

Institute of Applied Sciences and Techniques
Department of Business and Administration Management

**Digital Transformation as a Tool for Enhancing Human
Resource Management Performance: The Case of Cereals
and Dried Vegetables' Cooperative**

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Organizations and Human Resources

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Dedication

I dedicate this work to:

My beloved parents, with the following message:

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You have done everything parents can do and even more to guide me towards success, and I am grateful to you.

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May God protect you and grant you a long life.

To my dear brothers and sisters, who have always been examples of courage and generosity to me.

To my nephews and nieces.

To remember my friends with whom I spent golden years throughout my university studies.

Résumé

L'objectif de cette étude est de comprendre et d'explorer l'Influence de la transformation digitale sur la GRH cette dernière a profondément transformé la gestion des ressources humaines au sein de coopérative des céréales et des légumes secs « CCLS », générant des avantages considérables qui ont permis à l'entreprise d'exceller dans ses activités.

En effet, cette transformation a révolutionné le système d'information des ressources humaines (SIRH) en offrant des avantages tels que des gains de temps et d'espace, une communication fluide et un transfert rapide des informations, ainsi qu'une réduction des coûts.

Les résultats de notre recherche confirment l'importance capitale de la transformation digitale pour la fonction des ressources humaines.

Mots clés : Transformation digitale (TD) ; Gestion de ressources humaines (GRH) ; Système d'information des ressources humaines (SIRH) ; Fonction ressources humaines (FRH).

Abstract

The objective of this study is to understand and explore the influence of digital transformation on human resource management (HRM). The latter has profoundly transformed the management of human resources within cereals and dried vegetables' cooperative (CCLS), generating considerable advantages that have enabled the company to excel in its activities. Indeed, this transformation has revolutionized the human resources information system (HRIS) by providing benefits such as time and space savings, seamless communication, rapid information transfer, and cost reduction. The results of our research confirm the crucial importance of digital transformation for the human resources function.

Keywords: Digital transformation (DT); human resources management (HRM); human resources information system (HRIS); human resources function (HRF).

List of Abbreviations

TIC	Information and communication technologies
MRH	Human resources management
RH	Human resources
TI	Information Technologies
TD	Digital Transformation
CRM	Customer Relationship Management
CSR	Corporate Social Network
ERP	Enterprise Resource Planning
AI	Artificial Intelligence
IOT	Internet of Things
VR	Virtual Reality
AR	Augmented Reality
HRIS	Human Resources Information System
FRH	Human Resources Function
TCP	Transmission Control protocol
IP	Internet Protocol
WWW	World Wide Web
FTP	File Transport Protocol
CERN	European Nuclear Research Center
NCSA	National Center for Supercomputing Applications
TCI	Information and communication technologies
LSRH	Human Resources Self-service
E-HRM	Electronic Human Resources Management
HRT	Human Resources Team
IMS	Integrated Management System
HRD	Human Resources Department
HRM	Human Resources Manager
CV	Curriculum Vitae
SR	Social Report
APM	Administrative Personnel Management
TAM	Time and Activity Management
JSFM	Forecast Management of Jobs and Skills
CCLS	Coopérative des céréales et des légumes secs

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General Introduction

General Introduction

Organizations today are facing a whole new revolution, called the “fourth industrial revolution”. This transformation has taken place, in particular, thanks to digitalization (Numérisation)¹, robotics, machine learning and automation (Enkhjav, Szira, and Varga, 2021). Thus, we can say that the first decade of the 21st century has allowed the arrival of a new technological era that erases the boundaries between what is technological and physical as well as biological and digital (Sotnikova, Nazarova, Nazarov, and Bilokononko, 2020).

Organizations have had to transform and adapt their mode of operation to the new environment that appears around them. Thus, new ways of working, new procedures and processes have shaken up business life. The latter want more than anything to improve their competitiveness and productivity and have found, through technology², the way to meet their interests (Amechi and Long, 2015).

Globalization present companies with a new challenge, that of developing more and more new technologies both administratively and technically. The evolution of the Internet and in particular the appearance of ICT has the effect of modifying the landscape of HRM functions and meeting the new expectations of companies.

In a digital and innovative context induced by the development of Internet technologies, particularly the web, digital has modified the daily work of the organization's services, particularly the HR department. Manual management of HR function tasks is very time-consuming and complicated. It is today possible to automate a large part of recurring tasks using digital tools and digitize many processes with new technologies and the development of artificial intelligence which are revolutionizing the HRM sector.

¹ For ease of reading, the term (Numérisation) will be equivalent to the term digitalization.

² Konradowski, Océane « L’impact de la digitalisation au sein du département des ressources humaines : Le cas d’Ethias mémoire de Master en Gestion des Ressources Humaines à finalité (promotion 2020-2021).

HR departments which have a central role in the digitalization of companies must put digital technology at the service of their missions to better meet the expectations of new trends.

Thus, digital represents a real opportunity to optimize the performance of the HR function. It allows the automation of the most requested processes requiring the least customization: management of recruitment, training, absences, payroll and more generally administrative management and career monitoring. An approach which involves in particular the implementation of a human resources information system. Therefore, to understand the impact of digitalization, we conducted inductive research where the starting question is the following:

What is the impact of digital transformation on the performance of human resources management? Cereals and dried vegetables' cooperative as a case study.

In order to answer this problem, we assume the following hypotheses:

- H1: digital transformation imperative for human resources management (case CCLS).
- H2: digital transformation has a positive impact on the performance of human resources management (case CCLS).

The interest of this study lies in the fact that it will allow us to better understand the implications of digital transformation on HRM. It will make it possible to identify the opportunities and challenges it presents for companies, as well as the HRM practices most suited to dealing with these issues. It will also be able to contribute to the reflection on the public policies to be put in place to support companies in this transformation.

In order to answer our research question, the structure of this dissertation is divided into three distinct parts. The first chapter introduces digital transformation, its challenges, its advantages, its tools, and its consequences as well as the technologies involved. The second chapter presents HRM, as well as the impact of digitalization on the different HR functions. The third chapter is a case study to better understand the impact of digital transformation on HRM in the CCLS company.

Chapter 1
Digital Transformation in Business

Introduction

For more than thirty years, digital has entered both our society and the organization of our businesses. Computers have become an essential part of our daily lives.

As Barley (1986) explains, digital projects have advantages for a company because they force actors to review their way of interacting and also allow them to experiment with new forms of organization and power within a company organization³.

Section1: Theoretical Element on Digital Transformation

1. Digitalization

1.1 Definition

“Digital transformation is the change caused or affected by digital technology in all aspects of human life. »⁴.

A definition can be put forward in order to understand exactly what digitalization consists of.

The digital revolution corresponds to the combination of the digitization of information and its networking on a global level, most certainly presents comparable characteristics: those of a profound transformation, unprecedented both in its intensity but also in its speed, whose origin is certainly technical but whose social consequences are considerable, irreversible, inevitable and infinite⁵.

According to this same author (Storhay, 2016), digitalization within human resources can also be understood as “the process according to which an activity or a company integrates digital into its activity, in terms of supports and solutions, and tames the digital culture in its modes of operation and its individual and collective behaviors. »

Digital transformation as “a voluntary transformation carried out by companies to exploit the new opportunities offered by these digital technologies”. She also explains that digital transformation is characterized by two elements: digital technologies are

³ Barley, S; « Technology as an Occasion for Structuring: Evidence from Observations of CT Scanners and the Social Order of Radiology Departments », 1986.

⁴ BRIBICH Said, Revue Internationale du Chercheur, Maroc, 2021, p 1051.

⁵ Patrick Storhay, « **Transformation, RH et Digital** », Paris : EMS Management et Société, 2016, p 124.

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accessible to everyone and they also lead to flows of information that until now were not used⁶.

Digitalization is the process which aims to transform an object, a tool, a process or a profession into computer code in order to replace it and make it more efficient. Digitalization has become a natural phenomenon that combines the appearance of the Internet and daily IT advances⁷.

Digital transformation can be defined as a revolution in practices, automation and simplification of processes: towards an acceleration and optimization of internal exchange flows, and those between the bank and its clients or partners, digitalization constitutes a sector of creation of value and commercial opportunities⁸.

It refers to the changes brought about by the development of digital technologies which are occurring at a breakneck pace, which are disrupting the way in which value is created, social interactions, the conduct of business and, more generally, our way of thinking⁹.

1.2 The main advantages and disadvantages of digitalization

Digitalization, like any development, presents advantages and disadvantages for its users; it depends on the degree of mastery of the latter, but also on the relevance of its use.

According to David Rogers "Digital transformation offers the opportunity to redefine the market in which you operate, based on new products and services that meet previously unknown or ignored needs. »¹⁰

"Digital transformation can help organizations simplify processes and reduce costs by eliminating manual and repetitive tasks"¹¹

⁶ Aurélie Dudézert, « **La transformation digitale des entreprises** », Paris, La Découverte, 2018, p 16.

⁷ Definition of digitalization, its Advantages and its Tools – Alphalives, consulted on 04/30/2024 at 10:45 <https://www.alphalives.com/digitalisation> .

⁸ AIT OUHAMMOU, Meriem ; AIT TALEB, Nezha ; KHARIF, Mohammed. Transformation digitale : quels impacts sur les métiers bancaires ? Cas des banques marocaines Revue Internationale du Marketing et Management Stratégique, Volume 1, N°1, Janvier- Mars 2019, P 200.

⁹ FERHANE, Fethi. L'impact du marketing digital sur la performance des entreprises : cas d'un échantillon d'entreprises algériennes. Thèse de doctorat, sciences économiques, SIDI BELABBES : université Djillali Liabes, 2018-2019, p 250.

¹⁰ David Rogers, "Le manuel de la transformation numérique : repensez votre entreprise à l'ère numérique", 2016, p 7.

¹¹ Andrew Greenway et Ben Terrett, "Transformation numérique à grande échelle : pourquoi la stratégie est-elle mise en œuvre ?", Londres, 2018, p 18.

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1.2.1 Benefits offered to businesses

Digitalization has the following advantages for the company:

- Saves time in processes and organization.
- Gains in productivity and therefore competitiveness.
- Increases customer satisfaction and reduces costs.
- Simplifies communication between different departments, which helps reduce errors.
- Improves working conditions for (employees).
- Offers precise analysis and optimization of expenses and therefore an increase in profitability.
- Helps in knowing your customers better thanks to the data collected on them and adapt your offer according to needs & expectations, which differentiates the company from its competitors.
- Reduces communication costs thanks to better targeting.
- Improves the performance of a company thanks to new tools, CRM (customer relationship management tools), CSR (Corporate Social Network), accounting, process automation, automatic data processing.
- Facilitates data processing.
- Helps in increasing the flexibility of processes and reducing reaction times, major competitive arguments.
- Makes it possible to offer a much more personalized service and products.

1.2.2 Benefits offered to customers

For customers, digitalization offers customers the following advantages:

- Enhances company image in the minds of customers due to its modernity.
- Facilitates better communication with the company, fostering greater loyalty.
- Provides customers with a more personalized and relevant offer tailored to their needs.
- Increases overall customer satisfaction.

1.2.3 The disadvantages of digitalization

Digitalization also presents disadvantages such as security concerns, unavailability of operations, lack of qualitative information as well as lack of personalization, time and

accessibility problems, plus lack of convenience and above all dematerialization can even cause fraud.

Digital transformation is a process that presents many advantages for companies, but also several risks. One of the major risks is IT security. The digitalization of data can increase the risks of cyberattacks, hacks and data theft. To avoid these risks, businesses must take adequate security measures to protect their data.¹²

Resistance to change is also a significant risk. Employees may be reluctant to adopt new technologies or change their usual ways of working, which can delay the implementation of digital transformation.¹³

1.3 Digitalization tools

Digitalization is made possible thanks to the presence of a certain number of tools that companies can use according to their activities and their needs. We can cite among others:

1.3.1 Servers

The term server refers to a hardware device intended to offer services to clients. These services typically involve providing access to the web, email collection, databases storage and retrieval, or even electronic commerce. Servers must meet stringent security criteria to safeguard the data and information they store and share

1.3.2 Business software

Business software is specially designed to respond to the problems that arise in a given organization (company, association, etc.). The consultants then carry out a diagnosis covering all the problems and needs of the company, in order to precisely determine the necessary software; ERP (Enterprise Resource Planning), CRM (Customer Relationship Management), payment & accounting management, human resources management, logistics management, construction site management, etc.

1.3.3 The website

A dynamic (or administrable) website is a website whose page content is not fixed but variable depending on the time, the visitor or other parameters. Web pages are created

¹² <https://www.forbes.fr/brandvoice/la-cybersecurite-la-priorite-dune-transformation-numerique-reussie> consulted on 30/04/2024 at 12:25.

¹³ <https://www.riskinsight-wavestone.com/en/2016/06/risques-transformation-numerique/> consulted on 22/04/2024 at 13:15.

“dynamically” based on user requests (requests are generated by the use of objects such as input boxes, buttons, check boxes, drop-down lists, etc.). A dynamic site will offer much more advanced functionalities than a static site thanks to the use of databases (search engine, interactivity, personalization, etc.). The latter must be useful and updated

1.3.4 Mobile applications

A mobile application is a standalone program designed to run on a mobile terminal, such as a smartphone or touchscreen tablet. The technical specificities of an application give it numerous advantages:

- Execution is faster: interface elements do not need to be downloaded from a server.
- The functional possibilities are much more extensive.
- Access to user data is made easier.
- Apps can issue push notifications for more interaction with the mobile user.
- Some apps may work offline.

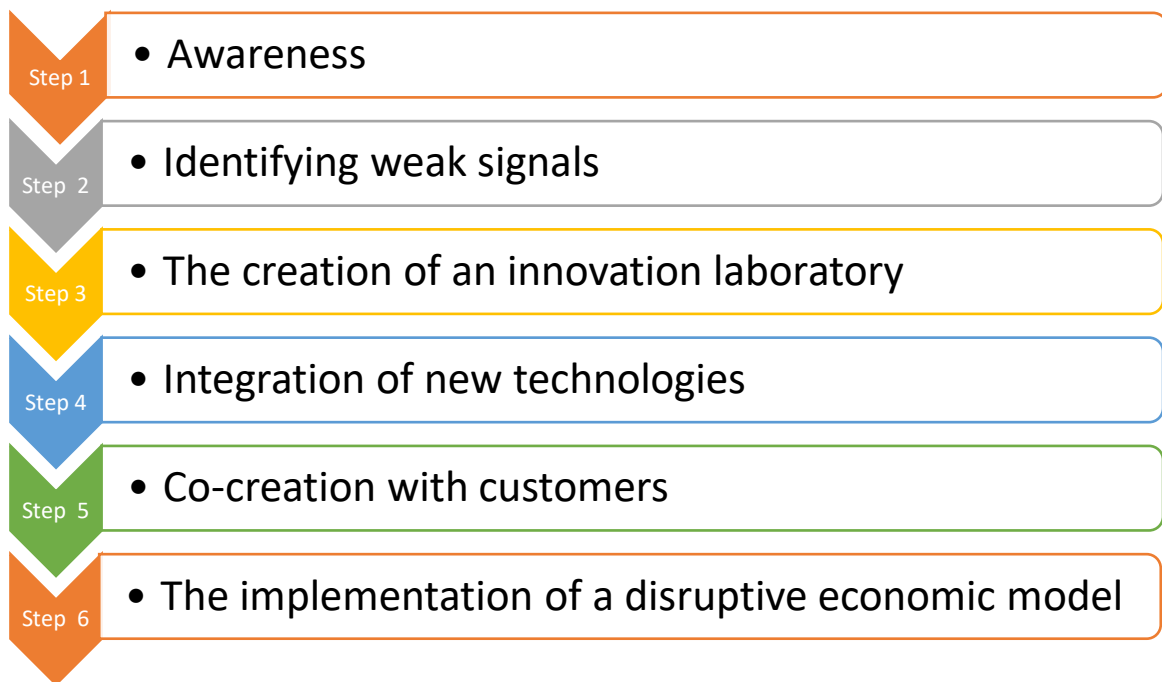
1.4 The stages and challenges of digital transformation

1.4.1 Stages of digital transformation

Digital transformation is a complex and ongoing process that involves a complete reorganization of the business to meet the demands of the digital world. The stages of digital transformation can vary depending on the company. In “The strategy of disruption” by Frédéric Fréry, the author offers a six-step method to help companies adopt a disruptive approach.¹⁴

¹⁴ Frédéric Fréry, La stratégie de la disruption, France, p 55

Figure 1. THE STAGES OF DIGITAL TRANSFORMATION
(created by the author)



Step 1: *Awareness of digital disruption*

The first step of the method proposed by Frédéric Fréry consists of raising companies' awareness of digital disruption and its effects on their economic model. This awareness is essential because it allows businesses to recognize the urgency to act and prepare for the changes to come.

Digital transformation is disrupting traditional business models by offering new opportunities for value creation, but also by threatening the very existence of companies that do not adapt their strategy to the digital age. Therefore, to succeed in their digital transformation, companies must be aware of the risks they run and the opportunities they can seize.

Step 2: *Identifying weak signals*

The second step proposed for a successful digital transformation consists of identifying the weak signals of digital disruption, these are indicators of potential changes in a company's environment. Identifying these weak signals is essential because it allows companies to anticipate emerging trends, assess their potential for disruption and adapt their strategy accordingly. Weak signals can come from a variety of sources, such as new

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technologies, consumer behaviours, competitor practices, regulations or economic changes.

Step 3: *Creating an innovation laboratory*

The creation of an innovation laboratory is an important step in enabling the company to adapt to changes linked to digital transformation. This laboratory is a creativity space where employees can experiment and explore new ideas without risk, while focusing on innovative projects.

The innovation laboratory can take different forms: it can be a dedicated physical space or an online digital platform. The aim is to enable employees to experiment with new technologies, new business models and new products independently, by working in project mode and developing prototypes.

Step 4: *Integration of new technologies*

Companies must integrate new technologies into their strategy to meet customer needs and improve operational efficiency. This involves finding ways to use technologies to create value for customers, while improving the operational efficiency of the business. Integrating new technologies into a company's strategy is essential to remaining competitive in a constantly changing environment. Cutting-edge technologies such as Artificial Intelligence (AI), blockchain, Internet of Things (IoT), virtual reality (VR) and augmented reality (AR) have the potential to radically transform operational processes, business models and customer experiences.

Step 5: *Co-creation with customers*

Businesses must work closely with their customers to better understand their needs and expectations. This step involves collaborating with customers to design products and services that meet their needs and are tailored to their preferences.

Step 6: *Implementing a disruptive economic model*

Implementing a disruptive business model may involve completely rethinking the way the business operates and creates value. This may require challenging traditional business models and exploring new avenues to innovate and create value for customers.

To implement a disruptive business model, the company must identify emerging trends and technologies that could disrupt its current market.

Next, the company should explore how these technologies can be used to create value

for customers and improve operational efficiency. It must also examine how competitors' business models could be disruptive, and how it can differentiate itself by offering a unique value proposition.

The company may also consider working with external partners to develop innovative solutions. This may include start-up's, universities, incubators or accelerators. By working with these partners, the company can access new ideas, skills and resources to innovate and create value, it must ensure that its disruptive business model is sustainable and scalable in the long term.

1.4.2 The challenges of digital transformation for businesses:

Digital transformation is a process that allows companies to modernize their processes and tools using digital technologies. The challenges of this transformation for companies are numerous, including:

1.4.2.1 Technical issues

The technical challenges of digital transformation for companies are numerous and complex. First, businesses must have a solid and secure IT infrastructure to support the digitalization of their operations. This often involves investments in new equipment and cloud services. Additionally, businesses must consider the security risks associated with the use of digital technologies, including cyberattacks, data leaks and fraud. Data management is also a major issue, as businesses must be able to store, analyze and protect large amounts of data generated by digital technologies. Companies must also be able to quickly adapt to technological developments to remain competitive in the market. Digital transformation involves three major aspects relating to technical issues¹⁵

1.4.2.1.1 Infrastructure and equipment

Are key elements of digital transformation for businesses, as they provide the foundation necessary to support the digitalization of their operations and enable them to offer digital services to their customers. This may include purchasing new IT equipment such as servers, laptops, tablets and smartphones, as well as setting up cloud infrastructure to store and share data. Businesses also need to ensure their infrastructure is able to support the growing demand for digital services, while remaining reliable and secure.

¹⁵ JANATI-IDRISSI, Farid. "La transformation digitale des PME au Maroc : enjeux et perspectives." *Repères et Perspectives Économiques* 4.2 (2020), p202.

1.4.2.1.2 Cybersecurity

Is a major challenge of digital transformation for companies. With the increasing use of digital technologies, security risks are also increasing, such as cyberattacks, data leaks and fraud. Businesses must implement robust security measures to protect their data and digital operations, which may include implementing firewalls, threat detection solutions and enhanced access controls. Businesses should also train their staff on digital security to reduce the risk of human error, such as opening fraudulent emails or using weak passwords.

1.4.2.1.3 Data management

Is a key element of digital transformation for businesses, as it allows them to analyze and derive insights from the large amounts of data generated by digital technologies, this may include using data analytics technologies to detect trends and patterns, as well as implementing database management solutions to store and organize data efficiently. Businesses can also use data to improve operational efficiencies, provide better customer experiences and create new business opportunities.

1.4.2.2 Economic issues

The three key elements of the economic challenges of digital transformation for companies are innovation, cost optimization and adaptation to a constantly evolving market:¹⁶

1.4.2.2.1 Innovation

Is a key element of digital transformation, because it allows companies to develop new products and services, as well as new ways of interacting with their customers. Companies that successfully innovate can take advantage of new markets and strengthen their position in existing markets.

1.4.2.2.2 Cost optimization

Is also a key element of digital transformation. Digital technologies can help businesses reduce operational costs, streamline production processes and improve productivity. Businesses can also reduce storage costs by adopting cloud storage solutions. The savings made can be reinvested in innovation projects or used to improve the profitability of the company.

¹⁶ <https://www.digitalschool.paris/transformation-digitale-entreprise> consulted on 20/04/2024 at 18.00.

1.4.2.2.3 Adapting to a constantly evolving market

Is another important element of digital transformation. Businesses must be able to quickly adapt to market changes, customer expectations and new technologies. Companies that successfully adapt quickly can seize new market opportunities and maintain their competitive advantage.

Ultimately, digital transformation can help businesses innovate, optimize costs and adapt to an ever-changing market. Companies that successfully master these challenges can take advantage of the significant advantages offered by digital transformation and strengthen their position in the market.

1.4.2.3 Human issues

The human challenges of digital transformation can be grouped into three elements: training and skills development, change management and corporate culture:¹⁷

1.4.2.3.1 Training and skills development

Are essential in helping employees adapt to new technologies and new ways of working. Businesses must therefore be prepared to invest in training their staff to ensure they have the digital skills needed to use new tools and processes effectively. This will enable employees to be more efficient and productive in their work, which can improve overall business performance.

1.4.2.3.2 Change management

Is crucial to helping employees adapt to digital transformation. Employees may be resistant to change and may fear for their job security due to the automation of certain tasks. Companies must therefore be able to communicate effectively with their staff to reassure them and involve them in the transformation process. This can help reduce resistance to change.

1.4.2.3.3 Corporate culture

Is also a key element for successful digital transformation. Companies must be ready to adopt a culture of innovation and adaptability to encourage employees to engage in digital transformation. This can lead to changes in the way businesses are managed and organized, with greater transparency and collaboration between different teams. This can help businesses become more agile and adapt more quickly to market changes.

¹⁷ <https://www.digitalschool.paris/transformation-digitale-entreprise> consulted on 24/04/2024 at 21:45.

1.5 The consequences of digitalization

Digitalization has several consequences on the professions themselves but also on social behaviour. First, with regard to the consequences on professions, Patrick Storhaye (2016) points out three observations. The first is that with the arrival of digitalization, certain activities may disappear and give rise to new ones. The second observation is that intermediaries, in a sales or production process, are gradually disappearing.

The third and final observation is the emergence of new models and actors in society such as the company “Uber”, taking up the work of taxi drivers in a new form¹⁸.

Second, certain social behaviours may be impacted by digitalization. First of all, it seems that there is an irreversible nature to the habits adopted by individuals under the reign of digitalization. They are considered consumers but also producers of information, they have become accustomed to expressing their feelings and their way of thinking.

Then, a second consequence on the behaviour of individuals is a modification of the relationship with information. Indeed, individuals are granted a certain ease in finding and accessing information on various subjects.

Finally, behaviours within companies are changing. Certain boundaries are broken to bring about more externalization but also new forms of contractual, psychological and moral relationships.

We can note four other forms of upheaval brought by digitalization/digital technology.

First of all, first upheaval the digital revolution brings an upheaval in relation to space. Thanks to the arrival of digital technology, workers can work anywhere, whether at home, in collaborative spaces, on the train, etc. This advance allows employees to better reconcile their professional and private lives.

The second upheaval that Marchal notices is a modification of the workspace. It is obvious that the workspace of employees is being reinvented because it is becoming more connected. The workspace will become “activity based”, meaning that the spaces are rearranged to be as high quality as possible.

Then, the workspace becomes a place where we have new experiences, where we feel emotions. And finally, the workspace becomes a place where the worker finds his place and finds meaning in his activity.

¹⁸ Storhaye, P ; « **Transformation, RH et Digital** », Paris : EMS Management et Société, 2016.

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The author Marchal addresses the third upheaval that the arrival of digital technology brings to the relationship with time. Nowadays, thanks to digital technology, information is transmitted in real time, we no longer have to wait for letters to arrive by post, we are in the era of immediacy. The problem that can be noticed with this instantaneous distribution is that employees find it increasingly difficult to manage priorities. Is it better to treat emails based on the subject or the time they appear in our mailbox? Digital technology presents another problem in relation to worker time. Because of this established sense of urgency, employees leave less and less time for reflection. Long-term tasks are replaced by many small, short-term tasks that must be completed with constant urgency.

The fourth and final upheaval brought about by the author Marchal is the appearance of relational transformations and individual development. With the arrival of digital technology, individuals are developing several skills: critical thinking, autonomy and accountability. Nowadays, one of the dominant wishes of employees is to flourish individually, individualism takes precedence over the collective¹⁹.

2. Information and communication technologies and the human resources information system

Information and communication technologies (ICT) have turned our daily lives upside down. Bringing together IT, telecommunications and Internet techniques, these make it possible to transform, produce or exchange information on a quantitative and qualitative level in real time and in very short time (instantaneous). Controlling information flows is becoming a strategic issue for organizations or the establishment of a human resources information system (HRIS) and the integration of ICT by all actors in the human resources function (FRH) is essential to adapt to local specificities.

2.1 Internet, web and website

A presence on the Web allows a company to build or strengthen its Institutional image, the impact of which will be beneficial on the image of its offer. Present your performances, assert your positioning and your philosophy which are all opportunities

¹⁹ Aurélie Marchal, « Réflexions sur l'innovation organisationnelle à l'ère du numérique », Questions de Management, n°7, 2014, pp.131- 141.

that the Internet allows to evolve or transform HR practices to make HR more efficient and faster with time savings and high added value.

2.1.1 General concepts on the Internet, web and website

The Internet is a global computer network that makes various services such as electronic mail, instant messaging and the world wide web accessible to the public using communications protocol. Its technical architecture which is based on a hierarchy of networks. The Internet is a huge computer telecommunications system developed at the international level, which allows access to data of all kinds, texts, music, videos, thanks to universalized coding.

2.1.1.1 Definition of the Internet

It is an international network of American origin constituting to date the largest network in the world, which is accessible to professionals and individuals alike. Thus, “The Internet is based on advanced information, computing and telecommunications technologies. The information is distributed across thousands of computers, linked together using a single protocol (TCP/IP) which allows it to pass from one to the other transparently, thus allowing easy access to all stored information. The Internet can therefore be defined as a set of interconnected IP networks (internet core) or as a set of networks connected to this core by at least one type of service²⁰” And among these components we cite: The World Wide Web “WWW” (WEB), email, FTP (File Transport Protocol) file transfer, and social networks.

2.1.1.2 Definition of the intranet

According to Mr. Germain, “the intranet can be defined as a means used to connect several employees in the company through the local network with the aim of facilitating their communication, their collaboration and the management of their work through a simple browser.²¹»

The intranet network works in exactly the same way with the same means and the same software as the internet network. The only difference is that it is not an open network because only authorized people can connect to it.

²⁰ SAADOUNE Melissa, avec le temps, 1ère édition, Edition d’organisation, p 103.

²¹ Germain.M, « L’intranet », édition economica, chapitre1, 2002.

2.1.1.3 Definition of the extranet

It is a website where some of the pages or all of the sections are accessible by password. This system makes it possible, for example, to limit the consultation of confidential information to customers, customers and suppliers. The extranet broadens access to the Internet network to an audience outside the company. External public access functions are reduced depending on the type of data and users.²²

2.1.1.4 Definition of the web

A website, website or simply site, is a set of web pages and resources linked by hyperlinks, defined and accessible by a web address.

A site is developed using web programming languages, then hosted on a web server accessible via the global Internet, a local intranet, or any other network, such as the Tor network.²³

2.1.1.5 Definition of a website

It is still possible to consult the very first website, the starting point for the development of the World Wide Web, created by Tim Berners-Lee and put online at the end of 1990 at this address: <http://info.cern.ch/>

The site was hosted on the CERN network in Switzerland and described the operation, advice and constraints of a web page.

2.1.2 Web history

The concept of the World Wide Web was created in 1989 at CERN (European Nuclear Research Center) by the British researcher Tim Berners Lee. Then, in November 1990, the Belgian systems engineer Robert Cailliau joined him and they developed together a formal proposal for an information management system outlining fundamental concepts and defining key web-related terms. The paper describes a "hypertext project" called the World Wide Web, in which a "web" (a web) of

“Hypertext documents” can be seen by “browsers”.

²² Abdelkader RACHEDI, TIC, structure et comportement des hommes dans l'entreprise, thèse de doctorant en science de gestion, 2012, p39 available at the link: <https://studylibfr.com/doc/8346030/rachedi.abdelkader.doc.pdf>

²³ https://fr.wikipedia.org/wiki/Site_web consulted on 29/04/2024 at 15:09.

Chapter 1: Digital Transformation in Business

In 1993, a graphical Web browser, named Mosaic, based on the principles of the Web as formulated by Tim Berners-Lee's CERN team, notably http, was developed by Eric Bina and Marc Andersen at NCSA.

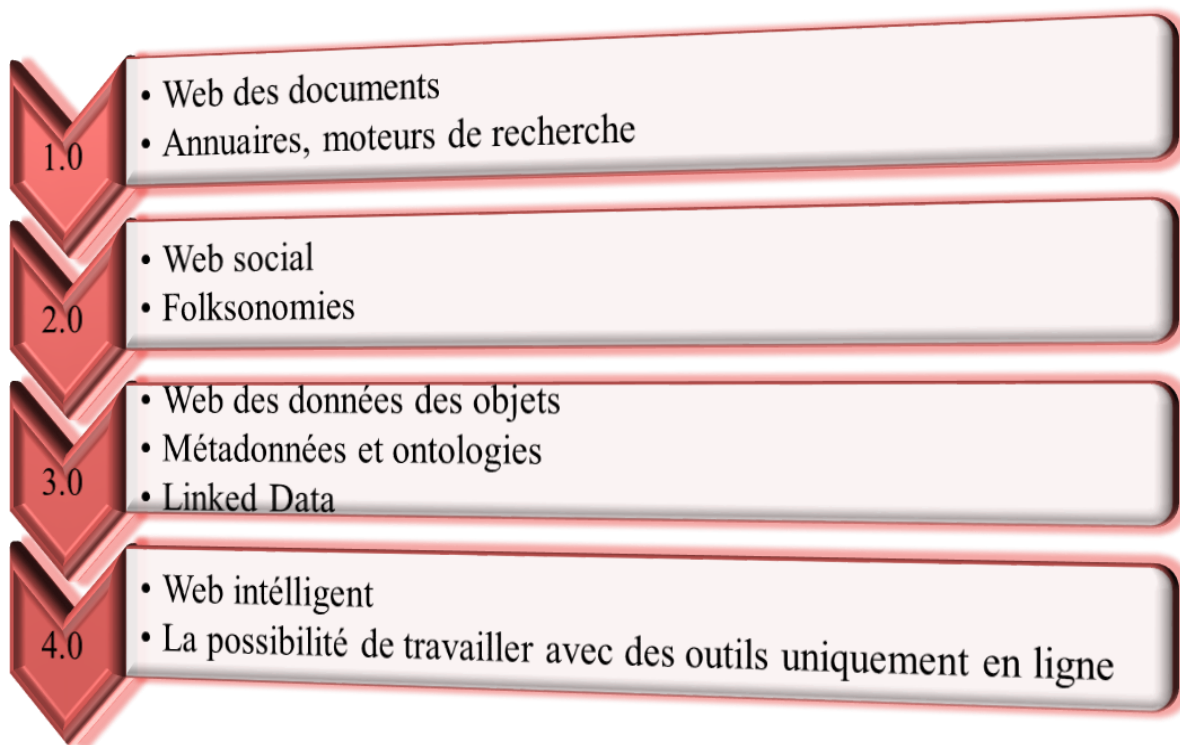
The project was designed and developed so that scientists working in universities and institutes around the world could exchange information instantly²⁴.

2.1.3 The evolution of the web and its contribution to the company

To understand the “Real-time Web”, you need to know the evolution of the Web because each new “version” of the Web is partly the result of the inadequacies of the previous version (techniques, uses, etc.). Furthermore, it complements it, not replaces it.

2.1.3.1 The evolution of the web

Figure 2: THE EVOLUTION OF THE WEB



Source : Web Sémantique _ Linked Data Présenté par : MEGHERBI Nour El Houda Maste2
2014-2015 Ontologie et web sémantique Département d'Informatique Sidi Bel Abbès.

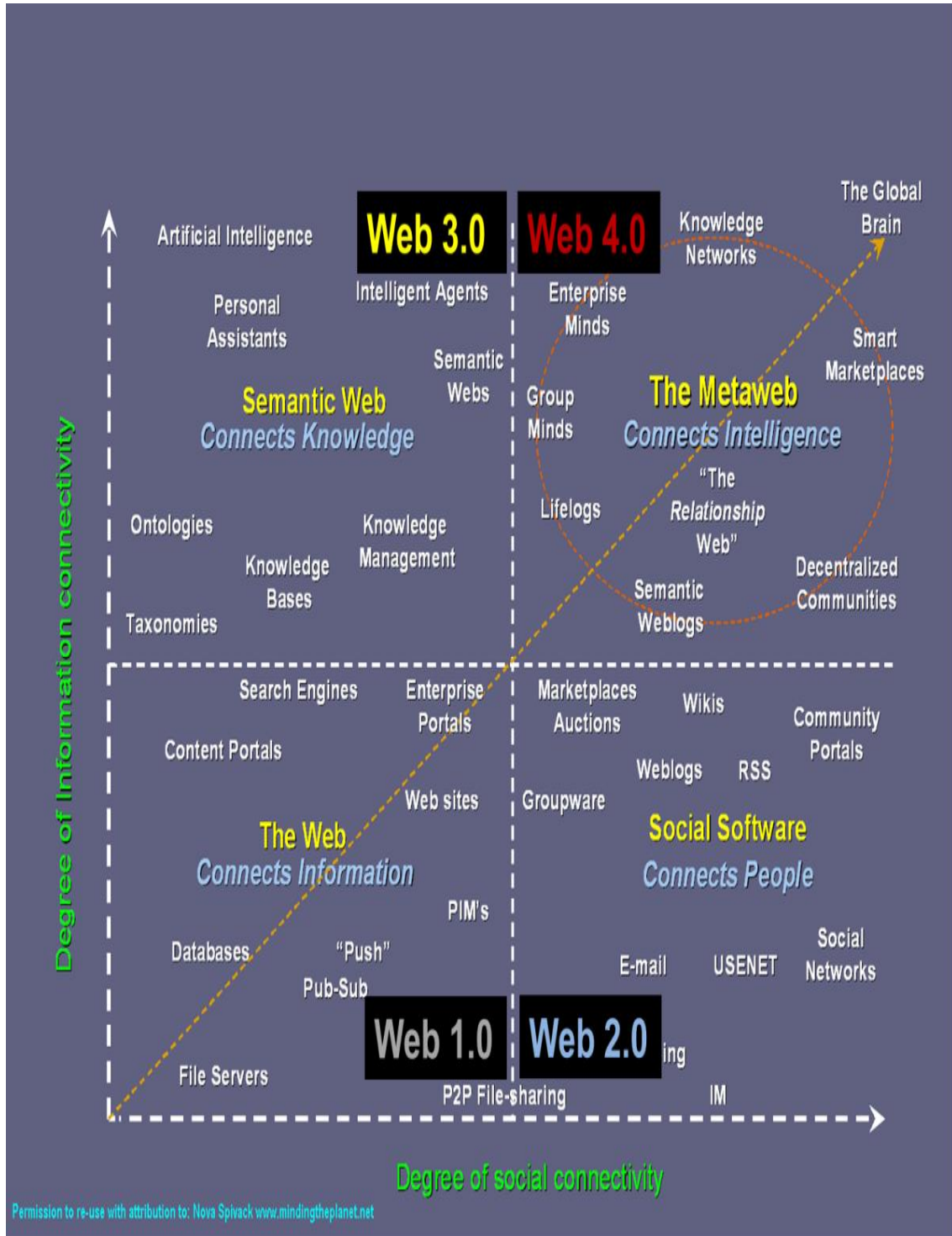
²⁴ <https://home.cern/fr/science/computing/birth-web/short-history-web> consulted on 29/04/2024 at 19:55.

Over the years the web has been modernized and gone through various versions including:

- **Web 1.0**, or traditional web, started in the 1990s. It is above all a static web, centered on the distribution of information. Mostly associated with large companies. It is characterized by product-oriented sites, which require little user intervention. This is often the online transcription of paper catalogs. The first e-commerce sites date from this time. At that time, the cost of proprietary programs and software was enormous and the explosion of the dot.com bubble in 2000 called into question this approach to the web.
- **Web 2.0**, or social web, fundamentally changes the situation. It favors the dimension of sharing and exchange of information and content (texts, videos, images or others). He sees the emergence of social networks, smartphones and blogs. The web is becoming more democratic and dynamic. It's the time of forums, wikis, etc. The consumer's opinion is constantly sought and he takes a liking to this virtual socialization. However, the proliferation of content of unequal quality creates infobesity that is difficult to control.
- **Web 3.0**, also called semantic web, aims to organize the mass of available information according to the context and needs of each user, taking into account their location, preferences, etc. It's a web that tries to make sense of data. Algorithm's reign supreme. It is also a more portable web which increasingly forms the link between the real world and the virtual world and meets the needs of mobile users, always connected through a multitude of supports and clever or fun applications.
- **Web 4.0**, or intelligent web, is the logical evolution of the semantic web. It frightens as much as it fascinates, since it aims to immerse the individual in an increasingly significant digital environment. Based on wireless communication connecting people and objects at anytime and anywhere in the physical or virtual world in real time, web 4.0 pushes the path of personalization opened by web 3.0 to its climax. But at the same time, it raises many questions regarding the protection of privacy and data control²⁵.

²⁵ <https://c-marketing.eu/du-web-1-0-au-web-4-0/> consulted on 25/04/2024 at 22:00.

Figure N°3: THE EVOLUTION OF THE WEB



Source : C-Marketing. "Du Web 1.0 au Web 4.0: Évolution du Web." Accessed June 2, 2024. <https://c-marketing.eu/du-web-1-0-au-web-4-0/>

Section2: Digital Transformation and Internal Company Functions

Introduction

ICT and HRIS constitute a factor in accelerating commercial exchanges, marking a radical change in business management and the exchange of information.

1. ICT and HRIS

1.1 Information and Communication Technology (ICT)

TIC acronym for (Technologies de l'Information et de la Communication) is transcribed from the English Information and Communication Technologies, TCI. is an expression used to designate the field of telematics, that is to say the techniques of computing, audio-visual, multimedia, Internet and telecommunications which allow users to communicate, access sources of information, store, manipulate, produce and transmit information in all forms: texts, sound, image, video...etc.

1.1.1 Definition of ICT

The term "information and communication technologies" (ICT) is currently used to refer to a wide range of services, applications and technologies, involving various equipment and software often operating through networks of telecommunication.

- Services: traditional which are landline telephony and fax; other new services which are e-mail, file transfer and especially the Internet;
- Applications: videoconferencing, teleworking, distance learning, integrated management and inventory management systems;
- Technologies: "old" such as radio or television and "new" such as cellular mobile telephony;
- Networks: on the one hand wired connections by copper cable or optical fibers and on the other hand wireless connections or cellular mobile connections and satellite connections;
- Equipment: telephone handsets, computers and certain network components such as base stations for non-cable services;
- Software: is the very soul of all these components: they contain all of the instructions necessary for each of them, whether it is an operating system or the Internet.

1.1.2 ICT applications and the human resources function

In this case, it is a set of applications distributed via the intranet and applicable to the Human Resources function²⁶.

- **E-recruitment:** which is a section relating to internal recruitment (recruitment for a position carried out on the basis of applications submitted by employees of the company wishing to apply for this new position).
- **Human resources information:** this is any kind of information that the company wishes to disseminate for its staff or for a particular category of staff.
- **Mobility management:** option available in particular in the HR intranets of large groups which have subsidiaries in several countries. Thus, employees wishing to evolve in new environments can submit their application there;
- **Staff evaluation:** which is a support available on the intranet where employees fill out a set of forms while waiting for their responses to be analyzed by the administration;
- **Human resources self-service (LSRH):** where applicable, this is a series of applications that employees can consult online, namely: the personnel file;
- Social dashboards, training platform, payroll, etc.;
- **E-learning:** this is online training covering modules such as accounting, management or specialized training in the field of HRM. Thus, this information provided online on the company's intranet can replace classroom programs, and their users will be able to acquire new knowledge, accomplish it through video conferences and apply it in the context of group work still on the intranet. of the company;
- **Knowledge management:** which is a section reserved for specialists where they can benefit from the experiences and knowledge of their counterparts (sales executives; management executives, etc.).

1.1.3 The contribution of ICT to HRT

e-HRM is the use of Information and Communication Technologies to optimize HR processes at the stages that characterize the life of an employee in the organization: recruitment, social management, payroll, skills management (career, training), employee

²⁶ Peretti J. M. (2001), « e-RH et renouvellement des pratiques managériales » Ressources humaines et management, Vol 2, Mai, pp 16-17.

departure and retirement. This makes it possible to automate procedures, speed up deadlines and, finally, facilitate the dissemination of information. All this constitutes a significant improvement in the services offered compared to the previous situation.

Information technologies then appear as a potential source of competitive advantage in the human resources function.

Aspects of the human resource function influenced by ICT:

1.1.3.1 Administrative functions and ICT

Administrative management is the part of human resources management which has evolved considerably with the introduction of ICT in HRM; before computerization, it occupied more than half of managers' time because of repetitive tasks.

1.1.3.2 Administrative management via ICT

HR administrative management is evolving significantly through ICT, particularly decision-making IT and transactional IT. They allow you to carry out online tasks such as leave management, expense reports and updating personnel files.

1.1.3.3 Communication using ICT

ICT enables clear and effective dissemination of information. At HR level, the information concerned is reference documents such as legal documentation, working documents, etc. ICT promotes exchanges between HR and other services, they also promote decentralization.

1.1.3.4 Online training and recruitment

In fact, many organizations use ICT to recruit and train their agents. Likewise, executives and young graduates train and apply to respond to offers from companies.

Furthermore, recruitment has undergone a real change since the job market has mainly moved online. Websites dedicated to employment are intermediaries between Internet candidates and companies, most of which have job sites. There are also specialized job sites. Thus, researchers when they use search engines (proposed by job sites) to receive targeted offers. On the other hand, as soon as they submit applications on company sites, they have an active attitude of seeking information on the image, the culture, the interest of the activity, the career possibilities, etc. etc. forums and email addresses allow

candidates to interact with employees and create a relationship with the company prior to recruitment.

Other than recruitment, the practice of training has undergone real changes since the appearance of ICT. Indeed. Online training consists of developing training modules which are available on the company intranet and can be used at any time by learners. They cover basic knowledge (accounting, management fundamentals) or applications specific to a profession. These online training courses can either replace the traditional classroom program or be complementary to it.

Managers can collect training requests online, or employees can submit training requests online.

1.1.3.5 Remuneration

- Computerization allows better monitoring of payroll.
- computerization facilitates the individualization of remuneration

1.1.3.6 Evaluation

- The use of ICT to evaluate work.
- The data collected during the assessment is stored in the personnel database.

1.1.4 The advantages and disadvantages of ICT

ICT has a positive and negative impact on the company, namely:

1.1.4.1 The advantages of TIC

ICT brings us new means in addition to those we already had, new means of communicating, of expressing ourselves, of creating, of working, of learning, and this phenomenon is perpetuated at a speed which always seems to go forward. accelerating.

What we could do before without ICT, we can now do much more quickly with ICT, and still more and more quickly.

Miniaturization is an important characteristic of ICT; this manifests itself both at the level of devices and information media.

Multichannel: ICT uses three channels, namely the textual channel, the image channel and the sound channel.

The other particularity of ICT, and which no technology can measure up to, lies in the fact that it affects all areas of our lives: to do business, to sell, to buy, to train, to exchange... you just need to connect to Internet.

With regard to the field of HRM, they allow better management of Human Resources (recruitment, remuneration, training, etc.).

1.1.4.2 The disadvantages of TIC

ICT also has a negative impact on the company which summarizes in the hacking of confidential data, the loss of significant data as well as the lack of confidentiality in relation to the data exchanged.

1.1.5 The Human Resources Information System (HRIS)

The HR information system is an interface between human resources management and information technologies; it has been defined in several ways.

1.1.5.1 The Human Resources Information System

J-M. Peretti in his work entitled “Tous DRH” defined HRIS as a set of software, more or less interconnected, which makes it possible to ensure in a coherent manner different administrative acts and management operations applied to human resources. The starting point of any HRIS is the implementation of a set of programs allowing, from a personnel file, to carry out a certain number of administrative tasks applied to human resources generally revolving around payroll²⁷.

GILBERT. P defines: “We use the term information system applied to the human resources function (HRIS) to designate any software package and primarily ERP (Enterprise Resource Planning) or in French IMS (Integrated Management System) integrating the different functions of HRM. This term HRIS therefore covers the management of several processes. The HRIS occupies a large part of the organization’s information system²⁸”

According to SILVA. F in his work entitled “être e-DRH” defined the HRIS as a software package which computerizes, on the one hand, a certain number of tasks of the different missions of the HR function and, on the other hand, their communication circuit. the information. The logic of setting up an HRIS means that the tasks that will be automated

²⁷ J-M PERETTI, « tous DRH », ouvrage collectif, Éditions d’organisations, Paris, 2ème édition, 2010, P36

²⁸ GILBERT. P, « l’informatisation de la GRH », Encyclopédie des RH, éditions Vuibert, Paris, 2006, P89

will thus constitute a series of value-added information flows. It is often an ERP Integrated Management Software Package²⁹.

1.1.5.2 The evolution of the HRIS

Familiarization with digital transformations allows companies to remain aligned with the external environment; this reality is even more present for the HR function which seeks to become a strategic partner recognized by the organization.

1.1.5.3 The challenges of HRIS

The challenges of HRIS are many, because the implementation of an HRIS can have external as well as internal causes. In 2004, Jean Marie Peretti distinguished four different motivations and problems in relation to the implementation of an HRIS³⁰.

Starting first of all with the motivations:

- Optimization of HR processes: the HRIS must facilitate knowledge management, the dissemination of knowledge, the development of required skills, the mobilization and retention of these skills, and the motivation of employees.
- Globalization and harmonization at the international level: human resources management practices must respond to global and local logic.
- Centralization of data: to support the company's strategy, the HR function needs a global vision of its resources (payroll, training, JSFM).
- Responsibility of stakeholders: the HRIS must allow decentralization to operational departments, then to management and employees, training planning, leave, etc.
- Transparency policy: provide services in the form of information and reports (job offers, news, annual report, sustainable development report, etc.).
- Research interests: handle administrative and payroll tasks with maximum ease (through automation) and security, participate in the implementation of new HR management tools, complete management tools.
- Performance: productivity gain, optimization and control of information flows, reduction of delays, cost control and greater availability to employees.
- Refocusing the HR function: freeing yourself from tedious and repetitive tasks

²⁹ SILVA. F, « être e-DRH », éditions Liaisons, Paris, 2008, P43.

³⁰ F. Bournois, S. Point, J. Rojot, J-L. Scaringella, « RH les meilleurs pratiques », éditions d'organisations, 2007, p. 331.

to devote yourself to tasks with greater added value.

The implementation of an HRIS leads to a refocusing on core skills and a modification of power. New technologies therefore contribute to the evolution of the HR function and renew the roles and missions of its managers in the company. There are two hidden issues³¹:

- A power issue: the HRIS makes it possible to increase productivity, improve the efficiency of managers making decisions to meet the needs of the company, makes it possible to control and measure the evolution of personnel, makes it possible to make projections according to different scenarios. Through HRIS, HR becomes an integral and essential player in the management of the company, as a business partner.
- A credibility issue: the HRIS makes it possible to show the essential and little-known role of the HR function, with the involvement of staff in the management of information linked to the HRM process.

Thus, we could say that the implementation of the HRIS in an organization is a means of coordinating and controlling the entire HR function, of harmonizing policies and practices, of structuring and standardizing the entire organization in a transversal manner.

1.1.5.4 The impact of the HRIS on the human resources function

The introduction of ICT allows HRIS to integrate a wide range of new services which allows the HR function to be a player in the success of the company's strategic initiatives.

Setting up a human resources information system (HRIS) will also make it possible to gain efficiency by automating and securing a certain number of low-value tasks. All the actions that employees or human resources (HR) teams will not have to manage will free up time for tasks with greater added value. The HR team will be able to devote itself to implementing the company's strategic vision, rather than administrative tasks.

1.1.5.5 The role of the HRIS

According to Joëlle IMBERT, there are five roles of the HRIS ³²:

- Technical guidelines: Within the framework set by the human resources department (HRD), the HRIS manager will organize the collection and processing of data.

³¹ Ibid, p. 332.

³² Joëlle IMBERT, les tableaux de bord RH, groupe Eyrolles, 2007, p 158-169.

Chapter 1: Digital Transformation in Business

Technological progress made in the IT field makes it possible to store enormous volumes of data, benefit from significant network capacities and powerful calculation tools. The challenge for the HRIS is to know how to use its information to meet the expectations of the HR department. You have to process the data, correct it, interpret it to extract information: this requires skills in statistics and economics.

- **Data consistency:** The data used for management comes from different sources. Companies that benefit from a single database are rare.
- **Integration of developments:** To ensure its responsiveness, the management system must be able to anticipate developments, changes in the scope of the company, reorganization of the workforce, company buyouts and ensure the necessary restatement of historical or forecast data. While carrying out these various adaptations, it must maintain the coherence of the overall system.
- **Use of information:** Complex queries requiring sophisticated applications can only be carried out by HRIS specialists. It is interesting to offer fairly simple query tools to HR function managers (HRM) and function experts to enable them to carry out the analyzes they need themselves and to communicate them internally or externally. to their various interlocutors.
- **Data communication:** The existence of an HR portal facilitates the communication of dashboards, indicators and analyzes to all operational managers and experts in the function. The HR department and the HRIS must, while widely disseminating the information, maintain control of the data and control their confidentiality.

Conclusion:

Companies are well aware that they have entered the era of digitalization, and they are conscious too of the need to transform themselves to maintain sustainability competitiveness. This awareness is evident in their adoption of more sophisticated digital tools to enhance efficiency and operational effectiveness.

However, some companies still have a limited understanding of digital transformation. They may simply use digital tools without considering the need to transform their processes through the development of strategies that align with digital requirements.

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The involvement of most management controllers in digital transformation projects remains minimal, despite their significant role and contributions to performance management. Only a few companies have fully grasped this reality.

This digitalization, often called “Big Data”, has several positive and negative impacts on management control; hence, professionals must be able to cope with these new digital developments.

Chapter 2

The Contribution of Digital Transformation to Performance

Introduction

In the current context of globalization, companies are compelled to adapt to the new economic environment to confront international competition. This necessitates enhancing performance not only in economic and financial aspects but also in terms of human resource management. Human resources represent essential capital for companies; without them, achieving objectives becomes unattainable. Consequently, an increasing number of companies prioritize human resource management. One of their objectives is to enable individuals to fully demonstrate their productivity, thereby boosting performance. The relationship between motivation and performance is a central focus in this regard. The motivational process encompasses various factors such as remuneration, working conditions, evaluation, and training, making it multifactorial, complex, and subject to scrutiny.

Section 1: Performance and HRM

I. Human Resources Management

1. Definition of HRM

Human Resources Management (HRM) is the set of practices, policies and strategies put in place by an organization to manage, recruit, develop, motivate and retain the human talents that make up its staff, and here are some definitions that we can quote:

“HRM is firstly structured by a set of administrative procedures emanating from labor law that the HR function must apply clearly and precisely”³³

Jean Michel Plane defines HR as “a function in its own right with a recognized tool integrated alongside general management. »³⁴

“HRM is a recent discipline. It derives from several disciplinary fields, economics, law, management. It is also located at the confluence of philosophy, psychology and sociology. These successive and multifaceted borrowings make the discipline rich and interesting, but also reveal its fragility”³⁵

2. The history of the HR function

Human Resources Management (HRM) is a relatively recent discipline that emerged

³³ F. Silva, « être e-DRH », éditions liaisons, France, 2008, p 143

³⁴ Jean-Michel Plane, Gestion des ressources humaines, France, 2003, p 9

³⁵ G. Lacongo, “GRH”, édition Casbah, Algérie, 2002, p 11

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during the 20th century.

At the beginning of the 20th century, most companies viewed employees as mere “factors of production” and their primary goal was to maximize their productivity. Employees were often treated impersonally and their well-being was often ignored. In the 1920s through the 1930s, theories of motivation began to emerge, which led companies to become more interested in the needs and aspirations of their employees.

The first personnel management practices have begun to be put in place, particularly in terms of recruitment and training. As the 1940s and 1950s progressed, HRM became more formal and began to be considered a core business function. Companies began to develop formal policies and procedures for employee management, including compensation and benefits, and since the 1960s and 1970s, HRM began to focus more on employee rights, workers and the need to protect employees against discrimination and abuse.

Equal employment opportunity laws began to be passed in many countries, which gave employees greater power and protection. HRM became increasingly strategic in During the 1980s and 1990s, companies sought to align their employee management strategy with their overall strategy.

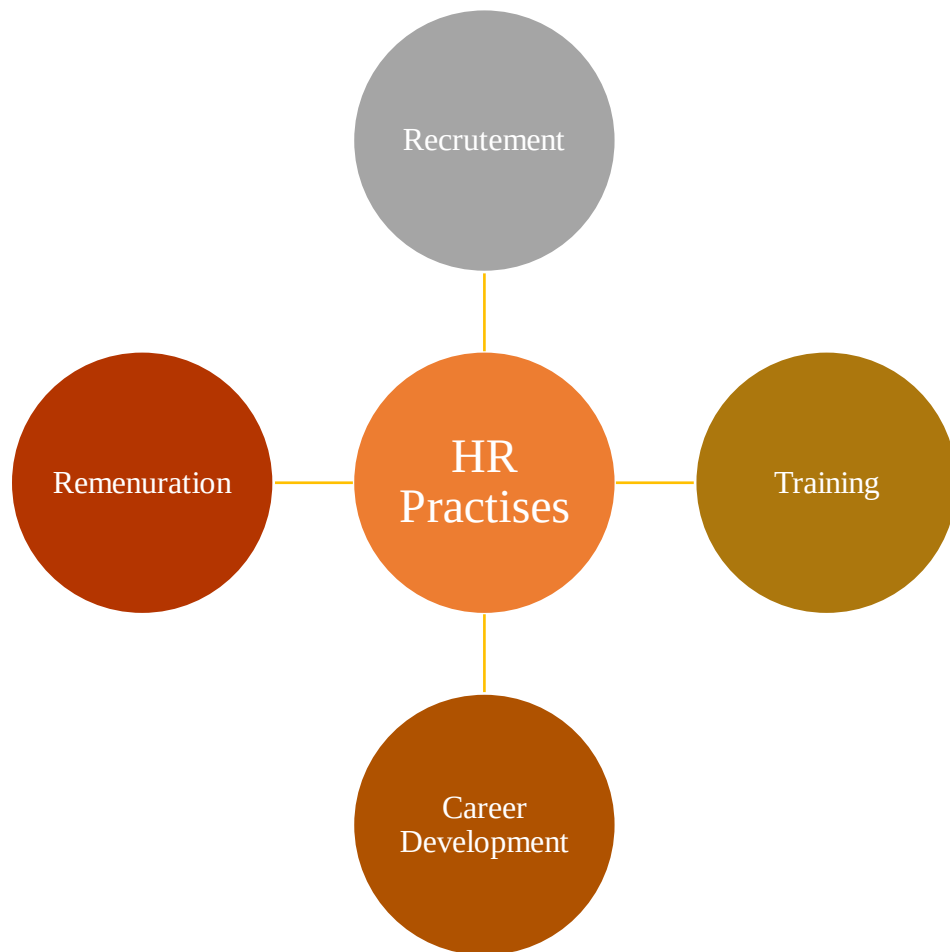
Companies have started to pay more attention to skills and talent management, as well as succession planning. In the 2000s, HRM continued to evolve to become more focused on employee engagement and creating a supportive work environment. Companies have started to invest more in skills development and continuing education programs, as well as initiatives to improve the quality of work life. Technological advances have also transformed HRM, with the increasing use of human resource management software and online performance management systems.

In summary, HRM has evolved over time to become a core business function, focused on improving employee engagement and satisfaction, as well as aligning employee management policies with the overall strategy of the company.

3. HRM practices

Recruitment, compensation, career management and training are important HR practices for managing human resources within a company. By implementing effective processes for these, companies can create a favorable working environment for their employees, improve their overall performance and strengthen their corporate culture.

Figure N° 4 HRM PRACTISES (created by the author)



- **Recruitment:**

Recruitment is the practice of finding and hiring qualified people for open positions. This includes posting job advertisements, candidate screening, job interviews and background checks. A good recruiting process can help a company find qualified candidates for open positions, reduce turnover, and improve the quality of new hires.

- **Compensation:**

Compensation or remuneration is at the heart of the relationship between an employer and its employees. It consists of paying a person in return for work carried out, or a service rendered, it plays an important role in motivating employees. Remuneration is influenced by certain factors (merit, performance, seniority, potential).³⁶

³⁶ https://www.academia.edu/36670418/Le_recrutement consulted on 02/05/2024 at 11:23.

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- **Career management:**

Career management is the monitoring of the past, present and future of the employee's professional life. It appears as a permanent compromise between employee expectations and the objectives set by the organization.³⁷

- **Training:**

Staff training is an investment, it consists of teaching an employee new knowledge. It allows businesses to increase the skills and productivity of their workforce while increasing the quality of their products and services. It is a value-added activity that promotes the adaptation and flexibility of individuals in the face of challenges.

II. Business Performance

The origin of the word performance dates back to the mid-19th century in the French language. At that time, it designated both the results and the sporting exploit of an athlete. Its meaning evolved during the 20th century. It indicated in figures the possibilities of a machine and by extension designated exceptional performance.

A performance is an exploit, a result or a remarkable achievement obtained in a particular field, by a person, a team, a group, or a machine.³⁸

In the field of physics, performance is considered as the set of qualities which characterize the services (acceleration, maximum speed, autonomy, etc.) of which a motor vehicle and an aircraft are capable.³⁹

In the field of management, performance has always been an ambiguous concept, rarely defined explicitly. It is only used in management control by transposing its meaning into English. Since the 1980s, many researchers have endeavored to define it (Bouquin, 1986; Bescos et al... 1993; Bourguignon, 1995; Lebas, 1995; Bessire 1999...) and more recently this notion is used in the managerial literature to evaluate the implementation by the company of announced sustainable development strategies (Capronet Quairel, 2005).⁴⁰

³⁷ PERETTI. J.M. « gestion des ressources humaines » - 5eme édition. FRNCE. 1999.

³⁸ <https://www.toupie.org/Dictionnaire/Performance.htm>.

³⁹ ESSOR Zineb, « La performance de l'entreprise : un concept complexe aux multiples dimensions », p 95. <https://www.cairn.info/revue-projectique-2017-2-page-93.htm>

⁴⁰ Angèle RENAUD, Nicolas BERLAND « Mesure de la performance globale des entreprises », 2010

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1. Definition of performance

According to LEBAS Michel (1995) “Performance is defined as the future potential for successful implementation of actions to achieve objectives and targets”⁴¹ .

On the other hand, LORINO Phillipe (2003) explained the term as follows:

“Performance in the company is everything that contributes to improving the value-cost couple, that is to say to improving the net creation of value (on the contrary, performance is not necessarily what contributes to reducing the cost or to increase the value, in isolation, if this does not improve the value-cost balance” ⁴² .

2. Definitions of business performance

The question of a company's performance can be approached in different ways. Indeed, this concept covers a vast corpus of definitions and various practices, in the fields of socio-economic activity. The definition of the concept of performance is generally confused with the concept of effectiveness and efficiency. By distinguishing individual performance from organizational performance.

P. Turcotte (1997) considers that the latter “differs from productivity which concerns the value of a unit of goods or services in relation to its production cost. It is different from effectiveness which is the ability to achieve objectives as well as efficiency which reflects the ability to be effective at the manufacturing level, regardless of whether the products sell well or not⁴³”.

Performance is essential for a company's sustainability and is intrinsically tied to the values of its stakeholders. Therefore, it gains significance only through their perspective. This highlights the need for a comprehensive framework for analyzing and measuring organizational performance that transcends disciplinary and functional boundaries, addressing personal biases and preferences⁴⁴ .

⁴¹ Lebas Michel 1995, *oui il faut définir la performance*, revue française de comptabilité, P 66-67

⁴² LORINO Philipe « Méthodes et pratiques de la performance », 3eme Édition d'organisation, France, 2003, p.5.

⁴³ P. Turcotte « Comportement en milieu organisationnelle » consul 2000 Éditeur Sherbrooke.1997, p 22.

⁴⁴ M. Estelle. Morin et al « Les indicateurs de performance » publié par l'ordre des comptables généraux licenciés du Québec. Edition GUREIN Montréal (Canada).1996. P8

Chapter 2: The Contribution of Digital Transformation to Performance

Performance is therefore analysed through:

- **Coherence:** Which reflects the harmony of the basic components of the organization to measure organizational performance by relating objectives to means;
- **Relevance:** Which relates the objectives or means to the constraints of the environment. Relevance makes it possible to evaluate performance in the strategic area, that is to say competitive advantage based on an assessment between the adequacy of the elements of the offer and market expectations;
- **Effectiveness:** It is the expectation of the objectives that the company has set without taking into account the means used. Effectiveness is concerned with results;
- **Efficiency:** As for it, it presupposes a constraint in relation to the means or resources to be used to achieve the objectives that the company has set for itself.

3. The typology of performance

Previously, the word performance has been linked to its financial dimension, that is to say, profitability, turnover and market shares desired by the company's shareholders, but managers do not seek the shareholder satisfaction, but also the satisfaction of customers and all staff within the company, then the performance of the company must be global.

“The global enterprise is defined as the aggregation of economic, social and environmental performance”⁴⁵

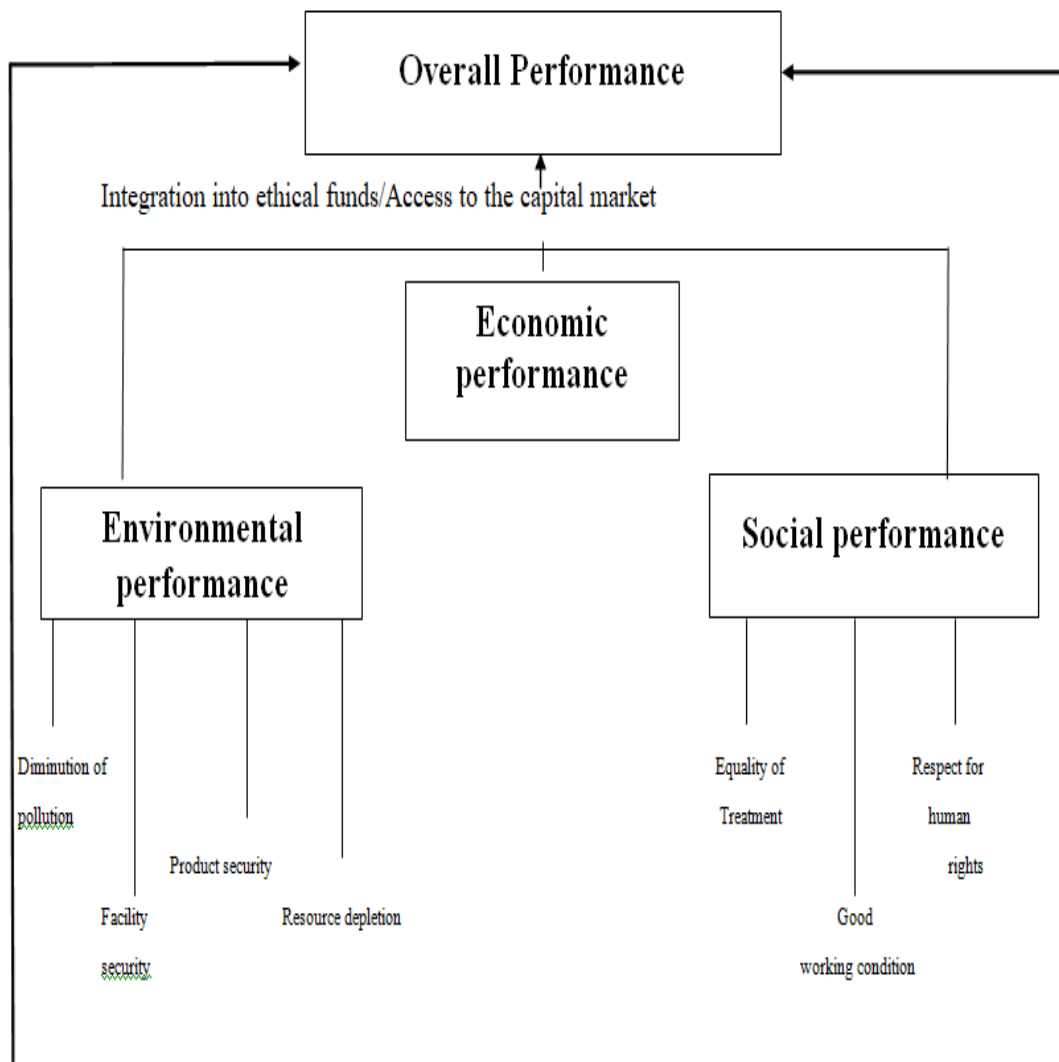
So, performance in the company is multidimensional encompassing:

- **Social performance:** These are the results of a company in the field which does not directly relate to economic activity. Social performance requires equality in the treatment of staff, respect for human rights and good working conditions, etc.
- **Economic performance:** Everything related to the financial dimension (profitability, turnover, etc.).
- **Environmental performance:** It aims to reduce pollution, as well as waste, respect for natural resources, the safety of installations, and non-polluting products.

The following diagram represents the components of overall performance.

⁴⁵ M. MAADANI et K. SAID, « Management et pilotage de la performance » Edition Hachette livre, Paris, 2009 p.33.

Figure N° 5: OVERALL PERFORMANCE



*Reduction in direct costs (reduction in waste).

*Reduction in probability of occurrence.

*Reduction in accident and legal risks of spectacular events (strikes, boycotts).

*Image/Market share gain.

*Increased employee motivation

*Opportunity to create new products.

*Ease of executive recruitment.

Source : Reynaud.E, « Développement durable et entreprise : vers une relation symbiotique », Journée AIMS, Atelier développement durable, ESSCA Angers, 2003 p.13

Section 2: Digital Transformation and Performance

1. The contribution of digital transformation to HRM

Digital transformation has a significant impact on human resources management (HRM). It enables increased process automation, faster and informed decision-making, improved employee experience, as well as greater flexibility and adaptation to change. In short, digital transformation offers many advantages for HRM in terms of efficiency, decision-making, employee experiences, flexibility and adaptation to changes.

2. The impact of digital transformation on HR functions

Technology has profoundly impacted HRM (human resource management) skills. HRM professionals must now master technological tools such as payroll, training and recruitment management software, as well as digital platforms to communicate with employees and find potential candidates. Analytical skills are also important for collecting and interpreting data related to employees and their performance. Communication skills are necessary to communicate effectively with employees, candidates and line managers through digital tools such as email, chats, social media and collaboration platforms. Finally, HRM professionals must be able to effectively manage organizational change caused by rapid technological developments. It is therefore essential for HRM professionals to constantly train and adapt to remain competitive in a constantly evolving job market.

Digital transformation has led to significant changes in the way companies manage their human resources. Digital tools have made it possible to automate many administrative tasks, which has allowed HR to focus more on higher value-added activities.

However, this has also created a need for specific skills for HR, particularly in IT, data analysis and digital communications. HR must be able to work with digital tools and complex human resource management systems, as well as collect, analyze and interpret data to make informed decisions.

- **On recruitment**

Digital recruitment has taken off with the advent of job boards and digital sourcing tools, giving rise to e-recruitment. The Internet occupies an increasingly dominant place in the field of recruitment, allowing companies to expand their CV databases thanks to three

Chapter 2: The Contribution of Digital Transformation to Performance

main tools: job sites, sites dedicated to career management and software. management of applications.

About a decade ago, it was still common to place advertisements in newspapers in the hope of receiving CVs. This process was costly, slow, tedious and inconvenient for both companies and candidates. Job sites have revolutionized the way we recruit employees by making it possible to post an offer in just a few minutes and receive responses quickly. Social networks have amplified this digitalization by providing recruiters with valuable information while facilitating the dissemination of offers and opportunities online. Thanks to digitalization, human resources professionals now have all the necessary assets to carry out effective recruitment, faster and at lower cost.

These transformations driven by new technologies have generated a paradigm shift in current recruitment practices. They are moving towards a predictive recruiting model, where companies seek to identify key profiles not only for current needs, but also for future needs.⁴⁶

- **On training**

ICT has improved training opportunities for employees. Online training modules can be accessed at any time, allowing employees to train at their own pace. Employers can also offer more specific and targeted online training to meet the training needs of their employees. Employees can also access online resources such as manuals, training videos, podcasts, webinars and discussion forums to enhance their learning.

Additionally, executives can submit online training requests and employees can make online training requests to meet their professional development needs. Employers can also use online training programs to train employees in areas such as regulatory compliance, cybersecurity, business ethics, and diversity and inclusion.

Ultimately, ICT has improved the way businesses recruit and train their employees. Job seekers can find job openings more easily, and employees can train more effectively at

⁴⁶ OUBELLA, Rajae et KOBIYH, Miloudi. Valorisation du capital humain et digitalisation RH: étude empirique sur les employes d'un centre d'appel. *Revue Internationale des Sciences de Gestion*, Maroc, 2023, p1057

Chapter 2: The Contribution of Digital Transformation to Performance

their own pace. Employers can also offer more specific and targeted training programs to meet the professional development needs of their employees.⁴⁷

- **On personnel management and administration**

Digitalization has profoundly transformed the administrative aspect of human resources, in particular thanks to the dematerialization of employee documents such as employment contracts, leave slips and diplomas. The digital management of personnel files constitutes a concrete solution which has revolutionized the working methods of HR teams. The introduction of self-service solutions has enabled employees to access information about them and directly enter data such as changes to personal information, leave requests, absences, etc.

Digitalization has also given companies an increased presence on social networks and the Internet, which allows them to promote themselves effectively to future employees. Today, companies have Facebook, Instagram and Twitter pages, on which they publish activities organized for the benefit of their employees. This constitutes a form of company marketing aimed at attracting new employees⁴⁸.

⁴⁷ Gilles Exbrayat, Nathalie Fisteberg, Ronan Fouesnant, université paris Dauphine -MBA Management des RH – promotion 7- Octobre 210 Le SIRH : un atout dans l'optimisation de la GRH au service de l'entreprise, p7

⁴⁸ OUBELLA, Rajae et KOBIYH, Miloudi. Valorisation du capital humain et digitalisation RH: etude empirique sur les employes d'un centre d'appel. Revue Internationale des Sciences de Gestion, MAROC , 2023, p 1058

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Table N°1: HR PRACTISES BEFORE AND AFTER DIGITALIZATION

HR practices	Digitalization	
	Before	After
Recruitment	Publication of job offers in newspapers	Publication of offers on job offer websites or company websites
	Receipt of paper CVs	CV libraries
	Candidate assessment test	Online assessment test
	Physical interviews	Skype interview...
Training	Identify training needs on paper	Identify needs remotely with software or by email
	Select firms	Access to online offices
	Carry out face-to-face training	Use remote tools: videoconferencing, Skype, Zoom, etc.
	Manual training facilitation tools	Pointer, digital tables and software...
HR administration	Manual pointing	Access to data provided by a digital timekeeping system
	Payroll: Excel	Use of data provided by digitized software
	Produce pay slips, print and distribute them	Online pay slips with personalized access

Source: International Review of Management Sciences

3. Digital transformation tools and technologies for HRM (HRIS)

There are a variety of tools and technologies that can be used as part of the digital transformation of human resource management (HRM)

To achieve its overall objectives and improve the efficiency of its resources, a company has the responsibility to implement a human resources management information system adapted to information and communication technologies (ICT), which will emphasis on value-generating activities. The HRIS will automate and modernize personnel management, which will facilitate the flow of information within the company.

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3.1 Definition

In short, “The HRIS is an integrated ERP-type system which brings together the computer systems which manage the main HR functions. Among these, we find: administrative personnel management (GAP), payroll, remuneration management, time and activity management (TAM), skills and training management, recruitment”⁴⁹

Furthermore, an HRIS is “a system for acquiring, storing, manipulating, analyzing, extracting and distributing information relevant to an organization’s human resources”⁵⁰.

3.2 HRIS functionalities

Generally speaking, the Human Resource Management Information System (HRIS) is divided into two main aspects, each containing a number of functionalities.

- The first dimension of HRIS, called the operational dimension, concerns operational processes such as Payroll, Administrative Personnel Management (APM) and Time and Activity Management (TAM).
- The second dimension of HRIS, called the strategic (or decision-making) dimension, concerns processes with a strategic dimension such as Forecast Jobs and Skills Management (JSFM), Recruitment, Remuneration, Professional Training, Dashboards HR, the Social Report (SR) and the social audit.

3.3 Operational Aspects of HRIS

- **Payroll management**

It is an essential element of operational personnel management. Operations related to administrative personnel management and time management are directly linked to the processing of data in this module.⁵¹

“Payroll is one of the great classics of the HR function, particularly the HRIS. We can define this activity as a set of processes, practices and applications implemented to calculate the elements of the pay slip, but also to make payments and ensure the regulatory compliance of the activity. This covers all operations involved in payroll production:

⁴⁹ André MULLENDERS, « e-DRH: Outil de gestion innovant. La théorie - Les progiciels - Le cadre juridique », Éditions De Boeck Université, Bruxelles, 2009. P 83.

⁵⁰ Kayodé Daniel Isaïe MOUSSORO mémoire Conception d’une plate-forme SIRH pour la gestion des ressources humaines dans les universités publiques du Bénin, Bénin, 2014-2015, p 10.

⁵¹ Michel GILLET et Patrick GILLET, « SIRH », Édition Dunod, Paris 2010. P 151.

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calculation of salaries, remuneration, benefits and deductions, but also the edition and distribution of bulletins, declarations to third-party organizations as well as legal maintenance”⁵²

- **Administrative personnel management (APM)**

APM is an important part of human resource management (HRM), which is responsible for recruiting, training, motivating and retaining a company's employees. By carrying out effective administrative personnel management, companies can reduce the risk of litigation, ensure legal and regulatory compliance, and facilitate overall human resources management.

“The administrative management of each employee's file is a set of administrative operations necessary for payroll production: creation of the individual file, administration of the file, closure of the file. Faced with the different elements of this activity (management of contracts, absences, attendance, arrivals, departures, certificates and work certificates, etc.), many organizations are looking for optimized management of it. »⁵³

Basically, the main objective of administrative personnel management (APM) is to ensure that all administrative aspects related to the employment of employees are managed effectively and efficiently. This allows the company to comply with legal and regulatory obligations, reduce the risk of litigation, and ensure that employees are properly compensated and protected.

- **Time and Activity Management (TAM)**

“Time and activity management is an area of information tracking that has been problematic for a very long time. The organization of work has become more flexible over the past several decades. »⁵⁴

TAM makes it possible to control the working time worked by employees, as well as the activities related to this work, such as absences, holidays, overtime, training, business travel, etc.

⁵² Gilles EXBRAYAT et al., Op Cit. P 37.

⁵³ Patrick GILBERT, Op Cit. In : Joëlle ALLOUCHE BENAYOUN (crood), France 2006. P 48.

⁵⁴ Michel GILLET et Patrick GILLET, Op Cit. P 145.

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Thus, helps to collect data on employee efficiency and productivity, and use it to make human resource management decisions. For example, using TAM data, managers can identify high-performing employees, provide training to improve the skills of lower-performing employees, and adjust work schedules based on business needs.

3.4 The strategic (decision-making) aspects of HRIS

We will examine the decision-making dimension of the Human Resources Information System (HRIS), which encompasses several key areas such as payroll forecasting, Jobs and Skills Forecast Management (JSFM), recruitment, training and compensation.

- **Forecast Management of Jobs and Skills (JSFM)**

“JSFM is an HRM human resources management process through which the specification of the skills required for carrying out a task or mission in a specific context is constructed, and the volume and nature of the corresponding workforce are estimated”⁵⁵. It makes it possible to better manage employees' jobs, careers and skills based on changes in the market and the company. JSFM involves an in-depth analysis of the company's professions and skills, as well as the implementation of an action plan to adapt the skills of employees to the needs of the company. It can also include training, recruitment and internal mobility actions to ensure the sustainability of the company. The technological tools relating to this activity aim to⁵⁶:

- ✓ To facilitate the search for a person, belonging to the staff or present in the file of candidates, who would have the profile sought for a position.
- ✓ To define the characteristics of an offer, external or internal, for a call for applications for a vacant position.
- ✓ To measure the gaps between a person's skills and the requirements of the position they occupy in order to avoid having people over- or under-profiled in relation to their position.
- ✓ To prepare for evaluation interviews by positioning these gaps.
- ✓ To prepare the training plan in relation to the gaps to be filled.

⁵⁵ Imane TABET DERRAZ, Ecole Supérieure de Management, Gestion prévisionnel des emplois et des compétences (GPEC), Algérie, 2017

⁵⁶ Michel GILLET et Patrick GILLET, Op Cit. P 177.

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- **Social management steering and control**

In general, human resources information systems (HRIS) must be able to produce relevant indicators for different areas of the company, and present them in a clear manner adapted to the needs of each user.

To obtain a large number of indicators, most companies use the social report. The analysis of the social report makes it possible to generate cross tables, graphs, and other types of visual data which are useful for responding to surveys from external organizations, but also for managing human resources management (HRM) within the company⁵⁷.

HRM dashboards are also used by businesses to help make real-time decisions on human resource management. These dashboards provide real-time performance indicators on headcount, skills, productivity, turnover, employee satisfaction and other key elements, allowing managers to make informed decisions to achieve always have the necessary resources in the right place⁵⁸.

3.5 The benefits brought to the human resources function by the HRIS

The HRIS (Human Resources Information System) brings many benefits to the HR (Human Resources) function, here are some examples:

- ✓ Improving administrative efficiency: HRIS makes it possible to automate administrative tasks related to human resources management, such as processing leave requests, payroll management, contract management, etc. This helps reduce errors and delays, and frees up time to focus on higher value-added tasks.
- ✓ Optimizing of talent management: The HRIS makes it possible to identify the talents and skills of the company's employees, to monitor them and to develop them. This makes it possible to better adapt employee skills to the needs of the company, promote internal mobility and strengthen employee engagement.
- ✓ Facilitating reporting and decision-making: HRIS makes it possible to collect, analyze and present human resources data quickly and accurately. This allows

⁵⁷ Claudine Blanche ALLEGRE et Anne Elisabeth ANDREASSIAN, Op Cit, France. P 54.

⁵⁸ Claudine blanche ALLEGRE et Anne Elisabeth ANDREASSIAN, Op Cit, France. P 62.

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HR managers to better understand the business situation and make informed decisions.

- ✓ Improving communication: The HRIS makes it possible to centralize employee data, which facilitates communication between the company's different departments, including HR, payroll and operational managers.
- ✓ Strengthening compliance: The HRIS makes it possible to comply with legal and regulatory obligations related to human resources management, such as payroll management, employment contracts, social security, etc.

“An ICT-based HRIS is a system open to all HR stakeholders and primarily to management. This system must be flexible and light. It is based on platforms which serve as supports for the new challenges of the function: Intranet, company portal, electronic document management, internal search engines giving access to the right information”⁵⁹.

4. The impact of digitalization on employees

Digitalization, or digital transformation, has had a significant impact on employees across many industries and sectors. The overall impact depends on how businesses and employees adapt to digital transformation. Businesses must maximize the benefits of digitalization while minimizing its negative impacts on employees, while employees must be willing to retrain and reskill to remain competitive in the ever-changing job market.

4.1 Change management in digital transformation

Change management is an essential part of digital transformation because it aims to help employees and the organization as a whole adapt to new processes, tools and technologies. Digital transformation often involves radical changes in company processes and practices, which can cause resistance to change among employees who have well-established habits.

Change management aims to mitigate this resistance and facilitate the transition to the new digital reality. This generally involves an in-depth analysis of the impacts of the transformation on different aspects of the organization, as well as putting in place measures to reduce negative impacts and facilitate acceptance of changes. Measures may

⁵⁹ André MULLENDERS, *Op Cit.* France. P 83.

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include training programs, targeted communications, corporate culture strengthening activities, etc.

Change management should not be underestimated in digital transformation, as it can have a significant impact on the success or failure of the project. Companies that ignore change management risk problems such as employee resistance, lower productivity and customer satisfaction, and higher than expected costs. On the other hand, companies that take change management into account tend to achieve their digital transformation with greater ease and success⁶⁰.

4.2 The impacts of digitalization on work and employment

Digitalization has profoundly transformed the world of work and employment. Digital technologies have made it possible to rethink production methods and working methods, and have opened the way to new economic models. Although these changes have brought undeniable benefits, they have also had significant consequences for workers and employment in general. The impacts of digitalization on work are varied and affect economic, social and psychological aspects. In this introduction, we will explore some of these impacts and the challenges workers face in this ever-changing digital age.

- **Volume of jobs**

The implementation of digitalization can lead to greater flexibility and fullness at work, just as it can be a source of stress. According to Goretti (2019), it risks creating, uniting or even eliminating services and departments within companies and impacting the traditional method of workers. Furthermore, in their study, Frey and Osborne (2013) predicted that, during the transition, up to 47% of jobs will be lost to computerization and that this will replace labor-intensive jobs unqualified. However, several authors argue that jobs are a composition of different tasks and that, although many functions can be digitalized, others cannot and still require human involvement. Therefore, this means that not all jobs are subject to the risk of substitution or disappearance due to machinations. Those at risk represent only 9% of jobs among European countries. The majority are not in danger because a large number of jobs require intellectual, social skills, or both, which is difficult to obtain from machines.⁶¹

⁶⁰ <https://hbr.org/2021/11/the-essential-components-of-digital-transformation> consulted on 05/05/2024 at 17:30.

⁶¹ Les impacts de la digitalisation sur la qualité du travail des employés de supermarchés Portugais et Belges." Belgique p 6 – 7.

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- **New working conditions**

According to Dominique Méda and Patricia Vendramin «The development of digital tools and their generalization in companies have effects on the forms and contents of work, on the methods of organizing work, on work relations and on skills required of workers. It is therefore essential to question the forms of work in the future, the skills and knowledge that will be necessary, the working conditions and the social protections that will need to be put in place to support these transformations. »⁶²

Digitalization will therefore impact the working environments of each company, but internal departments and professions will be affected differently. This fourth industrial revolution transformed the job market by creating modern office layouts. New working conditions have emerged, each with specific variables. For example, the interaction between humans and machines, the use of big data, control and interface tasks, as well as network problem solving are now part of the working conditions.

- **Efficiency**

Digitalization has a significant impact on efficiency within companies, particularly with regard to communication, data management and use, as well as organization in general. Although opinions on the overall effects of this transformation are varied, it is clear that the implementation of modern technologies makes it possible to improve the speed and efficiency of work processes, to replace manual and repetitive tasks, and to make workers more flexible and autonomous. According to a study by the European Commission, digitalization offers notable advantages in terms of productivity, automation and optimization of workflows⁶³.

- **Flexibility**

The flexibility offered by digital technologies has benefits by allowing greater accessibility to employment, opening new possibilities of work locations and schedules, and promoting the creation of cross-functional and multicultural teams with experiences varied. This diversity encourages the adoption of innovative working methods and the achievement of original results. However, this flexibility can also present disadvantages,

⁶² Dominique Méda et Patricia Vendramin, "Le travail à l'heure de la digitalisation" Belgique, (2017), p09.

⁶³ Les impacts de la digitalisation sur la qualité du travail des employés de supermarchés Portugais et Belges." Belgique p 8

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such as financial and professional instability for workers who are often hired for specific tasks and for duration as well, without guarantee of continuous work.

4.3 The limits of digital from an HR point of view

The limits of digital from an HR point of view are multiple and can have a significant impact on performance and corporate culture. First of all, comfort with digital technology can vary considerably from one individual to another, which can create challenges in terms of training and support for change. HR must be able to effectively communicate the benefits of digital transformation and provide adequate training to enable all employees to adapt to new technologies.

Furthermore, digital should not be considered a complete substitute for human interactions. Although it can improve the efficiency and speed of certain tasks, it cannot replace the human interactions that are essential to maintaining a strong company culture and effective collaboration.

Thus, the integration of digital within a company can result in significant costs in terms of investment and human resources. HR must be able to effectively budget for these costs, and find ways to recruit and train employees skilled in digital technologies while maintaining a high level of cybersecurity.

In short, HR must understand the limits of digital and work closely with employees and relevant departments to effectively integrate new technologies while preserving a strong corporate culture and meaningful human interactions.

Conclusion:

In conclusion, the relationship between HRM and digital transformation is close and complex. Digitalization offers opportunities to improve HR practices, strengthens business efficiency and strategy. However, it is essential to carefully manage change and support employees throughout this transformation process. HR must take a proactive approach in understanding and integrating digital tools and technologies, while ensuring that impacts on employees are considered. Digital transformation offers exciting new opportunities, but it also requires careful management to maximize its benefits and minimize potential risks.

Chapter 3

Digital Transformation Performance Tool for Human Resources Management (case CCLS)

Chapter 3: Digital Transformation Performance Tool for HR Management

Introduction

Today, the Algerian company, finds itself obliged to transform itself by adopting new technologies available on the market in order to confront the new challenges it encounters and enhance its performance. While some Algerian companies across various sectors and of different sizes have already embarked on their digital transformation, doubts persist regarding the effectiveness and reliability of their strategies. Others are still reluctant to this change questioning whether they can transition to the digital world without losing their corporate culture and exposing themselves to the risks of cyber hacking.

The previous chapters allowed us to understand the key concepts of digital transformation and its impact on human resources management (HRM). In this third chapter, we will deepen our understanding of these concepts by examining a specific case study. This case study will allow us to explore in a concrete way how digital transformation has affected the performance of the HRF. To achieve this, we will divide our chapter into two sections:

- In the first section, we will present the Cereals and Dried Vegetables Cooperative (CCLS) company in Mahdia.
- While the second section will be devoted to our data collection methodology, outlining how the study was conducted within the Cereals and Dried Vegetables Cooperative.

Section 1: Presentation of the Company (CCLS)

1. Definition

The CCLS is a commercial cooperative, it collects cereals from producers. It ensures the storage of cereals and their distribution to two types of customers: mills and direct consumers. The mills take care of the processing of cereals. The CCLS provides assistance to producers in the wilaya of Tiaret. This assistance is linked to specialized technical personnel and also to appropriate agricultural equipment at an attractive price. Thus, we can say that the CCLS is a cooperative that is both commercial and service provider. It is commercial not only through its activity linked to the collection and distribution of cereals but also thanks to its activity linked to the sale of competitive agricultural equipment. The latter are of a good quality and sold at very attractive prices for producers. It is a service provider thanks to its technical assistance. It seems important to us to emphasize that before independence, the cooperative was placed under the responsibility of the National Interprofessional Office of Cereals (ONIC).

Table N°2 TECHNICAL SHEET

Creation date	1922
Number of staff	270
Useful agricultural area	90 490 Ha
Multiplication area	3 500 Ha
Number of member farmers	2 800
Number of multipliers	110

Source: Developed by ourselves based on data collected in the field

Table N° 3 ACTION AREA

Daïra	Town			
Mahdia	Mahdia	Sébaine	Ain Dzarit	Nadhora
Hamadia	Hamadia	Rechaiga	Bougara	
M'ghila	M'ghila	Sid Hosni		
Ksar Chellala	Ksar Chellala	Zmalet Emir AEK	Serguine	

Source: Developed by ourselves based on data collected in the field

Table N° 4 LOGISTICS MEANS

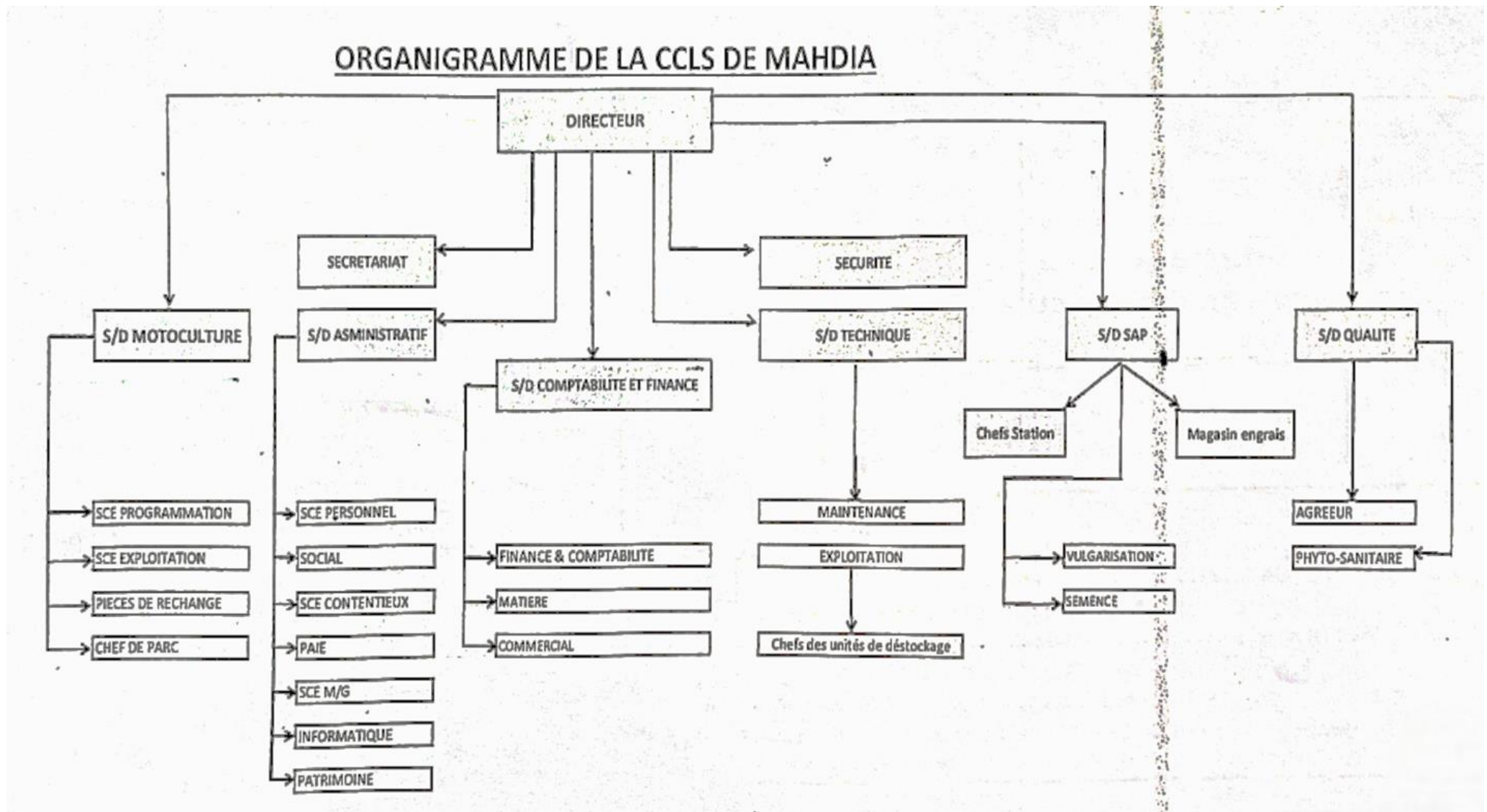
Designation	Number
Screw Conveyor	32
(Goods Elevator) Freight Elevator	11
Weighbridge	8
Forklift	3

Source: Developed by ourselves based on data collected in the field

Table N° 5 STORAGE CAPACITY

Town	Type of infrastructure	Storage capacity (Quintal)
Mahdia-sébaine-Hamadia-Bougara-Ain Dzarit	Concrete silo	301 000
Chellala	Metal silo	176 000
Total Silos		477 000
Sidi Hosni-Si Haoes-Mahdia-Ain Dzarit-Hamadia-Bougara-Rechaiga	Flat bottom magazine	285 000
Total flat bottom magazine		285 000
Total		762 000

Figure N° 6 THE COMPANY ORGANIZATION CHART



Source: CCLS Internal Document

2. Presentation of the ERP HR component

The HR Information System is centralized, which means that it is managed globally, but the applications that make it up are decentralized within the different departments of the HR function. Responsibility for managing the Human Resources Information System (HRIS), that is to say all elements linked to the HRIS, is entrusted to the Administration Sub-Directorate (SDA), while its implementation is carried out by the IT Department. It is important to note that the Human Resources Information System (HRIS) is developed from the software package (DLG PC PAIE).

Section 2: Survey Methodology and Data Analysis

This section concerns the presentation of the survey methodology, the sample and the data collection tool, then we processed using an interview guide with the human resources director. To conclude, to have an idea of the digitalization of the HR function and to have more details in terms of HR digitalization, we have chosen to take a sample of direct users of the ERP integrated by the company.

a. Survey methodology

In this part, we will present and explain the methodology followed during the carrying out of our survey, the main objective was to study the contribution of the integration of the digitalization of the HR function to companies.

1. The qualitative study

A qualitative study is a study intended to collect qualitative elements, which are most often not directly quantifiable by the individuals interviewed or studied, like the interview.⁶⁴

1.1 Interview

The interview is a situation of oral communication, with one person acting as the interviewer and the other as the respondent (less commonly, a group). The data collected are essentially opinions, motivations, that is to say qualitative information. It is often chosen to complete a questionnaire survey.⁶⁵

⁶⁴ <https://www.definitions-marketing.com/definition/etude-qualitative/>. Consulted on 05/05/2024 at 21:36.

⁶⁵ https://pedagogie.acstrasbourg.fr/fileadmin/pedagogie/stss/DEPOT_DOCUMENTS/BAUMEIER_Elisabeth/16_EBentretien.pdf Consulted on 09/05/2024 at 22:02.

There are different types of interviews, namely:

- The non-directive interview: it is based on free expression based on a theme proposed by the interviewer. The investigator then simply follows and notes the thoughts and speech of the respondent without asking questions.
- The directive interview: this type of interview is very similar to the questionnaire, with the difference that the transmission is done verbally rather than in writing. As part of this interview, the interviewer asks questions according to a strict protocol, set in advance.
- The semi-structured interview: it covers a certain number of themes which are identified in an interview guide prepared by the interviewer. The interviewer, if he asks questions according to a protocol planned in advance because he is looking for precise information, strives to facilitate the individual's own expression, and seeks to prevent the interviewee from feeling locked in questions.

1.2 The interview guide

The tool that serves as support is the interview guide, a document which lists the themes or questions to be addressed and which sometimes allows you to enter the answers as the interview progresses.

In our case, we opted for an interview guide with the HR department and the human resources team of the company “CCLS”.

b. Data Analysis

2. The vision of the company's HR department in terms of digitalization of the HR function

2.1 The digitalization of the information system with regard to HRD

Q1: What does the digitalization of company information systems mean to you?

Answer:

“...As a corporate HR director, I consider the digitalization of information systems as an essential element for the company. It encompasses the adoption of digital technologies and tools to manage and process information in an efficient and automated manner...

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The digitalization of information systems represents a profound change in the way businesses operate and create value, harnessing the power of digital technologies to remain competitive and relevant in an ever-changing business environment. [...]

Finally, digitalization also strengthens data security. Digital information systems offer advanced security features, such as data protection, regular backups and restricted access. This helps prevent the risks of data loss, sensitive information leaks and cyber-attacks.”

2.2 The contribution of HR digitalization to the company

Q2: Knowing that HR management is an important decision-making tool, in your opinion, what does the digitalization of HR bring to your company?

Answer:

1. Automation of administrative processes:

- Automate many administrative tasks (such as: leave management, pay slip, performance evaluation).
- Frees up HR time.

2. Improved employee experience:

- Employees can easily access essential information, submit requests, track their professional progress.
- Contributes to a positive employee experience and strengthens talent engagement and retention.

3. Better data management:

- Easily collect, store and analyze employee data.
- Make more informed decisions.

4. Cost reduction:

- Improve operational efficiency.
- Strengthen employee engagement.
- Allow our company to better adapt to market developments and workforce needs.

2.3 The usefulness of HR digitalization adopted by the company

Q3: Can you give us examples of the usefulness of HR digitalization adopted by your company?

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Answer:

- We use online platforms to publish our job offers via social networks like LinkedIn.
- We have implemented online learning platforms that provide our employees with easy access to a variety of training and professional development courses (E-LEARNING ALGERIA).
- We use internal communication platforms to facilitate collaboration and communication between employees (Company telephone).
- We use payroll software.

2.4 The effectiveness of the ERP used

Q4: How do you measure the effectiveness of ERP as an investment and modernization project for HR management within your company?

Answer:

- Cost reduction: we evaluate the savings made thanks to ERP by comparing the costs before and after the implementation of the system. This could include reducing costs associated with manual processes, reducing data entry errors, reducing labor costs, or streamlining human resources operations.
- Process automation: we measure the level of automation achieved through ERP by comparing previous manual tasks with new automated procedures. We look at the percentage of human resources processes that are automated, which can reduce the time it takes to complete these tasks and improve operational efficiency.
- Improved productivity: we evaluate the impact of ERP on the productivity of our teams. This can be measured by analyzing time saved on administrative tasks, the ability to manage a larger volume of work, or the ability to focus on higher value-added activities.
- Data accuracy: we measure the improvement in data accuracy through ERP. This can be assessed by comparing the error gaps between previous systems and the ERP. By analyzing error rates in salary calculations or collecting user feedback on data quality.
- Guarantee the security and confidentiality of employees' personal data.

2.5 Access to information

Q5: Who has access to information?

Chapter 3: Digital Transformation Performance Tool for HR Management

Answer:

Access to information within the company may vary depending on user roles and responsibilities. Here is a general description of the different levels of access to information and responsibility for decision-making:

1- Operational users: Operational users generally have limited access to the HR information necessary to accomplish their daily tasks. They can view specific data related to their area of responsibility, such as managing records and documents, entering and updating employee information, and communicating with employees.

2- Department managers: Department managers have more extensive access to HR information related to their area of activity. They can view employee employment contracts, track available leave balances and leave days taken by employees, as well as administer salaries, bonuses, benefits, retirement plans.

3- General management or board of directors: General management or the board of directors have full access to HR information and are responsible for the overall decision-making of the company.

It is important to note that access to HR information must be managed in a secure and controlled manner to ensure the confidentiality of sensitive data. Companies implement appropriate security policies and access permissions to ensure that only authorized individuals have access to confidential HR information.

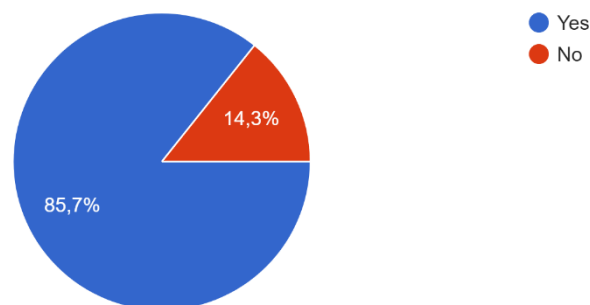
3. The Digitalization of the HR Function and its Contribution for Users

3.1 Direct access to the ERP

Figure N° 7

Q1: Do you have direct access to the ERP adopted by the company?

7 réponses



Source: Google form

Comment:

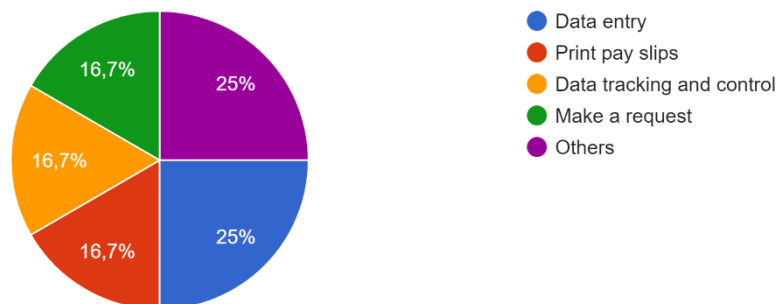
According to the data collected from ERP users within the human resources department, we see that the majority of respondents declare having access to the ERP provided to them.

3.2 Tasks assigned to ERP users within the human resources department

Figure N° 8

Q2: If yes, specify your tasks among the following answers:

6 réponses



Source: Google form

Comment:

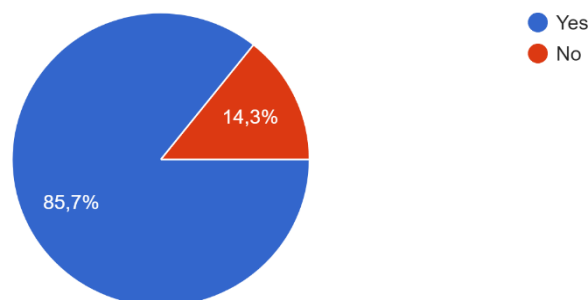
According to the data collected from ERP users within the human resources department, we note that the majority are capable of entering data, we notice that we have the equality between the other tasks (their superiors) have permissions to control data, print pay slips and make a request.

3.3 The contribution of ERP to the achievement of its users' missions

Figure N° 9

Q3: Do you think that the digitalization of the HR service makes it easier for you to carry out your missions?

7 réponses



Source: Google form

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Comment:

The proportion of 85.7% positive responses suggests that ERP implementation has a positive impact on the achievement of user missions. These results are encouraging and indicate that most users find that the ERP contributes effectively to their professional tasks and goals. However, it is also important to consider the 14.3% of users who answered “no”. Although their number is lower than that of positive responses, it is crucial to understand the reasons behind these negative responses. Overall, this chart shows that the majority of ERP users find that it has a positive impact on the achievement of their missions. However, it would be beneficial to deepen the analysis to better understand the factors influencing the responses negative and look for solutions to improve the experience of dissatisfied users.

Q4: If yes, specify how?

Comment:

According to the analysis of the answers given by users to this question we can summarize the following points:

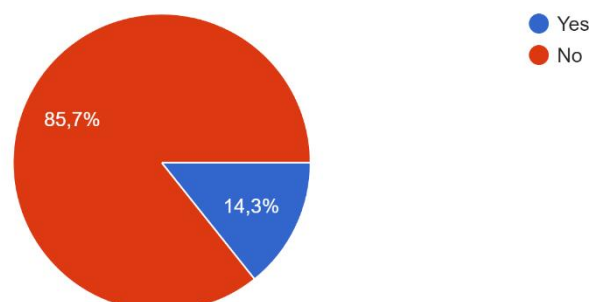
- Data processing efficiency: This leads to a reduction in errors.
- Cost reduction through time-saving: By saving time in task completion, costs are reduced.
- Efficient data collection, storage, and analysis: This enables easy management of data.
- Enhanced decision-making: Access to organized data facilitates making more informed decisions.
- Automation of administrative tasks: Many administrative tasks are automated to increase efficiency.

3.4 Difficulties in accessing HR information via the ERP

Figure N° 10

Q5: Do you find it difficult to access HR information?

7 réponses



Source: Google form

Comment:

This graph illustrates the availability of information provided by the ERP within the finance department. It shows that 85.7% of users confirm that the information is accessible via the ERP, which supports and strengthens the hypothesis of ERP user access.

- The degree of difficulty

Q6: If yes, specify the nature and degree of difficulty.

Comment:

The majority of respondents agreed that the degree of difficulties accessing information is mainly attributed to “software complexity”

- In the event of difficulty accessing, who should you contact?

Q7: If you encounter difficulty accessing information, who should you contact?

Comment:

The respondents provided various answers, including:

- Company IT engineer.
- The software vendor.
- A former.
- Specialized team
- Head of service.

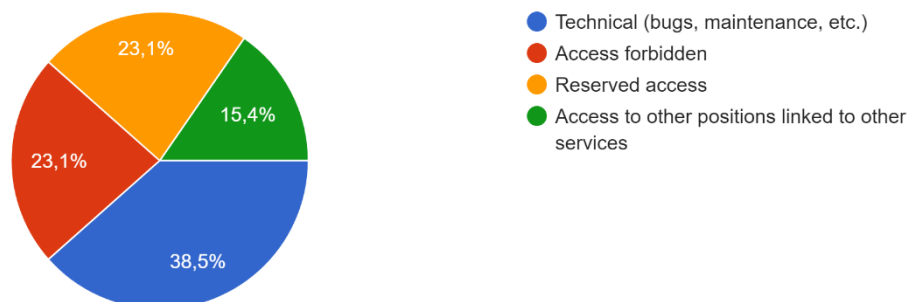
3.5 The nature of access to human resources information with ERP

The employees have problems when they accessed to ERP, So what kind of this issues?

Figure N° 11

Q8: The nature of difficulty in accessing HR information is:

7 réponses



Source: Google form

Comment:

The graph illustrates a map of the supporting documents for accessing financial information, presented as follows:

Technical nature: it concerns breakdowns, system bugs, maintenance, etc. It is estimated at 38.5% of the total responses given by users, which explains that when users do not get to the information financial, the justifying reason is therefore: **technical failure**.

- **Restrictions and prohibitions:** the graph indicates that the rest of the respondents (61.5%) have no access (either restricted or prohibited) suggesting that this information may be available only to a limited group of people with authorization, this may be due to privacy or security reasons.

4. The study results

To better understand the contribution of the integration of human resources digitalization to companies, we carried out a qualitative study using an interview guide carried out with the CCLS HR Director, we deduce the following:

- The digitalization of human resources brings better accessibility to data, task automation, increased precision, improved collaboration and enhanced security. These advantages allow business leaders to make more informed decisions, to gain efficiency and drive business growth.
- The digitalization of human resources improves efficiency, precision, analysis and security HR processes, which contributes to more efficient management of the company.
- Access to information must be managed in a secure and controlled manner to guarantee the confidentiality of sensitive data. Companies are implementing security policies and appropriate access permissions to ensure that only authorized persons have access to confidential HR information.
- The majority of ERP users find that it has a positive impact on the achievement of their missions (reliability, efficiency, time saving, etc.).
- When users have difficulty accessing HR information, the main reason given is a technical problem such as an outage.
- Using an ERP system offers several advantages in terms of data management. First of all, ERPs make data entry easier by automating many processes and providing a user-

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friendly interface. Additionally, built-in quality control features in ERPs help increase data reliability by identifying and correcting possible errors.

- When it comes to data processing and storage, ERPs generally offer a solid level of performance and security. Advanced data processing features help analyze information efficiently.

In summary, the use of an ERP helps to improve the management of the company's human resources in general. ERPs are valuable tools for companies wishing to improve their operational efficiency and their decision-making based on reliable data.

Based on available information, the survey results support our hypothesis, indicating that digital transformation is imperative for human resources management, and has a positive impact on its performance.

Conclusion

This chapter explored in depth the digitalization of human resources in the company using a qualitative approach based on an interview guide. Thanks to this methodology, we were able to collect rich information and valuable perspectives on the experiences of actors involved in HR digitalization.

By analyzing the results of our qualitative study, we identified several key themes. We have observed that the digitalization of human resources presents both challenges and opportunities for companies. Among the challenges, we observed issues related to resistance to change, technological complexity and data security. However, participants also highlighted potential benefits such as automating tasks, improving data accuracy, optimizing processes and making more informed decisions.

General Conclusion

General Conclusion

HR digitalization and ERP integration are essential elements for the future of corporate human resources management. This transformation offers multiple benefits, such as process automation, improved data accuracy, decision-making based on reliable information, and greater operational efficiency. Companies that adopt these technologies are better positioned to meet current challenges, optimize performance and seize new opportunities. However, it is crucial to have a solid implementation strategy, adequate staff member training and continuous monitoring in place to ensure the success of HR digitalization and ERP integration.

In the digital age, companies that capitalize on these technological advances are able to transform their HR operations, strengthen their competitiveness and thrive in an ever-changing environment.

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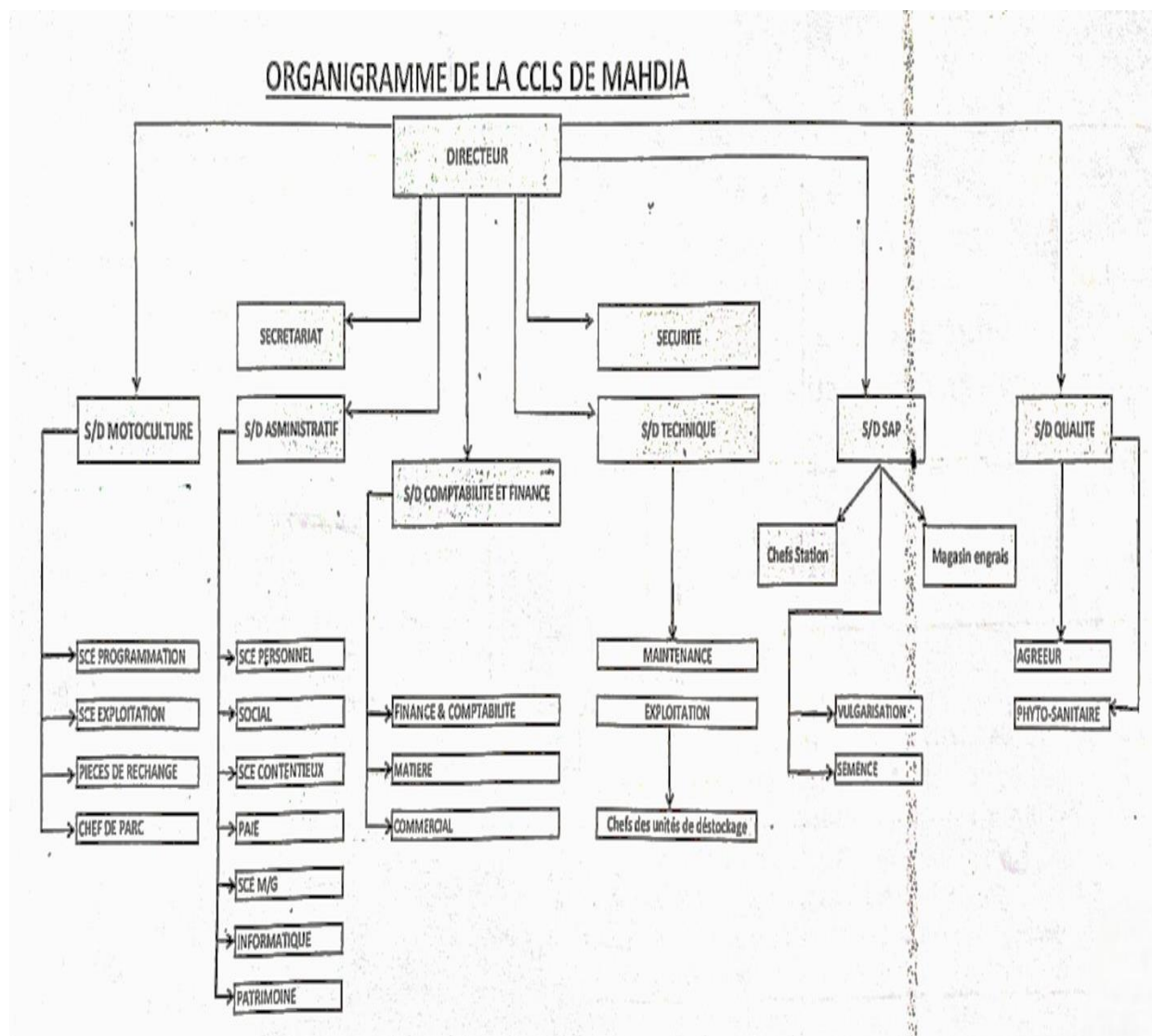
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Appendices

Appendix 1



Appendix 2

The vision of the company's HR department in terms of digitalization of the HR function

1. The digitalization of the information system with regard to HRD

Q1: What does the digitalization of company information systems mean to you?

2. The contribution of HR digitalization to the company

Q2: Knowing that HR management is an important decision-making tool, in your opinion, what does the digitalization of HR bring to your company?

3. The usefulness of HR digitalization adopted by the company

Q3: Can you give us examples of the usefulness of HR digitalization adopted by your company?

4. The effectiveness of the ERP used

Q4: How do you measure the effectiveness of ERP as an investment and modernization project for HR management within your company?

5. Access to information

Q5: Who has access to information?

Appendix 3

A guide outlining the elements of the HR service

Q1: Do you have direct access to the ERP adopted by the company?

☐ Yes

☐ No

Q2: If yes, specify your tasks among the following answers:

☐ Data entry

☐ Print pay slips

☐ Data tracking and control

☐ Make a request

Q3: Do you think that the digitalization of the HR service makes it easier for you to carry out your missions?

☐ Yes

☐ No

Q4: If yes, specify how?

Votre réponse

Q5: Do you find it difficult to access HR information?

☐ Yes

☐ No

Q6: If yes, specify the nature and degree of difficulty

Votre réponse

Q7: If you have difficulty accessing, who should you contact?

Votre réponse

Q8: The nature of difficulty in accessing HR information is:

☐ Technical (bugs, maintenance, etc.)

☐ Access forbidden

☐ Reserved access

☐ Access to other positions linked to other services

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