviewing or verifying any prospectus or other documents in connection with this collective investment scheme. The Authority has not approved the Prospectus or any other associated documents nor taken any steps to verify the information set out in the Prospectus and has no responsibility for it. The units to which the Prospectus relates may be illiquid or subject to restrictions on their resale. Prospective purchasers of the units offered should conduct their own due diligence on the units.

Additional information for investors with residence or seat in Canada
No securities commission or similar authority in Canada has reviewed or in any way passed upon this document or the merits of the securities described herein, and any representation to the contrary is an offence. Robeco Institutional Asset Management B.V. relies on the international dealer and international adviser exemption in Quebec and has appointed McCarthy Tétrault LLP as its agent for service in Quebec.

Additional information for investors with residence or seat in the Republic of Chile
Neither Robeco nor the Funds have been registered with the Comisión para el Mercado Financiero pursuant to Law no. 18.045, the Ley de Mercado de Valores and regulations thereunder. This document does not constitute an offer of or an invitation to subscribe for or purchase shares of the Funds in the Republic of Chile, other than to the specific person who individually requested this information on their own initiative. This may therefore be treated as a "private offering" within the meaning of Article 4 of the Ley de Mercado de Valores (an offer that is not addressed to the public at large or to a certain sector or specific group of the public).

Additional information for investors with residence or seat in Colombia
This document does not constitute a public offer in the Republic of Colombia. The offer of the fund is addressed to less than one hundred specifically identified investors. The fund may not be promoted or marketed in Colombia or to Colombian residents, unless such promotion and marketing is made in compliance with Decree 2555 of 2010 and other applicable rules and regulations related to the promotion of foreign funds in Colombia. The distribution of this Prospectus and the offering of Shares may be restricted in certain jurisdictions. The information contained in this Prospectus is for general guidance only, and it is the responsibility of any person or persons in possession of this Prospectus and wishing to make application for Shares to inform themselves of, and to observe, all applicable laws and regulations of any relevant

jurisdiction. Prospective applicants for Shares should inform themselves of any applicable legal requirements, exchange control regulations and applicable taxes in the countries of their respective citizenship, residence or domicile.

Additional information for investors with residence or seat in the Dubai International Financial Centre (DIFC), United Arab Emirates
This material is distributed by Robeco Institutional Asset Management B.V. (DIFC Branch) located at Office 209, Level 2, Gate Village Building 7, Dubai International Financial Centre, Dubai, PO Box 482060, UAE. Robeco Institutional Asset Management B.V. (DIFC Branch) is regulated by the Dubai Financial Services Authority ("DFSA") and only deals with Professional Clients or Market Counterparties and does not deal with Retail Clients as defined by the DFSA.

Additional information for investors with residence or seat in France
Robeco Institutional Asset Management B.V. is at liberty to provide services in France. Robeco France is a subsidiary of Robeco whose business is based on the promotion and distribution of the group's funds to professional investors in France.

Additional information for investors with residence or seat in Germany
This information is solely intended for professional investors or eligible counterparties in the meaning of the German Securities Trading Act.

Additional information for investors with residence or seat in Hong Kong
The contents of this document have not been reviewed by the Securities and Futures Commission ("SFC") in Hong Kong. If there is any doubt about any of the contents of this document, independent professional advice should be obtained. This document has been distributed by Robeco Hong Kong Limited ("Robeco"). Robeco is regulated by the SFC in Hong Kong.

Additional information for investors with residence or seat in Indonesia
The Prospectus does not constitute an offer to sell nor a solicitation to buy securities in Indonesia.

Additional information for investors with residence or seat in Italy
This document is considered for use solely by qualified investors and private professional clients (as defined in Article 26 (1) (b) and (d) of Consob Regulation No. 16190 dated 29 October 2007). If made available to Distributors and individuals authorized by Distributors to conduct promotion and marketing activity, it may only be used for the purpose for which it was conceived. The data and information contained in this document may not be used for communications with Supervisory Authorities. This document does not include any information to determine, in concrete terms, the investment inclination and, therefore, this document cannot and should not be the basis for making any investment decisions.

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This document is considered for use solely by qualified investors and is distributed by Robeco Japan Company Limited, registered in Japan as a Financial Instruments Business Operator, [registered No. the Director of Kanto Local Financial Bureau (Financial Instruments Business Operator), No.2780, Member of Japan Investment Advisors Association].

Additional information for investors with residence or seat in South Korea
The Management Company is not making any representation with respect to the eligibility of any recipients of the Prospectus to acquire the Shares therein under the laws of South Korea, including but not limited to the Foreign Exchange Transaction Act and Regulations thereunder. The Shares have not been registered under the Financial Investment Services and Capital Markets Act of Korea, and none of the Shares may be offered, sold or delivered, or offered or sold to any person for re-offering or resale, directly or indirectly, in South Korea or to any resident of South Korea except pursuant to applicable laws and regulations of South Korea.

Additional information for investors with residence or seat in Liechtenstein
This document is exclusively distributed to Liechtenstein-based, duly licensed financial intermediaries (such as banks, discretionary portfolio managers, insurance companies, fund of funds) which do not intend to invest on their own account into Fund(s) displayed in the document. This material is distributed by Robeco Switzerland Ltd, postal address: Josefstrasse 218, 8005 Zurich, Switzerland. LGT Bank Ltd., Herrengasse 12, FL-9490 Vaduz, Liechtenstein acts as the representative and paying agent in Liechtenstein. The prospectus, the Key Information Documents (PRIIP)the articles of association, the annual and semi-annual reports of the Fund(s) may be obtained from the representative or via the website.

Additional information for investors with residence or seat in Malaysia
Generally, no offer or sale of the Shares is permitted in Malaysia unless where a Recognition Exemption or the Prospectus Exemption applies: NO ACTION HAS BEEN, OR WILL BE, TAKEN TO COMPLY WITH MALAYSIAN LAWS FOR MAKING AVAILABLE, OFFERING FOR SUBSCRIPTION OR PURCHASE, OR ISSUING ANY INVITATION TO SUBSCRIBE FOR OR PURCHASE OR SALE OF THE SHARES IN MALAYSIA OR TO PERSONS IN MALAYSIA AS THE SHARES ARE NOT INTENDED BY THE ISSUER TO BE MADE AVAILABLE, OR MADE THE SUBJECT OF ANY OFFER OR INVITATION TO SUBSCRIBE OR PURCHASE, IN MALAYSIA. NEITHER THIS DOCUMENT NOR ANY DOCUMENT OR OTHER MATERIAL IN CONNECTION WITH THE SHARES SHOULD BE DISTRIBUTED, CAUSED TO BE DISTRIBUTED OR CIRCULATED IN MALAYSIA. NO PERSON SHOULD MAKE AVAILABLE OR MAKE ANY INVITATION OR OFFER OR INVITATION TO SELL OR PURCHASE THE SHARES IN MALAYSIA UNLESS SUCH PERSON TAKES THE NECESSARY ACTION TO COMPLY WITH MALAYSIAN LAWS.

Additional information for investors with residence or seat in Mexico
The funds have not been and will not be registered with the National Registry of Securities or maintained by the Mexican National Banking and Securities Commission and, as a result, may not be offered or sold publicly in Mexico. Robeco and any underwriter or purchaser may offer and sell the funds in Mexico on a private placement basis to Institutional and Accredited Investors, pursuant to Article 8 of the Mexican Securities Market Law.

Additional information for investors with residence or seat in Peru
The Superintendencia del Mercado de Valores (SMV) does not exercise any supervision over this Fund and therefore the management of it. The information the Fund provides to its investors and the other services it provides to them are the sole responsibility of the Administrator. This Prospectus is not for public distribution.

Additional information for investors with residence or seat in Singapore
This document has not been registered with the Monetary Authority of Singapore ("MAS"). Accordingly, this document may not be circulated or distributed directly or indirectly to persons in Singapore other than (i) to an institutional investor under Section 304 of the SFA, (ii) to a relevant person pursuant to Section 305(1), or any person pursuant to Section 305(2), and in accordance with the conditions specified in Section 305, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The contents of this document have not been reviewed by the MAS. Any decision to participate in the Fund should be made only after reviewing the sections regarding investment considerations, conflicts of interest, risk factors and the relevant Singapore selling restrictions (as described in the section entitled "Important information for Singapore Investors") contained in the prospectus. Investors should consult their professional adviser if you are in doubt about the stringent restrictions applicable to the use of this document, regulatory status of the Fund, applicable regulatory protection, associated risks and suitability of the Fund to your objectives. Investors should note that only the Sub-Funds listed in the appendix to the section entitled "Important information for Singapore Investors" of the prospectus ("Sub-Funds") are available to Singapore investors. The Sub-Funds are notified as restricted foreign schemes under the Securities and Futures Act, Chapter 289 of Singapore ("SFA") and invoke the exemptions from compliance with prospectus registration requirements pursuant to the exemptions under Section 304 and Section 305 of the SFA. The Sub-Funds are not authorized or recognized by the MAS and shares in the Sub-Funds are not allowed to be offered to the retail public in Singapore. The prospectus of the Fund is not a prospectus as defined in the SFA. Accordingly, statutory liability under the SFA in relation to the content of prospectuses does not apply. The Sub-Funds may only be promoted exclusively to persons who are sufficiently experienced and sophisticated to understand the risks involved in investing in such schemes, and who satisfy certain other criteria provided under Section 304, Section 305 or any other applicable provision of the SFA and the subsidiary legislation enacted thereunder. You should consider carefully whether the investment is suitable for you. Robeco Singapore Private Limited holds a capital markets services license for fund management issued by the MAS and is subject to certain clientele restrictions under such license.

Additional information for investors with residence or seat in Spain
Robeco Institutional Asset Management B.V., Sucursal en España with identification number W0032687F and having its registered office in Madrid at Calle Serrano 47-14º, is registered with the Spanish Commercial Registry in Madrid, in volume 19.957, page 190, section 8, sheet M-351927 and with the National Securities Market Commission (CNMV) in the Official Register of branches of European investment services companies, under number 24. The investment funds or SICAV mentioned in this document are regulated by the corresponding authorities of their country of origin and are registered in the Special Registry of the CNMV of Foreign Collective Investment Institutions marketed in Spain.

Additional information for investors with residence or seat in South Africa
Robeco Institutional Asset Management B.V. is registered and regulated by the Financial Sector Conduct Authority in South Africa.

Additional information for investors with residence or seat in Switzerland
The Fund(s) are domiciled in Luxembourg. This document is exclusively distributed in

Switzerland to qualified investors as defined in the Swiss Collective Investment Schemes Act (CISA). This material is distributed by Robeco Switzerland Ltd, postal address: Josefstrasse 218, 8005 Zurich. ACOLIN Fund Services AG, postal address: Leutschenbachstrasse 50, 8050 Zürich, acts as the Swiss representative of the Fund(s). UBS Switzerland AG, Bahnhofstrasse 45, 8001 Zurich, postal address: Europastrasse 2, P.O. Box, CH-8152 Opfikon, acts as the Swiss paying agent. The prospectus, the Key Information Documents (PRIIP), the articles of association, the annual and semi-annual reports of the Fund(s), as well as the list of the purchases and sales which the Fund(s) has undertaken during the financial year, may be obtained, on simple request and free of charge, at the office of the Swiss representative ACOLIN Fund Services AG. The prospectuses are also available via the website.

Additional information relating to RobecoSAM-branded funds/services
Robeco Switzerland Ltd, postal address Josefstrasse 218, 8005 Zurich, Switzerland has a license as asset manager of collective assets from the Swiss Financial Market Supervisory Authority FINMA. The RobecoSAM brand is a registered trademark of Robeco Holding B.V. The brand RobecoSAM is used to market services and products which entail Robeco's expertise on Sustainable Investing (SI). The brand RobecoSAM is not to be considered as a separate legal entity.

Additional information for investors with residence or seat in Taiwan
The contents of this document have not been reviewed by any regulatory authority in Hong Kong. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. This document has been distributed by Robeco Hong Kong Limited ("Robeco"). Robeco is regulated by the Securities and Futures Commission in Hong Kong.

Additional information for investors with residence or seat in Thailand
The Prospectus has not been approved by the Securities and Exchange Commission which takes no responsibility for its contents. No offer to the public to purchase the Shares will be made in Thailand and the Prospectus is intended to be read by the addressee only and must not be passed to, issued to, or shown to the public generally.

Additional information for investors with residence or seat in the United Arab Emirates
Some Funds referred to in this marketing material have been registered with the UAE Securities and Commodities Authority ("the Authority"). Details of all Registered Funds can be found on the Authority's website. The Authority assumes no liability for the accuracy of the information set out in this material/document, nor for the failure of any persons engaged in the investment Fund in performing their duties and responsibilities.

Additional information for investors with residence or seat in the United Kingdom
Robeco is deemed authorized and regulated by the Financial Conduct Authority. Details of the Temporary Permissions Regime, which allows EEA-based firms to operate in the UK for a limited period while seeking full authorization, are available on the Financial Conduct Authority's website.

Additional information for investors with residence or seat in Uruguay
The sale of the Fund qualifies as a private placement pursuant to section 2 of Uruguayan law 18,627. The Fund must not be offered or sold to the public in Uruguay, except under circumstances which do not constitute a public offering or distribution under Uruguayan laws and regulations. The Fund is not and will not be registered with the Financial Services Superintendency of the Central Bank of Uruguay. The Fund corresponds to investment funds that are not investment funds regulated by Uruguayan law 16,774 dated 27 September 1996, as amended.