

Beyond the issues, what are the futures?

06 **Digital agriculture: Can new digital technologies accelerate the fundamental transformation of food systems?**

Véronique Bellon-Maurel & Isabelle Piot-Lepetit.

Digital technology can accelerate the transformation of food systems to make them healthier, more sustainable, and more ethical, following the principles of agroecology. This synergy between digital technology and agroecology is giving rise to new research challenges: Designing low-cost, frugal, and easy-to-use sensors and robots, modeling more complex agricultural systems, rethinking food traceability and e-commerce systems to improve their efficiency, and building ethical data governance. A “responsible research and innovation” approach is needed to meet these challenges.

13 **Digital technology and the restructuring of the electrical sector**

Ivan Fauchoux.

Far from allowing a simple incremental improvement of our electrical system, digital technologies are challenging many of the principles on which this system is based. The other major movement that is also impacting these principles is the transition to an economic and social system that emits less greenhouse gases. These two movements sometimes combine, but they can also clash. This article has no other ambition than to ask questions about this restructuring and the challenge of setting the terms of a passionate debate: Electricity has a well-normalized energy value, but its emotional value sometimes gives a foretaste of the infinite... and this article’s author apologizes in advance for not being able to provide firm and definitive answers in a world full of certainties, but invites the reader to pick up these few digital reflections from an energy peregrine who has undoubtedly lost his way outside his world of reference!

19 **Digital management of the health crisis: Some lessons learned**

Maurice Ronai.

The Covid-19 crisis is the first major pandemic of the 21st century. We have not finished analyzing its consequences. Among countless lessons, it was the first major test of the ability of “digital technology” to enable us to deal with containment and travel restrictions.

It was also the first health crisis to be managed digitally. From start to finish. Well, almost: Epidemic monitoring, modeling, hospital capacity management, teleconsultation, implementation of testing campaigns, then of the vaccine, contact tracing, remote patient monitoring.

This crisis shows us that companies can quickly reorganize around new priorities. In a way, it is a “dress rehearsal” for bigger disasters, new pandemics, or those that are coming with climate change. Digital agility, “emergency science”, cooperation mechanisms, collective intelligence are all part of the preparation of future crises.

29 Societies in transition:

What changes can we expect from digital technology?

Alexandre Tisserant.

Since the beginnings of the Internet, the promises of digital technology have been filled with the common good, horizontality, infinite sharing of knowledge, equality, openness, neutrality, and free access. Fifty years after the first official demonstration of Arpanet, the social and economic interest of digital development no longer seems to need to be demonstrated, but the development of digital content and uses has been guided above all by a need for economic profitability, often to the detriment of these promises, or of socio-ecological objectives. While the metaverse promises us the possibility of a total and permanent disintermediation of our bodies with reality, other projects of exploitation of digital technologies are possible to reconcile an ethical and sustainable relationship with life. To do this, it will be necessary to authorize ourselves to build new imaginary worlds in which to project our digital expectations, and, above all, to take back in hand the conditions of their realization. A daring project, but probably necessary.

35 Trust in the digital age starts with words

Côme Berbain.

Digital technology holds the promise of creating trust between people or entities that have never met. If it seems to be primarily technical in nature, the creation and maintenance of trust requires a coherent discourse between the purposes, practices, technologies, and organizations, both digital and physical. From then on, this discourse itself becomes an object of trust or mistrust that can have effects contrary to the initial intentions. The construction and use of such a discourse involves all the internal and external stakeholders of organizations, and remains a challenge to be met in order to create trust in the digital age.

39 Legal markets and professions facing digital challenges

Bruno Deffains.

At a time when digital transformation has become a priority for both the public and private sectors, it is essential to assess the state of digitization of the law as an important factor in the economic efficiency of the legal market and the public service of justice. The digital transformation of the legal market has been a reality for several years. Driven by the legal professions, it is improving the conditions of access to the law, and allowing for new uses of digital tools applied to the legal world.

47 The great return of sovereignty:

Short circuits or closed circuits?

Pierre Bonis.

A little more than two years ago (in September 2020), an eternity, we questioned in the columns of this magazine the notions of borders and territories, associated with the Internet. It was at the very beginning of the pandemic. It was before the war in Ukraine.

And while we were, for the most part, for the authors who participated in this issue, questioning the articulation between the notions of digital proximity and global interoperability, an era of globalization (which we could say was a happy one, at least from the point of view of progress in connectivity and services rendered by the Internet) was coming to an end.

These same notions, to which we can add those of digital sovereignty, cultural diversity, and legislative interoperability in cyberspace, have been shaken by the events of the last two years.

How have these notions evolved? Is there a risk that the short circuit will eventually be replaced by a closed circuit?

51 Frequencies, managing a key resource

François Rancy.

The radio frequency spectrum is the scarce resource that underpins most of the applications upon which our societies have been largely depending in just a few decades.

Today, six billion people have at least one mobile subscription, can locate themselves at any time and at any point on the globe, or know the weather permanently thanks to the global meteorological system; and almost two billion people have DTT and more than one billion have a satellite television receiver. All of this only exists because, for decades, the frequencies that make it possible have been harmonized globally, organized and protected as the underlying technologies have emerged.

This result, which mobilizes investments of thousands of billions of dollars, did not come about by chance. It has been achieved through the combined efforts of all the world's states and stakeholders for more than a century to organize and manage the spectrum, on Earth and in space, in a rational, equitable, efficient, and cost-effective manner.

58 Objects: From communication to intelligence

Anne-Lise Thouroude.

Communicating objects are at the heart of the creation of data, and thus of the digitalization of our society. The multitude of data generated by connected objects makes them the essential breeding ground for the intelligence that comes from them. In this context, the impact of the ever-increasing number of communicating objects brings to light issues intrinsically linked to the digitization of society.

This article touches on some of the issues raised by the massification of objects: Issues of privacy and data sovereignty, issues of security, and, finally, issues of sobriety.

63 Cybercrime outlook for the next ten to twenty years

Éric Freyssinet.

Cybercrime must be seen as a phenomenon in perpetual movement, which adapts to technologies and uses, and which appropriates the defenses put in place by society, cybersecurity actors, and, of course, the legal authorities chasing them. The action of cybercriminals is underpinned by fundamental movements: Essentially financial motivations, recipes that work in the long term, but we must be prepared for developments in the years to come that could further upset the approaches to prevention and fight. Let's explore the prospects of cybercrime in the next ten to twenty years.

**68 Human and artificial intelligences:
Collaboration, confrontation or substitution?**

Arnaud de La Fortelle.

Artificial intelligence is often scary. At the very least, it raises concerns. Yet, it is a technique that is deployed rather easily, as its advantages outweigh its disadvantages. This article presents a brief analysis of the two years since the eponymous issue. We will see that new domains have been "won" by artificial

intelligence, such as mathematics or art. But these domains seemed to be distinctive of the human soul, which raises questions, and renews the one posed by the title.

72 Internet and its uses: between wisdom and frenzy

Michel Schmitt.

The news on the evolution of Internet uses is abundant. For example, containment has created a life-size laboratory of uses, and lessons are being learned, particularly in the fields of education and work. Some uses are further widening the gap between virtual and real, such as the explosion of NFTs. On the other hand, the European Commission is putting in place new tools to regulate the Internet through the “Digital Market Act” and the “Digital Service Act”, aiming to make the real and the virtual converge. Thus, we are oscillating between wisdom and frenzy, which is described in this article through numerous examples.

77 On analogies used in the debates on the regulation of social media content moderation systems in the United States

Jean-Yves Ollier.

Following the deplatforming of president Trump by the main social networks, Florida and Texas passed laws restricting the latter’s ability to exclude users and to moderate contents. As federal appeal courts have reached opposite conclusions on whether these laws violate the firms’ First Amendment rights, creating a circuit split, the cases could be brought before the Supreme court. It is difficult to anticipate how it might rule on this matter, on which a great variety of analogies are being used in legal debates: Public forums, common carriers, and public accommodations, having a duty to serve the public without discrimination pursuant to ancient principles common law, and editorial functions, protected by the First Amendment.

89 Thirty years after CERN’s gift of the free and open Web, how do we reinvent an empowering Internet?

Bertrand Pailhès.

As we celebrate the 30th anniversary of the invention of the World Wide Web, the industrial and regulatory landscape of the digital world is in upheaval: The ambition of a digital world managed by an autonomous community for the benefit of everyone’s interests has faded. On the contrary, the public debate is focused on the harmful effects of the Internet and its companies. Is this the failure of the Net’s ambition of individual emancipation? It seems that this development probably lacks real governance and methods that would allow the use of these tools to be structured for the benefit of everyone, even if the debates on artificial intelligence and data protection try to put the individual back at the heart of the objectives designated for the development of the Internet.