THE DIGITAL TRANSITION:
IMPACTS AND DEPENDENCES

Executive Summary

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INTRODUCTION

WHY THIS STUDY?

While the term "digital transition" is synonymous with a significant increase in digital devices, today artificial intelligence (AI) is broadening and deepening its impact on all aspects of life. A key question is what societal impacts and dependences will result from it. This is the subject of this report.

Some impacts and dependences, such as those in the financial and environmental spheres, are well known and will only be recalled here, while other, less obvious ones, in the social, ethical, political and geopolitical, democratic and sovereignty spheres, will be discussed in greater detail.

We will draw on a wide range of national and international analyses and expert contributions to answer the following questions:

- ***What is the place of human, social and sovereignty aspects in the paradigm of the digital transition and the transition to artificial intelligence?***
- ***How should we respond to these changes?***
- ***What are some possible solutions?***

These solutions are based on education, the development of critical thinking and of the relationship with truth, ethics by design, and the possible implementation of global regulation.

1. **KEY POINTS**

I-   **THE DEPENDENCES ALREADY IDENTIFIED**

In this first part of the report, we recall the observation that the digital transition implies endless needs and investments, with increased equipment, facilities and energy requirements, as well as technological obsolescence. This obsolescence and constant competition raise the issue of the economic model underpinning new digital technologies. The digital transition also entails uses and energy and environmental costs that are not yet controlled. Today, from an energy and environmental standpoint, the growth of our digital systems seems difficult to sustain. This is a perfect illustration of the paradox our societies face when they encourage people to embrace the digital transition while at the same time advocating energy frugality.

II-   HUMAN AND SOCIAL IMPACTS TO CONSIDER

Changes in the work landscape

The constant emergence of new digital technologies is transforming the workplace, challenging the relevance of entire business sectors and eroding jobs. With the massive spread of sophisticated technologies, human skills will become more valuable than technological ones, soft skills and analytical abilities more valuable than the ability to implement set processes. However, hard skills remain essential to maintain the ability to perform and manage one's activities, and in particular to ensure that the use of AI continues to serve the objectives set by humans. Whether one takes an optimistic or a pessimistic view, we can only emphasise the essential role of education, vocational training and public policies in supporting this evolution of the labour market. It is a question of anticipating to manage the profound structural changes taking place. The transition period will be crucial to making the most of AI's contributions in the future, or not.

Ethical costs

The ethical costs associated with the digital transition, and in particular with the growing role of AI, are underestimated. The preservation of freedom is a central element of digital ethics. Individuals can be de facto deprived of information or, on the contrary, unduly influenced. This limits their choices and deprives them of some of their freedom of thought, even though the internet and social media theoretically provide a wonderful space for free speech and exchange. This requires an approach upstream of the construction of algorithms, at the level of those who write them. Such an approach has already been thoroughly analysed and is known as ethics by design.

Legal questions

The first question concerns intellectual property. AI is capable of creating content, but based on elements that already exist. At present, the creation of a work by AI is not covered by patent law, copyright law or other protections such as trademarks. Another issue is obviously privacy. There are many national and European regulations in place, but they are not entirely effective. The adoption of the principle of ownership of all of one's personal data, even the most private, logically raises the dizzying question of the commercialisation of one's body. If virtual personal data can be sold, why not the body? This is libertarian logic taken to the extreme.

The reinforcement of inequalities

The term "digital divide" is often used to differentiate the practices of "classes", and suggests an analysis in terms of deficits and relegation. This is valid, but reductive. But it can also refer to more subtle inequalities: those that distinguish skilled users from users who are consciously or unconsciously overwhelmed by the tool and the offer they are using, or distance from the written word. The move to online and paperless services can also be very difficult to deal with, especially when it comes to government services or making appointments with a doctor. Hence the need to develop a principle of digital subsidiarity, to avoid this kind of dependence.

Loss of human interaction

However sophisticated they may be, current algorithms make decisions only on the basis of duly catalogued situations. This removes much of the nuance and sensitivity required to take human situations into account. The psychological and cognitive effects of going all-digital are probably still not sufficiently taken into account: loss of ability to retain information, weight of the social norm, cyberbullying, etc.

III. PREVENTING THE RISKS OF DIGITAL DEPENDENCE

1.   SOVEREIGNTY AND DEMOCRACY

With data now the king of commodities, just as fossil fuels once were, the digital transition raises issues in terms of sovereignty. It is worth asking the question: to what extent does digital sovereignty fail to embody the new precondition of national sovereignty?

Moreover, the question of the democratic impact of the digital transition and the transition to AI is a legitimate one. The French Republic is one and indivisible. But the digital world is based on the logic of communities of followers or members communicating with each other in a closed circuit. There is a trend towards

communitisation, where individuals in the digital space are part of circles where others have a similar way of thinking producing an echo chamber effect. Beyond the challenge posed by fake news, in a context of information overload, the question of how to qualify information now seems fundamental.

2. EDUCATION: THE CENTRAL PILLAR

The new digital technologies can be excellent tools to support learning, but they must not replace human input. Learning requires a process of intellectual and moral construction of the human being through the assimilation of knowledge, not just access to it. The question of the appropriate use of digital technology in education cannot be fully resolved by saying that it is relevant where it is beneficial, because there is no consensus on what is beneficial. This is why we discuss the concepts of complementarity and subsidiarity in this report.

As the digital transition gathers pace, many countries are beginning to identify the digital skills they wish to prioritise in curricula and assessment standards. What is needed is a neutral digital education. It is a necessary adaptation to the world in which we live. The use of digital technology is legitimate as long as it adds value for the pupil or student. These technologies must remain at their service without replacing human input, which cannot be imitated or avoided. In the face of the onslaught of digital technology and AI, it is essential to instil a relationship with truth.

Ethics by design is a solution to digital technology and AI dependences. The by-design approach links general ethical considerations and operational ethical considerations, from the technical design stage through to the deployment of the digital solutions. At this stage, we must emphasise the importance of establishing a set of common standards that are approved by governments and professionals, and not left to the discretion of individual companies.

IV. BUILDING NEW APPROACHES

1. DEVELOP FLEXIBLE GLOBAL RULES FOR THE DIGITAL WORLD

Today, a global race for the governance of AI is emerging. Countries have recognised the political and geopolitical importance of this new technology. An article by analyst Laure Pallez[1] distinguishes three different models when it comes to AI: the liberal American model, in which AI must serve innovation via private interests; the authoritarian Chinese model, in which AI is an instrument of control but also a source of trade; the regulation-focused European, in which AI serves the population and not just economic interests. The issues raised above all point to one question: who will be able to ensure a minimum of public interest or concern for the common good in the use of digital technologies and AI? Should there be international standards? If so, what should they be? How should they be developed? International organisations are all taking a stand on this issue.

2. AVOID CRISES BY MAINTAINING ALTERNATIVES

To support the idea of subsidiarity, it is essential to have alternative plans in place in advance as new uses of digital technologies and AI are introduced, to take into account the **impact of potential failures**, outages or outright attacks, as well as **the issue of memory**, ensuring documents and records are preserved.
We need alternative, non-digital solutions in place that can quickly take over, and people capable of using them effectively. Indeed, the latter is not a given, because **while certain skills are acquired through the use of digital technology, many, both basic and complex, are also lost through non-use.**

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[1] Pallez, L. (2024, April 26). Régulation de l'IA : quelles conséquences pour la productivité de nos entreprises ? Le Figaro.

V. SUMMARY OF PROPOSALS TO ADDRESS DIGITAL AND AI DEPENDENCES

1. For organisations, **the identification and management of lifespans should be integrated into continuity plans**.

2. **Design algorithms that are more energy and resource efficient from the outset.**

3. Support the radical structural changes taking place in the labour market by **introducing appropriate public policies to provide the keys to understanding AI from an early age and as part of professional development**.

4. Assess the **risk of a casualisation of the labour market** and address it in the context of labour law.

5. **Change the legal framework for intellectual property rights.**

6. **Avoid a dogmatic approach to digital technology by using it only when it adds value to human work.**

7. **Work on teaching individuals to distinguish between the true, the plausible and the relative. The aim is for citizens to learn how to qualify information by developing their critical thinking skills. This is certainly not about questioning without reason.**

8. **Implement ethics by design upstream, when algorithms are being developed by their creators.**

9. **Minimise our dependence on digital services governed by foreign law.**

10. **Encourage French digital professionals to pursue their careers in France. Increase domestic attractiveness and limit brain drain – two key elements in the battle for AI sovereignty in France.**

11. **Lay the groundwork for a non-coercive international convention establishing principles for the governance of digital technology, and AI in particular.**

12. **Develop a principle of subsidiarity to avoid dependence, by systematically providing an alternative to ensure continuity of operations and maintenance of skills.**

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AUTHORS

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- **Esther Mac Namara**, Magistrate at the Cour des Comptes (Court of Auditors) and former Vice President Employers and Programmes for Employment at OpenClassrooms
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The persons mentioned above do not bear any responsibility for this report, which reflects the views of its authors only.

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