

School of Higher Commercial Studies



A dissertation for obtaining a Master's degree in commercial sciences

Option: Management and Entrepreneurship

Theme:

Analysis of the digitalization's effects on
Commercial performance

Case: Glass Design

Submitted by:

Ms.Benmakhlouf Aya

Supervised by:

Dr.CHENNOUFI Wassim

Lecturer - HEC

June 2024

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Dedication

First of all, I thank god for allowing me and helping me to accomplish this piece of work.

With deepest gratitude and affection, I dedicate this work to:

My amazing extraordinary parents, for their endless support, patience, sacrifice, care...and love.

My nephew Ahmed Ghaith, auntie's heart, for existing!

My beloved sisters Basma and Wissal, who bring a daily dose of chaos and laughter into my life.

My dear brother Tamim, for being the most caring, loving and supporting sibling.

My sister's husband Amir, my second brother, for being there whenever I needed him.

My second parents, mama Wahiba and papa Mounir, for their unconditional love and kindness.

My grandparents and uncles, for their encouragement and support.

My STRONG lovely aunties, whose tenderness and kindness shine brightly, (particularly auntie Leila).

My cousins, boys and girls, for being such pure-hearted and cool persons.

My Angel Yazen, my grandma Baya, May Allah reunite us in Jannah Insh'Allah.

Me, the expert of squeezing out brilliance at the 11th hour, finally your hard work paid off! Congrats on completing this thesis! May your ideas continue to shine and inspire others for all time.

(And to everyone that I would regret not writing their name here)

AQA

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I express my sincere gratitude to the administration of EHEC, for providing an excellent academic environment and opportunities to grow both personally and professionally.

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Special thanks to my family for believing in me and encouraging me to reach my goals whatever it requires.

Thank you all

Abstract:

As part of the technological advancements we witness today, digitalization has been widely adopted in companies worldwide, particularly after the pandemic of COVID-19.

Companies are actively trying to catch up in the digital revolution by implementing strategies and initiatives that facilitate the implementation of digitalization and the use of its tools to face challenges and constraints. This can influence the commercial performance of organizations.

In the theoretical part of this study, we will define digitalization and some related concepts: its tools, its benefits, its process, its characteristics...etc; make the adjustment to the context of our country, then discuss the key performance indicators of commercial performance, and how digitalization contributes to determine their value.

To confirm or refute the hypotheses and finally answer the main question of this research, we will rely on the theoretical foundations to analyse the concrete results obtained in the practical part concerning the positive impact and the challenges of digitalization and suggest recommendations at the end.

Key words:

Digitalization, commercial performance, companies, key performance indicators.

Résumé :

Dans le cadre des avancements technologiques qu'on assiste aujourd'hui, la digitalisation a été largement adoptée par les entreprises au niveau mondial, notamment, après la pandémie du COVID-19.

Les entreprises s'efforcent activement de rattraper le retard dans la révolution numérique en mettant en place des stratégies et des initiatives qui facilitent la mise en œuvre de la digitalisation et l'utilisation de ses outils pour faire face aux défis et aux contraintes. Cela peut influencer la performance commerciale des organisations..

Dans la partie théorique de cette étude, on va définir la digitalisation et quelques concepts relatifs : ses outils, ses avantages, son processus, ses caractéristiques..etc; faire l'ajustement au contexte de notre pays l'Algérie, puis discuter les indicateurs de performance commerciale, et la façon par laquelle la digitalisation contribue à déterminer leur valeur.

Pour confirmer ou infirmer les hypothèses et répondre au final à la question principale de cette recherche, on va s'appuyer sur les fondements théoriques pour analyser les résultats concrets obtenus dans la partie pratique concernant l'impact positif et les défis de la digitalisation et proposer des recommandations à la fin.

Mots clés:

Digitalisation, performance commerciale, entreprises, indicateurs clés de performance.

ملخص:

كجزء من التقدم التكنولوجي الذي نشهده اليوم، تم تبني الرقمنة على نطاق واسع من قبل المؤسسات حول العالم، خاصة بعد جائحة كوفيد 19.

تحاول المؤسسات اللحاق بركب الثورة الرقمية عن طريق وضع استراتيجيات و مبادرات تسهل تنفيذ الرقمنة و استعمال وسائلها المختلفة لمواجهة التحديات و القيود، و يمكن لهذا التأثير على أدائها التجاري.

في الجزء النظري من هذه الدراسة، سنعرف الرقمنة بالإضافة إلى بعض المفاهيم ذات الصلة أدواتها، فوائدها، مراحلها، خصائصها...و ما إلى ذلك، ثم نقوم بمناقشة مؤشرات الأداء التجاري، وكيفية مساهمة الرقمنة في تحديد قيمها.

لتأكيد أو رفض الفرضيات و الإجابة أخيرا على السؤال الرئيسي لهذا البحث، سنعتمد على الأسس النظرية لتحليل النتائج الملموسة التي يتم الحصول عليها في الجزء التطبيقي، و المتعلقة بالتأثير الإيجابي للرقمنة و بتحدياتها، و في الأخير اقتراح بعض التوصيات.

كلمات مفتاحية

الرقمنة، الأداء التجاري، المؤسسات، مؤشرات الأداء التجاري.

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List of abbreviations

Abbreviations	Meaning
AI	Artificial Intelligence
BI	Business Intelligence
CRM	Customer Relationship Management
ERP	Enterprise Resource Planning
HCVA	Human Capital Added value
HR	Human Resources
ICT	Information and Communication Technologies
IOT	Internet Of Things
IS	Information System
IT	Information Technology
KPI	Key Performance Indicators
LLC	Limited Liability Company
ROI	Return On Investment
SSL	Secure Sockets Layer
UN	United Nations

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General Introduction

General introduction:

Profitability and sustainability are the two ultimate goals for every company. Businesses strive to generate more profit and increase their market share, which ensures profitability; at the same time, they aim to maintain their presence over the long term and remain competitive, which equates to sustainability and growth. Achieving these goals is intrinsically linked to the creation of value.

Due to the rapid digital advancements, the methods of creating value have transformed significantly. Companies are increasingly turning to digitalization as a crucial strategy. It has become unavoidable in today's world.

Globally, multiple initiatives are underway to embrace this shift that has become essential for businesses seeking growth and better performances.

The transition to digitalization may present challenges and constraints, but these can be overcome with a well-crafted implementation strategy.

❖ In the light of this reality, I chose to expand on this topic through my study entitled:

“Analysis of the effects of digitalization on commercial performance”.

❖ For a better understanding of this topic, I spent 3 months of internship in a production company, Glass Design, which is trying to be updated with this digitalized world through using ERPs, CRM systems and other digital tools.

❖ The main question of this study is :

“How does digitalization influence the commercial performance of companies? ”

❖ From this main question, the following secondary questions arise:

- **Question 01:** what is digitalization?
- **Question 02:** does it have a positive impact on commercial performance?
- **Question 03:** what are the challenges related to digitalization?

❖ **Hypotheses:**

In order to better guide the investigation process, I suggested these two hypotheses:

- **H1:** Digitalization has a positive impact on commercial performance.
- **H2:** Glass Design may face some struggles with integrating digitalization in its system.

❖ **Methodology of research:**

To confirm or not my hypotheses, I based my work on an a qualitative and a quantitative investigation by using interviews and a questionnaire ; and to enrich my study, I took some theoretical works related to my research as a reference , in addition to the documentation provided by Glass Design company and those which I made with my personal efforts .

❖ **The aim of this research:**

This study aims to: **Know the real impact of adopting digitalization on company's commercial performance.**

❖ To get to this aim, I put these partial objectives :

- **Objective 01:** Define digitalization's concepts and make the difference between it and other similar terms.
- **Objective 02:** Study the context of digitalization in Algeria, its reality, initiatives, challenges and constraints.
- **Objective 03:** Identify the KPI of commercial performance in a company.
- **Objective 04:** Analyse the impact of digitalization on commercial performance of Glass Design company and suggest some recommendations.

❖ **The reasons of choosing this theme:**

Personal reasons:

- As a management and entrepreneurship student at EHEC, I felt interested in this study because digitalization is reshaping the whole management's processes, as a consequence, I must develop my knowledge in this topic.
- The fact that I am planning to create my own company put me in a position where I am supposed to be updated with all the developments related to digital in order to know its dimensions and the best way I could take advantage of it in my future business.

Objective reasons:

- The interest in digitalization today, in the world and in Algeria.
- Digitalization and its tools can provide data-driven decision making in companies
- The usefulness of digitalization in daily activities of companies.

❖ **Significance of the work:**

This study will contribute to our understanding of the impact of digitalization on commercial performance in enterprises .Its results may have implications for managers, relevant stakeholders and future entrepreneurs.

Detecting digitalization features and knowing the position of Algeria in this digital world, will give them an overview of the current situation and how can them get a maximum of benefits from it.

❖ **The plan of my work includes three (03) chapters**

After this general introduction, in which I tried to clarify the topic, we'll move to these three chapters:

Chapter 01: The context of digitalization in Algerian companies

In this part, I will try to define digitalization and some related concepts such as: its levels, tools and characteristics. After that, I will analyse the reality of digitalization in our country, its advantages and constraints,

Chapter 02: The contribution of digitalization in commercial performance

In this chapter, we'll define commercial performance and discuss its KPIs and how does digitalization contribute in this area in general, and specifically through e-commerce and social media.

Chapter 03: Case study of GLASS DESIGN

In this part, there will be a presentation of the research area; I'll try to study its internal information system and digitalization tools that the company uses. Then, we'll discuss the methodology of research that I have chosen and I'll finish this part by analysing the results and suggesting some recommendations according to them.

Chapter 01:

***The context of digitalization
in Algeria***

Introduction:

Algeria is one of the countries whose government is striving to be updated with digital advancements and technological evolution in today's world.

In the first section of this chapter, we will define digitalization, make the difference between it and other similar terms, and then explain: the usefulness of some digital tools, the process of digitalization, characteristics of digitalized companies, and finally its advantages and disadvantages.

In the second part, we will have an overview about the position of our government concerning digitalization, its situation before and after the pandemic of COIVD 19, and finally its initiatives and challenges.

Section 01: Concepts of digitalization

In today's world, digitalization has become an essential part of companies due to the daily evolutions in the technology area. This term was widely spread in the last decade, that's why in literature, there are multiple definitions of digitalization. Each author defines it according to his perspective; among these definitions we mention the three definitions below.

1. Definition of digitalization:

Digitalization refers to the use of digital technologies to transform and improve activities, processes and interactions within the company, with the aim of achieving greater efficiency and competitiveness in the market¹.

It is also defined as the utilization of digital technology to modify and substitute a conventional business model, ultimately providing new opportunities for growth and value creation. It is a process through which a company transitions from a traditional to digital business (Gartner, 2019).²

From the previous definitions, we conclude that digitalization refers to the use of digital technologies and tools to create value in new ways and to change the way interactions with internal and external stakeholders of an organization in order to automate all the operations, as a result, it can get more efficient and competitive and updated with digital world transformations.

Figure 01: Digitalization trends



Source: www.interplex.com viewed on 20/05/2024 at 17:00

¹ TRAORE,(S) et al : «*Digitalisation et performance commerciale des petites et moyennes entreprises (PME) du District de Bamako* », *Revue Française d'Economie et de Gestion* , Volume 4: N° 09, 2023, P.150. (translated by the author)

² EL ADIB,(M) & NAFZAOUI,(M): “*Analysis of the determinants of digital technology adoption in Moroccan audit firms: development of an explanatory conceptual model*”, *International Journal of Accounting, Finance, Auditing, Management and Economics*, 4(4-1), 2023,PP. 246-269, <https://doi.org/10.5281/zenodo.8264705>

2. The difference between Digitizing, Digitalization and Digital transformation:

The terms: digitization, digitalization and digital transformation are used interchangeably in literature, studies and researches (e.g. IBM company, which considers digitization and digitalization as synonyms). The similarity between them can be a source of confusion and perplexity; that's why distinguishing between them is essential to avoid using them in inappropriate positions.

In the table below, I will try to make the difference between them through the definition of each of the terms:

Table 01: Definition of: Digitization, digitalization and digital transformation.

The term	The definition
Digitization	The process of converting physical objects into a digital format. It involves encoding information in computers by converting from analogue to digital. For example, scanning paper to create digital copy or converting audios or video recordings into digital files ¹ .
Digitalization	According to Vivier.E and Ducrey.V, It is used to describe the integration of different digital tools, terms and methods into the overall strategy and daily activity of the company. ² It also refers to the use of digital technology and digitized data, in order to create and harvest value in new ways ³ .
Digital transformation	"It is a strategic initiative that incorporates digital technology across all areas of an organization. It evaluates and modernizes an organization's processes, products, operations and technology stack to enable continual, rapid, customer-driven innovation" ⁴

Source : elaborated by the author

From the definitions in the table below, we notice that digitization means turning audio, visual and written information to digital data; digitalization means integrating digital tools in

¹ AREYNE,(L), published on 22/03/2022,(consulted on 06/05/2024 at 15:29), <https://www.globalsign.com/en-sg/blog/difference-and-similarities-digitization-digitalization-and-digital-transformation>.

² VIVIER,(E), DUCREY,(V): "Le guide de la transformation digitale", Eyrolles, 2nd Edition, Paris, 2019, P.312.

³ GOBBLE.M, "Digitalization, digitization, and innovation ", Research Technology Management, « Volume 61, Num°04 », 2018, PP. 56-59.

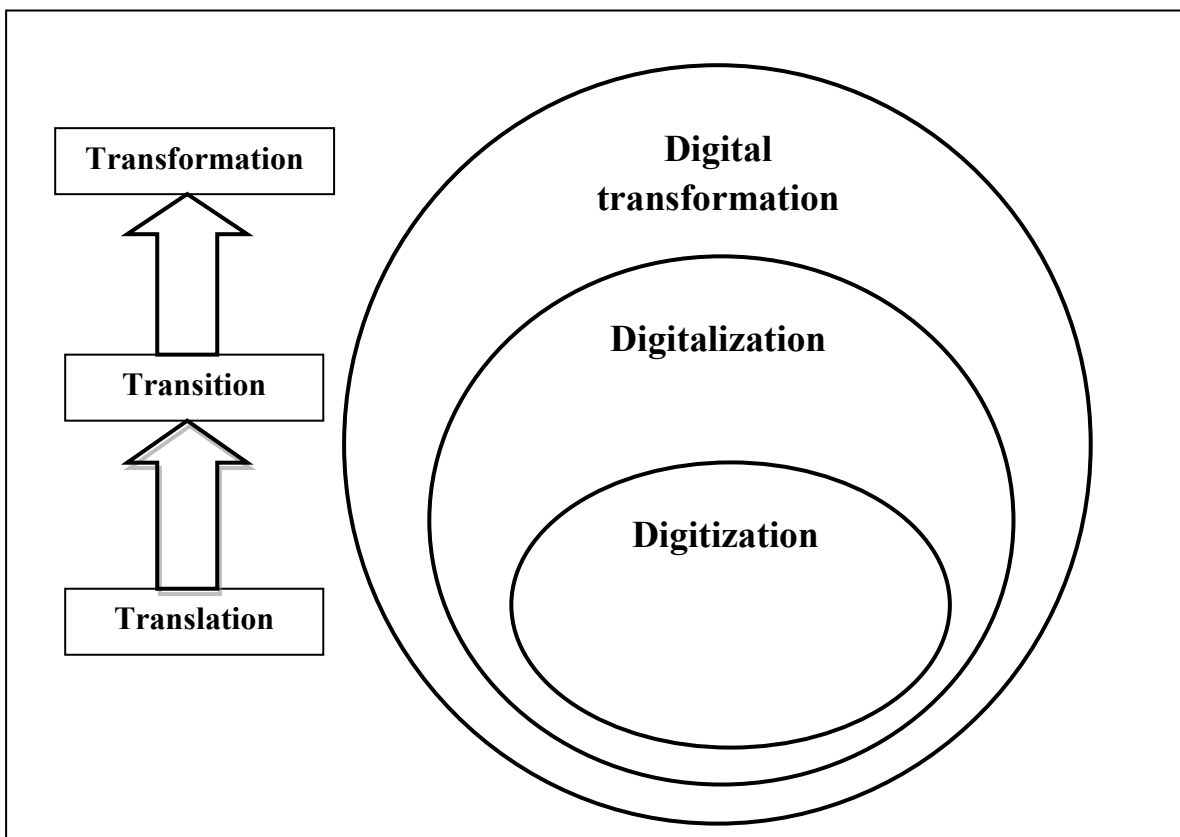
⁴Keith,(O), Amanda,(D), Mark,(S), published on 02/05/2024,(consulted on10/05/2024 at 01:22) , <https://www.ibm.com/topics/digital-transformation> .

the daily activities of the company; and digital transformation means modernize organization's processes by integrating technology in all of its areas.

Some digital companies tried to focus on the debate related to clarifying the meanings of these terms and on distinguishing between them. Among these companies we find Oracle (digital services, software and hardware provider), which suggested the next definitions:

- digitization is the process of transforming information from analogue or manual into digital form;
- digitalization is the process of applying digital technology and capabilities to do regular activities in new and better ways;
- Digital transformation means the conversion from manual processes to digitized processes in every aspect of business, including supply chain, ERP, operations, customer service and more.¹

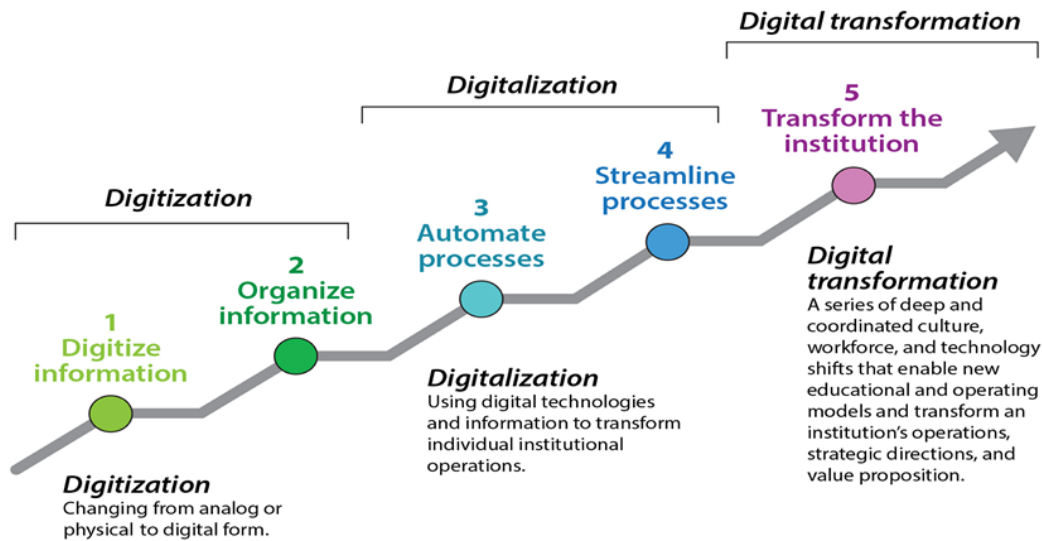
Figure 02: What is digital transformation, digitalization and digitization



Source: elaborated by the author, retrieved from www.medium.com, (viewed on 17/05/2024 at 15:41)

¹ www.oracle.com (consulted on 07/06/2024 at 19:00).

Figure 03: Phases of digital transformation



Source: www.educause.edu viewed on 04/06/2024 at 21:46.

The two figures above resumed the relationship between the three terms. We notice that digitization is the first step in the process of digital transformation, it is considered as a preliminary phase through which a company translates and converts the physical to digital, then it moves to the second phase (transitional), digitalization, where the company can exploit those digitized and well organized information by using digital tools and technologies to automate and streamline the business processes. If a company stops here, it is digitalized, but if it gets deeper in the process, generalized the changes in all parts of the institution and transform its business models, practices and strategic directions, then we can say that the company has done a digital transformation.

Finally, we conclude that digitization is a framework for digitalization, and digitalization is the foundation for digital transformation, as a consequence, there's a sequential dependency between the three.

3. The tools of digitalization:

There are too many tools of digitalization that an organization can use for several reasons and aims, but before listing some tools, we need to explain the term: IS, which is the foundation for those tools.

3.1 Information system:

According to Alphanose.C, information system is a common system between a user and an integrated computer that produces quality information to assist employees in execution, management and decision-making functions. It uses infrastructure and software computing equipments, databases, manual procedures and models for analysis, planning, control and quality decision-making¹.

- **Components of Information system:**

- **Hardware:** physical equipments that allow to access and distribute data in a more tangible form. Some of them are used for direct human interactions and others to collect and process information.²

For example: computers, tablets, keyboards, smart phones, hard-drivers and microprocessors.

- **Software:** this component is directly connected with hardware of the IS, it is used for the input, output, storage and processing of information. There are two main categories of software: system software and application software.

For example: MacOS, Microsoft Windows.

- **Databases:** hardware and software cannot be beneficial without data. Database is a collection of relevant data that people can access and use for specific tasks. It is used for collecting, organizing and archiving information to allow users to make their analysis successfully which leads to useful insights.

- **Network:** it is an intricate interconnected system that exchanges electronic communications, files and other resources. There must be a network for computers and physical devices to exchange data and important information and communications. There are two main categories

¹ ALPHANOSE,(c). (2013) : «*Business Intelligence et management* », AFNOR, 2013, P.06.

² www.ischoolonline.berkeley.edu , consulted on 17/05/2024 at 02 :00.

of networks: wired (where computers are connected with cables) and wireless (where computers and devices are not connected with cables but with new technologies like WI-FI).

- **People resources (human resources):** all of the components pre-mentioned, can't operate without human resources. IS users are people who are able to collect, analyse and utilize data; For example: experienced technician, finance, marketing professionals.

They depend on IS to:

- Increase work efficiency
- Improve productivity
- Identify solutions to achieve their goals
- Make better data-driven decisions

3.2 Digital tools:

The fast evolution of digital world today there is an endless list of digital tools that companies may benefit from in their digitalization journey; it can be resumed in the list below:

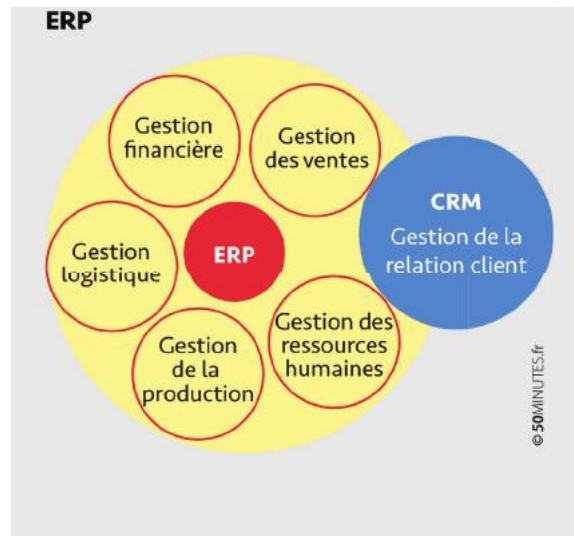
- **Enterprise Resource Planning systems (ERP):** refers to a type of software that organizations use to manage day-to-day business activities, such as accounting, procurement, project management, risk management and compliance, and supply chain operations. ERP systems link a multitude of business processes and allow the flow of data between them¹.

- **Customer Relationship Management systems (CRM):** a set of strategies, tools and techniques to save, manage and enrich relationships with current –even former ones to win back- and prospects². CRM is a part of ERP system as shown in the next figure :

¹ www.oracle.com/erp (consulted on 18/05/2024 at 02:30).

² DELERS,(A),CADIAT,(A): " *La gestion de la relation client* ", 50 minutes , France , 2015,P. 12.

Figure 04: ERP system components.



Source: Delers.A, Cadiat.A , opcit''*La gestion de la relation client*'' ,2015, P12

- **Social media:** it can be defined as: ‘‘ a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, which allow the creation and exchange of user generated content’’¹

There are different types of social media applications and platforms, divided as follows:

- Professional networking platforms: where the content is only related to work, education or professional interactions and events; for example: Facebook, LinkedIn.
- Visual content sites: where the content is whether pictures or videos; such as: Instagram, Youtube.
- Discussion forums: which contains online communities where users can share information, interests and discuss different topics; For example: Reddit , Quora
- Blogging and community platforms: these platforms can help companies to share valuable insights and expertise in order to position its brand as an authority; for example: Twitter (X), WordPress, and Medium.

¹ KAPLAN,(A) and HAENLEIN,(M): ‘‘Users of the World, Unite ! The Challenges and Opportunities of Social Media’’, 2010, p. 61.

The use of social media tools can be a condition for the accomplishment of the process of “Digital marketing” ; which refers to marketing techniques that use digital media and channels to promote products or services, increase sales and turnover, give visibility and credibility to businesses and attract customers¹.

- **Project management tools:** project management tools are one of the collaboration tools in a company. It can be defined as software applications or online platforms that allow managers or teams to track the progress of their projects from the start until the end. There are several types of project management tools as soon as:

- Planning tools: they are used for scheduling, setting calendars and planning the tasks duration according to the deadlines.
- Task management tools: this tool is used for the creation and distribution of the tasks on the members of the project team as well as for tracking its progress.
- Collaboration tools: they are used for facilitating communication and collaboration between the team of the project and discuss their problems and progress by sharing files and documents.
- Resource management tools: used for managing and allocating the right resources (human resources, financial resources and equipments) for the right tasks and missions in order to ensure project success.

- **Business Intelligence and Artificial Intelligence:**

- Business Intelligence: refers to the technologies, applications and practices of collection, integration, analysis and presentation of information². It aims to make analysis and overviews on historical performance of the organization.
- Artificial Intelligence: AI refers to: ”a field of computer science that focuses on computer processes that can often function and react in human-like ways, such as

¹ www.icd-ecoles.com , (consulted on 20/05/2024 at 00:35).

² www.oracle.com (consulted on 02/06/2024 at 04:37).

image recognition (vision), speech recognition (hearing), and natural language generation (speaking) "¹. It aims to predict future actions based on the historical data.

These two tools may be used separately or individually, but that does not prevent using them simultaneously, because this will help in delivering better analytical solutions.

- **Communication tools:** every company needs to have some common communication tool and platforms, because achieving short and long term objectives is the mission of the whole team, as a consequence, sharing information and exchange ideas are necessary. Here are some examples of this type of tools: Zoom, Google meet, MS Teams Meetings, Slack, Gmail, Viber, Whatsapp

- **Cloud storage solutions:** the concept of this type of storage is using online data-storing techniques instead of physical devices storing like hard drives and local servers. Every concerned employee can have access to the stored data from anywhere; for example: Google drive, OneDrive, DropBox, Azure.

- **Internet of things (IOT):** IOT is a network of connected objects and terminals equipped with sensors (and other technologies) allowing them to transmit and receive data between them and other systems². It involves the interconnection of everyday devices on different networks, such as:

- Manufacturing and industrial applications: which concerns industrial machines
- Smart cities:
- Retail and supply chain: for example, the applications that allow clients in a supermarket to detect the exact position of a product, and others that allow producers to track the product during its whole lifecycle.

- **Mobile applications:** today, companies are getting closer to their customers through different ways, one of these ways are mobile applications, a company creates its own application so that clients would have more accessibility to the latest news, updates and exclusive features. For example: Yassir, Jumia.

¹ RYAN,(M): «*In AI we trust : Ethics, artificial intelligence, and reliability*», Science and Engineering Ethics, 26, 2749-2767. , 2020, P03.

² www.sap.com (consulted on 01/06/2024 at 05:07).

- **HR management tools:** HR department can leverage different tools to streamline its processes, improve its effectiveness and efficiency and also empower the employees skills; such as:

- **ATS (Applicant Tracking Systems):** it concerns the automation of recruitment process, and the sourcing of candidates.
- **Onboarding platforms:** which streamlines the integration of new employees and provide them by the necessary sources, information and training materials.
- **HR analytics tools:** which aims to collect and analyse HR data to make insights into workforce trends and employees engagement.

- **Websites:** a set of interconnected web pages accessible from the World Wide Web that are identified by a common domain name and hosted on a web server.¹

Among the characteristics of a website, we find:

- **A set of web pages:** that means that a website is a whole collection of web pages and not only one page (home page, product/service page, about page, contact page, reviews page...etc).
- **Responsive design:** that means that the website is accessible and viewable by all type of devices.
- **Visual appeal:** high quality images, videos and graphics in order to enhance the brand image.
- **Security features:** through using some protocols like SSL , which is a technology that allows to ensure that all the data transmitted remains confidential and secure.

4. The benefits of digital tools:

Each digital tool has a specific use and benefits; in the next table I will try to mention the most important benefits that we can get by implementing the tools previously mentioned.

¹ www.merriam-webster.com/dictionary/website (Consulted on 17/05/2024 at 19:49).

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Table 02: The benefits of digital tools

Tools	Benefits
Websites	<ul style="list-style-type: none"> -Gives an overview about the organization -Develop the presence of the company on the web -Encourage innovation
ERP	<ul style="list-style-type: none"> -Accessibility to information at anytime from anywhere -Gain time and reduce waste -Eliminate data duplication -Ensure data integrity -Centralize the information -Better communication and coordination
CRM	<ul style="list-style-type: none"> -Better customer experience -Get valuable insights into customer's preferences -Storing interactions and data related to each customer -Better reporting and analytics
Social media	<ul style="list-style-type: none"> -Achieve marketing goals -Develop visibility -Connect the company with its audience
AI and BI	<ul style="list-style-type: none"> -Automation of the work flows -Better decision-making -Get relevant insights -Gain time
Project management tools	<ul style="list-style-type: none"> -Track of progress -Centralize the planning of projects -Align goals with deadlines
IOT	<ul style="list-style-type: none"> -Data collection and exchange -Optimize manufacturing processes -Monitoring energy use and calculate costs -Predict machines failures
Cloud storage solutions	<ul style="list-style-type: none"> -Secure information -Cost effectiveness -Accessibility

Collaboration suites and communication tools	<ul style="list-style-type: none">-Better communication and coordination-Optimize productivity-Enhance brainstorming and problem-solving sessions
HR management tools	<ul style="list-style-type: none">-Optimise recruitment process-CV processing-Gain time
Mobile applications	<ul style="list-style-type: none">-Have access to customers-Predict needs, choices of customers through analysing its behaviours-Better customer experience

Source: elaborated by the author.

To conclude, I presume that companies can make the maximum out of those digital tools by choosing the most relevant and suitable ones according to its needs, preferences and capabilities in order to empower smart work often with lower costs especially since the majority of the tools are accessible and affordable.

5. Process of digitalization:

There are some principal steps in the process of digitalization of companies, which, according to Lukas JOSEPH, are:¹

Figure 05: Process of digitalization



Source: <https://entreprisedigitale.info/croissance-des-entreprises/>,
(consulted on 30/05/2024 at 07 :30)

¹ www.lemonlearning.com, (consulted on 01/06/2024 at 00:00).

- **Define the objectives of digitalization:** in this phase, companies must define clear objectives depending on its needs and vision and understand the reasons for which it will integrate digitalization. In this phase also, the company should evaluate the current situation, identify the existent processes and its potential and decide whether this transformation is justified, and finally evaluate the impact of the objectives of the previously defined objectives and its technical feasibility.
- **Select the technological tools and platforms:** the company choose the suitable tools depending on its needs, available resources and objectives, and on the capacity of these tools to provide effective communication and collaboration. Before making this choice, the organization should focus on customer experience and have a clear vision.
- **Training and support the teams:** the members of the team should adapt to new technologies. This involves the acquisition of skills, training and leading cultural change within the organization. Employees and collaborators must be included in this process to share ideas, feed-backs and ensure digitalization success.
- **Implementation and deployment of the process digitalization strategy:** in this phase, managers should inform employees and collaborators of their vision and get their commitment to realize it, they must also identify the services that will be directly impacted by the transformation, develop the strategy and detect financial needs. After that, they start with deploying low risk projects and then gradually raise the challenge level with the help of “chief digital officers” who provides feed-backs.
- **Monitoring, evaluation and continuous improvement of digital transformation:** the success of digital transformation is measured with KPIs, financial results and other quantitative feed-backs. Companies should adopt a flexible continuous improvement mindset and constantly adjust and evaluate processes in order to guarantee success and minimize change resistance.

6. Advantages and disadvantages of digitalization:

Digitalization can provide multiple advantages for companies, but that does not prevent the existence of some disadvantages and struggles. In the table below I will focus on some important advantages and disadvantages:

Table 03: Advantages and disadvantages of digitalization

Advantages	Disadvantages
Build a more accurate picture of manufacturing processes and address inefficiencies, resulting in higher-quality production.	Cyber-security threats and privacy concerns
Speed up the design process and eliminate the need for physical prototypes.	Increased dependence and reliance on technology
Connect real-time data from product performance in the field to the next versions of those products for definitive improvements	Data management complexity and fragmentation
Improve competitiveness	High costs of implementation
Increased productivity and efficiency	Problem of mastering some digital tools
Data-driven decision making	The reliance of the tools on network (wired or wireless)
Improve customer service	The difficulty of adopting digital culture in some companies
Encourage innovation and agility	Fast evolutions of digital world

Source: elaborated by the author

In conclusion, integrating digitalization in a company must be done after deep investigations and making precautions in order to avoid obtaining adverse results.

7. Digitalized company:

Digitalized and traditional companies are not the same; digitalized ones have some specific characteristics and relationships with other modern concepts that make all the difference; among them:

- **Agility:** digital tools and technologies provide a foundation for agility, because it optimizes innovation, flexibility, reactivity in a changing environment. There's a complementary relationship between these terms.

- **Customer centric approach:** digitalization focuses on enhancing and improving customer's experience by aligning its objectives with his needs and preferences, in order to increase his satisfaction's level, and that is exactly what does this approach mean.
- **Industry 4.0:** fourth industrial revolution, or "smart manufacturing", according to PWC company, is when companies are oriented to consumers through e-commerce, social media, digital marketing and consumer experience by integrating digital technologies; comparably to digitalization's definition, we can say that these two concepts are interconnected.
- **Innovation and creativity:** digitalization encourages bringing and exchanging new ideas between the members of the team and implementing the most creative ones to be updated with the digital world and keep the competitiveness of the company.
- **Change management:** digitalization of a company can't be done without changing the culture of the members of the team, and their mindsets to move from traditional ways of thinking and working to more creative, modern and innovative ones in order to adopt the technological solutions effectively.
- **Data-driven decision making:** most of digital tools provide the companies with platforms in which quantitative and qualitative data are collected, stored and then analysed and interpreted; these data will later guide the decision-making process of the company.

Section 02: Context of digitalization in Algeria

Algeria is among the countries that strive to catch up in digital transformation, we recently noticed that discussions about digitalization are becoming increasingly prevalent. In the Next pages, we will discuss the digitalization's history in Algeria, the initiatives and struggles of its implementation.

Figure 06: Digital Algeria



Source: <https://www.dzair-tube.dz/en/algeria-makes-great-strides-in-digital-transformation/>
(consulted on 30/05/2024 at 08 :00)

1. History of digitalization in Algeria:

Since we cannot neglect the fact that the pandemic of COVID 19 had reshaped the Algerian economy and changed our perspective on digitalization, I tried to divide the history of digitalization on three main historical phases, which are the following:

- **Before the pandemic of COVID 19:** Algerian government had the intentions to adopt digitalization since 2000, where it tried to develop the sector of ICT, but there was a lack of strategic organization. In 2008, Algeria launched the project of ‘‘E-Algeria 2013’’ which aimed to integrate ICT in public administrations, private institutions, improve the infrastructure related to high debit connection, encourage scientific

research in this domain and finally frame it with legislative restrictions¹. In this period of time, Algeria had to face many constraints and challenges, that's why efforts were mainly focused on improving the infrastructure, reducing bureaucracy and widening the access to Internet especially in rural areas. However, the progress was very slow due to the difficulties that were mentioned. In this period, global ranking was a source of concern for Algerian government.

- **During the pandemic of COVID 19:** during this pandemic, Algeria witnessed a huge revolution in digitalization's world due to the social distancing and quarantine where government found that the only way not to stop its economic, educational, commercial activities and to reduce its loss is by adopting the digital. As said a manager of Ericsson company: "life during the pandemic has been highly digitalized in Algeria. Consumers are therefore increasingly using new applications that appeared during this period in different areas including economic, banking, commercial, health and educational". Also, Mr El Mahdi Oualid, the minister of Knowledge Economy, Start-ups and Micro-Enterprises described the pandemic as "an opportunity" for all sectors, and an extremely accelerator for all-out digitalization². In this period of time, Algerian government directed Algerians to adapt remote work, E-learning, remote healthcare services (telemedicine); and launched the project of "e-government".
- **After the pandemic of COVID 19:** in the period after COVID19, Algeria witnessed an increasing level of connectivity and improvement of infrastructure, high Internet debit and more users of smart-phones. Algerian government keeps focusing on the strategy of developing the area of digitalization and participates in international conferences and events, to learn from other country's experiences and to be updated with the recent advancements in this domain. On the other hand, Algerian people become more interested in digital tools, and more included in this process of development no matter what is their mission or profession; students are using more and more digital platforms and applications for E-learning, online workshops; business owners are using these tools for: management, the application of marketing strategies and the presentation of products / services.

¹ سلمى.ب، " تطوير الرقمنة في الجزائر كآلية لمرحلة ما بعد جائحة كورونا " ، 03 n° ، VOL 36 ، Les cahiers du CREAD ، 2020/07/17 ، ص 587.

² www.aps.dz , published on December 2021, viewed on 25/05/2024 at 01:00.

2. Statistics of digitalization in Algeria:

Here are some statistics related to digitalization in Algeria:

- **EGDI:** E-Government Development Index, a composite indicator which is used to measure the readiness and the capacity of national institutions to use information and communication technologies (ICTs) to deliver public services.¹

Table 04: The evolution of E-Government Development Index of Algeria

E-Government Development Index	2022	2020	2018	2016	2014	2012	2010	2008
Algeria (Rank)	112	120	130	150	136	132	131	121
Algeria (Value)	0.56110	0.51730	0.42270	0.29991	0.31064	0.36077	0.31810	0.35150

Source: <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/3-Algeria/dataYear/2022> , viewed on 01/06/2024 at 01:20.

From the figure above, we notice that the value of EGDI of Algeria before COVID19 was not that high, it reached its minimum in 2016: 0.29991 with the ranking of 150/193, which is a very low rate; there was gradual decreasing of this value during all the previous years (with very low rankings) until 2018, where Algeria gained +20 positions in ranking with a value of 0.42270.

During 2020, the EGDI reached 0.51730 with the ranking of 120/193, which is a proof that during the pandemic Algerian government worked more and more on its e-government strategies and was more directed to the use of ICT.

In 2022 after the pandemic, EGDI of Algeria has increased and reached 0.56110 with the ranking of 112/193 (with a change of +8 positions since 2020).

- **EPI:** Electronic Participation Index, a complementary measure to the EGDI, it ranks countries based on their use of ICT to engage citizens in the democratic process.²

Table 05: The evolution of Electronic Participation Index of Algeria

E-Participation Index	2022	2020	2018	2016	2014	2012	2010	2008
Algeria (Rank)	148	183	165	167	172	124	157	152
Algeria (Value)	0.22730	0.15480	0.20220	0.11864	0.07843	0.05260	0.01428	0.02272

Source: <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/3-Algeria/dataYear/2022>

¹ <https://cpbrd.congress.gov.ph/2012-06-30-13-06-51/2012-06-30-13-36-50/1284-ff2021-03-e-government-development-and-e-participation-indices-2020> , (consulted on 01/06/2024 at 01:53).

² <https://apie.industrie.gov.dz/storage/2022/12/le-e-gouvernement-en-Algerie-enquete-de-l-onu-2022.pdf> , (consulted on 01/06/2024 at 02:00).

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Before COVID 19, the level of EPI had a fluctuating trend. In 2018, Algeria realized a value of 0.2022 with the ranking of 165 of 193, which is a very low rate comparably to other regions average. But that did not prevent the existence of e-government which means that there were initiatives and future plans.

In 2020, the value of EPI reached a very low ranking (183/193) due to the circumstances and distractions caused by the situation and the lack of infrastructure.

In 2022, Algeria have got a better ranking with +45 positions in comparison to the previous ranking, which is a good indicators of the citizens' engagement and government's initiatives, such as : improving in internet infrastructure, launching online platforms...etc.

- **Internet:**

Datareportal report showed that:¹

- In 2018, Internet penetration was 50%.
- In 2020, the Internet penetration level reached to 52% in January. Then, in 2021, it increased to 59, 6%, which is a noticeable evolution in such a short period of time.
- In 2023: Internet penetration percentage reached the 70.9%

- **Social Media:**

DATAREPORTAL statistics showed that:²

In January 2020, there was 22.00 million social media users equivalent to % of the whole Algerian population. This value has increased by 2.4 million users (+12%) from 2019-2020.

In January 2021, the number of social media users was equivalent to 56.5 % of the Algerian population, in other words, it reached 25.00 million users; this value has increased by 3 million users (+14%) in comparison to 2020.

There were 23.95 million social media user in January 2023, which represents 52.9% of its total population.74.6% of Algerian Internet users used at least one social media platform during this year.

According to these statistics, we can conclude that the number of social media users in Algeria is noticeably increasing every year (by millions). This could be due to:

¹ www.datareportal.com , (consulted on 01/06/2024 at 03:00).

² www.datareportal.com , (consulted on 01/06/2024 at 03:00).

- The governmental initiatives to improve the internet infrastructure, which means more accessibility to internet;
- The pandemic of COVID 19: in this period of time, internet and social media platforms were the only way to communicate, keep the interaction between government and people and not to stop the economic and commercial activities and operations; which means a high level of internet users.
- Digital services promotion: Algerian government encourage using and developing more digital tools that serves both people and authorities

3. Initiatives of digitalization in Algeria:

- **Project “E-Algérie”:** refers to a project that was launched by the Ministry of Post and TIC, and implemented by “Algérie Télécom”, and other stakeholders such as: research centres, universities, professional associations, public and private economic operators. In the beginning, it was named “E-Algérie 2013” but the impossibility of achieving the objectives of the strategy from 2009 to 2013 led the government to change its nomination. The principal aim of this project was to “accelerate the use of TIC”; it has some other objectives like: the modernization of the administration, bringing it closer to citizens through developing online services in all sectors of Algeria.¹

- **E-government:** Electronic government, an initiative taken by Algerian government, it involves using online platforms to accomplish administrative operations such as paying taxes...etc. There are periodic statistics and studies regarding e-government, among them we find the UN survey in which EGDI and EPI.

- **Creation of mobile applications:** Algerian government tried to facilitate interactions, work, education and daily operations through creating some mobile application that serve as an intermediary between it and its people; such as:

- Baridimob
- Takaoudi
- WEBETU
- CNAS DZ
- Algérie Poste

¹ ESSAID, (T): “«e-Algérie 2013», ou l’échec d’une politique publique de modernisation de l’administration par les TIC”, *Revue Algerienne de Polituque Publiques*, 2015, PP. 8-11.

- CNEP Banque

- **Creation of the Ministry of Digitalization and Statistics:** in December 2020, Algerian this ministry was created, with the mission of:¹

- Preparing and ensuring the implementation of the national policy for the promotion and development of digitalization and digital transformation in public administrations and institutions.
- Promoting the use of digital technologies to improve public services;
- Ensuring the establishment of an appropriate environment for implementing electronic governance.
- Preparing periodic reports on the progress of digitalization development indicators and proposing measures and procedures that aim to improve them.

- **Zero paper policy:** a strategy that started to be implemented since 2022 in Algerian universities, it involves reducing the dependency on papers in administrative procedures (like the deposit of thesis), and replace them with their digital version stored in computers, phones...etc, in order to reduce the expenses of printing.

- **E-commerce:** recently and especially after the pandemic, Algerian government tried to provide e-commerce with a regulatory framework and offers training opportunities in this domain to improve digital skills and enhancing online payment systems.

- **Creation of Start-ups:** Algerian government is inciting citizens and encouraging them to create and share their innovative ideas in order to exploit and develop digital tools and then contribute to the technological growth of Algeria.

- **E-banking:** Algerian government is encouraging the use electronic platforms to deliver banking services, digital payment systems, money transfer...etc, in order to improve operational efficiency of the banks and contribute to digital transformation process.

4. Constraints and struggles of digitalization in Algeria:

- **Infrastructure limitations:** despite the initiatives taken to improve the Internet infrastructure, it remains weak because of regulatory and bureaucratic challenges, limited investments and the lack of technical expertise.

¹ www.mns.gov.dz , (consulted on 01/06/2024 at 17:00).

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- **Resistance of change:** changing the perspective of Algerian people regarding digitalization, especially among the elderly, is crucial, because most of them does not believe in its benefits and pursue it as a giant challenge.
- **Cultural constraints:** Algerian population is used to traditional ways of managing, working and even selling products or promoting for services. This point could be one of the most convenient ones because digitalization is a culture and a mindset to be adopted.
- **Low digital skills:** Because Algerian society is relatively new to digitalization there is a lack of expertise in this area. Recently, efforts have been made to catch up with the digital world's advancements, including training programs focused on the AI, machine learning...etc.
- **Language barriers:** the majority of learning sources, courses, research materials are written in English language, and that could be a challenge for a significant portion of Algerian population as Arabic and French are the predominant languages used in the country.
- **Cyber security problems:** due to the inadequate cyber security infrastructure, the lack of professionals in this domain and a low level of awareness, Algerian digitalization's efforts are not working the right way.

Chapter 02 :

***The contribution of
digitalization in commercial
performance***

Chapter 02: The contribution of digitalization in commercial performance.

Introduction:

Several factors can contribute to shaping the commercial performance of companies. Recently, digitalization has become a significant one.

Commercial performance indicators can vary depending on the use and mastery of digital tools.

In this chapter, I will focus on the most commonly used KPIs of commercial performance, through which companies evaluate their activities and digitalization strategies.

In the last section, I will examine how does e-commerce (as a form of digitalization which involves the use of some digital tools), and social media (as an unavoidable digital tool) impact the value of those indicators.

Chapter 02: The contribution of digitalization in commercial performance.

Section 01: Definition of commercial performance:

1. Performance:

In literature, performance appraisal is a multidimensional construct with different subjects, objects and perspectives. Scholars interpret this concept differently according to the theory that they rely on; among these theories we find: Results Theory, Behaviour Theory, Results-Behaviour Theory, Competence Theory, Synthetic Theory, and Dynamic Theory.

Result Theory stems from the early management principles such as Taylor's scientific management; it considers performance as "completing assigned production tasks". Literature has developed Results Theory (Kane et al.1979; Bernadin 1998; Jianfeng.P 2003; Rong.Y 2003) and indicates that performance is the explicit and implicit output of a specific job at a given period.¹

According to Cambridge dictionary, performance means: how well a person, a machine...etc does a piece of work or an activity².

2. Commercial performance:

Commercial performance is one of the most relevant concepts in strategic management (Rumelt.R. P et al., 1994)³. Its definition depends on the objectives set by different actors; for example: for an executer, commercial performance or marketing performance (Issor, 2017) is synonymous with profitability and competitiveness of his company (Wheelen et al., 2014). For a seller, commercial performance includes also the work climat (Honeycutt, et al., 2001; Valentine, 2002). And for a consumer, a company is successful if it offers a quality product which meets its needs (Issor, 2017), competent, honest and respectful salespeople and effective after-sales service (Schwepker and Ingram, 1996). So, a business is commercially successful if it is

¹ HONGGUANG,(L): "Literature review regarding the performance evaluation in the Chinese local government", Master of science in management engineering, Politecnico di Milano, Milan, 2018, P 10.

² www.dictionary.cambridge.org (consulted on 31/05/2024 at 00:29).

³ NEJJARI(I) et al. : "Determinants of commercial performance: Proposal of a subjective model", International Journal of Performance & Organizations (IJPO), Vol. 01, No. 02, 2022, P 88.

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profitable, maintains long-term relationships with its customers and a good reputation and brand image for its products (Wheelen et al., 2014)^{1*}.

The measurement of commercial performance depends fundamentally on two principal concepts, effectiveness and efficiency of the company; which means the capacity of meeting goals (financial and non financial ones), in addition to the achievement of a maximum profit by using minimum resources, time and efforts.

In some researches ‘ Commercial Performance’ is replaced by the terms: ‘Business Performance’ or ‘Sales Performance’

Section 02: The Key Performance Indicators of commercial performance

Key performance indicators are specific metrics that measure the performance of specific aspects of business prospects. They vary depending on the nature of the business and the objectives of the prospects².

Commercial performance of a company can be measured by using KPIs, among the most important indicators, we find:

- **Revenue growth:** refers to the increase of the cumulative total of company’s sales (goods/services) sold over a period of time.
- **Market share:** refers to the portion or percentage of a market earned by a company or an organization. In other word, is the company’s total sale in relation to the overall industry sales of the industry in which it operates. It is calculated by using this formula: ³

$$\text{Market share} = \frac{\text{Total Company Sales}}{\text{Total Industry Sales}}$$

¹ ZOHRA,(G.Z) and KHADIJA,(S) : “Ouvrage collectif : «Performance des entreprises : vers quel modèle de création de valeur ?» Ethique de l’Organisation, Pratiques Ethiques des Vendeurs et performance commerciale : Revue de Littérature”, Generis Publishing, PP. 75,76. (Translated by the author)

² <https://fastercapital.com/startup-topic/Tracking-and-Evaluating.html> , (consulted on 07/06/2024 at 06:00).

³ www.corporatefinanceinstitute.com , (consulted on 05/06/2024 at 00:00).

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- **Return On Investment:** refers to a simple ratio that divides the net profit (or loss) from an investment by its cost. It is expressed as a percentage. There are two formulas to calculate this ratio:¹

$$ROI = \left(\frac{\text{Net Profit}}{\text{Cost of Investment}} \right) \times 100$$

$$ROI = \left(\frac{\text{Present Value} - \text{Cost of Investment}}{\text{Cost of Investment}} \right) \times 100$$

- **Net Profit Margin:** refers to the percentage of sales revenue that is left once all costs have been paid. It is calculated by using this formula:

$$NPM = \frac{\text{Net Profit}}{\text{Sales Revenue}} \times 100$$

- **Customer Retention Rate:** refers to the indicator that measures the percentage of customers that a company keeps over a specific period. To calculate it, we use:²

$$CPR = \left(\frac{\text{NC at the end of the period} - \text{NC acquired during the period}}{\text{NC at the start of the period}} \right) \times 100$$

➤ NC : Number of Customers


- **Number of new customers:** refers to the number of new customers who have made a demand of a good / service for the first time.
- **Customer Satisfaction degree:** refers to a measure of how well the products/services of a company meet or exceed the customer's expectations. It is measured generally by using surveys in which the company put different questions and ratings to get its customers feed-backs, as shown in the figure below:

¹ www.forbes.com , (consulted on 05/06/2024 at 00:30).

² Opcit, consulted on 05/06/2024 at 00:40.

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Figure 07: Example of Customer Satisfaction Survey Questionnaire



Service Quality Review

Please mark the appropriate circle for each question. Compare OUR PERFORMANCE during the PAST 12 MONTHS to YOUR EXPECTATIONS of what QUALITY SHOULD BE.

	Much Better Than	Better Than	Equal to	Less Than	Much Less Than	Not Applicable
Overall Performance	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service						
1. Efficiency of service call handling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Professionalism of our service personnel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Response time to service calls.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contract Administration						
4. Timeliness of contract administration.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Accuracy of contract administration.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please share your comments and suggestions for improvements:

Source: https://www.researchgate.net/figure/Example-of-Customer-Satisfaction-Survey-Questionnaire_fig1_4744302 viewed on 10/06/2024 at 01:00.

- **Human Capital Value Added:** refers to the indicator that calculates the financial value or profit that employees bring to the company. It is calculated by using the following formula:

$$HCVA = \frac{\text{Revenue} - (\text{Operating Expense} - (\text{Compensation} + \text{Benefits Cost}))}{\text{Headcount}}$$

These performance indicators are some of the examples; in order to provide better understanding of the purpose of using them, I suggest the next table, in which I explained the utilization of each indicator and the interpretations that those metrics can provide us with.

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Table 06: The interpretation of KPIs

Indicators	Utilization
Revenue growth	<ul style="list-style-type: none"> -Reflects the financial health and performance of the company. -Understand the degree of effectiveness of the company.
Market share	<ul style="list-style-type: none"> -Determine business profitability. -Measures the competitiveness and the dominance of the company in a specific market comparably to others. -Indicates the position of the company.
ROI	<ul style="list-style-type: none"> -Allows the evaluation of the effectiveness of an investment. -Helps in the decision-making -Evaluates investment opportunities and compares between them.
NPM	<ul style="list-style-type: none"> -Provides information about how much is the net profit that the company get after every sales revenue received. -Helps to do comparative analysis. -Evaluate the performance of the company.
CPR	<ul style="list-style-type: none"> -Provides insights into the company's effectiveness in keeping long-lasting relationships with customers. -Reflects the loyalty of customers and their satisfaction.
Number of new customers	<ul style="list-style-type: none"> -Reflects the company's ability to penetrate new markets. -Reflects the Marketing effectiveness. -Provides information about business growth.
Customer's satisfaction degree	<ul style="list-style-type: none"> -Reflects the business success. -Allows companies to detect improvement areas. -Indicated the extent to which customer's expectations are met.
HCVA	<ul style="list-style-type: none"> -Reflects the financial performance of the company -Allows better understanding of the human capital initiatives impact. -Serves as a tool for benchmarking (comparing the HCVA with industry competitors and benchmarks performance)

Source: elaborated by the author

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From the table n°06, we notice that the majority of performance indicators guide the strategic decision-making process because they provide crucial information which can serve companies to get developed in financial, commercial, marketing area...etc, and raise their competitiveness level.

Figure 08: Steps of tracking and evaluating business performance



Source: A Step by Step Guide for Success: Tracking and Evaluating your Business Performance, available on <https://fastercapital.com/startup-topic/Tracking-and-Evaluating.html>.

As shown in the figure above, identifying key performance indicators is the second step of evaluating and tracking business performance after setting goals and objectives of the organization, therefore, the choice of relevant KPIs and its measurement will guide the decision-making of the company and the execution of the next steps of the evaluation process. This choice should be based on the framework ‘SMART’; which means that KPIs have to be:

- **Specific:** each KPI should be specific and concern only one clearly defined criteria.
- **Measurable:** all of the KPIs should be quantifiable to provide more exact results.
- **Attainable/Achievable:** KPIs should be reasonably accomplishable during a certain time frame with the available resources.
- **Relevant:** KPIs should align with the values and long-term objectives (strategic goals) of the organization.

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- **Time-based:** KPIs should have clearly defined deadlines to increase the efforts and the focus of the group.

In conclusion, the previously mentioned indicators (KPIs) are measured in order to make better data-driven decisions and to detect the areas of improvement which can lead to a more successful business and better results and profitability.

Section 03: The contribution of digitalization to commercial performance:

Digitalization contributes through too many ways, in this study, we will focus on only two fundamental ones:

1. The contribution of e-commerce in commercial performance:

According to article 06 of the law 05-18, e-commerce is “ the activity through which an electronic provider suggests or ensures the supply of goods or services remotely to an electronic consumer via e-communications”¹ .

Electronic provider (e-provider): any natural or legal person who shall market or suggest the supply of goods or services via e-communications.

Electronic consumer (e-consumer): any natural or legal person who gets, either for a fee or free of charge, goods or services via e-communications from the e-provider for final use.

¹ Ministry of Post and Telecommunications, “*Guide of e-commerce*”, 2024, P. 05.

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Figure 09: E-commerce



Source: www.mundodomarketing.com.br , viewed on 01/06/2024 at 05 :00.

Recently, and especially after the pandemic of COVID 19, e-commerce was widely adopted due the facilities that it offers and some other reasons. The number of online / web-shops is increasing significantly, which is a proof of its profitability. Researchers have made multiple studies regarding this point, one of them showed that, based on a dataset of 624 firms across 10 countries shows that higher degrees of e-commerce utilization are associated with improved business performance (Salwani.M.I, et al)¹.

E-commerce offers opportunities for traditional retailers to expand their market share while improving the efficiency of their operations. Firms that use online sales channel have better overall performance and higher sales in comparison with firms with no online sales” (Cosgun.V and Dogerlioglu.O). ².

According to Intel Corporation, electronic businesses may have these benefits:³

- Better information management.
- Better integration of suppliers.
- Better channel partnership.

¹ ŠACOVIC,(J) et al. :“*The Relationship between E-Commerce and Firm Performance: The Mediating Role of Internet Sales Channels*”, article published in *Sustainability*, 2020,P. 03.

² ŠACOVIC,(J) et al, opcit, P02.

³ ŠACOVIC,(J) et al, opcit, P02.

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- Lower transaction costs.
- Better market understanding.

2. The contribution of social media on commercial performance:

Social media platforms are one of the most important tools of digitalization that a company needs and cannot neglect in this digital world. The majority of business owners recently focus on having a presence on the web, to expose their brand image and present their products/services to the customers in order to provide better collaboration and communication.

Figure 10: Benefits of social media for small and medium business



Source: www.firmbee.com consulted on 02/06/2024 at 03:00.

As shown in the figure, social media can be a useful tool for companies, it can: grow business awareness, increase website traffic, low-cost advertising, gain more visibility, promote products and services; which will automatically raise the level of sales and then improve the commercial performance of the company.

Social media applications can easily reach to larger audience attract new customers and widen its potentiality to get more important market share. Having more customers and reaching more public will definitely raise the number of sales which means a better revenue and profitability.

These platforms allow customers to have more explanations and details related to the products/services offered by the company, and also let him express his preferences,

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share his feed-back with the company so it can in the future predict their needs, which is a positive thing to both, company and customers; this interaction between them means a good customer experience which leads to his satisfaction, and good results of the company's marketing strategies.

Chapter 03 :
Case study: Glass Design

Introduction:

In his chapter we will align theoretical concepts with a concrete example of Glass Design in order to understand its relationship with digitalization. Given that my topic is “Analysis of the effects of digitalization on commercial performance” , I have chosen Glass Design as a case study to provide a better understanding of how does digitalization influence the commercial performance, both positively and negatively.

The first section will be dedicated for the presentation of the company where I spent my internship, including its departments, information system, and the tools it uses in day-to-day operations. We will then analyse and evaluate its system and digitalization features.

In the second section, I will explain the research methodology that I’ve adopted for this study.

In the final section of this chapter, I will present the results of my investigation, analyse and interpret them, and finally suggest some recommendations.

Section 01: Presentation of the area of research:


1. Presentation of Glass Design:

The Algerian company GLASS DESIGN is an LLC whose head-office is located in Bordj Bou Arreridj .This company is founded by Mr.HOUMOUR Said in 2004 with a capital of 187.600.000.00 DZD. It specializes in aluminium and PVC carpentry, production of all type of glass, cladding facades, fire protection solutions, insulating glazing and interior preparation of houses and institutions (doors, windows and ceilings).

This organization aims to develop its competencies, encourage innovation, the protection of environment and sustainable development.

2. Data sheet of Glass Design:

Table 07: Data sheet of Glass Design

Company	Glass Design
Creation	2004
Slogan	"L'excellence se cultive, elle ne s'improvise pas "
Logo	
Legal form	Limited Liability Company (LLC)
Head office	ZA.100 Lots Bordj Bou Arreridj
Field of activity	Constructions
Specialty	<ul style="list-style-type: none"> -PVC and Aluminum carpentry -Passive fire protection solutions (fireproof partitions, fire doors, glass facades) -Facades cladding -Insulating glazing -Interior preparation (manufacturing of doors, windows and ceilings)
Website	www.glassdesign-dz.net
Company phone	Annex of Bordj Bou Arreridj : +213 560 043 694

	Annex of Algiers : +213 561 654 374
LinkedIn	www.linkedin.com/glassdesign

Source: elaborated by the author

3. Products of Glass Design:

- Aluminum carpentry:

- **Doors and windows :**

- Chic (Lingot)
- Premium (TPR)
- Economic (Local)

- **Walls curtains :**

- Traditional
- VEC
- VEP
- Facades ventilated in cement board
- Facades ventilated in terracotta
- Facades ventilated in ACP composite panels

- **Roller shutters :**

- Electric
- Manual

- PVC carpentry:

- Doors
- Windows
- Forex decoration

- Glazing:

- Laminated glass
- Double glazing
- Insulating glass
- Tempered glass

- Passive fire control solutions:

- Fire doors
- Fire rated / flame rated windows
- Fireproof partitions

- Films:

- Decorative sandblasted
- Solar films
- Safety films

4. Achievements of GLASS DESIGN :

Glass Design has numerous achievements all around the country, whether in private or public sectors, it contributed in the construction of several institutions. According to the information that I have got from the company I could have the following list:

- Ferry terminal of Bejaia
- Ferry terminal of Algiers
- Jijel university
- Annaba airport
- Touring Club (Setif)
- Private company (Setif)
- CNAS Bordj Bou Arreridj
- Wilaya of Setif
- Bordj Bou Arreridj university
- CDI building (Bordj Bou Arreridj)
- AADL building (Algiers)
- Clinics
- CAC building (Batna)
- Headquarter CNL (Algiers)

5. Structure of GLASS DESIGN:

Thanks to the information that I have collected with the help of intern documents of the company, I could resume the different parts of the organization in the list below:

- **Management department** : its missions:
 - Aim for the sustainability of the company.
 - Defend the image and the interests of the company.
 - Outline the objectives for short (operational) and long term (strategic).

- Lead the teams of the company.
- Make decisions and put rules.
- **HR department:** its missions:
 - Ensure the success of recruitment procedures.
 - Manage salaries using software (Cospack).
 - Process absences and reasons.
 - Serves as an intermediary between the company and other organizations (CNAS,CACOBATPH).
 - Ensure the good training of the staff.
 - Manage conflicts.
 - Ensure the application of regulatory provisions (law 90/11, internal regulations).
- **Commercial and Marketing department:** its missions:
 - Manage orders and sales contracts.
 - Serves as an intermediary between production and projects departments.
 - Manage the showrooms of the company.
 - Negotiate payment methods and deadlines.
 - Put marketing strategies and apply them.
 - CRM management.
- **Supply department:** its missions:
 - Ensure the purchasing of the necessary materials for production on time.
 - Organize, manage and coordinate the flow and stocks of goods within the company, based on sales forecasts.
 - Seeking the best quality-price ratio.
- **Projects department:** its missions:
 - Design the main products in accordance with the orientations and policies of management.
 - Ensure planning and monitoring of the project execution.
 - Contribute to the resource allocation operations depending on the project.
 - Define the objectives in terms of technical deployment and customer satisfaction.
- **Ateliers of Production:** its missions :
 - Make measurements and footage.
 - Confirm prototypes and start production.

- Manage inventory.
- Control the quantity of raw materials.
- **Accounting and finance:** its missions:
 - Supervise the financial, accounting and tax activities of the company.
 - Manage the invoices for local and international purchases and sales.
 - Ensure financial security for the company.
 - Make analysis and reports.
- **Stock management department:** its missions:
 - Verify the quality of merchandise.
 - Organizes the area of stocking.
 - Enters the information of every single article.
 - Prepare reports.
- **Quality control:**
 - Verify the quality of raw materials.
 - Evaluate and calculate technical formulas.
 - Verify the conformity of received materials and compare it to the order.
- **IT department:** (explained in the next sections)

6. Information system of the company:

As I mentioned in the chapter, I found out that the IS of a company has four components (software, hardware, data, procedures, people).

In this part, I will try to analyse the IS of Glass Design and define its components.

- **Software:** Glass Design has multiple software that help her to manage its day-to-day activities. This enterprise works with different types of software; it has a CRM system related directly to commercial and marketing department; it has a common software between the members of financial and accounting, supply and commercial department; and a software for human resources management, in which they process salaries, register employees' information, tracking their absenteeism. Glass Design has also an ERP which connects the majority of its departments. Managers, developers of IT department and the totality of the members of commercial and marketing, supply, stock management departments have access to it, but when it comes to other departments such

as projects and production department, only few representatives (3) have access to it in order to provide information and updates related to the current situation of the products.

- Hardware: Glass Design provides its employees with smart phones, laptops with good processors, keyboards, computer accessories, fingerprint scanners. But according to a manager, this company is striving to get better and more developed hardware for them, especially for IT department members.

- Database: All the data of Glass Design are collected and stocked in databases such as the one of the common ERP, which connects all the departments and allow all the parts of the organization to enter information anytime. Thanks to those software, data are never deleted or missing.

- Network: Glass Design has 3 WI-FI routers, which provides a good connectivity in order not to stop its operations and have a good reach from all parts of this company.

- Human resources: The majority of departments are included in the ERP system, and all of them help in the collection of data automatically during the execution of their daily tasks due to the automation of the procedures via ERPs. The company provides training programs for its teams.

It should be noted that the developers of Glass Design are recently creating and developing a customized common ERP system according to its needs, problems and preferences, to which more employees will have access.

Glass Design, as mentioned before, is a company which encourage innovation and which is trying to improve its skills in the domain of technology. Among the most important departments of the company, we find the IT department, on which I will focus in the next few lines.

7. Analysis SWOT of the IS of Glass Design:

Based on the information provided by the members of Glass Design departments, I tried to make a SWOT analysis to evaluate the IT system of the company, the results are shown in the next table:

Table 08: Analysis SWOT of Glass Design’s Information System

<p>Strengths</p> <p>Skilled team:</p> <ul style="list-style-type: none"> -A skilled team of developers capable of providing the company with tailored software. -There’s no need to external support to fix failures. <p>Resources:</p> <ul style="list-style-type: none"> -The company have the necessary resources to adopt digitalization 	<p>Weaknesses</p> <p>External dependency:</p> <ul style="list-style-type: none"> -Ancient ERPs have some failures -Only the external provider of the ERP has access to its whole database. -Less personalization <p>A basic system:</p> <ul style="list-style-type: none"> -Limited sessions in the ERP.
<p>Opportunities</p> <p>Better experience:</p> <ul style="list-style-type: none"> -Developers of IT departments are working on more customized ERP. <p>Digital transformation:</p> <ul style="list-style-type: none"> -Glass Design is striving to get more digitalized which leads to gradual digital transformation .It aims to reach the digital maturity level. <p>Training opportunities:</p> <ul style="list-style-type: none"> -Glass Design provides professional training programs for employees involved in using different software. 	<p>Threats</p> <p>Cyber security threats:</p> <ul style="list-style-type: none"> -External agent of ERP installation has access to sensitive information which can be a source of concern related to cyber security. <p>Competitors threats:</p> <ul style="list-style-type: none"> -Competitors adopt superior technologies

Source: elaborated by the author

8. IT department of Glass Design:

IT department, is one of the main parts of Glass Design (according to the interviewed), it is directly connected to all other departments in addition to the executive management, that’s why this company is striving to concentrate its efforts to develop this section. It department contributes to the decision-making process and this will be explained below.

This department in Glass Design consists of four web developers; every member of the team has his missions, the division of tasks depends on the planning elaborated by a supervisor which is one of the four developers. These missions or tasks are:

- Install / uninstall software and hardware
- Update the website and develop new applications
- Fix software / hardware failures
- Track the progress of the projects
- Help in having clearer and more accurate deadlines for the projects

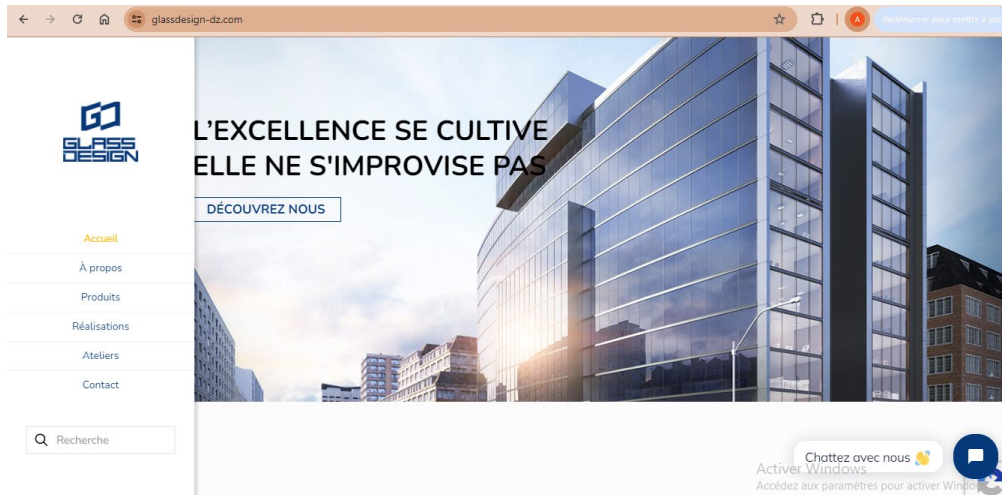
IT department representative makes regular reports about the current situation of the IS of the company, in which he detects the failures, the potential threats, evaluates the efficiency of the systems and software and recommends corrective measures. This department provides meaningful data-driven insights which allow her to be a part of the strategic and operational decision-making process because it has.

9. Digital tools in Glass Design:

Glass Design uses many digital tools in her day-to-day activities. After my internship, I knew more about its digital tools, that's what I will discuss in the next part:

- **Website:** Since 2019, Glass Design made its own website where it shares its achievements, present its products and services, and provide more information about its history, policy and others. The company is working on developing more and more this website because their managers consider it as "a mirror" which reflects the quality of products and services, the culture of the company members and the way they present themselves in a market full of competitors in the same domain. In the figure below, the..... of Glass Design website:

Figure 11: The website of Glass Design



Source: www.glassdesign-dz.com , consulted on 02/06/2024 at 03 :00

- **Social media:** The company strives to have and keep a presence on the Internet, through its social media accounts, as :
 - ✓ **Facebook:** Glass Design has 4,3k followers on this platform; it shares its achievements, news, and participation in national events on the page and interacts with its followers.

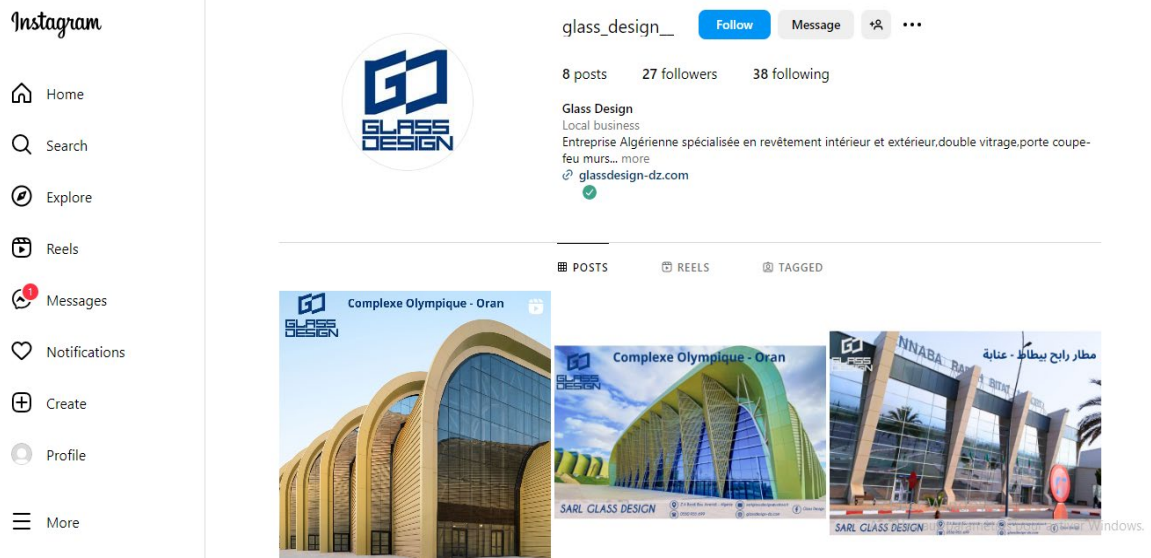
Figure 12: The interface of Glass Design's Facebook page



Source: www.facebook.com consulted on 02/06/2024 at 02:00.

- ✓ **Instagram:** Glass Design recently created an Instagram account, it has 27 followers as shown in the next figure:

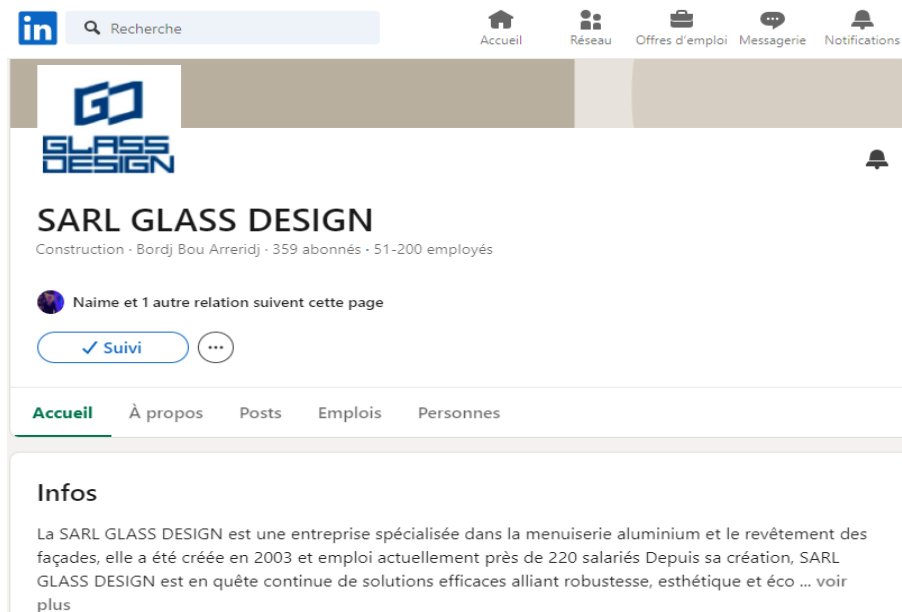
Figure 13: The interface of Glass Design's Instagram page



Source: www.instagram.com ,(consulted on 03/06/2024 at 01:00)

- ✓ **LinkedIn:** In this professional platform, Glass Design is present and interact with other companies posts.

Figure 14: The interface of Glass Design's LinkedIn page



Source: www.linkedin.com ,(consulted on 03/06/2024 at 01:00)

- **ERP:** As we mentioned previously, Glass Design have a team of developers who are consistently trying to improve the ERP systems. The company has a common ERP which contains a database that connects all the departments of the company: management, production, commercial and marketing, supply, projects, stock management, finance and accounting and HR management

department; and has also some specific software like the one in finance and accounting and another software related to HR department in which they process salaries, absenteeism and employees preoccupations. These software were developed by an exterior provider but updated and developed by the intern developers; currently, and according to the employees of IT department of this organization, those developers are working on a super customized ERP system depending on the needs and problems of Glass Design that will be launched in the beginning of 2025. This ERP system will be the intermediary between all the departments, contain more options and less failures.

Figure 15: ERP



Source: <https://www.calliweb.fr/interfacage-erp-outil-de-management-strategique/>
,(consulted on 03/06/2024 at 01:00)

- **CRM:** commercial department uses a CRM system in which it manages the contacts' list through storing their data including their names, interaction history, preferences...etc. This system allows tracking potential customers from the first interaction, and provides relevant insights to conduct the strategic marketing decision-making process through preparing reports.

Figure 16: CRM



Source: <https://digital.hec.ca/en/blog/crm-digital-marketing-strategy/> (consulted on 03/06/2024 at 01 :02)

- **Artificial Intelligence:** employees of Glass Design use sometimes tools of AI, for example: ChatGPT, to help them in managing daily tasks, scheduling and set reminders. Developers use sometimes this tool to get some code snippets and to ask programming-related questions.

Figure 17: Artificial Intelligence



Source: <https://emeritus.org/in/learn/what-is-m-tech-in-artificial-intelligence/> (consulted on 03/06/2024 at 03 :00)

Section 02: Methodology of research

In this part, I will try to explain the research methodology that I choose to verify if my hypotheses will be confirmed or not.

The objectives of my study was to: test the degree of the adoption of digitalization in Glass Design Company, which are the main digital tools used in this company, what do the involved employees think of it, and what are the results of integrating digitalization in this company.

For that reason, I based my study on quantitative and qualitative studies.

1. Research design

In this study, I adopted a mixed-methods approach to offer a comprehensive understanding of digitalization, its benefits and constraints in Glass Design. The quantitative component will involve the collection and analysis through a questionnaire, On the other hand, qualitative interviews with some representatives will provide information about the current situation of the company and future plans. This dual approach allows for a robust analysis of both numerical data and subjective perspectives, which facilitate a holistic evaluation of our research question.

1.1 Qualitative study: Interview

As mentioned above, I adopted the method of interview, defined as a meeting at which people talk to each other in order to ask questions and get information.¹ There are different types of interviews; for my case, I made a semi-structured interview, in which I follow the interview guide with such level of flexibility concerning the order and the content of the questions given to different participants.

The aim of choosing this tool is to get more relevant insights about departments and see digitalization from different perspectives.

For the interview, I selected the profiles of the representatives with whom I have done a meeting according to the following criteria:

- The representative of department should be a supervisor, a head of department or at least have more experience than other employees of the same department.

¹ <https://www.britannica.com/dictionary/interview> , consulted on 04/06/2024 at 17:00.

- He/she has to be involved in the digital projects.
- He/she must have a deep understanding of the business processes within their departments.

Based on those conditions, I decided that the interviewed are:

- A supervisor of commercial and marketing department.
- A supervisor of IT department.

After the step of profile's selection, I have made an interview guide through which I structured my questions and the interview process.

1.2. Quantitative study: Questionnaire:

For my quantitative study, I used a questionnaire, because it provides meaningful information on the level of digitalization of Glass Design company, and also feed-backs of relevant parts of the company.

1.2.1 Data collection:

For this study, data were primarily collected through a questionnaire survey, and then through interviews.

The questionnaire aimed to collect data related to the perceived impact of digital tools across different departments, and to collect also opinions and feed-backs of employees regarding digitalization; as for the interviews, it aimed to get in-depth insights from important representatives in order to identify the dimensions of digitalization in their company, have an overview about their perspectives on this topic, and finally get to know their suggestions of improvements.

1.2.2 Sample:

Concerning the sample of the survey, I based my investigation on a purposive sampling method; the choice of employees is based on their involvement with digitalization.

Purposive sampling (also known as judgement, selective or subjective sampling) is a sampling technique in which relies on his or her own judgment when choosing

members of population to participate in the study.¹ I choose this method in order to get highly relevant answers for the research question.

As I mentioned in the previous sections, the majority of departments' members are involved in the utilization of digital tools, that's why I targeted the totality of employees which are equal to 47 employees, but due to the workload especially among projects department (architects), I gathered 41 responses, which means that I had a high response rate, equal to 87.23%.

The questionnaire was distributed within different departments' representatives, who in turn shared it with the staff.

1.2.3. Content of the questionnaire:

- **Parts of the questionnaire:**
 - **Profile of the respondents:** to have a general idea about the composition of Glass Design's employees; such as in: question n°01 and question n°02.
 - **Current situation of digitalization in Glass Design:** aims to understand the components of digitalization in Glass Design and the dependency of employees on its digital tools, such as in: question n°03, question n°04, question n°05, question n°06, question n°07, and question n°08.
 - **Degree of Improvement due to digitalization:** aims to understand to what degree does digitalization impacted positively on the company; in this section we have two questions: question n°09 and question n°10.
 - **Challenges of digitalization in Glass Design:** to detect the main difficulties and challenges that may face the team during its activity. For example: question n°11 and question n°12.
 - **Degree of satisfaction of employees regarding digital tools:** question n°13 and question n°14 are examples from this section, which aims to evaluate the degree of satisfaction of the employees of Glass Design.
- **Nature of the questions:**
 - **Closed-ended questions:** I used the following types of closed-ended questions:
 - **Multiple choice :** question n°04, question n°08 and question n°12.

¹<https://research-methodology.net/sampling-in-primary-data-collection/purposive-sampling/>
(consulted on 08/06/2024 at 21 :05)

- **Multiple choice with single-answer:** question n°1, question n°02, question n°05, question n°06, question n°07, question n°10, question n°14.
- **Multiple choice with ranges:** question n°10.
- **Dichotomous questions:** question n°03, question n°09, question n°11, question n°13.
- **Likert scale:** question n°14
- **Ordinal scale questions :** question n°06.
- **Combination questions:** these questions includes a multiple choice question with an open-ended option for further elaboration, such as: question n°08, question n°12.
- **Filter questions:** are questions used to decide who should answer the next question or not based on specific criteria, for example: question n°04 and question n°12.

1.2.4. Data analysis:

After getting the answers of respondents of this questionnaire, I used the SPSS software for entering and analysing data gathered. I chose this software because it provides simple and understandable analysis, and allows us to study the relationship between different variants.

Section 03: Results and recommendations

1. Analyse and discussion of results:

1.1 Interview:

A / Interview with the supervisor of commercial and marketing department:

- **Question n°01:** What are the main digital tools that are used in your department?
- **Response n°01:**
 - There are multiple digital tools, which support the commercial and marketing department.
 - The most commonly used tools are: CRM system, social media platforms such as: Facebook, Instagram, LinkedIn, the website of the company and communication tools, such as: Whatsapp, Google meet.
- **Question n°02:** In what ways have digital tools and platforms improved your sales processes efficiency?
- **Response n°02:**
 - Glass Design has not achieved yet its goals related to digital marketing. It is in an early stage of implementation of their strategy.
 - Despite being in the first stages of implementation of the strategy, this company witnessed some improvements thanks to the CRM system which allows deadlines' meeting, tracking of customers' interactions, streamlining communication, and enhancing customer segmentation and targeting.
 - Social media platforms also helped Glass Design to expand the brand visibility and increase market reach.
- **Question n°03:** Can you provide a concrete example of how does digitalization or the use of digital tools affect on your performance indicators?
- **Response n°03:**
 - The revenue growth reached 12.8%, which is a considerable increase in comparison to the previous percentage (11.4%).
 - The use of digital tools is among the factors that contribute to this increase of sales.

- Glass Design has made significant efforts in this digitalization by mastering their CRM system, providing training programs for the staff, and focusing their marketing team on digital strategies. This includes creating an Instagram page, reviving their Facebook activity, and enhancing their brand image through different social media platforms.
- The last study of customer's satisfaction level, showed that 89% were "very satisfied" of their experience with Glass Design company, the rest of them were moderately satisfied.
- The number of new customers has increased by 13 customers the last year.
- **Question n°04:** What are the struggles that you have faced in your digitalization journey?
- **Response n°04:**
 - Some digital tools are very necessary for the company, but they require very high costs.
 - Sometimes, resistance to change can be a challenge for companies, because ancient generation of employees may prefer traditional methods of working more than modern ones in fear of not being skilled enough to master it.
 - Inconsistent data entry may also lead to big problems.
- **Question n°05:** What are the key areas of focus for future digitalization efforts?
- **Response n°05:**
 - Those initiatives focus primarily on ERP systems of Glass Design as well as digital marketing.
 - There are other strategic and operational plans that are being studied and developed, but for now, there's nothing to be officially announced yet.

Conclusion:

Thanks to CRM, digital marketing, in addition to other digital tools, Glass design is now increasing its market reach, enhancing customer segmentation and targeting, which leads to a better customer retention and profitability as indicated by the supervisor of commercial and marketing department despite the struggles such as resistance to change; this allows the company to have future ambitions concerning the implementation of digitalization and continuous innovation.

B / Interview with the supervisor of IT department:

- **Question n°01:** What are the main digital tools used in IT department?
- **Response n°01:**
 - IT department has access to database management systems, in addition all digital platforms and tools.
 - This department does not directly “use” digital tools, but instead provides support for other departments to use correctly those tools.
- **Question n°02:** What are the digitalization initiatives of IT department?
- **Response n°02:**
 - IT department has implemented some digitalization initiatives, including: upgrading the ERP system of the company and enhancing cyber-security measures.
- **Question n°03:** What are the main challenges that you have faced in implementing digitalization?
- **Response n°03:**
 - IT department has no access to the database of the ancient ERP system installed by an external provider, which means the access to limited actions.
 - The infrastructure of the company can be also a determinant of the success of digitalization initiatives (equipments)
 - The problem of incompatibility between existent systems and new technologies.
- **Question n°04:** How would you describe the current situation of digitalization in Glass Design?
- **Response n°04:**
 - Glass Design began digitalization before the pandemic of COVID 19 with an ERP system. The pandemic accelerated this process, requiring remote work and revealing system failures and missing features.
 - Glass Design, as a small company which strives to overcome the challenges of digitalization, is performing well.
- **Question n°05:** What are the future projects of your department that concerns digital transformation?
- **Response n°05:**

- Recently, the team is developing a new, advanced ERP system, customized to meet Glass Design's specific needs, which will be implemented by the start of 2025.

Conclusion:

IT department is a fundamental section in Glass Design, it represents the support centre for other departments. The team of IT department strives to implement digitalization's initiatives correctly and simplify the use of digital tools to get the maximum of its benefits, and also to overcome the challenges of infrastructure in order to improve the performance.

1.2 Questionnaire:

Section 01: General information about participants:

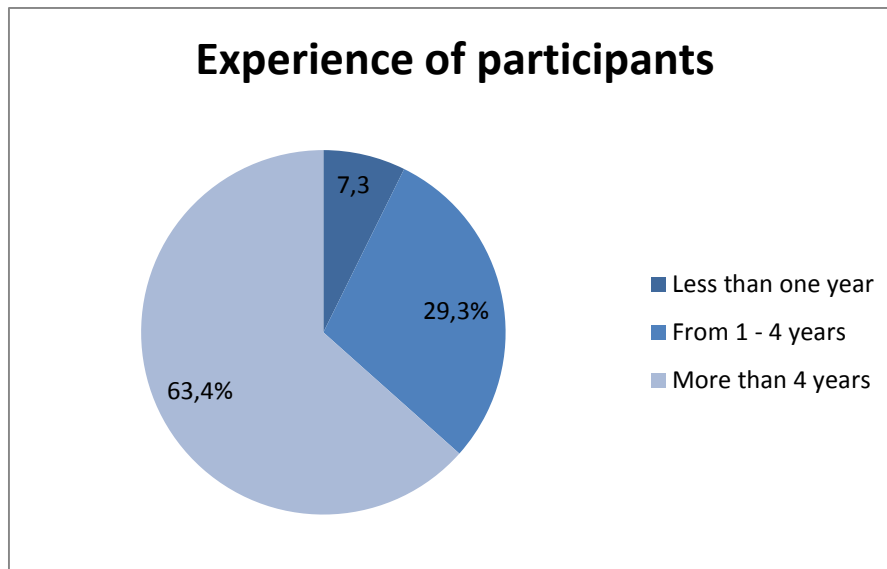
- Question 01: How long have you been working in Glass Design?

Table 09: the values related to the experience of employees of Glass Design

	Frequency	Percentage
Valid Less than one year	3	7,3
From 1 - 4 years	12	29,3
More than 4 years	26	63,4
Total	41	100,0

Source: elaborated by the author using SPSS

Figure 18: experience of participants



Source: elaborated by the author

The pie chart above represents the percentages of participants who have:

- Less than year in Glass Design
- From 1 – 4 years
- More than 4 years.

As it is shown in the figure, 63,4% of participants, which reflects the majority, have more than 4 years of experience in this company, while only 7,3% of participants (equal to 3 participants) have less than one year of experience, and the rest 29,3%

represents employees who have been working from 1-4 years in that company, which means in the post pandemic period.

This means that the majority of participants can provide relevant insights because they have witnessed the whole transformation process

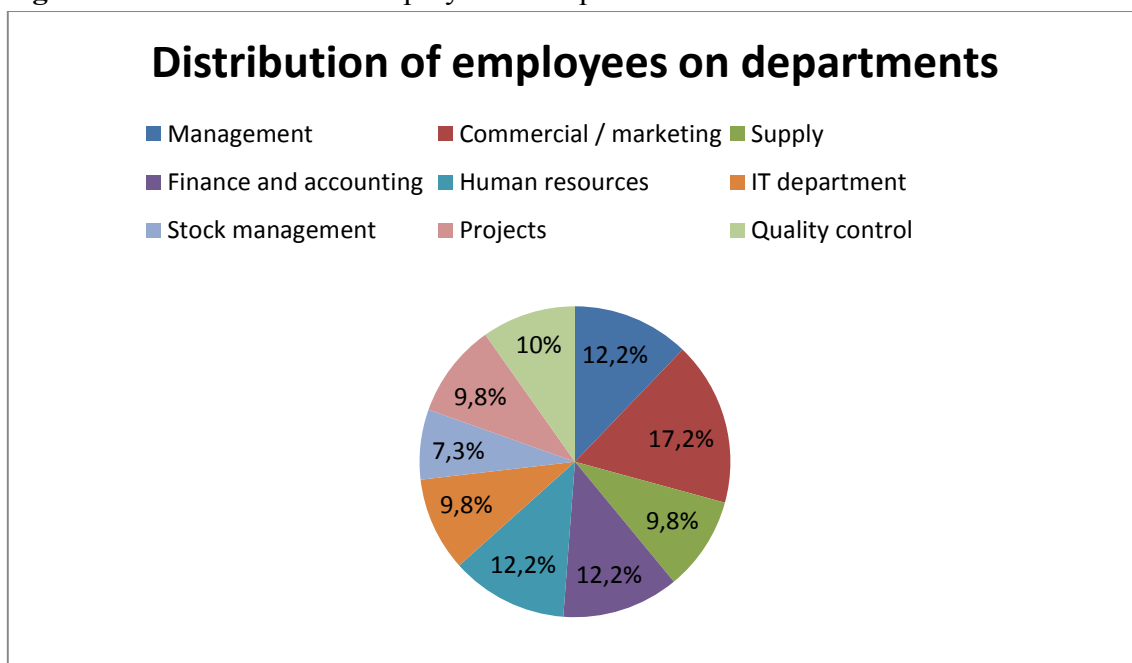
- Question 02: In which department do you work?

Table 10: Table of values related to the distribution of employees on different departments

	Frequency	Percentage
Valid Management	5	12,2
Commercial and marketing	7	17,1
Supply	4	9,8
Finance and accounting	5	12,2
Human resources	5	12,2
Information Technology	4	9,8
Stock Management	3	7,3
Projects	4	9,8
Quality control	4	9,8
Total	41	100,0

Source: elaborated by the author using SPSS

Figure 19: Distributuion of employees on departments



Source: elaborated by the author

Chapter 03: Case study: Glass Design

This graph explains the distribution of participants on departments of Glass Design. We notice that commercial and marketing department contains a significant number of employees, with a rate of 17,2%. That is a proof that this company is focusing on strengthening its commercial team and develops marketing strategies.

Section 02: Current situation of digitalization in Glass Design:

- Question n°03: Do you use digital tools?

Table 11: The values related to the use of digital tools within Glass Design departments

	Frequency	Percentage
Valid Yes	41	100,0

Source : elaborated by the author using SPSS

The table above shows that the totality of employees uses at least one digital tool, which is a proof of the involvement of employees in the digital transformation process.

- Question n°04: if yes, which ones?

ERP

	Frequency	Percentage
Valid No	11	26,8
Yes	30	73,2
Total	41	100,0

Source : elaborated by the author using SPSS

ERP systems are used by 73,2% of employees, including different departments.

Table : the utilization of ERP in Glass Design

	ERP		Total	
	No	Yes		
In which department do you work?	Management	0	5	5
	Commercial and marketing	0	7	7
	Supply	0	4	4
	Finance and accounting	3	2	5
	Human resources	4	1	5
	Information system	0	4	4
	Stock Management	0	3	3
	Projects	2	2	4
	Quality control	2	2	4
Total	11	30	41	

Source: elaborated by the author using SPSS

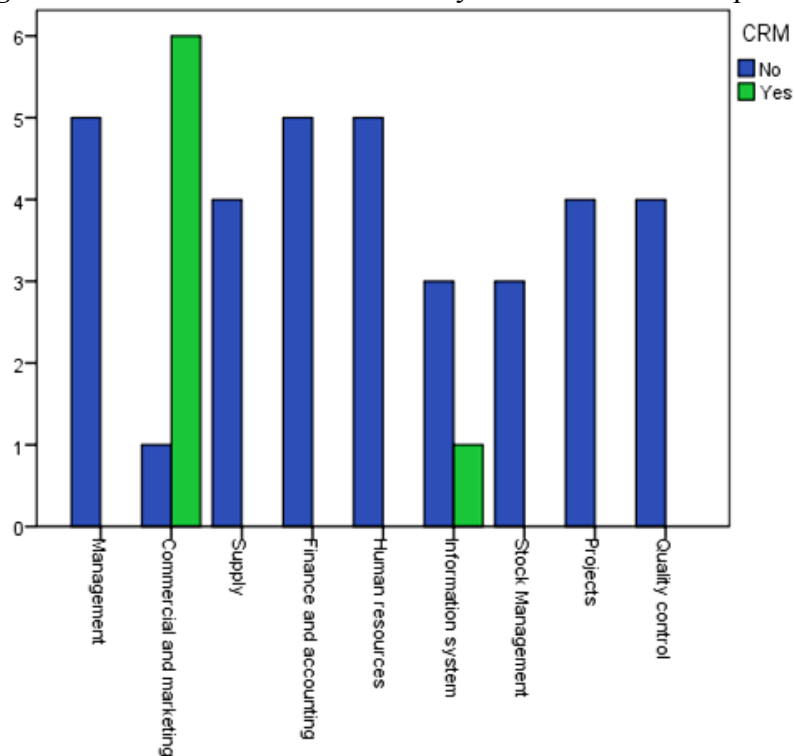
We notice that commercial and marketing department is the one which uses ERP in comparison to others, then we have management, supply and stock management departments who are involved also in the utilization of this tool.

		CRM	
		Frequency	Percentage
Valid	No	34	82,9
	Yes	7	17,1
	Total	41	100,0

Source : elaborated by the author, using SPSS

CRM systems are used by 73,2% of employees, including different departments.

Figure 20: The distribution of CRM system users within departments



Source: elaborated by the author, using SPSS.

CRM system is used only by commercial and marketing department according to the values indicated above. In revenge, only one employee of IT department has access to CRM system.

Social Media

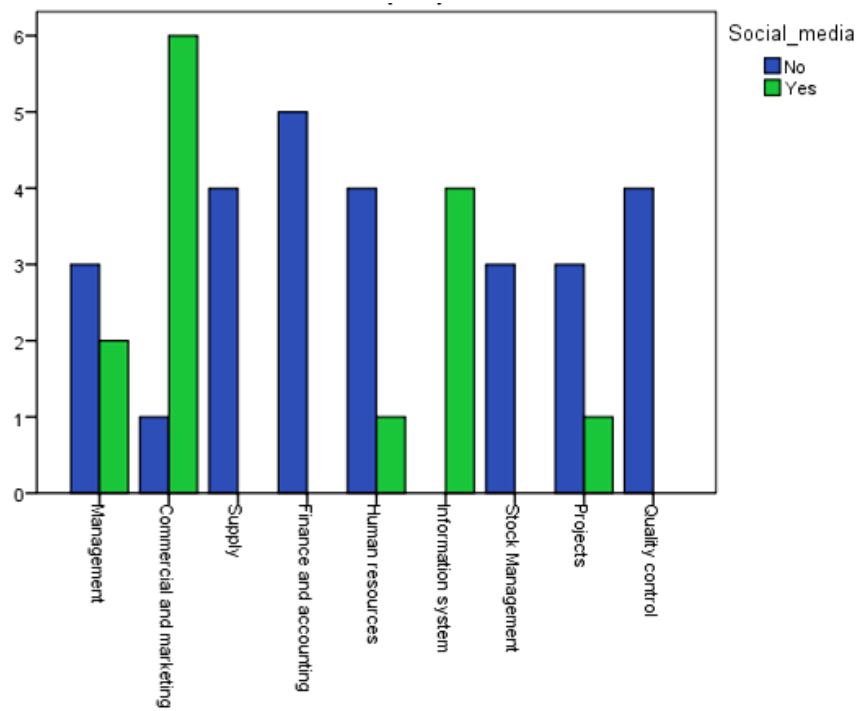
		Frequency	Percentage
Valid	No	27	65,9
	Yes	14	34,1
	Total	41	100,0

Source: elaborated by the author, using SPSS

Among 41 participants in this investigation, 34,1% use social media platforms in their activities.

The distribution of these members on departments is as follows:

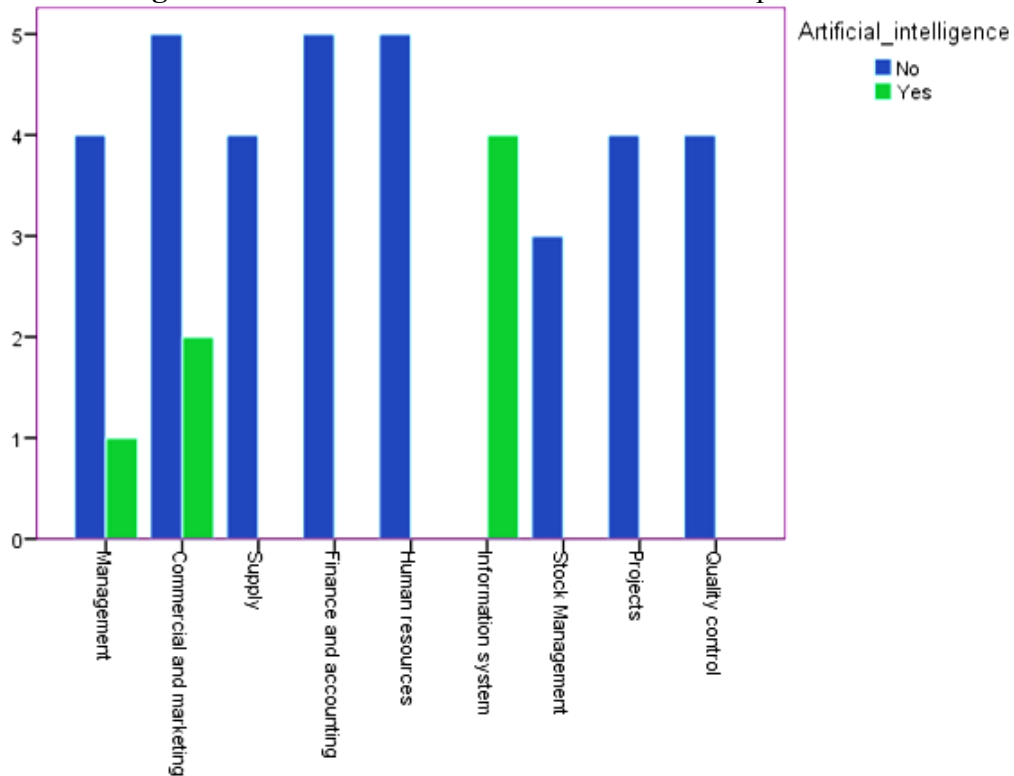
Figure 21: The distribution of social media users within departments



Source: elaborated by the author, using SPSS

As shown in the figure, commercial department has the highest number of social media users, followed by IT department, management, HR, and project management. Commercial and marketing department involves the application of digital marketing strategies, which led to a high number of users.

Figure 22: The distribution of IA users within departments



Source: elaborated by the author, using SPSS

As shown above, IT department has the highest number of AI users due to their need to code snippets.

Commercial department and management use AI tools aswell for scheduling ,calculation of some ratios and improving productivity.

Communication tools

		Frequency	Percentage
Valid	No	2	4,9
	Yes	39	95,1
Total		41	100,0

Source: elaborated by the author, using SPSS

The table above shows that the majority of Glass Design’s employees and employers use communication tools (95,1% of the company’s members), which is very logical since they cannot share information without these tools.

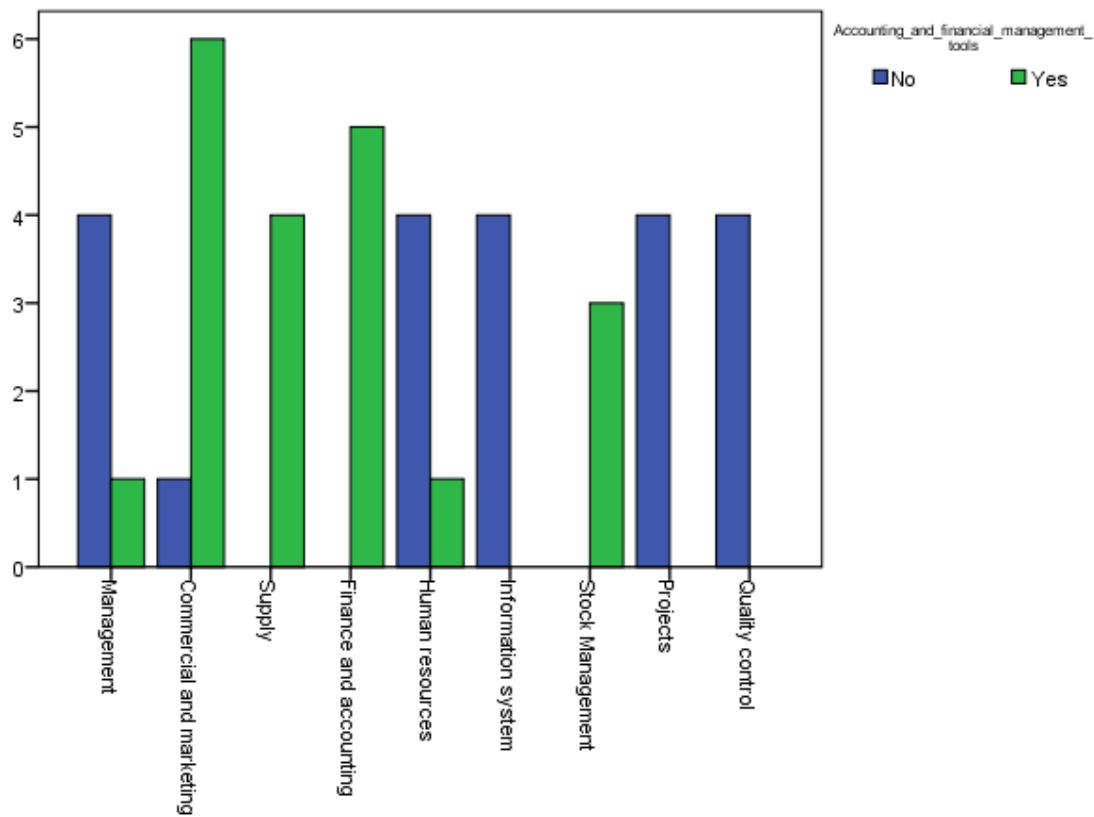
HR management tools

		Frequency	Percentage
Valid	No	36	87,8
	Yes	5	12,2
Total		41	100,0

Source: elaborated by the author, using SPSS

HR management are dedicated to human resources department, in order to manage their tasks, and boost their productivity and efficiency.

Figure 23: The distribution of accounting and financial management tools users within departments



Source: elaborated by the author, using SPSS

Unlike HR management tools, accounting and financial management tools are not only used by finance and accounting department, but also by the commercial department, supply, HR and stock management.

These departments use this tool to exchange financial states and information.

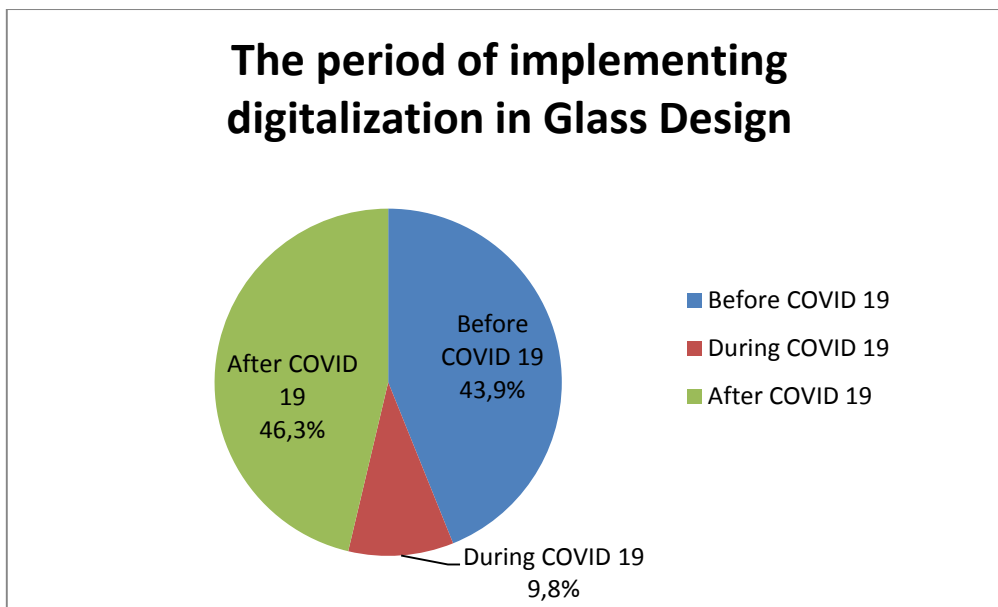
- Question n°05: since when Glass Design has adopted digitalization?

Table 12: the period of implementation of digitalization in Glass Design

	Frequency	Percentage
Valid Before COVID 19	18	43,9
During COVID 19	4	9,8
After COVID 19	19	46,3
Total	41	100,0

Source: elaborated by the author, using SPSS

Figure 24: The period of implementation of digitalization in Glass Design



Source: elaborated by the author

This figure shows that even before the pandemic of COVID 19, Glass Design tried to implement some initiatives to catch up with technological advancements; During the pandemic, the company was in a phase of research and investigation in order to decide the strategic and operational plans that would help it to attain digitalization level. Right after the pandemic, this company started the implementation of its strategic plan gradually but with a strict mindset and vision.

- Question n°06: What is your level of mastery of digital tools?

Table 13: The level of mastery of digital tools

		Frequency	Percentage
Valid	Beginner	4	9,8
	Intermediate	3	7,3
	Advanced	13	31,7
	Expert	21	51,2
	Total	41	100,0

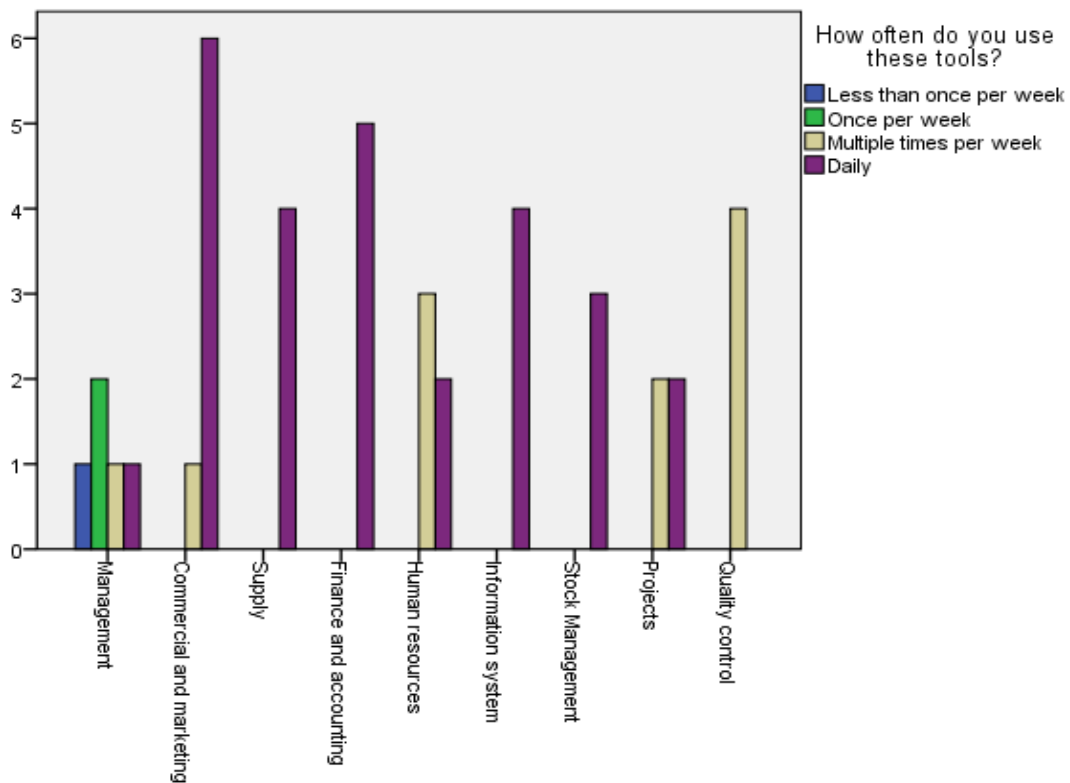
Source: elaborated by the author, using SPSS

According to this table, 51,2% of employees of Glass Design are experts in the utilization of digital tools, and 31,7% who reached an advanced level. Only 3 employees have an intermediate level of mastery of digital tools and 4 employees who are still beginners in this domain, they were recently recruited.

From the information mentioned previously, we conclude that digital tools of Glass Design are accessible and easy to master, which provides a good experience for employees.

- Question n°07: The frequency of using digital tools?

Figure 25: The frequency of using digital tools according to departments



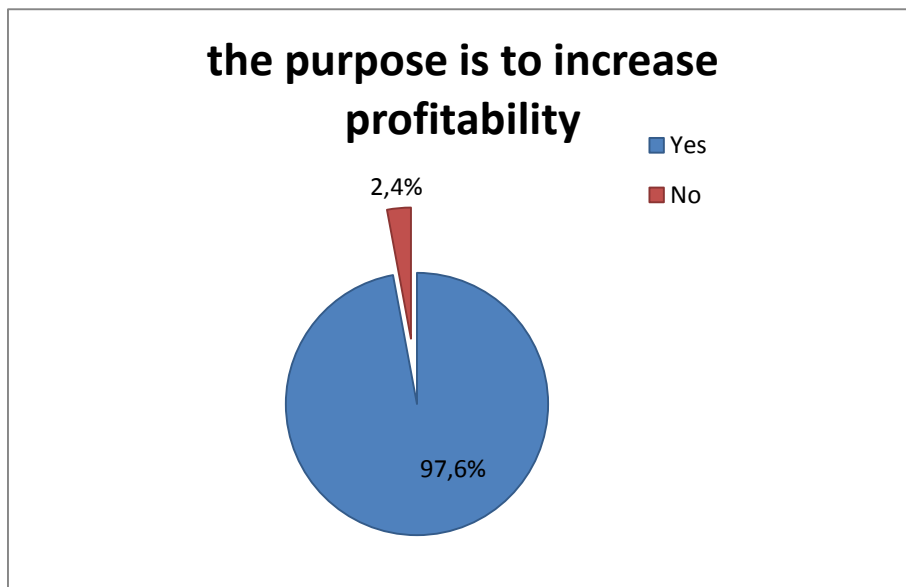
Source: elaborated by the author, using SPSS

As shown in the figure above, there are multiple departments which depend on digital tools for its daily activities, such as the commercial department (which uses CRM, ERP, social media...etc), supply, finance and accounting, IT. We notice that Managers are less involved in the daily use of digital tools.

The frequency of utilization varies according to multiple factors like the accessibility to ERP system which obliges employees to update their sessions daily.

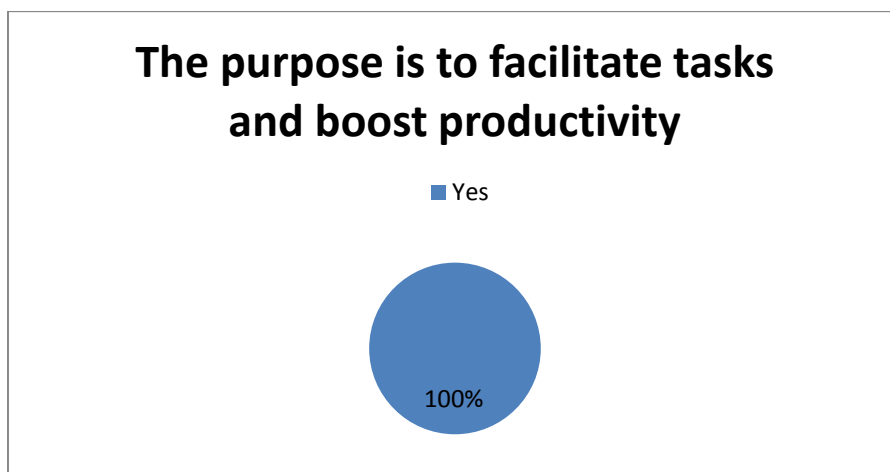
- Question n°08: Why do you use digital tools?

Figure 26: the purpose of using digital tools is increasing profitability



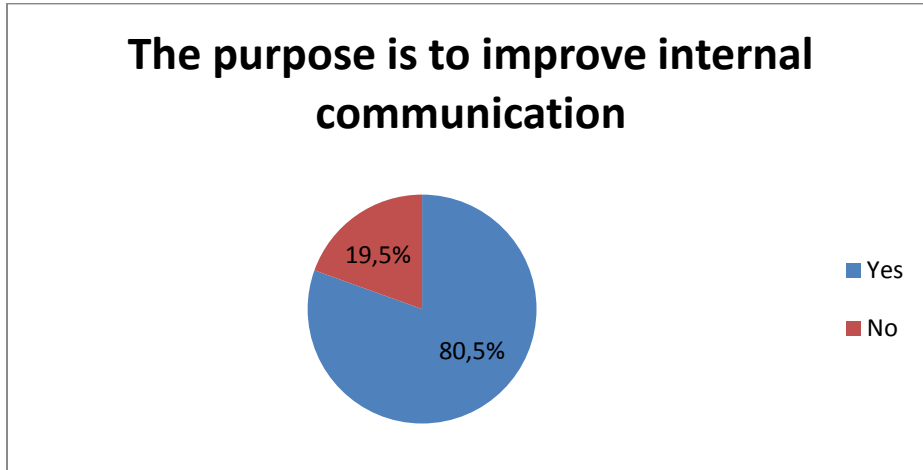
Source: elaborated by the author

Figure 27: the purpose of using digital tools is increasing profitability



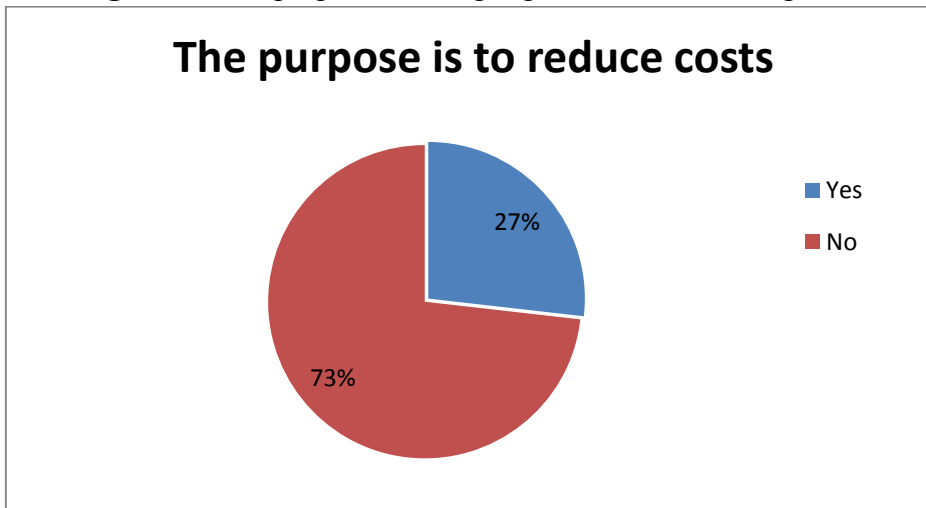
Source: elaborated by the author

Figure 28: the purpose of using digital tools is improving internal communication



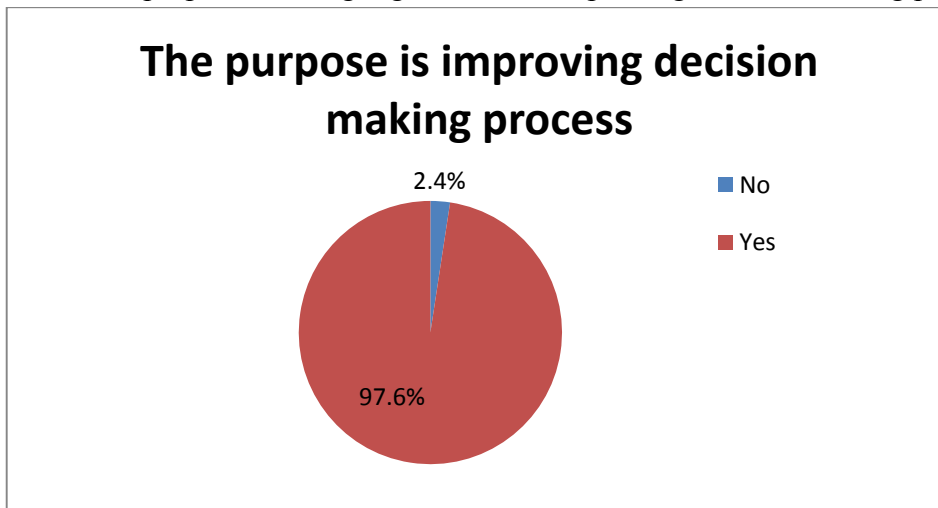
Source: elaborated by the author

Figure 29: the purpose of using digital tools is reducing costs



Source: elaborated by the author

Figure 30: the purpose of using digital tools is improving decision making process



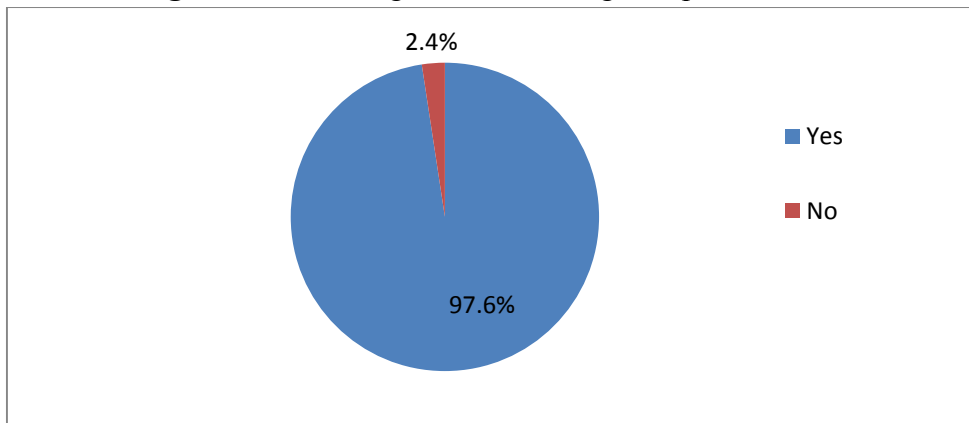
Source: elaborated by the author

According to the information above, most of the employees think that the ultimate purpose of using digital tools is to increase profitability, facilitate daily tasks and improve productivity in order to make efficient decisions and get better results. A minority thinks that the main purpose of digitalization is reducing costs. A company who strives to implement a successful strategy of digitalization such as Glass Design, would overcome challenges related to costs and instead invest in those tools, that's why reducing costs is not the first purpose of digitalization.

Section 03: Degree of improvement due to digitalization:

- Question n°09: Do you think that digitalization has brought improvements?

Figure 31: Have digitalization brought improvements?

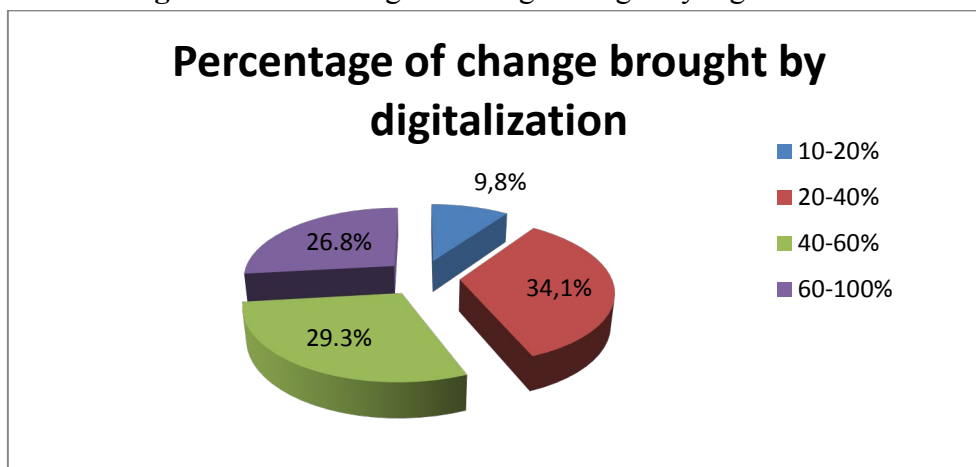


Source: elaborated by the author

97.6% of participants agree that digitalization of Glass Design has brought improvements.

- Question n°10: What is the percentage of change brought by digitalization?

Figure 32: Percentage of change brought by digitalization



Source: elaborated by the author

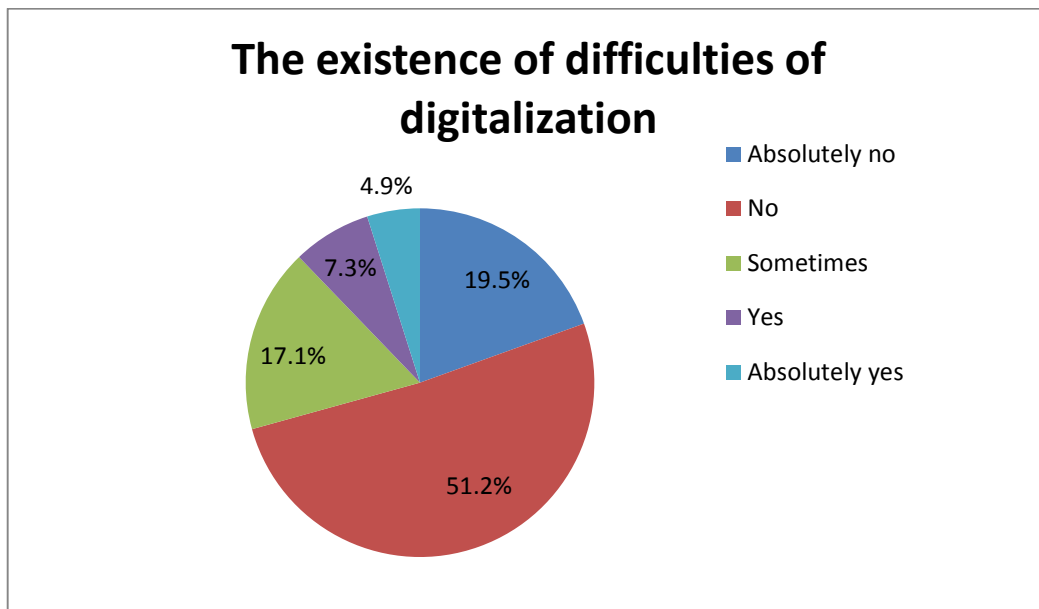
The previous figure indicates that a significant portion of respondents perceive digitalization as bringing about an important degree of change within the company. Nearly 2/3 of them (about 64.2%) chose ranges that indicate an improvement of 40% or more, with a significant proportion that indicates a change of 60-100%.

These results reflect the recognition of employees of the impact of digitalization across various departments.

Section 04: Challenges of digitalization in Glass Design:

- Question n°11: Have you faced any difficulties with using digital tools?

Figure 33: Difficulties and challenges of digitalization



Source: elaborated by the author

A significant proportion of almost 70.7% of respondents indicates that they have never faced any difficulties since digital tools are implemented or used. About 17% of them face sometimes challenges, 7.3% face them more often, and the last proportion (4.9%) concerns employees who still have not mastered digital tools yet, such as new employees.

- Question n°12: If yes, which ones

Lack_of_training

		Frequency	Percentage
Valid	No	33	80,5
	Yes	8	19,5
Total		41	100,0

Source: elaborated by the author

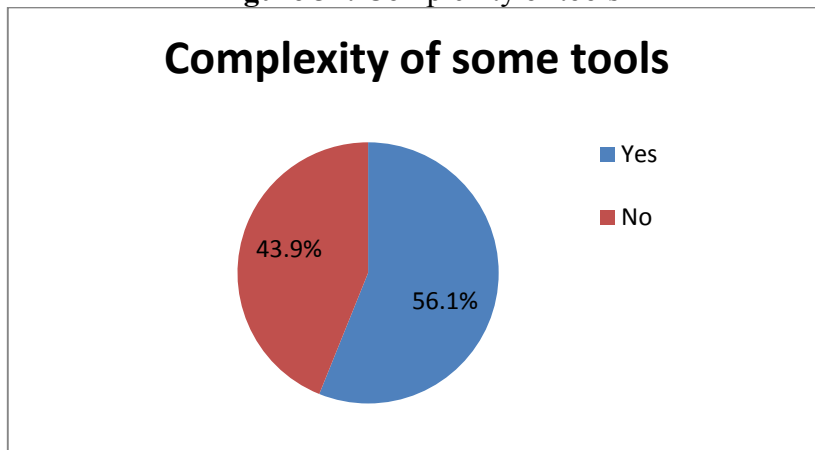
More than 80% of respondents do not think that lack of training is a challenge; that shows that Glass Design is doing valuable efforts regarding its staff through the organisation of training programs and the participation in educational events.

Complexity_of_some_tools

		Frequency	Percentage
Valid	No	18	43,9
	Yes	23	56,1
Total		41	100,0

Source: elaborated by the author

Figure 34: Complexity of tools



Source: elaborated by the author

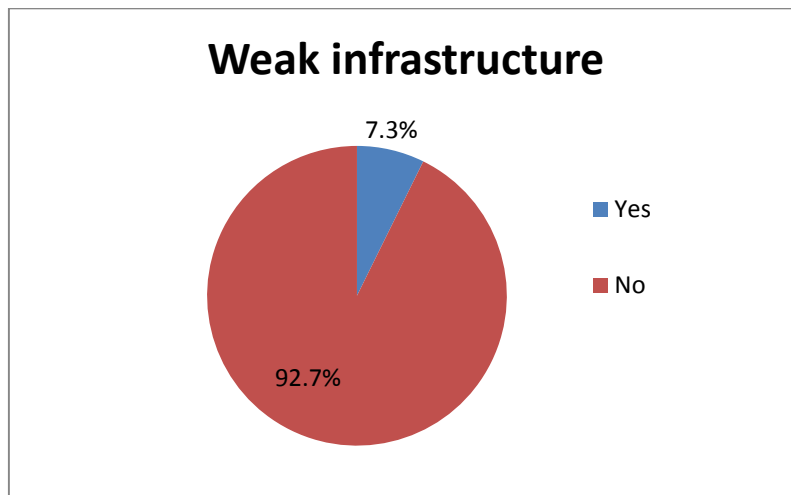
More than a half of respondents consider the complexity of some tools. Defining the degree of complexity of tools depends on the experience of employees and their technical skills.

Weak_infrastructure

		Frequency	Percentage
Valid	No	38	92,7
	Yes	3	7,3
Total		41	100,0

Source: elaborated by the author

Figure 35: Weak infrastructure



Source: elaborated by the author

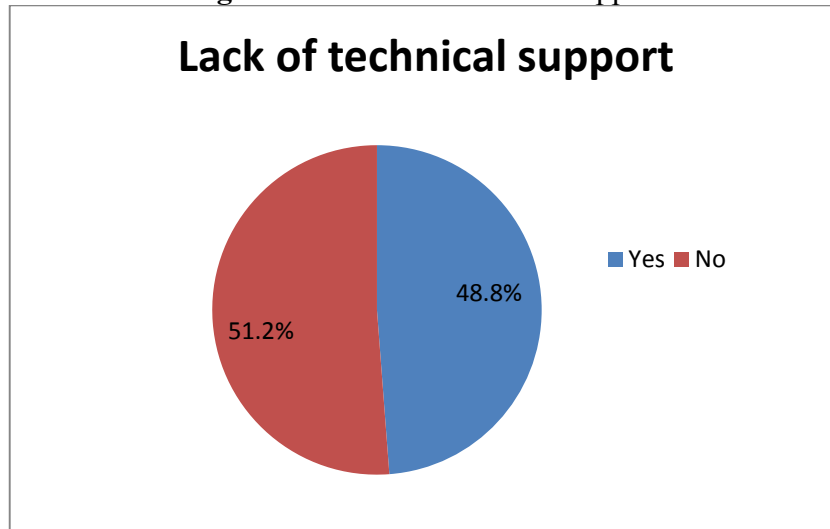
92.7% of respondents indicate that Glass Design does not have challenges related to infrastructure, that means that it is provided with a good one, except for some functions.

Lack_of_technical_support

		Frequency	Percentage
Valid	No	21	51,2
	Yes	20	48,8
Total		41	100,0

Source: elaborated by the author

Figure 36: Lack of technical support



Source: elaborated by the author

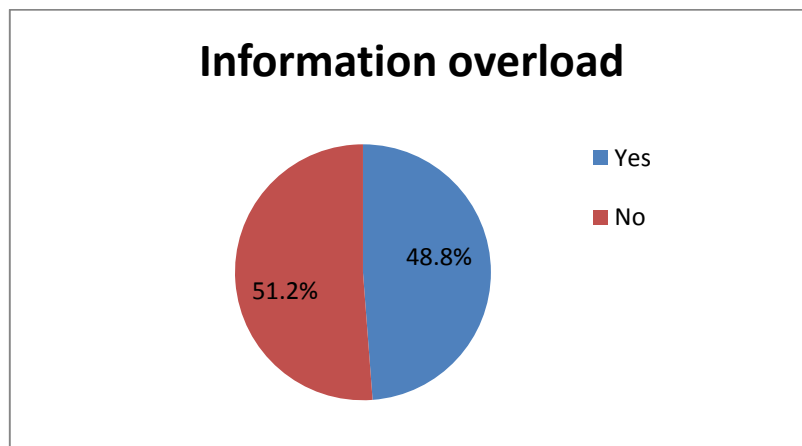
The figure shows that a significant proportion needs technical support for using digital tools. Some departments lack of support because developers who fix failures and detecting problems are often not available because of their projects and preoccupations.

Information_overload

		Frequency	Percentage
Valid	No	21	51,2
	Yes	20	48,8
Total		41	100,0

Source: elaborated by the author

Figure 37: Information overload



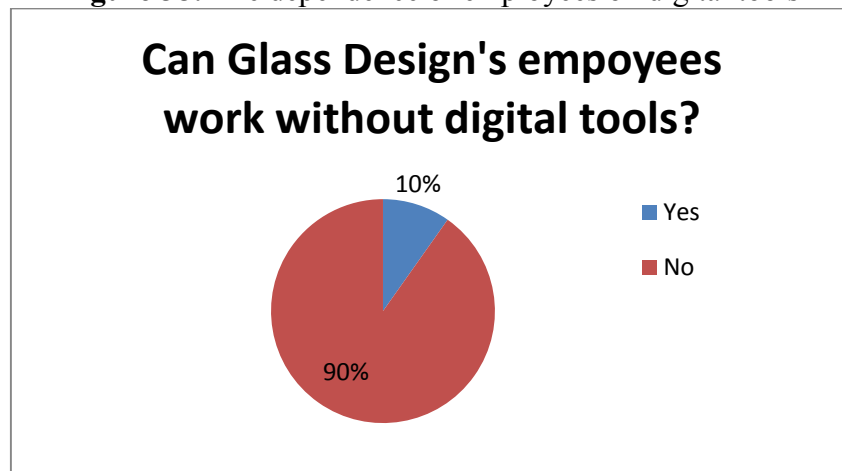
Source: elaborated by the author

The overload of information can be a struggle for some departments who have the authority to make decisions, because the amount of data is significantly increasing. From these findings, we conclude that the lack of training is the most common challenge.

Section 05: Degree of satisfaction of employees regarding digital tools:

- Question n°13: Can you work without digitalization?

Figure 38: The dependence of employees on digital tools

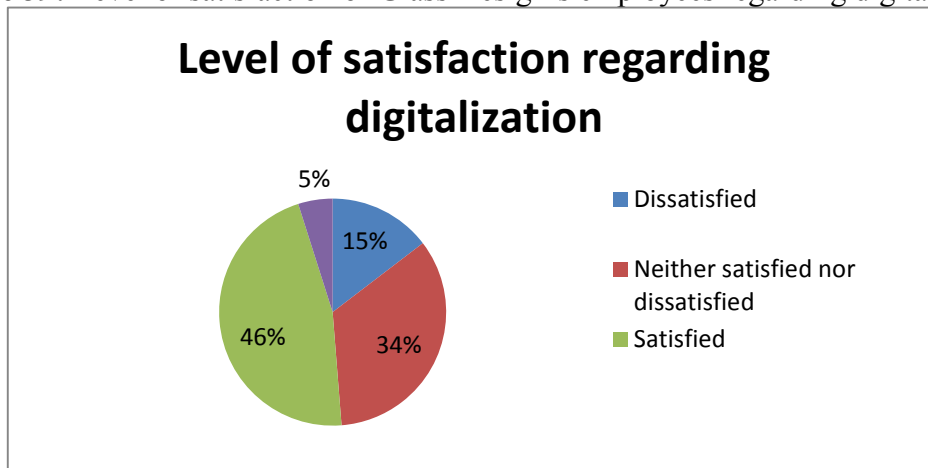


Source: elaborated by the author

We notice that the employees of Glass Design are dependent on digital tools provided for them in order to manage their daily tasks.

- Question n°14: What is your level of satisfaction regarding the digitalization of your company?

Figure 39: Level of satisfaction of Glass Design's employees regarding digitalization



Source: elaborated by the author

According to the figure, almost 50% of employees are satisfied with the digitalization's features of Glass Design even though it is still in the development phase, but that doesn't prevent the fact that there are employees who are dissatisfied and an important proportion of them who are sensing a change. This may be due to the challenges mentioned before.

2. Conclusion:

After finishing the investigation that I conducted through the qualitative study (interview) and the quantitative one (questionnaire), I arrived at the following:

“The hypothesis H1: digitalization has a positive impact on commercial performance”, was confirmed:

- According to our findings mentioned previously, digitalization has raised some important KPIs of commercial performance such as revenue growth. It has also improved the market reach, brand image and customer retention, which means a higher number of customers and then realize “profitability” thanks to its tools like CRM and ERP systems.

“The hypothesis H2: Glass Design may face some struggles with integrating digitalization in its system”, was confirmed:

- According to my findings mentioned above, we conclude that Glass Design, like other companies who decided to adopt digitalization, face different types of constraints and challenges, among them: resistance to change, lack of training, lack of involvement of employees, infrastructure limitations and the complexity of some tools.

Digitalization is unavoidable in today's world, that's why companies are striving to overcome its challenges through the implementation of some initiatives that provide support for the digital transformation process, Glass Design is among them.

As mentioned before, employees of Glass Design are being more involved in this transformation process, today; a department could not attain a high degree of efficiency without digital tools.

The results of this research can be exploited by Glass Design to get a recap on the digitalization of this company and get a clear vision about its current situation so they can improve their processes.

Limitations of the study:

- The confidentiality of some information such as KPIs did not allow me to have an exact overview of the impact of digitalization on commercial performance.
- The sample of 41/47 employees was quite enough for the study but more significant sample would provide more exact information.

3. Recommendations:

For Glass Design:

- Provide more training and skills' developing programs for the employees.
- Implement strategies to enhance IT department support.
- Enhance digital marketing strategies.
- Try to create online shops.
- Improve the IS infrastructure with good processors to avoid information overload.

For future researchers:

- Choose more significant sample will provide more exact information for the study.

Conclusion:

This part allowed us to resume the information gathered during the internship within Glass Design and analyse it.

Quantitative and graphic representations provide better understanding of the features of digitalization. The purpose was to determine positive results of its implementation and challenges.

In conclusion, I found that digitalization has positive results and potential struggles for the company.

General conclusion:

General conclusion:

In an era of technological advancements, companies have no but to adopt digitalization, because it is a crucial component of today's economy. But before adopting it, companies should know its dimensions.

Today, companies are striving to keep their competitiveness in the market in the light of these innovative transformations that we witness today.

Algerian companies adopted the mindset of differentiation through walking on the path of digital transformation. Glass Design is among Algerian companies who are aware of the role of digitalization in realizing short and long term activities.

This study aimed to explore the impact of digitalization on the commercial performance of companies.

This work was divided into three chapters:

- The first chapter: in this part, I tried to discuss basic concepts related to digitalization and align it with Algerian context.
- The second chapter: it involves the definition of KPIs of commercial performance and the way digitalization influence on their values.
- The third chapter: this last chapter was dedicated to the case study of Glass Design.

Theoretical chapters served as a reference for this last chapter.

To conduct this study, I chose to use both: qualitative study through interviewing two of the supervisor of two main departments: commercial and IT departments; and a quantitative study through a questionnaire of 14 questions with different sections, and then analysing their results to organize answers and interpret them.

The present study aimed to find an answer to the main question “how does digitalization influence commercial performance?” and to confirm /or not, my hypotheses:

- **H1:** Digitalization has a positive impact on commercial performance.

- **H2:** Glass Design may face some struggles with integrating digitalization in its system.

Findings show that the impact of digitalization on commercial performance is multifaceted; offering both:

- Significant benefits: improvement of profitability, customer retention, market share, customer engagement, data-driven decision making.
- Notable challenges: technical issues, system failures, lack of skills, complexity of some tools and resistance to change.

which lead to say that:

H1 was confirmed, digitalization of Glass Design has borne fruits from the beginning of its implementation, and there are continuous gradual improvements, which prove the success of its initial initiatives.

H2 was confirmed, depending on the results of glass Design, there are many challenges to overcome in order to take advantages from this transformation.

In conclusion, while digitalization offers opportunities for enhancing commercial performance of companies, it requires effective strategic planning, investment in financial and human resources, and also risk management tactics. Companies which overcome these challenges are well positioned to get the maximum of benefits from digital transformation, improve its competitiveness and achieve its main goals: profitability and sustainability for long term.

Future research should keep on investigating the evolving world of digitalization to further understand its impact. They can tackle a specific component of digitalization or focus on studying this subject from another area or sector, or from different geographical regions to make comparative studies, in order to serve scientific research and developing knowledge because of analysing it from different perspectives.

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Appendix:

Appendix:

Questionnaire

Survey on the impact of digitalization on commercial performance of companies

I am Benmakhlouf Aya, a student at EHEC, specialized in management and entrepreneurship. Within the framework of my thesis entitled: "**Analysis of the effects of digitalization on commercial performance**", I am conducting a survey to gather relevant information your experience and perceptions of digitalization within Glass Design company. I have chosen your company because it is among the digitalized companies in Algeria, and your participation is essential to understand how digital tools influence your commercial performance and to identify any potential challenges related to their usage.

The attached questionnaire is anonymous and will only take a few minutes of your time.

Question 01: How long have you been working in Glass Design?

- Less than one year
- From 1 - 4 years
- More than 4 years

Question 02: In which department do you work?

- Management
- Commercial and marketing
- Supply
- Finance et accounting

- Human resources
- Information system
- Stock management
- Production
- Laboratory

Question 03: Do you use digital tools?

- Yes
- No

Question 04: If yes, which ones?

- ERP
- CRM
- Social media
- Artificial Intelligence
- Communication tools
- HR management software
- Accounting and Financial management tools

Question 05: Since when Glass design has adopted digitalization?

- Before COVID 19
- During COVID 19
- After COVID 19

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Question 06: What is your level of mastery of digital tools?

- Beginner
- Intermediate
- Advanced
- Expert

Question 07: How often do you use these tools?

- Daily
- Multiple times per week
- Once per week
- Less than once per week

Question 08: Why do you use digital tools?

- To increase profitability
- To facilitate tasks and boost productivity
- For better internal communication
- To reduce costs
- For better decision-making

Question 09: Do you think that digitalization has brought improvements?

- Yes
- No

Question 10: What is the percentage of change brought by digitalization?

- 10-20%
- 20-40%
- 40-60%
- 60-100%

Question 11: Have you faced any difficulties with using digital tools?

- Yes
- No

Question 12: If yes, which ones?

- Lack of training
- Complexity of some tools
- Weak infrastructure
- Lack of technical support
- Information overload

Question 13: Can you work without digital tools?

- Yes
- No

Question 14: What is your level of satisfaction regarding the digitalization of your company?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied

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