

Innovative technology – a boost for sustainable investments

Historically funds following global trends or theme funds linked to global trends were limited to specific sectors. The technology shift happening at existing and new companies provide concrete solutions to some of the major challenges faced by our societies, from resources and environmental issues to demographics. Thanks to this evolution, funds following sustainability mega trends now benefit from a broadening of their investment spectrum by integrating these new set of companies, which in turn provides interesting diversification to their universe and more exciting investment opportunities. The sustainability funds IFP Global Environmental Fund and the IFP Global Age Fund have integrated since 2015 various new technological trends and are invested in a number of companies that are outside their traditional universes.



Source: Google.com

Smarter and Greener

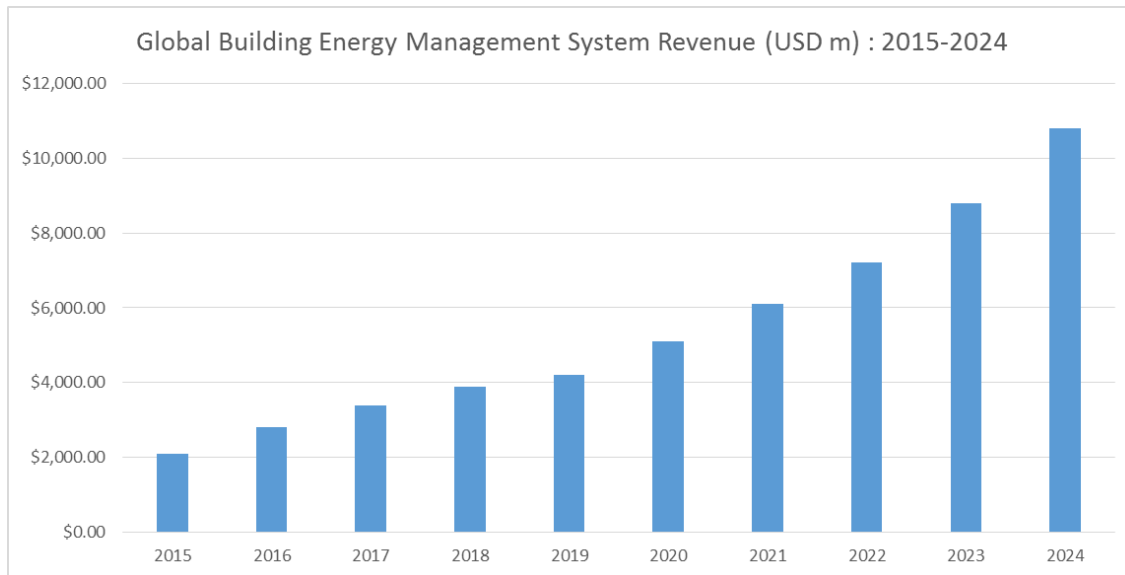
By enabling innovations in infrastructure, education, personal change, and many other domains, information and communication technology can help people live more sustainable and higher quality lives by bringing improvements in areas such as manufacturing, energy, transport systems where smart systems can help to optimize performance and reduce waste. Furthermore, better access to information as a result of high speed connectivity (i.e. Internet of Things) will foster sustainable consumption and greener lifestyles.

IoT (Internet of Things) is defined by Wikipedia as “the internet-working of vehicles, physical devices (also referred to as “connected devices” and “smart devices”), buildings and other items—embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data”. According to Ericsson, a leading manufacturer of telecom equipment, IoT market is expected to grow at a CAGR of 23% from 2016-2022.

A) Smart Building

In a paper already published in 2014 by Intel Corporation, the company outlined the potential for IoT-driven advances extending into the broader environmental market. The underlying reason why technology can have a significant positive impact is because progress in sensors and CPU technology can enable a significant number of end-use energy efficiency improvements, which in turn can reduce energy use. These improvements can be found in technologies such as building energy management systems, smart grid devices, smart logistics using GPS, as well as smart industrial motors. Companies such **Ingersoll – Rand**, with its strategic focus on sustainability, even go a step further by offering

their clients new solution in building energy management based on whole building strategy which has the potential to further improve energy efficiency.



Source: Intel, Navigant Research

B) Smart Transportation

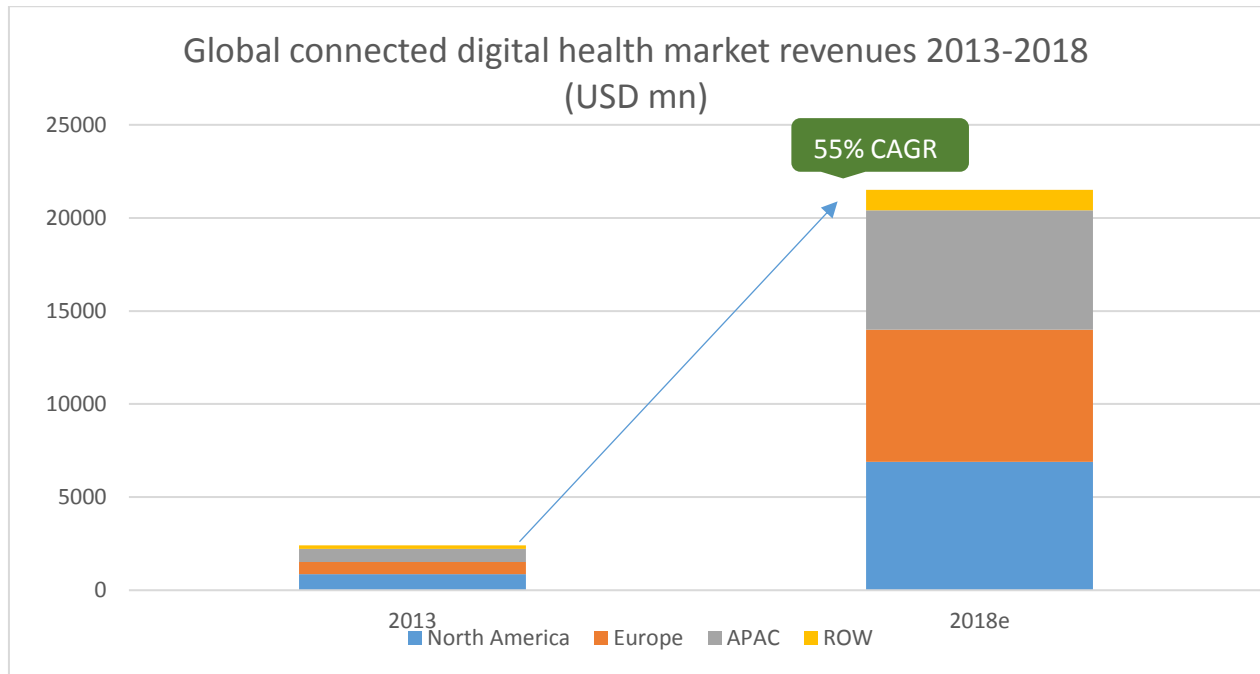
Private cars are the primary mode of mobility in most developed countries and they account for most of the air pollution in cities around the world. Most governments encourage public transportation, for decentralized low density cities. However, increases in the public transportation usage are difficult to achieve as convenience usually outweighs other criteria. Nonetheless, we see IoT and more specifically smart device apps to help in several ways: 1) multiple passenger ride sharing service, such as Uber, which has smartphone enabled booking; 2) IoT and Big data (GPS +Google map) provide better data route for travelers; 3) GPS and fast processor enable vehicle to plot out very complex routes.; 4) Autonomous driving: autonomous cars will navigate far more efficiently than human drivers as inefficiency of human driven car leads to considerable congestions. While this list is not exhaustive, we believe that IoT will not only optimize transportation through more car sharing or route planning but as well improve the environment by the reduction of overall fuel consumption and pollution. With more and more machine intelligence needed in these new modes of transportation, we expect processor companies such as **Nvidia**, **Intel** as well as chip equipment manufacturers such as **Applied Materials** to benefit from this trend.

C) Connected Healthcare

Globally, an aging population will continue to put pressure on the existing healthcare system and we need new solutions to address and relieve the system. Thanks to the advancement of science and technology, information technology will play an important role to relieve this pressure. More specifically, technology will drive the development of new advances to improve our healthcare system. New diagnostic capabilities, better cost effectiveness and higher overall quality of our healthcare delivery system will be beneficial for the quality of life of our seniors.

Connected healthcare is defined as “a technology enabled care that converges health technology, digital media and mobile devices”. It enables patients, care givers and healthcare professionals to access data and information more easily and improve the quality and results. It is also a cost effective solution at a time when the demands on health services continue to increase globally due to the growth of the aging population.

The rise of connected healthcare is also enabling new entrants in the provider market. New app-based services such as “virtual” primary care service can offer a myriad of services from access to virtual clinicians to symptoms monitoring. The partnership of Apple with Mayo clinic as well as Google’s Health and Fit initiatives reflect the importance of the healthcare market to the technology players and could represent another leg of growth for these companies. We see health tech companies such as **Philips**, a company that consistently scores high on ESG, benefiting from this trend.

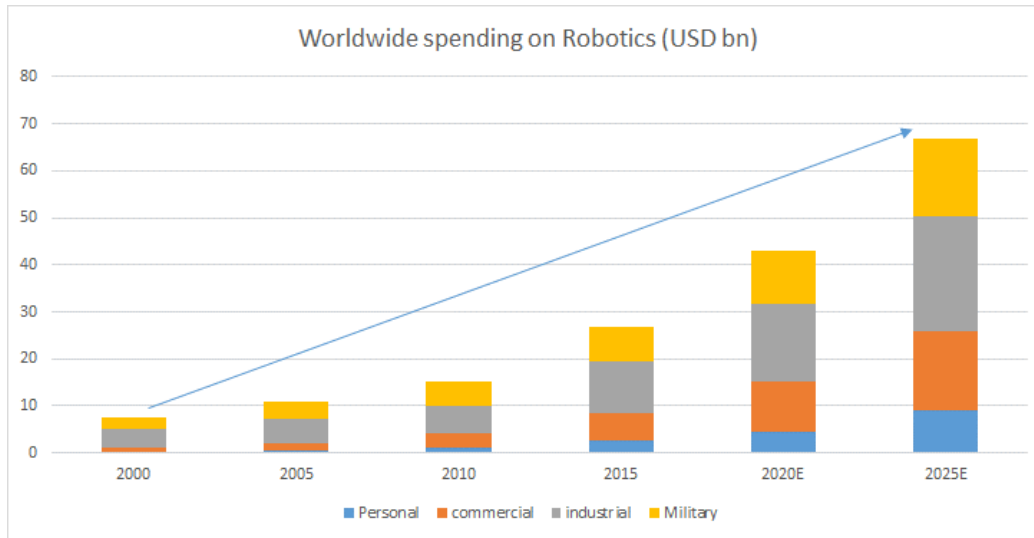


Source: Deloitte

Machine serving Man

Industrial 4.0 is defined by Wikipedia as “the fourth industrial revolution, which is the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things and cloud computing.” The advent of this revolution is the concept of smart manufacturing, which encompasses the use of sensors, robotics, software, as well as internet (connectivity) to optimize production processes from supply chain management to manufacturing workflow to logistics. The optimization of these processes will contribute to the environmental dimension of sustainability. The allocation of resources, i.e. material, products, energy, and water can be realized in a more efficient way on the basis of intelligent data, which in turn will reduce waste, encourage industrial and energy efficiency as well as logistic optimization. **Ansys**’ engineering simulation software helps to optimize performance, testing and possible failure modes of product design and it is one of the enablers of this trend.

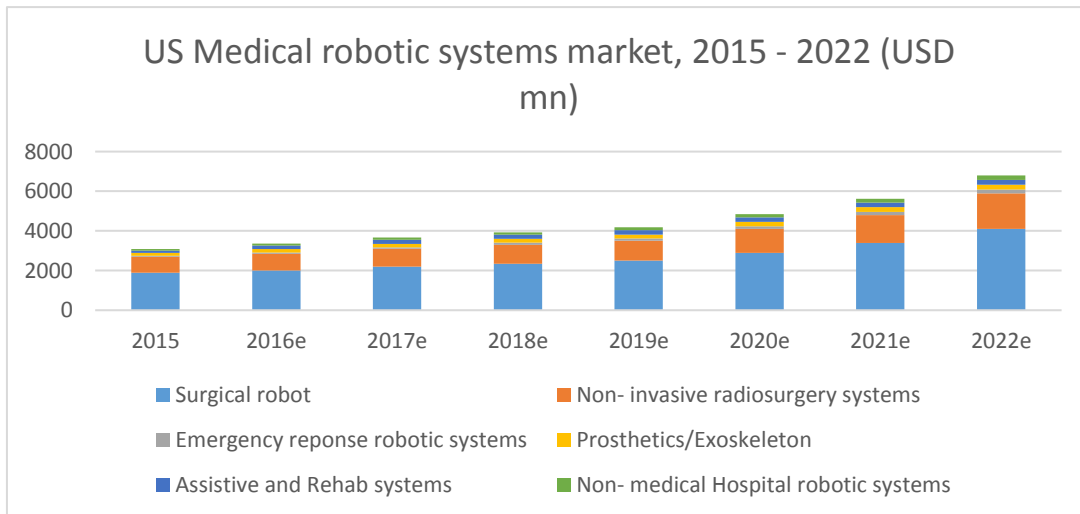
Robotics has also been used to enhance labor force, most notably in Japan, to counteract the demographic headwinds. Japan has embraced the technology to continue to drive productivity growth to bring economic prosperity. While Japanese statistics has shown that this was not sufficient to overcome fully the negative impact of an aging demographic, it has gone a long way in reducing the effect. At the same time, many developed countries are facing the same problems and may have to step up their adoptions. Hence the demands for robotics products from **ABB**, a world leader in discrete automation as well as machine vision supplier **Cognex**, will continue to grow.



Source: International Federation of Robotics, Japan Robot association, BCG analysis

Medical robotics refers to robotic systems applied within the domain of healthcare. From the standpoint of science and engineering, robotics is a highly-evolved and well-understood discipline involving topics from mechanical engineering, electrical engineering, materials science, and computer science. A paper published by Robotics business review on “Healthcare robotics 2015-2020: trends, opportunities & challenges” outlined 3 main areas of development in robotic healthcare:

- 1) Direct care robot: surgical robots, exoskeletons and prosthetics.
- 2) Indirect patient care robots: pharmacy robots (inventory control, streamlining automation), delivery robots in hospitals and disinfection robots
- 3) Home healthcare robots



Source: Grandview Research

The ultimate goal of a good healthcare system is to understand the healthcare needs of individuals and their caregivers, and to develop new systems to support them. By helping seniors to become more proactive in managing their health, and providing caregivers or healthcare professionals with the tools and information they need to deliver care in any setting, we believe that medical robotics will play an important role in addressing the needs of the aging population

wave. We see **Stryker**, a global leader in medtech, and in particular its highly innovative Mako robots, benefiting from this trend.

As the digitalization of the economy and robotics offer real solutions to some environmental and social challenges we must not ignore the issues regarding jobs creation implied. Handling job destruction/creation will be a major success factor in order to avoid constraining political legislations which could tarnish the development of this trend.

Social media

More than 60% of seniors (vs. >90% in the general) are using the internet today and they are showing the fastest adoption rate as compared to the other age groups. We believe that as the baby boomers reach their retirement age, the gap will continue to narrow. There are many benefits for seniors to get more connected with technology. Many are using the internet and the latest tech devices to find information, connect with people, and stay mentally engaged as they socialize. This can improve their mental health, reduce their isolation and hopefully avoid depression by engaging online. Building a peer network online via social media can be uplifting for many seniors. Interestingly enough, **Facebook** is the most popular social media site for seniors (63% of over 50y are using Facebook).

Conclusion

By enabling innovations in infrastructure, transportation, social interactions, and many other domains, technology can help people live more sustainable and higher quality lives. We expect these technological changes to drive excellent investment returns for years to come as we are just at the start of this revolution. Investors who would like to benefit from these trends can either invest directly in companies that are exposed to the theme or in sustainability funds such as the **IFP Global Environmental Fund** and the **IFP Global Age Fund**, which have already invested in a number of companies that are making these themes a reality.

About IFP Investment Management SA

IFP Investment Management SA manages sustainable UCITS funds and mandates since 2009, integrating both financial and ESG criteria in its investment process. The IFP Global Environmental Fund (available in EUR, USD and CHF), a balanced sustainability fund with a focus on absolute return, was launched in 2009. The IFP Global Age Fund (available in EUR, USD and CHF), a global equity sustainability fund around aging population, was launched in 2012.

Contact

IFP Investment SA
6B Route de Trèves, L-2633 Senningerberg, Luxembourg
E-mail: info@ifpim.lu

Special thanks

We thank our advisor Conser Invest SA for their valuable contribution to this report.
www.conser.ch – expert in sustainable finance