

A Tech Odyssey



At a glance

- ▶ The pandemic witnessed faster adoption of certain technologies such as Cloud computing or e-Commerce, as well as a strong data proliferation
- ▶ However, it did not change the environmental and social challenges that we face, and how technology can address these
- ▶ When it comes to technology, sustainability can be quite an odyssey, as solutions never come without risks
- ▶ Our analysis framework looks for companies developing sustainability solutions, but only where environmental and social risks are properly managed.



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Do you think the technology acceleration we witnessed during pandemic will become “the New Normal”?

In many ways, the pandemic promoted faster adoption of technology, both by companies and consumers. Companies had to be capable of connecting with customers, suppliers and employees, and consumers had to turn to digital platforms even more than before. This led to the acceleration of certain technologies such as cloud computing, which, promoted by remote work, has become the obvious choice of Information Technology. Many companies have already started to transition into this “New

Normal”, and cloud infrastructure providers should benefit. The figures speak for themselves: we anticipate that the total Public Cloud Services for the End-User market will increase from 243 billion dollars in 2019 to 362 billion dollars in 2022¹. Remote working should continue after the situation normalizes, creating opportunities for companies with activities related to data centers, servers, and collaborative software.

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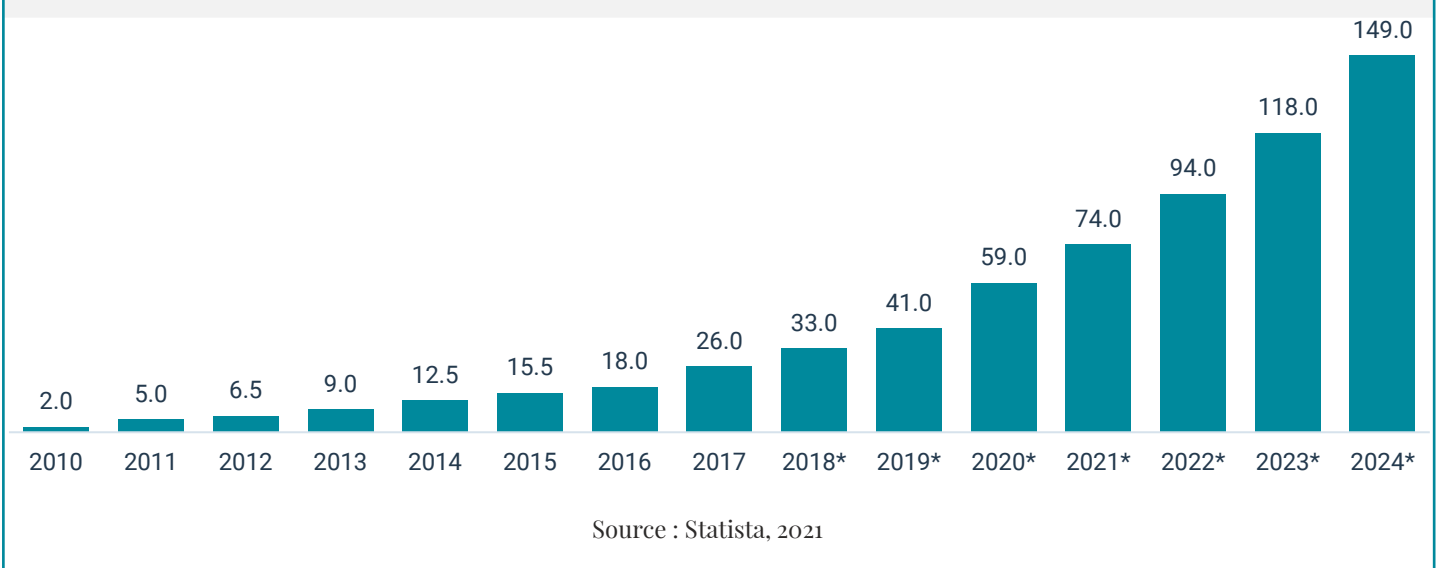
1- Source: Gartner



The pandemic also saw a clear rise in e-commerce, expanding its scope in terms of firms, consumer segments and products¹. In order to adapt, businesses had to move online, amping up the strong data proliferation that pre-existed the pandemic. While we believe Covid-19 has accelerated key technology trends such as cloud computing, digitalization, data proliferation, and that these will last, we also have to keep in mind the risks they carry in terms of cybersecurity and data privacy.

“ Most of all, it did not change the environmental and social challenges that we face, and how technology can address these. We believe that, without sustainability, the risks for our populations and planet will likely offset the potential benefits of Technology.”

Volume of data/ information created, captured, copied, and consumed worldwide from 2010 to 2024 (in zettabytes)



What do you look for in terms of sustainability when analyzing a tech company?

We look at companies which offer sustainable development opportunities or manage sustainability risks well. However, when it comes to technology, sustainability can be quite an odyssey, as solutions never come without risks, especially for B2C* companies.

Technology is an enabler of innovation. Information Technology equipment, for instance, is essential to the development and implementation of potentially higher sustainability solutions across all other sectors. It is a key component for renewable energy and essential support for the socio-economic development of emerging countries.

*B2C: Business to Consumers

1- Source: www.oecd.org/coronavirus/policy-responses/e-commerce-in-the-time-of-covid-19-3a2b78e8/



“ Yet, if we look at a company providing semiconductors for solar panels for example, it seems like a sustainable development opportunity, but is it really – what about the risks? ”

It all depends: the components rely on minerals that are often present in countries where violations of fundamental rights are widespread (e.g., child labor, forced labor). In addition, if you consider the life cycle approach, they often end up as non-recycled toxic waste!

Appearances can also be deceiving if we look at companies providing applications to access

knowledge and banking services in emerging countries facing unstable geopolitical situations. Insufficient cybersecurity measures or abusive use of personal data can very well lead to the risk of people losing their money and seeing their privacy violated.

Thus, while it may seem like technology helps companies that are steering the planet towards a greener future and society on a fairer path, we do not believe it's necessarily the case. That's why our analytical framework looks for companies developing sustainability solutions, but only where environmental and social risks are properly managed.

Can you give us a few examples of risk management?

We feel semiconductor companies need to implement appropriate mechanisms to ensure the traceability of their minerals, which should be conflict-free, abuse-free and refined with the least impact possible on biodiversity. We further believe the hardware industry in general has a great area of opportunity to invest, by setting-up a reliable, large-scale circular economy that would broadly widen the use of second-generation semiconductor materials recovered from recycling and upcycling schemes. Our view is that this would solve a great deal of severe environmental and social issues. We also feel that, in terms of data privacy and access to information, telecommunication companies should adopt policies that guarantee non-cooperation with public authorities requiring access to user data outside international conventions or restricting

users' access to internet and information. On these issues, reports on the performance of ad hoc mechanisms are key, e.g., the number of government requests for user information that were received by type and admissibility. Regarding data, there is also an indirect risk to take into account: despite the proliferation of data seen over recent years, rapid improvements in energy efficiency have helped limit the growth in energy demand from data centers, which in 2019 accounted for around 1% of global electricity use¹.

“ However, we feel that if we keep developing new technologies such as 5G but cannot maintain this growth in energy efficiency, there is a clear environmental risk. ”

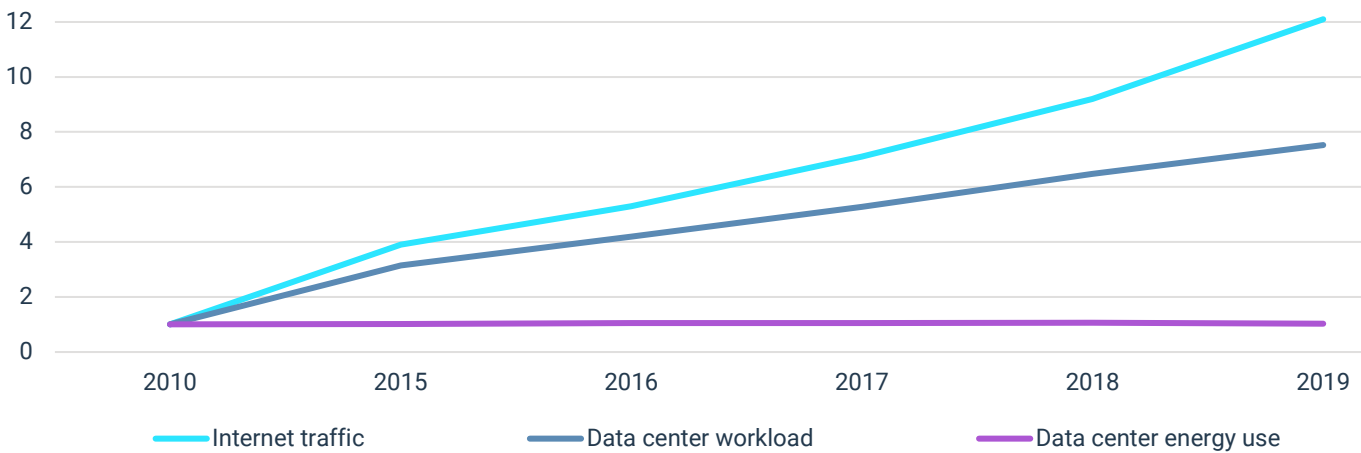
1- Source: International Energy Agency (IEA).



Our view is that many companies have a role to play in preventing the Tech industry from becoming an energy intensive sector. Video traffic currently accounts for 66 percent of all mobile data traffic, a share that is forecast to increase to 77 percent in 2026¹.

We believe companies can refrain from embedding autoplay videos everywhere and can also start matching videos' resolution to the viewer's internet network (e.g., broadband or cellular).

Global trends in internet traffic, data center workloads and data center energy use, 2010-2019



Source: International Energy Agency

“ We think technology can be a true enabler of innovation. However, it’s a matter for all (businesses, consumers and public authorities) to make sure it doesn’t hinder us from moving toward sustainable development in our planet and society. ”

1- Ericsson Mobility Report, 2020.



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