

Strategic orientation report  
2023

# Wild cards

by 2030-2040

**Cigref**  
SUCCEED  
WITH DIGITAL



Wild cards  
by 2030-2040

# Executive Summary

This strategic orientation report (ROS) responds to the concerns and need for anticipation and crisis preparedness expressed by Cigref members, by opening up a new cycle of forward thinking. It examines ten possible disruptions that could occur in the digital sector between now and 2030-2040. Disruptions are defined as **events or phenomena likely to bring about profound changes in the natural, political, economic or social environment of a society or organisation**. We have ensured that all these disruptions reflect the five major issues or 'fields' identified by Cigref for 2020 in the digital domain. Each disruption is presented according to a similar structure, including an analysis of the current situation, a brief description of the potential disruption, a presentation of the causes that could lead to this disruption, as well as its possible consequences on French and European organisations and on civil society.

## Field 1.

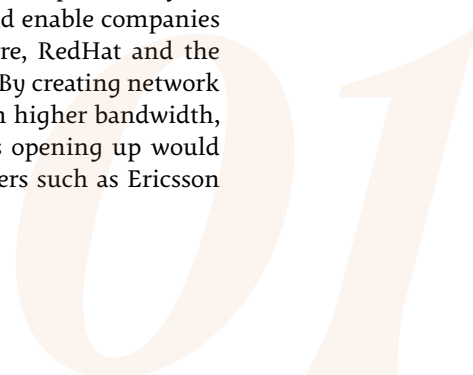
### Technology and innovation

#### Wild card 1: By 2030, quantum computing will be operational and widely available.

The wild card hypothesis envisaged for 2030 is an acceleration in quantum research, enabling quantum technologies to be put into operation and distributed more widely. This acceleration would be supported by growing investment from private players who are already well ahead in the field. By overcoming the current technical and physical difficulties, such as the stability of qubits and the reduction of quantum calculation errors, quantum computing would become operationally interesting for organisations. Companies that have adapted their algorithms to make them post-quantum and that have prepared for future quantum algorithms in advance could rapidly deploy these technologies. In addition, a general awareness of the opportunities offered by quantum computing, thanks in particular to discoveries about its ability to solve global problems such as those linked to the climate crisis, could accelerate research. This could lead to global collaboration between governments and the private sector, and encourage the rapid and widespread adoption of quantum computing. This wild card would therefore represent a strategic disadvantage and a risk for players who had not anticipated this acceleration and had not prepared for its impact.

#### Wild card 2: By 2030, the roll-out of 5G, then 6G, and the introduction of concepts such as Open RAN will accelerate virtualisation, automation and disaggregation of telecoms networks.

The wild card hypothesis envisaged for 2030 is the opening up of telecoms network operations to new players thanks to the virtualisation, automation and disaggregation - separation of the various functions of the radio access network into interoperable bricks with open interfaces - of networks, made possible by the deployment of 5G and the future 6G. This development would enable companies specialising in virtualisation and the cloud, such as VMware, RedHat and the American cloud giants, to enter the telecoms services market. By creating network slices, these new players could offer customised packages with higher bandwidth, more flexible network management and lower latency. This opening up would favour cloud players over traditional equipment manufacturers such as Ericsson and Nokia, who have dominated the market until now.



## Field 2. Digital, environment and resources

**Wild card 3: Between 2030 and 2040, a high-intensity solar storm hits the Earth, depriving organisations of their electricity and communications networks.**

This wild card hypothesis, envisaged for the year 2040, explores the consequences of a massive solar storm. The likelihood of such an event has increased with the intensification of the solar activity cycle. This hypothesis would have major consequences for electricity and communications networks and associated technologies. Given that levels of preparedness against this risk are currently very disparate, except in certain military fields, if a major solar storm were to occur in the next ten years, it could have extremely serious consequences for the global economy and the development of societies.

**Wild card 4: By 2040, the EU will require the digital industry to recycle 100% of all IT hardware components placed on the European market.**

The wild card hypothesis envisaged for 2040 is that the European Union will require the digital industry to market only computer hardware components that are fully recyclable. This regulation would encourage the reduction of electronic waste and stimulate research and the development of innovative recycling technologies. Manufacturers would have to review their design processes to ensure that components can be easily dismantled and recycled at the end of their life. This would create new opportunities for companies in the sector, but it could also lead to higher purchasing costs for businesses and consumers. The aim would be to reduce the environmental footprint of digital technology and encourage a more sustainable circular economy.

02

## Field 3. Geopolitical issues

**Wild card 5: By 2035, trade between China and Europe will have come to a permanent halt, due to worsening Sino-American tensions.**

By 2035, geopolitical tensions between China and the United States could escalate, particularly in the event of a potential invasion of Taiwan or a more assertive stance by the Chinese regime on the side of Russia. These events could force China to permanently cease relations with Europe in order to protect its interests. Similarly, the cultural, political and economic differences between China and the European Union could become politically untenable, forcing Europe to voluntarily break off trade relations with China or be forced to do so by international sanctions. The consequences of such a rupture would be significant, both for businesses and consumers, and could contribute to a further polarisation of the system of international relations.

**Wild card 6: By 2035, the United States is retreating into its national interests and distancing itself from the European Union.**

The return of an ultra-protectionist and nationalist government in the United States in 2024 would lead to a refocusing of American policy on its national priorities, in particular to counter the threat from China. This development could weaken the ties between the United States and Europe, with significant geopolitical and economic consequences. The United States is an important ally for Europe in international affairs, and a weakening of these ties would have an impact on European and American companies, which enjoy close relations.

03

## Field 4. Digital economy, players, suppliers and regulation

### Wild card 7: In 2040, the MAG (Microsoft, Amazon and Google) business model is collapsing.

The wild card hypothesis envisaged for 2040 is an increasingly marked slowdown in the growth of digital giants such as Microsoft, Amazon and Google, and a gradual collapse in their market capitalisation. This disruption could result from a variety of factors, such as the inability of these companies to adapt to major technological developments, profound changes in digital usage, increased legislative requirements in terms of competition, or external events such as restrictive political decisions or geopolitical, economic or environmental shocks. The possible disappearance of the digital giants could pave the way for the emergence of new players, but could also complicate access to certain digital products and services.

### Wild card 8: In 2040, Europe is consolidating a high-performance digital industry that strengthens its strategic independence.

The wild card hypothesis envisaged for 2040 is that Europe will succeed in positioning itself as a digital power and reducing its dependence on American and Chinese players. This could be made possible by the development of major technological innovations in the European Union, as well as massive investment in research and the development of advanced technologies. The end of the war in Ukraine and a return to stability would also favour this hypothesis. For this wild card to happen, Europe would need to adopt strong industrial policies and support European digital companies, which would enable major players to emerge in areas such as artificial intelligence, cybersecurity and quantum technologies. This emergence would strengthen the European economy, create new jobs and attract foreign investment.

# 04



## Field 5. Digital and society

### Wild card 9: By 2035, Europe's populations will be subject to global and widespread surveillance enabled by digital tools.

The wild card hypothesis envisaged for 2035 is a significant increase in widespread surveillance in Europe, by both public and private players. European governments would use digital tools to monitor their populations, justifying this by the rise in security threats and growing risk aversion among the population. Technological advances are said to be enabling this expansion of surveillance, with the widespread use of facial recognition and other biometric surveillance technologies. Private actors, notably the digital giants, would also be involved in data collection and analysis, raising concerns about privacy and the protection of personal data. This increased surveillance would have major consequences for individual privacy and freedom of movement, and could lead to abuses of power, the stigmatisation of minorities and political dissidents, and social and economic inequalities.

### Wild card 10: By 2030, advances in artificial intelligence, and particularly generative AI, will radically change the way work is organised.

The wild card hypothesis envisaged for 2030 is that generative AI, thanks to a better understanding of its capabilities and its more advanced integration into the tools used in business, will be widely adopted and will make it possible to automate many tasks. This would increase employee efficiency and productivity, but could also lead to job losses and the need for retraining. However, new professions linked to the development and supervision of generative AI could emerge, creating new opportunities. This development could also reduce employees' working hours, impacting on work-life balance.

# 05



**Cigref**  
SUCCEED  
WITH DIGITAL

Cigref  
[www.cigref.fr](http://www.cigref.fr)  
21 av.de Messine, 75008 Paris  
+33 1 56 59 70 00  
[cigref@cigref.fr](mailto:cigref@cigref.fr)