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The Mirage of Digital Transformation: the French Context Through the Perspective of Two Case Studies

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Abstract: The automaticity between digital technology and organization is attractive, especially since it is part of a context conducive to a harmonious and simplistic vision of technological and social change. Digital technology would come at the right time to solve many societal and organizational problems. The chosen approach questions, in the French context, the automaticity link between the nature of a technology, more particularly digital information and communication technologies (DICT) and its operating mechanisms, as well as its governance in productive organizations. As part of the French field of information and communication sciences (SIC), our approach aims to re-evaluate hegemonic discursive productions in the light of the observable realities in two sectors of activity: health and telecommunications. The thesis is that it is necessary to get out of an irenic vision of the analysis of digital transformations. Indeed, the diffusion of DICT in productive organizations cannot be extracted from the existing social relationships that have gradually been built and structured taking into account the history of each organization, the power relations, the modes of operation and governance, often long-established.

Key words: digital transformation, organization, governance, technological determinism, France

The proposed reflection comes from a double observation: on the one hand, the proliferation of a hegemonic discourse on the digitalization of society and its inevitability, and on the other hand, the difficulty for contemporary productive organizations to find alternative models of governance. In France, the promises of the all-digital world mark the representations within the professional worlds and contribute to the appropriation of the tools. However, they are confronted with organizational structures most often referred to as "silos", bureaucratic hierarchical relationships, *top-down* communications and sometimes "ancestral" managerial practices.

Without claiming to draw up an exhaustive inventory of the current questions raised in the scientific field by the digital transformation of French society, we propose to question the automaticity link between the nature of a technique and its orientation on the governance and operating practices of « productive organizations ». This term covers a wide range of

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organizations: companies, administrations, public and private institutions, actors of the social economy, associations, etc. This broad formulation makes it possible to analyse jointly the socio-economic, technological and communicational logics that prevail in the education or health sectors, in public services, firms, small and medium-sized enterprises.

This contribution is part of the field of Information and Communication Sciences (SIC), a discipline that exists in France but does not have its exact equivalent in the Anglo-Saxon world¹. At the crossroads of different disciplines such as cultural studies, sociology, mass communication research, Internet studies and political economy, our approach aims to re-evaluate hegemonic discursive productions, which are most often relayed by the media, to better take into account the two sides of any productive organization: the nature of what we call DICT (digital information and communication technologies) and the way organizations work.

The thesis defended here is that it is necessary and urgent to get out of an irenic vision of the analysis of digital transformations. Indeed, the diffusion of DICT in productive organizations cannot be extracted from the existing social relationships that have gradually been built and structured taking into account the history of each organization, the power relations, the modes of operation and governance, often long-established. The position is intended to be critical, it is based on both theoretical reflection and an empirical approach that also relies on multiple observations and field analyses carried out by the two authors mainly in France for many years in different sectors of activity.

The objective of this contribution is not to present a general "socio-numeric-philosophical" communication but to question the relationship between the nature of the technical configurations and the orientation of the functioning of what are called *Web 2.0 organizations*, adhocratic, networking, multicellular, post-Taylorian organizations, based on field investigations. We focused our analysis on the French context, without any comparative pretension to other organizational cultural contexts. This posture, however, allows us to feed a more global critical and reflexive perspective. Our intention is to argue, on the one hand, that the hegemonic discourse failed in practice and, on the other hand, to point out the oppressive nature of hegemonic discursive production.

¹ To learn more on the origins of Information and Communication Sciences in France: Moles, A. (1958), *Théorie de l'information et de la perception politique*, Paris, Flammarion; Escarpit, R. (1976), *Théorie générale de l'information et de la communication*, Paris, Hachette; Boure, R. (2002), *Les Origines des sciences de l'information et de la communication*, Lille, Presses universitaires du Septentrion; Miège, B. (2004), *L'Information-communication, objet de connaissance*, Brussels, De Boeck.

1. 1- Automaticity and unicity of digital technology and organization?

If we were to believe everyone's discursive productions: consultants, journalists, experts, managers and even sometimes some researchers, each time a work organization uses a "network" technique and operates following the Web 2.0 principles, that organization would ipso facto get rid of hierarchical logic based on authority, its structure would no longer be pyramidal, the circulation of information would only be bottom-up or horizontal, relationship, decision, management would necessarily be co-produced and would offer staff increasingly autonomous, responsible and fulfilling work. These ideas, which are widely used in political and economic discourses, are spreading, shaping a cognitive framework and structuring social representations (Moscovici, 1984). The feeling of discomfort about this observation is the root of this contribution.

This determinism, which flourished in the 1970s (Toffler, 1970; Ellul, 1988), has since been strongly challenged by many sociological studies. More recently, according to some discourses, digital technology would restore its consistency. In France, this widespread technical vision is coupled with the functionalist approach.

Corporate communication often conveys stories whose objective is to seek consensus, internally and externally, and aims to enchant the economic universe (d'Almeida, 2001). Thus, communication on corporate social responsibility (CSR) is omnipresent in discursive productions and communication media of organizations because this topic helps to ease tensions and give an apparent harmony to the company, filled with multiple tensions. This is also true for the themes that are flourishing in companies about creativity and innovation at work (Andonova, 2015). In addition, many and varied mechanisms proliferate in the professional context and frame the work which they try to include, despite its complexity and without any subjectification, in dashboards and reporting applications, often imposing a "disembodied" management (Dujarier, 2015).

These devices, such as corporate digital social networks or enterprise social media to give just one example, far from "revolutionising" the professional world, are most often part of existing business practices (Boboc et al., 2015). Surely there have been some developments in open data, cloud computing and Web 2.0, promoting a certain "power to act" and a differentiated functioning, but we also feel it is necessary to examine the other side, which is much under-analysed, less Promethean, the side of social control and the hierarchical nature of governance, not necessarily called into question by the most modern digital devices. This is what we propose to do in the following developments.

The "good conscience" and legitimacy of modernists and digital activists are worrying. Doubt and perplexity have no place here. And yet... The theme of a society (here in particular productive organizations) organised according to the technical configuration seems to elicit so much approval

and so little criticism. It is therefore necessary to reintroduce contradictions and break the paranoid dream that too often leads to thinking social order through technology (Faivret, Missika, Wolton, 1980).

Is our society struck by amnesia or so seduced by digital technology that it would forget the words of technology advocates, who promoted, based on not so distant technological innovations, a new model of society: an information society, a knowledge society, among others (Masuda, 1980; Castells, 1998). This phenomenon is neither new nor specific to the digital sector. The history of the development of technology - more particularly information and communication technology - teaches us that the arrival of the telegraph, for instance, aroused the interest of a certain Vandermonde in 1795, holder of the first chair of political economy in France, since he believed that it made it possible to establish democracy among a great people. This belief was found in Kropotkin's writings in the 19th century and in Mumford's in the 20th century. The latter relied on the premise that only the establishment of electricity networks could create a new society. More recently, other authors (Lussato, 1981 and many articles in the magazines *Wired* and *Terminal*) have perceived the microcomputer as a Promethean tool able to compete with centralised, technocratic, even totalitarian computing (and the hegemonic power of IBM). Microcomputing is being perceived as liberating, redemptive, promoting emancipation and access to more democratic information. Researchers, such as Freeman, Soete (1987), have shown that information technologies have all the characteristics of a new technico-economic paradigm. According to them, it is above all the ability of these technologies to serve as a vehicle for new forms of work organization and new business structures that asserts their paradigmatic character, much more than their technical performance. The authors insist particularly on the transformation of service activities.

The lack of precise definitions of the terms used (digital, ICT, DICT) is confusing. For some authors, digital technology is associated with a social organization. Digital technology would generate or carry an internal logic that would impose a form of social and productive organization. Others project into the digital world the desired, idealised model of society. In such cases, certain characteristics of technology are put forward in order to highlight how they would greatly promote the establishment of a "new society" or "new productive forms". The first approach is based on a technological determinism, the second on a social determinism, but both suggest that society and companies are fundamentally determined by their relationship to technology and not by social relationships. In the first version, it is the internal logic of technology that would impose a form of social organization. In the second version, it is the nature of the technology and its use that would make it possible or not to implement the desired societal project.

However, studies carried out on the appropriation of what were still called information and communication technologies (ICT) have shown that these socio-technical devices are complex to understand because of the many discrepancies between social interests, organizational modes, temporalities, territories and cultural dominance (Carré, Valenduc, 1991). This was written, among other things, in the FAST II final report (1989), which teaches that any innovation in DICT involves three major components: hardware, software and orgware. We are adding a new component that both makes configurations more complex and allows organizational alternatives, which we have called « comware". It includes communication innovations deployed in current digital configurations. The main feature of communication innovations is to greatly encourage cross-linking, combined with content production from multiple actors.

This automaticity of the relationship between digital and organization is all the more attractive since it is part of a context conducive to a harmonious and simplistic vision of technological and social change. Digital technology would come at the right time to solve a double societal challenge: low growth and unemployment on the one hand, and global warming and air pollution on the other. Those discourses widely promote digital technology, giving it all the qualities.

In companies, this translates into the promotion of so-called collaborative work, greater staff autonomy and participative management via the multiplication of information channels despite the acknowledged cognitive overload, by the redundancy of digital media or by the prevalence of a discourse on corporate social responsibility (CSR), theoretically attractive, but more often than not both unrealistic and idealistic. The social context in which the devices are used is often omitted, just as much as the particularity of organizational structures (Andonova, 2011). Can we compare the functioning of a large multinational company - with its hierarchical structure, the division of tasks and its centralised information system - with a start-up or with fablabs?

Suffocated by devices designed to improve sharing and collaboration (collaborative Intranet, enterprise social media, workflow, shared databases, business applications, etc.), has the contemporary productive organization really changed its governance and operating methods as much as the various discursive productions indicate? Of course, digital technology gives tools to work uncertainties, while adding new constraints: the quest for visibility, the tyranny of urgency, the lure of collaboration and the constraint of constant learning are deployed against a backdrop of globalised competition and increased search for performance.

Are companies really free of hierarchical relationships thanks to the arrival of enterprise social media (Treem, Leonardi, 2012; Leonardi, Huysman, Steinfield, 2013) ? Is digital technology the *sine qua non* condition for rebuilding the corporate governance system towards greater democratisation and participation? Is flexibility unavoidable in the context of digital transformation? These are all questions that we will try to answer based on the analysis of two

selected fields of activity: health and telecommunications, in the French context. The first study is *diachronic* and is based on a long research conducted over nearly twenty years, with the aim of better understanding the structuring logics of the discourse on DICT in the health sector, the positioning of the actors, as well as the notion of convergence in public policies. The second study is a *synchronic* analysis conducted over two years (2015-2016) in the telecommunications sector on the subject of digital skills across the company and on the paradoxes linked to digital technology.

2. 2- In the health sector are DICT the solution?

The health sector, which represents 1,175,000 health professionals² in France, is undeniably a relevant sector for assessing how the introduction of DICT met with professional practices, organizational methods and hierarchical and symbolic systems despite the implementation of a modernisation policy strongly supported by the public authorities.

The development of the information highways of the late 20th and early 21st centuries was accompanied by an apologetic discourse on the "digital revolution" underway with the development of online services for education, health and e-commerce. In response to a structural crisis in the health sector, the government resolved to put order in the sector which some considered to be financially ungovernable (Califano Jr., 1986; High Committee on Public Health, 1996)

In the study we conducted over a period of twenty years in the health sector, we founded that there was no longer any place for doubt about the relevance and effectiveness of computer transplantation on the socio-sanitary system (Carré, Lacroix, 2001-a). The information highways had to solve everything and "revolutionise" the functioning and organization of the health sector. The train of history was on the move, everyone had to get on it (patients, professionals, managers, administrators, politicians) or accept to be seen as outdated. According to the promoters, we were at a key moment at the time, in the transition to a new mode of productive organization in health and in transition to another type of society.

A recurring theme in the discourse on health combines cost control and quality of care. The rapid development of technological information and communication services appears to be a key factor in this sector. It is part of a dynamic of budgetary and organizational rationalisation, a particular

²Including 355,000 people in the medical and pharmaceutical trades and 820,000 medical auxiliaries. To this must be added all administrative staff, including the primary health insurance funds.

<http://www.vie-publique.fr/decouverte-institutions/protection-sociale/risque-sante/professionnels-sante/combien-professionnels-sante-france.html>

process of care industrialisation and the creation of market-oriented products and/or services. This trend towards financialisation, which has been reinforced since the 2000s, has been detrimental to the health system in France (abolition of doctor and nurse posts, generalisation of quantitative indicators to the detriment of qualitative ones, etc.) which we experienced during the currently Covid-19 pandemic period.

The reorganising effervescence is then articulated around the implementation of the ambulatory shift (Bostonian model) which favours ambulatory medicine and is based on four pillars: the technical networking of the health sector, the computerised patient record, the more collective management of the patient by healthcare professionals and his or her empowerment (Carré, Valenduc, 1999). The information highways are therefore perceived as an essential, even unavoidable, instrument for restructuring the supply of care. They participate in the generalised networking of the health sector: networking of all health professionals between themselves and with the primary health insurance funds, networking of hospitals between themselves and with city medical practices, not to mention the networking of health professionals with their patients.

Twenty years have passed since these forewarning discourses, and many of the measures put in place are still struggling to spread or have been totally or partially abandoned. There are three reasons for this. The first is that device promoters have underestimated the complexity of the health sector which is compartmentalised at multiple levels and too often abstruse. The second is that the "impact" of technological innovation has been overestimated, overlooking professional practices and traditions, organizational operations, ethical rules, not to mention the importance of existing protocols. The success of the implementation of a new computer application in work organizations is most often achieved, not to be forgotten by its "diversion" (Pavé, 1989). The third is that social relations have not been taken into account, the supervisory administration wanted to impose THE solution, without considering the complex professional and social relations.

Let us take two scenarios among others to illustrate our point: the development of medical imaging devices and the collective management of the patient by healthcare professionals.

2.1. Medical Imaging Technical Devices

Medical imaging is favourable to networking. Indeed, it is a cross-cutting with other medical specialities and requires a special relationship between the various actors in the care chain around the patient, encouraging the hybridisation of management data (administrative follow-up of the patient) and medical data (digitised image files, examination reports). As for radiologists, although they are doctors themselves and therefore prescribers of examinations and/or care, they are absorbed by the technical element and intervene in most cases at the request of other colleagues. As a result, they are usually excluded from the intimate relationship with the patient, thus making

radiology a "second level" speciality (Carré, Panico, 1998). They are generally more favourable to technological innovation because they perceive it as a means of enhancing their prestige and obtaining better recognition.

Despite this, it has been possible to measure on several occasions the difficulties encountered and the underlying issues inherent in the implementation of remote imaging systems between a Regional University Hospital Centre (CHRU) and a General Hospital Centre (local hospital), particularly in neurosurgical teleradiology, to promote patient expertise during neurosurgical emergencies.

The physical implementation of an imaging console in a hospital, for example, has consequences on professional relationships. Should it be installed in radiology or in the emergency department? Behind what seems to be a childish argument, there are actually many things being challenged: practices, methods of imposition or cooperation between professionals, but also with organizational entities and administrative authorities. Moreover, the relationships between doctors and (hyper)specialists are not easy because the over-determination of the authority of the latter over the former can affect the prescribing role of doctors. As for administrators and managers, by setting standards and over-coding the rules for information gathering and exchanges, they partly deprive the medical profession of its autonomy (Carré, Lacroix, 2001-b).

When new technical devices are introduced, radiologists generally claim a change in their professional status, not to say a new authority that they wish to legitimise through their reflective knowledge provided by the new technical device. By doing so, they hope to intervene further upstream on the medical prescription of images - and therefore on the prescribers themselves. But it also happens that in other contexts, for instance in teleradiology between an off-site geriatric facility and the imaging services of a hospital, the radiologist finds himself in a less comfortable situation, destabilising the profession since in the geriatric facility, the doctor is replaced by a simple technician: a radiologic "technologist".

It should be noted that actors outside the health sectors, particularly industrialists, who have proposed cardiac telemonitoring devices for example, have encountered problems similar to those described above.

2.2. Collective Patient Care by Healthcare Professionals

The public authorities show their will to implement a health policy that would focus on the patient, i.e. based on greater complementarity of practices emanating from general and specialised medicine on the one hand, and from hospital medicine and urban medicine on the other, thus favouring the development of healthcare practices. The objective is to make the information travel as much as possible rather than the patients. The technical networking of the health sector and the

creation of the electronic patient record are necessary to promote collective patient care. It is presented as a tool for the convergence between hospitals and city medicine. The electronic patient record signals the advent of the "virtual" patient being managed by a system and no longer by a healthcare professional or a medical structure. To do this, the pathologies treated must be modelled and the procedures performed classified. This file must become a kind of common ground where all the information collected on the patient can be recorded in the same place in order to be consulted by all the care providers and used in various contexts by a certain number of authorised actors. Thus, only DICT can enable the operation of that functioning.

Twenty years later, it can be said that the transplant did not take place and that there are many endogenous "resistances". Technical networking is far from being a factor of exchange and mutualisation since it challenges first of all the strong intertwining of the exclusive doctor-patient bond, which is the foundation of medical practice, then the too often compartmentalised medical practices and finally the traditional hierarchical relationships³. It should be noted that at the end of 2018, the French public authorities relaunched the Medical Record again, but this time it was intended to be "shared". The Shared Medical Record is a kind of digital health record, a historical health memory, that will allow patients and healthcare professionals to access health data anywhere and at any time. Let us not forget that the general implementation of the shared medical record had been announced for July 2007. Eleven years later, the system was still not operational.

Beyond the growing intertwining of medical data, management data and healthcare practices, the healthcare professionals foresee the challenges of control and monitoring that are assigned to modernisation and which require the systematic "tracking" of certain key exchanges between healthcare actors. The search for efficiency is based, as Gadrey (1994) notes, on an increasing quantification of the activity favourable to an industrialisation process now affecting the health sector.

The other issue, not the least, is that the depersonalisation of the relationship is contested. Indeed, medical professionals think that networking and the type of cooperation it allows tend to generate a (over)centralisation of decisions at the level of (over)specialists. Such (over)specialisation would in fact constitute a devaluation of what is called "frontline" practices and doctors, doctors in hospitals and city doctors.

³ For example, the transformation of hierarchical relationships at work takes place between physicians, for the formulation of diagnosis, clinical intervention, and during pre- or post-intervention follow-up, and leads to a restructuring of authority, i.e. the recognition of the relevant and legitimate expertise held by each physician as an individual who personalises, symbolises and operates it.

3. 3- Agile methods in telecommunications: a managerial revolution?

The telecommunications sector has undergone profound changes over the last years as a result of the convergence of telephony, Internet and multimedia, which have become more pronounced due to market fragmentation, global competition and increasingly stringent European regulations. In France, the arrival on the market of Free (Iliad group) and its very low-cost commercial practice shook the other three operators: Numéricable-SFR, Bouygues Télécom and the historical operator France Télécom, now Orange⁴. There is also a will to bring them together at the European level, so as to face the arrival of new competitors (Skype, WhatsApp) and Internet giants, while remaining in the race to content development. Digital technology is the key issue in this sector, which is one of the leading private employers in France⁵.

The following field analysis is based on a one-year study conducted in France by one of these telecommunications operators⁶. The group in question is a very important company in terms of wage bill which has experienced an unprecedented social crisis after a drastic recovery plan. Drawing conclusions from its past and its mistakes, particular attention is currently being paid to well-being at work and to "the human being at the heart of the company", while stressing the importance of the deployment of digital technology in the years to come. The speeches from the management are proliferating in this direction, as evidenced by the speech of its CEO in 2011, in which he already mentioned the need for the company to become a "more agile" organization, in order to reconcile well-being, employee commitment, customer satisfaction and economic performance. A strategic plan in favour of digital technology was then implemented, in order to support the company in this approach, help it to distinguish itself from the competition, gain market share and satisfy its customers, who are more and more fond of digital tools. In view of what the managers call "the digital transformation of the company", several projects have been launched: the identification of internal successes and the exchange of best practices in the field of digital technology; awareness-raising and training in digital tools for all employees of the group with internal certification; the "digitalization of customer relations", etc.

However, the massive diffusion of digital tools and their intensive use in the workplace raise questions about the acquisition of new skills, lifelong learning and cognitive overload (Saint

⁴ Due to rapid changes in the business model, technological developments (network improvements, optical fibre, 4G mobile telephony and soon 5G, etc.) and network convergence, some telecommunications operators are experiencing significant difficulties.

⁵ The numbers from the French National Institute of Statistics and Economic Studies (INSEE) can be found here: <https://www.insee.fr/fr/statistiques/3303632?sommaire=3353488>

⁶ This is a qualitative study led between 2015 and 2016 through 80 semi-directive interviews and in situ observations. The objective was to apprehend the perception of the group's strategy board's speech on digital transformation, and to identify the required transversal skills and the ways to acquire them within that company's framework.

Laurent - Kogan, Metzger, 2007). The acceleration - which is the original driving force behind the transformations of the world, in the three forms identified by Hartmut Rosa (2010): technical acceleration, acceleration of changes in social structures, and finally the acceleration of the pace of life - has ethical, political and social consequences, particularly in the context of productive organizations. Discourses of technological determinism operate in rationalizing certain organizational changes - such as digitization (Deetz, 1990; Leonardi, 2008).

The "digital transformation of the company" results first and foremost in the digital equipment of employees so that they can familiarise themselves with the tools and applications they sell to customers: smartphones for all and tablets for certain trades (intervention technicians for instance). Thus, individuals operate in an over-equipped work environment: multi-screens, landline phones and smartphones, tablets and multiple devices (email, chat, wiki, internal digital social network, business applications, etc.). Professional requests are therefore multiple, dispersion at work (Datchary, 2011) is a reality, since multi-tasking has become the daily routine of the majority of employees, regardless of their status, function or occupation. The company is living a pivotal period in its history, torn between societal changes, economic and technological constraints and social fragility, in a context where trade unions are important players.

In the report *Digital Transformation and Life at Work (Transformation numérique et vie au travail)*, commissioned by Myriam El Khomri, Minister of Labour, Bruno Mettling (2015) assesses the social challenges of digital transformation and the consequences on work conditions. Based on his conclusions and following field observations, two aspects of the use of digital technology in work organization will be discussed here: new forms of social control and agile methods.

3.1. New Forms of Work Versus Social Control

In the aforementioned report, Bruno Mettling states that digital transformation "paradoxically makes it possible to rebuild or even create new professional collectives, based on new, more collaborative and participatory working methods, which fortunately break with the culture of reporting and control that has too often characterised the recent functioning of large companies" (2015, p.8). However, this seems paradoxical since there is no causal link between the creation of new work collectives and the disappearance of the reporting culture following the arrival of digital tools and "more collaborative" practices. The reporting culture is quite resistant in the productive organization observed here, which is decentralised thanks to "digital", but which is deeply hierarchical, with a "silo" functioning. Decentralising services is a laudable objective, but according to employees, surveillance and control are strengthened by the use of digital devices.

Thus, a general public intervention technician showed us on his tablet how each task is assigned to him in real time, by an agent of the central office who knows exactly at what time of day he

started his mission, how long he travelled, when he was done and whether he has been effective (final or partial resolution of the problem, need to return later). However, the control exercised via the tool (the digital tablet which has been given to each intervention technician nearly two years ago) is not the only means of evaluating employees. In addition, customer satisfaction is also evaluated through the network: the customer is contacted after each intervention to assess the efficiency of the technician's work and the quality of service. Paradoxically, this control strengthening by the devices does not seem to constrain agents. Tracked by the system, they still manage to bypass it, at least in part, by blocking longer time slots than their actual interventions for instance. They thus escape the rigid organizational framework embedded in the devices and leave themselves room for manoeuvre, which is essential to adjust their activities (Crozier, Friedberg, 1977).

Moreover, the remodelling of work collectives following the digital transformation is not easily observable, and therefore impossible to qualify, since project-based operation has existed for a long time and telework has not disrupted traditional modes of operation at the time of our case study. In this company, there has been no radical change following the implementation of telework. This remains reserved to the management and takes the form of half-days, taken exceptionally to work from home during periods of overwork or transport strikes. It should be pointed out that during the current context of the Covid-19 crisis that the world is going through, telework is widespread but it poses many problems for thousands of workers in terms of appropriation of tools, lack of social links and organization of work.

However, the issue of digital temporalities, and particularly continuous availability, remains central here, as strong cognitive vigilance is expected from operators and managers. The use of digital tools is shaking up work temporalities, changing accessibility standards, and contributing to the transformations of work already underway (Andonova, 2016).

3.2. More Agility Thanks to Digital Technology?

Another issue addressed in the Mettling report concerns the generalisation of agile methods: "The study of native digital companies shows a more agile organization of work, structured in project mode, more open to an ecosystem, much more efficient, especially for spreading innovations" (2015, p.8). In the field, we can see that there are some "agile organizations", but they only concern very specific contexts and occupations, such as computer engineers⁷. Therefore, one of the fields studied concerns a project-based open services organization presented as an innovative model to accelerate innovation, where network architects, engineers and developers work according to a

⁷ Actually, "agile" organizations have existed for several decades since Kanban and Scrum were widely spread in the 1990s.

just-in-time model (no rigid specifications, permanent adaptations according to the customer's needs, immediate problem solving). Interactions, through digital devices and/or face-to-face, are central to this because responsiveness, collective discussion, information sharing, autonomy and flexibility are essential for finding solutions. The population concerned has a strong technical culture, a very intensive use of digital tools and specific skills, which facilitate the appropriation of devices and the implementation of agile methods (Takeuchi, Nonaka, 1986). However, according to employees, agile methods are confronted with the rigidity of the organization's structures and information flows.

Agility, so much sought by the company, is far from becoming the norm since it comes up against a very hierarchical and procedural structure, where decisions must go through each level of the organization to be validated. How is it possible then, thanks to digital technology, to go towards more agility and more collaboration, when the organizational structure is a considerable obstacle to their deployment in companies? The promising discourse on the digitalization of the company as well as the use of the many digital tools that are constantly flourishing within the company, are not enough to fundamentally transform an organization that has long been centralised.

Thus, the promotional discourse on the all-digital held at the political level is followed by organizations in the telecommunications sector, which by the very nature of their activities are at the heart of the digital industries. It is transmitted internally by the general management, the human resources management and the communication services, and is applied through strategies in favour of digital technology, digital tools training and internal certification, while supporting the appropriation of the devices and marking social representations. Designed to simplify processes and make the company more fluid, digital technology is full of contradictions: it facilitates the circulation of information while contributing to information overload, reduces organizational layers while complicating hierarchical relationships, strengthens remote collaboration while contributing to the fragmentation of work collectives, in a culture of numbers that needs to be overcome, but which remains for the moment well anchored in daily practices.

4. Conclusion

The joint analysis of the introduction of digital technology in two sectors of activity in France, health and telecommunications, allows us to draw conclusions that will last over time. Without neglecting the fact that digital devices bring definite improvements to the functioning of productive organizations thanks to a better circulation of information, the creation of specific occupations (data scientist, big data statistician, etc.), and the emergence of new organizational forms (fablabs, hackerspaces), we wanted through this contribution to insist on the need to free ourselves from the mirage of digital transformation and promotional discourses held by the promoters of the all-

digital. Discourses about technology shape the production of meaning in ways that limit certain actors from participating in everyday life in meaningful ways. They are used by management to justify certain organizational changes (Deetz, 1992). The vast majority of productive sectors and organizations operate according to organizational modes and socio-professional relationships that have been structured, as we have just seen, over time. Ignoring those is to omit the role of the human being, of social relations, and the specificities of work collectives.

As for agility, it is a topic of concern. On the one hand, research on the analysis of the implementation of agile methods mainly concerns IT development activities within small teams. The second case presented here falls into this category. What about the deployment of agile methods on a larger scale, in hierarchical, less flexible organizations operating in traditional project mode? On the other hand, the dividing line between Scrum, XP, and lean methods remains quite blurry. Lean management approaches are gaining ground in uncertain working environments, backed up with long-standing prophetic discourses about the value of setting up learning organizations, the only way to develop adaptation, innovation and creativity capabilities. However, these methods face various problems, including their implementation in structures that go beyond the limited scope of an IT team. It is not surprising that many companies do not meet the expected results. Are we witnessing yet another trend in terms of management techniques, ignoring the specificities of the organizational context? We are both witnesses and actors of the rise of investments and expectations in terms of digital transformations. They are part of a long historical tradition ranging from the "information society" to the "knowledge society" and require a relativisation of expectations and promises of the all-digital world.

The various analytical aspects addressed in this article are only the beginning of a societal diagnosis, which invites us to further question a certain number of biases that seem to have governed the deployment of the mirage of digital transformation in the French society. This is why it is salutary to keep thinking critically in view of the changes taking place in our hyper-industrial societies (Veltz, 2017), bearing in mind that there is no automatism between digital and organization.

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