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Information Management as a Value Generator for Cross-Departmental Activities

Digital Transformation as a Business Management
strategy

Ernesto Felipe Avilés Ramos

Internship report presented as partial requirement for
obtaining the Master's degree in Information Management

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INFORMATION MANAGEMENT AS A VALUE GENERATOR FOR CROSS-DEPARTMENTAL ACTIVITIES

by

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Internship report presented as partial requirement for obtaining the master's degree in Information Management/ Master's degree in Statistics and Information Management, with a specialization in Marketing Intelligence

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DEDICATION

The following report is dedicated to all the people who have been involved in the development process, who without their help it would not have been possible.

I would like to thank my thesis advisor, Teodora Szabo-Douat, for her constant help throughout the development of this report, as well as the whole team at Nova IMS University.

I would also like to thank the whole team at Pegasus Consultancy for allowing me to develop this project and for opening the doors for me to be part of their team.

I would like to give special thanks to the interview participants for their time and information shared, which was key to the completion of the project.

I would like to dedicate this project to my parents for their continuous support, without it I would not have been able to start this Master's degree.

To Lizzie who has been supportive from the beginning, and who has encouraged me at every stage.

ABSTRACT

The following report presents findings regarding digital transformation activities. The study has gathered data from three different sources, secondary data coming from previous studies, primary data coming from in-depth interviews and from a personal perspective from developing activities during a professional internship. Digital Transformation has come a trending topic discussed among organizations because there are no parameters to follow that help to identify when it is necessary to digitalize a process. Recent research documents the benefits observed when applying these changes in multiple fields of work such as medicine, business administration, among others. Proving that when a manual process evolves into an automatic one, it enables people to act and work on strategic tasks more than in a simple repetitive process that can easily be accomplished by process automation. Although findings report that these evolutions are beneficial for organizations and people, the results from the in-depth interviews suggest that the problem is not that there is a lack of technology but rather a conflict with people when trying to adapt to a new technology and subsequently a new way of working. There is a misconception regarding digital transformation because employees think that their work will be replaced by a machine leading them to lose their jobs. This is a perspective that organizations and managers need to work on to implement any tool or process that can be identified as a digital transformation activity. This sentence doesn't make sense

KEYWORDS

Digital transformation; Technology; Process automation; Increased productivity

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LIST OF ABBREVIATIONS AND ACRONYMS

KPI	Key Performance Indicator, is a common word in the business world that is used to describe an important metric that an organization measures to understand their performance as a company.
B2B	Abbreviation for business to business, which refers to the commercial relationship between two different organizations.
B2C	Abbreviation for business to consumer, that refers to a commercial relationship between an organization and the final customer.
U.K.	Abbreviation used to shorten United Kingdom.
RTM	Abbreviation for Real time marketing.
ARPU	Abbreviation commonly used in the telecommunications area to refer “Average revenue per user”.
SAAS	Abbreviation used for shortening the phrase “Software as a service” which is commonly used in the IT world.
BI	Abbreviation for business intelligence.

1. INTRODUCTION

As part of the requirements to obtain the title of Master's in Information Management with specialization in *Marketing Intelligence* granted by Universidade NOVA de Lisboa, the following investigation aims to understand the impact of information management in the activities developed by different departments of the same company, and how good practices can generate more value to the company. Through the modality of an internship report, the following investigation aims to study the relationship between information management and activities developed by cross-disciplinary departments and projects.

The focus of this document is to show evidence found on how organizations are adding more value to their operations through strategic information management. To support this the references will come from research articles and by experience gained through the internship period.

The following chapter will be divided into three sections that will provide support for the thesis and its development. The first section is used to present the research framework and the relevance of the investigation. The second section will be used as space to define the problem and the objectives of the investigation. Finally, the third section of this chapter will be used to define the structure of the investigation and points to consider.

1.1. RESEARCH FRAMEWORK AND RELEVANCE

Data creation and analytics have increased greatly in the past years thanks to the creation of innovative technologies that have allowed many different organizations across multiple fields of work to create, store and analyse data coming from its activities. These processes have enabled organizations to increase their productivity and to overcome new challenges. One example of the amount of information that can be found is in Google, which can see as a many as 3.5 billion searches per day on average across the globe, according to the web page [interlivestats.com](https://www.internetlivestats.com). The 1affirmation mentioned claims to use official sources to use a complex algorithm to obtain a result that is as accurate as possible Google Search Statistics. (2021). Internet Live Stats. <https://www.internetlivestats.com/google-search-statistics/>. Web pages like the one mentioned can help understand how companies are analysing data to create resourceful information for their operations and their business decisions.

Another example of data analysis usage to overcome challenges can be seen in the following research papers:

- To improve the process that doctors and researchers must follow during the analysis of brain tumours a group of scientists have developed an algorithm that that can detect cancer cells in

the brain in more efficient way. Typically to do this people have go through long and complex sampling and sampling analysis. In the research done by S., Kamatchi, K., Govindaraj, V., Zhang, Y. D., & Thiagarajan, A. (2019), it is possible to evidence that the digitalization of some process in medicine have already shown positive effects, by enhancing the capacity to detect and treat such dangerous threats. MRI scans are one of them as a fairly new invention Editorial team. (2021), that has been used to save many lives by enabling healthcare workers to detect illnesses in the human body faster. ANother example of a beneficial transformation seen in medicine is the algorithm mentioned previously, which shows that by running complex mathematical calculations precise results of the MRI scans can be delivered and accelerate the process of cancer cell detection.

- Data analysis has been utilised by humankind for centuries since it has been an accurate tool to measure multiple parameters, such as population, production, architecture, among other fields, by gathering information from the outcome of different processes. If placed on a timeline it is possible to say that data analysis can be traced back as far as the Egyptians in building the great Pyramids, to more recent years with the industrial revolution when the production lines in a factory could be maximized by adjusting the process to deliver more and better products. Foote, K. D. (2022, January 27). The manufacturing industry is a field that has been positively impacted by digitalization. Companies have noticed that aside from producing goods they also produce data that can be used for the benefit of the company. In the last 70 years AI (artificial intelligence) has been a trending topic because of the capabilities that it has regarding data analysis. With the help of AI, companies have seen an incredible opportunity to improve their efficiency by analysing multiple datasets that, if done by one person, could take years if it was even possible. Data scientists have come up with complex models and algorithms that can process and analyse information in a short period of time and with extreme precision. Machine learning has enabled companies to change their old-fashioned production methods to an intelligent production based on data analysis. Wang, J., Xu, C., Zhang, J., & Zhong, R. (2021).
- Social media has become an important part of people's lives because it has enabled them to expand their network like never before. Nowadays there are different types of social media platforms that execute and accomplish different roles in society, whether they help them to connect with people no matter how big distance between them , or to find a job in another corner of the globe, to develop new skills or simply to get distracted by seeing random content. There is no doubt that these factors have helped social media platforms engage with today's society on a whole new level. But this relationship? has presented some negative effects on people because of the speed that content can be shared, the lack of verification on the sources

used to spread information, bullying between users, or the lack of control on the hours spent online each day by a person. Social media played an important role during the lockdown caused by the Covid-19 virus, because people had to isolate themselves from their face-to-face social circles that caused an increased usage of social media platforms. A study concluded that even though people see social media platforms as something positive, one of the answered questions shows that 61% of the sample feels that the impact is positive and negative at the same time Sharma, N. (2020), which leads to a bigger question, are there more metrics that should be considered before making these conclusions To understand the different data that can be collected from different sources a group of investigators have done a study that aims to answer this question, by analysing big data coming from different social media platforms. These different studies have shown that the data that can be measured can be structured, non-structured and semi-structured, coming from text, videos, or images. By segregating data in these groups, it is possible to comprehend the actual impact that these platforms have in society, which can lead to a better understanding of the limitation that they should be considered. Bazzaz Abkenar, S., Haghi Kashani, M., Mahdipour, E., & Jameii, S. M. (2021).

In the three articles mentioned it is possible to show how organizations from multiple fields of expertise can use data analytics as a methodology to overcome challenges and to evolve.

Furthermore, in the past few years businesses have seen a change in the dynamic of their activities. Most of these changes come from a migration to digital tools that help organizations by speeding up and shortening repetitive processes. New technologies have enabled organizations to use their human resources in a more strategic way, an example of these technologies is robotic process automation (RPA) technology that's usage has been significantly increasing in the past years in manufacturing companies. Their usage can help organizations to streamline and lower cost of processes, and it also enables them to use their human talent in more value centred activities and tasks Boulton, C. (2018). It is possible to demonstrate these statements in the article by Huang, F., & Vasarhelyi, M. A. (2019), which explores the benefits of implementing an RPA for auditing. One of the most valuable findings of this article is that the authors explain the level of complexity that an RPA requires for its implementation. To conclude this, we can confirm that the process of transformation to digital tools can bring many benefits to organizations and employees.

1.2. RESEARCH OBJECTIVE AND LEARNINGS

For the past two years the world has been living in uncertainty due to the pandemic caused by the worldwide spread of COVID-19. Among all the changes that have been happening because of this

situation, digital transformation is probably one of the more positive developments during this time.

Jones, M, Hutcheson, S, & Camba, J (2021)

Multiple fields of work have changed the way that they approach their activities, an article was published containing research about the way basic education has been changed since the beginning of the first months of lockdown. This investigation concluded that educational systems have migrated their teaching techniques to digital platforms, although this migration was developed along with many challenges, the benefits that schooling has seen have had a bigger positive impact. Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020).

The objective of this report is to define some benefits that organizations can see when implementing information management systems, based on practical activities and theoretical documentation. The theoretical part of the following report is based on the compilation of learnings from academic studies and investigation for academic references. Besides that, the practical approach of this report comes from the development of professional activities by means of an internship in the company Pegasus Consultancy which is a professional services company that has a sister company called Clockworx that offers an Orchestration system for companies.

Pegasus Consultancy is a company that offers professional services mainly to enterprises that are going through a digital transformation stage but also to technology vendors offering them post-sale services. Typically, the organizations approached from a sales perspective were manufacturing companies that had complex production processes, produced state-of-art products and that were looking for mechanisms of improvement of their processes. The companies targeted by Pegasus were in the EMEA region. On the other side the technology vendors approached were organizations that had been developing digital solutions and that their focus was to continue developing their products and markets but not necessarily to increase the size of their teams. The geographical location of these companies was diverse but focused on the USA and Israel, but the activities required are on the EMEA and South American region.

The second company where the internship activities were developed is Clockworx. This company is under the same management team, but offers a business orchestration solution that organizations can benefit from by expanding the usage of their digital investments and accelerating the value of their systems. This solution can extract information from multiple sources and languages to provide accurate reports and improve the information management process of an organization.

During the period of the internship the activities developed were a part of sales, marketing, and digital transformation departments. In the following report, the mentioned activities will be detailed and supported by literature review.

1.3. STRUCTURE

The report contains the following chapters:

In chapter 2, all the literature review researched to support the importance of the activities developed will be placed. In this chapter different perspectives and approaches related to information management and academic documents related to the activities accomplished during the internship will be developed.

In chapter 3, the readers will find a detailed explanation of the company where the internship was completed and their services and products.

In chapter 4, an explanation of the activities developed in the different departments of the company is shown. These departments, as it was previously mentioned, are sales, marketing, and digital transformation. The activities will be detailed with the methodology used to accomplish each task and the outcomes of them.

Chapter 5 contains a side investigation that will help to reinforce the topics covered, this investigation will collect qualitative data from in depth interviews. This chapter is used to describe all the methodology applied for this study.

Chapter 6 will be used for detailing the analysis of evidence and conclusions of the work done and learnings acquired during the time of the internship.

Finally, in chapter 7 the author will place reflections of the internship period and things that should be considered when analysing this report.

2. LITERATURE REVIEW

Information management is a practice that, as already presented, can be applied in many different fields of expertise, which leads to an opportunity to find examples of good practices by different organizations. This section of the report will contain references coming from multiple academic sources that will provide support to the thesis purposed.

2.1. PROJECT MANAGEMENT

As part of the training program established by Pegasus Consultancy the new members must take a project management course provided by the company “Easy Redmine”, which is a company that provides a free open-source web-based project management tool. The training program has several topics such as an introduction to the tool and basic project management concepts.

Normally projects are seen by organizations as a temporary and specific activity which has a beginning and an end, this statement can be supported by the theory seen in the guidebook Turner, R. J. (2008) where the definition of a project is said to be an event that has a delimited amount of resources assigned and that has a termination date. Even though in the theory it is possible to show that project management should be seen as single goal activity, there is documentation that the project management model can be moulded to each organization’s necessities. In the article Fernandes, G., Moreira, S., Araújo, M., Pinto, E. B., & Machado, R. J. (2018) the authors conclude that project management practices can be mixed with the company’s strategy to create a hybrid model that could be applied for long term.

Project management practices can be used in long term activities for improving the information management practices of a company by sorting data in a single source of truth. This organization can be beneficial for future decisions by having on hand a useful repository of information that can be accessed at any moment for decision making, according to the study mentioned previously multidisciplinary activities can be mixed with the good project management practices.

2.2. INFORMATION MANAGEMENT IN SALES

The digital transformation era has brought different opportunities to generate more value to organizations, by enabling every department of a company to automate and improve their activities they can perceive more value from their daily activities repetitive. In a sales environment, organizations are now able to access to multiple digital tools that will give them different insights of their target markets. An example of these technologies is the big data analytics which have been increasing its popularity among sales environments. A study was done about the applicability of digital

technologies in a B2B sales environment, where the findings suggested that the integration of big data analytics can add important outcomes to the company, by increasing the lifetime value of their customers and increasing monetary sales. Hallikainen, H., Savimäki, E., & Laukkanen, T. (2020).

Another way in which sales departments can benefit from digital tools is with the usage of social media, which even though most of the time people use it to distract themselves and for leisure, they provide organizations with powerful tools for sales and marketing. Nowadays companies can diversify the way they identify new customers, social media has enabled organizations to reach customers from international territories without the need to expand their sales force. By doing this they can save money and improve their sales performance. Fraccastoro, S., Gabrielsson, M., & Pullins, E. B. (2021), this is evidence of the potential that digital transformation can bring to organizations. Also, it is worth mentioning that in the studies found about integrating digital tools into a company's assets group, none of them suggest that this should be about ripping out and replacing the traditional management techniques, but as systems that enable companies to strengthen their strategies.

2.3. DIGITAL TRANSFORMATION

The digitalization of processes should be seen more as a continual improvement process, digital transformation goes beyond a rip and replace strategy that allows organizations to find better ways to develop their activities and to improve their results. Digital transformation should not be seen as a project with a beginning and an end, but the starting point of perfecting a process. Mergel, I., Edelman, N., & Haug, N. (2019), this study reveals an accurate definition for digital transformation as continuous process, that is contrary to what some might see as a matter of installing software.

This process can benefit organizations by helping them to capture more value from their daily activities by enhancing the capability to create, store and analyse data. Giving them a better understanding of the business surroundings. As private organizations can use big data to create complex models that allows them to increase their revenues, expand their customers base, understand the behaviour of their customers, or analyse their competitors in a detailed way public entities can also create solutions for urban areas to make them "smart cities" where the relationship that organizations have between each other is community oriented instead of a battlefield in a continuous fight for customers. Pappas, I. O., Mikalef, P., Giannakos, M. N., Krogstie, J., & Lekakos, G. (2018).

Some companies have been able to create value through digital transformation of open-source software. These systems are defined as a system that can be modified to each project and requirement. *What is open source?* (n.d.).

Some companies repetitive have been adding new capabilities to this free of usage systems and creating a more complete and complex system. Open-source software has enabled small organizations with a reduced budget for investments to develop some complex tools that allows them to grow at amazing rates. This technology help has been proved to be an excellent way to customize solutions for each case, the individualization of products at its best. Moritz, M., Redlich, T., & Wulfsberg, J. (2018). Open-source technologies has not only enabled companies to modify software to their needs but also has allowed them to build an ecosystem of contributors with different abilities that contribute with knowledge and different perspectives. Morgan, L., & Finnegan, P. (2014). Some organizations have been adding value to their internal IT systems by moulding open-source systems to their requirements. The value that these transformations can bring to companies works as evidence of the value creation that companies can see with digital transformation.

2.4. MARKETING DIGITALIZATION

In the past few years, marketing departments have been able to engage with their customers in a more meaningful way, because nowadays they can use very efficient tools, such as social media, to reach their potential customers, create brand awareness, brand loyalty, and many more strategies. It is also worth mentioning that businesses can approach target markets more precisely. Social media and analytics have enabled companies that operate both B2C and B2B to find the target market and reach the exact person that they need to reach. Freddy is a company that sells clothes and traditionally traded their products via B2B relationships with wholesale stores. Recently they have started to develop their business through digital channels, with the opening of an online store, selling their products on Amazon, and through flagship stores. This new strategy started to provide different insights about their customers base and enabling them to create digital campaigns Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021).

Digital transformation processes have been proven to positively impact on an organization's revenue. Every manual process that adopts technology can be considered. (I think a new sentence here) A good example of this can be the adoption of a CRM system in a company, to manage, understand, assist, among other activities that can be accomplished with a customer. The results obtained by adopting this tool show that companies that use CRM see an increase in their sales of around 29%. Stancheva, T. (2022, May 12). These transformations can also be used for social responsibility and return over investment performance. A system orchestrator of the information technology's resources is being used by organizations as way to control information and data from a company. The more digital tools are used in a company's internal processes, the greater the volume of data that will be produced,

which, if well managed, can bring positive results Kristoffersen, E., Mikalef, P., Blomsma, F., & Li, J. (2021). Circular economy is a topic that has been discussed in different opinion spaces such as the United Nations, World Economic Forum, among others. *develop* Presenting some good opportunities for society. An improvement in the supply chain system managed can positively impact a company's revenue by reusing materials in such a way that their material life span lasts longer, creating a continuous chain of treatments. By creating different levels of usage of the materials, organizations will see that it is more profitable to have materials coming back to them, than buying raw materials and needing to transform them into final product. Ellen MacArthur Foundation and McKinsey & Company. (2014).

3. METHODOLOGY

A second part of this report includes an investigation which helps to gather data that is used to define conclusions and to comprehend from an external point of view the main topic of this report. It is a very well-known way to prove or contradict a statement. Investigators can gather two types of data, primary and secondary.

Primary data comes from research done by the author of each investigation, this type of information aims to answer the questions that the author has about their thesis statement, also a particularity of this type of data is that it has never been published before in any study.

Secondary data is all the information gathered from bibliographic sources, meaning that someone else has already gathered their own data, analysed it, and then drawn some conclusions. Investigators use this information sources to support their statements because they are a reliable source of information and documentation coming from official sources. Bouchrika, I. (2021)

3.1. IN DEPTH INTERVIEWS

Qualitative data has been gathered to support the thesis statement presented. This data comes from in-depth interviews with experts that reveal their perspectives of the benefits, obstacles, and things to be considered before going through a transformation process, considering that each one has a different background.

Insights about characteristics and strengths of qualitative data can be found the book by Miles, M. B., Huberman, M. A., & Saldana, J. (2019), qualitative data such as interviews are a strong source of information since they provide a personal point of view on a specific topic which comes from someone that has a deep knowledge about the topic. Another characteristic of this research method is that they are not rigid, meaning that they allow interviewees to extend their answers by providing insights into different topics. The semi-structured interviews use questions to guide the conversation and to maximize the amount of information that the interviewee can provide.

4. THE COMPANY AND INTERNSHIP ACTIVITIES

In the following chapter a description will be presented with information about the company where the activities were developed, followed by an explanation of the activities done across the different departments of Pegasus Consultancy during the time of the internship.

4.1. PEGASUS CONSULTANCY AND CLOCKWORX

The following company is the source of this report. Pegasus Consultancy is a British company with headquarters in Buckinghamshire, Southeast England. The company also operates in Lisbon, Portugal, and Bulgaria. In Portugal the company has Human Resources, Sales, Digital Transformation, and Customer Success departments, and in Sofia, Bulgaria the company has a small part of its operations. The company's team is distributed globally which means that they can operate in any part of the world, allowing them to reach customers from different geographical locations.

The company has been evolving for over 15 years since its first steps, by adapting its business model according to the market's requirements and the business opportunities that its management team has seen with the passing years, but always loyal to their core business that is professional services to other companies.

During the years of development of the company, the management team decided to start a new project that would become Pegasus Consultancy's sister company. The company was called Clockworx and is a company that offers software that can orchestrate the customers' applications. Both companies are managed by the same management team, but the strategies applied for each one is completely different.

Pegasus Consultancy has decided that they will divide their customers, segmenting them into two main groups that are enterprises and vendors. Enterprises' opportunities are seen as organizations that are evolving and that are looking for a tool to help them improve their internal processes. Pegasus provides them with business and IT solutions that will improve their return over investment from their digital assets. Pegasus IT Consultancy. (2021, July 5). The approach that the company takes to this market segment is by enhancing their technological capabilities by improving the information systems and digital investments. This will help organizations to improve their performance.

Besides this, they have defined their approach to vendors by enabling these organizations to focus on the core of their businesses that is developing technologies by delivering products to their customers. By doing this Pegasus enables organizations of this kind to focus their efforts in developing their

products and improving their technologies, by solving the delivery process, acting as white-label brand for the company. This process allows companies to scale their businesses without worrying about the cost of hiring new talent. Pegasus IT Consultancy. (2021, July 5). The vendor's segment is the market that they focus their efforts on the most. They work with organizations that develop and sell technology, their business model is focused on helping organizations reach new markets and to develop their operations in new locations. Pegasus offers these companies professional services for after sales processes, such as training and deploying' the product sold at the customers' locations. By doing this, Pegasus enables organizations to focus their activities on product development instead of investing resources in reaching new markets.

As previously mentioned, Pegasus Consultancy has a sister company that sells a business orchestration software called Clockworx, which is a system that can be integrated with multiple technologies because of its capability to communicate in multiple programming languages. Because of this, the system can extract information to generate reports, which can be used for gathering insights into the performance of processes, teams and production lines, among others. This information can be used by management teams to adjust and improve the company's activities. Clockworx. (2021, July 31).

Clockworx's system have been developed on top of Redmine's open-source system, which is normally used for project management. Redmine is an open-source application that has been developed to allow developers to increase its capabilities by integrating other applications into it. Originally Redmine was thought to be a project management tool that allows organizations to approach the challenges that come along the implementation of a project with different techniques. PCMag. (2020, December 28). From this article obtained from the magazine PC Mag, it is possible to understand some of the features that this system has, and how organizations can adapt it to their necessities. The internal system is based on the Easy Redmine open-source system and has been adding capabilities and plugins to exploit its benefits, taking advantage of the ability to add new programs to it.

4.2. THE HUB

Both companies, Pegasus and Clockworx have a centralized system to gather information from all their activities and to keep track of their advance, this data comes from the biggest projects to the smallest activities that all the employees develop, in this place many entities as (Wiki pages, Knowledge base articles, projects, assignments, etc.) can be created and will feed the records of all the activities developed for future references of good practices and approaches for different problems that each department might face. This system works both as a repository of data and information and as a centralized activities centre, where all the people working in the company can find most of the information that they require for the development of their individual tasks. The system has different

modules to segregate the information in defined places that helps and guides users while developing their tasks. Before developing any activity, a record needs to be created that will provide the person in charge of the task with information about the task needed, furthermore management teams can benefit because each job done needs to be updated with records of the advance on the work required, with the amount of time spent and the specific activity done. In each entity users can interact with each other by adding comments, creating a virtual space for sharing ideas.

The Hub becomes a centre for information management, by saving all the records from all the activities that the company develop. This information provides many insights into all the activities accomplished which can be used with the passing time to improve the way in which teams operate by reviewing their performance measured with the time spent per activity, number of times that the task requires adjustments, accomplishment of deadlines, and others. The management team can use the different KPIs to measure performance.

5. ACTIVITIES DEVELOPED

To finish the master's degree studies at the University Nova IMS it is required to develop either a thesis, an investigation, or an internship report. For this matter the internship report has been developed between the months of January and July of 2021.

The following section has been divided into three groups that will be used to describe the activities developed during the internship period. The work required happened in three departments which are sales, marketing, and digital transformation. The activities developed were monitored by a person from each of the departments to ensure that the work done followed the guidelines determined. During the internship all the activities were recorded in the "The Hub" and will work as referential points for future activities and interns.

5.1. SALES

Working as a support to the sales department, the first task assigned was to complete the training provide by Easy Redmine which involved the understanding of the basic features that Readmine has as a project manager system and how administrators can modify its options. The training also had information about theoretical ideas of project management such as the WBS, Gantt, agile and scrum methodology. The training required a minimum grade to accomplish the process. During this time, it was possible to understand in more detailed way the different features that "The Hub" has, and how administrators and management teams can modify it.

The reason behind this training was not only to help newcomers to understand how the internal system works, but also how Clockworx works, since the "The Hub" and Clockworx system are the same, with the difference that each customer receives a set of capabilities that are required to solve the company's problems.

The second stage of this internship was to create a database with companies that fulfil several different predetermined parameters, which included revenue, location, business core, products, and number of employees. The parameters for the creation of this database were the following:

- Business type: Manufacturing companies
- Location: United Kingdom, Finland, Denmark, Norway, Sweden, and Iceland
- Revenue: Between 30 million and 300 million
- Products: High complexity, state of art, custom, or industrial.

The companies were researched using free access databases such as:

- <https://www.zoominfo.com/>
- <https://www.largestcompanies.com>
- <https://www.dnb.com/>
- <https://uk.globaldatabase.com/>
- <https://www.gov.uk/government/organisations/companies-house>

These websites were used for gathering information about the potential customers, being the largest and most accessible databases in the web, a large quantity of information was gathered. The list of companies was placed first in a google docs spreadsheet where the manager in charge of the intern would put comments with feedback from each company identified.

After the feedback was received from a preliminary list of companies it was required to identify the relevant points of contact of the company. The profile required for this section of the investigation were people with decision power over the company such as (Directors, chiefs of department, or managers) that were related to the departments:

- Information Technologies
- Procurement
- Production
- Operations
- Finance

These parameters had to be considered for differentiating the points of contact from each company, but further information was required to be added such as:

- Name
- Last name
- Company
- Job title
- LinkedIn link
- Email
- Phone number
- Additional comments

The preliminary list of companies and points of contact had 300 companies, which after reviewing their information regarding the companies' information, products, and points of contact the list was reduced to 150 companies.

After determining which of the companies suited the specifications previously required, the investigation for the points of contact began. To obtain information about the people working in these companies it was necessary to search for them using LinkedIn. Social media is used by different companies to identify new customers, as they enable salespeople to reach and find customers based on specific criteria. Using multiple types of filters, it is possible to segregate the searches and find the right person to talk to. Social media platforms offer paid capabilities that simplify the prospection process. Cartwright, S., Liu, H., & Raddats, C. (2021). The usage of this social media platform was crucial when determining which people from the company were the ones that needed to be contacted.

Although LinkedIn provides information about people and overall insights into the human resources of a company, the information required to get in contact with this people is not enough. For this reason, the usage of other source of information was required to finish the process of creating the companies' data base. Companies are constantly facing the challenge of validating the data that they have on hand. Data can come from internal or external sources which makes the process of data segregation more complex than it looks, luckily there are tools that allow organizations to organize the data obtained in more organized and meaningful ways. Hwang, Y., Lin, H., & Shin, D. (2018). For the last part of the process the information required from contacts was gathered using Lusha, which is a contact information retriever. This online application can search within a person's LinkedIn profile and show their phone number and email.

The last stage of this process took place when the manager in charge of this project uploaded all the companies with their respective contacts in a CSV file to "The Hub", this way the people who gathered all this information didn't need to input each individual contact manually into the system. This feature enabled the sales team to move faster to the next activity.

5.2. MARKETING

Everything around internal and external communication, social media management, campaign analytics, the content of the web pages, and the proposal of external applications or plugins that could be integrated with the company's product, Clockworx, are managed by the marketing department. During the internship period the interns had the opportunity to get involved in different activities surrounding the marketing department projects. The following sections will provide further and more detailed information about the activities previously described.

5.2.1. Communication

To be aligned with the company's strategies the marketing department uses only digital tools to share key information to the different stakeholders of the company, all these communications are carefully reviewed to deliver messages in a specific way to each receptor, from the content, tone, length, and complexity of the messages. The definition of the strategic approach of communication has an important role on the outcome on the interaction, this is because of the company's business model. Stakeholders are an important part of an organization's structure, as they have different interests and necessities, and because of this reason the way the company communicates with them must be customized. When organizations identify the right way to communicate with their stakeholders the number of misunderstandings reduces. Bourne, L. (2016). As shown previously the identification of each stakeholder is important when delivering information. Due to each stakeholders' different relationship with the company the process of delivering the message must be well identified to ensure that the communication process succeeds.

5.3. DIGITAL TRANSFORMATION

To improve the sales speech and to engage the customers and potential customers with a different perspective, the sales department required the digital transformation department to manage a project to develop a compilation of capabilities and benefits that the product "Clockworx" would bring to each customer.

The content of this book will be developed using the company's internal system "The Hub". As mentioned previously "The Hub" allows users to create knowledge base articles that can contain multiple informational elements such as text, sounds, images, videos, internal and links, code, that complements the content and improves the message delivering process. This capability also helps writers to organise the information in a more structured and meaningful way, by allowing them to use references from different sources to complement the content developed.

This written guide will have a specific format to standardize the way each article is written. This format will determine a specific order which the elements must follow, each article must contain 5 main elements which are:

1. What does the plugin do?
 - This section is used for giving a global idea of how this specific plugin works, what it can do, and how it behaves with the rest of the digital environment, i.e., the document management plugin allowed users to store different types of documents across the different modules of the system.
2. How does the plugin make life easier for users?
 - The second section of the articles was intended to be used as a place to enhance the explanation of palpable results coming from the usage of each plugin, i.e., the graphs and charts generator capability allows users to present data using multiple types of charts and graphs.
3. Business outcomes
 - The tone used for writing this section of the article must be more driven by a sales-business speech rather than using technical aspects, with the usage of examples of the benefits that can be shown after implementing such a plugin, customers can be persuaded to implement it. The examples used to complement the article present different ways to approach business-centred problems that companies commonly face daily.
4. Benefits
 - The benefits section of the article was designed to be a space to list all the potential advantages that each specific plugin will provide to its users. Bullet points are used to describe examples of how daily basis tasks can be improved or how it can simply tasks and processes. To write this section of the article a mixture of two types of languages is required. On one side it requires a technical overview of the plugins' capabilities, but it also needs to have a sales approach to persuade and convince readers to implement them to their technological tools used to develop activities. Benefits are listed with the usage of several bullet points that each describe different perspectives to perceive value from its usage while developing daily activities.
5. Features
 - The last section of the article is used to share with the readers all the potential ways that its key users and managers can configurate it to its convenience. The features section of the article can contain information of different perspectives of the plugin described, such as configuration capabilities, usability aspects and single independent actions that can be accomplished.

6. COMPLEMENTARY DATA

To support what has been stated in the thesis of the following internship report, and to provide evidence of the benefits gained from migrating manual processes in different companies into a more digitalized process.

This last section of the report will gather qualitative data from interviews with experts on the topic of digital transformation coming from different industries. The information acquired will be analysed and used as a data base to define conclusions.

Furthermore, to prove the impact of digitalization on multiple disciplines, interviews have been selected as the method of data collection. With the help of digital platforms, a series of interviews have taken place. The interviewees selected for this research are people coming from different parts of the world, one of the following sub sections of this chapter will be used to describe each profile and the reason why they have been selected to take part.

The reason why interviews have been selected as a method for gathering information is because of the spectrum that they can cover with one individual. Typically, interviews can address a wide range of topics without losing the focus of the main topic, they are a useful way to uncover different perspectives in a short period of time. Denzin, N. K., & Lincoln, Y. S. (2017). Each interview will have a different approach, either by tackling the impact in their area of work, the overall benefits of such activities or the evolution of digital transformation across the past years.

Because the information collected will have different approaches and perspectives it is important to segregate and organise it. To accomplish this, this chapter will have 3 subsections that will help with the organization of the data collected.

6.1. INTERVIEWS

As previously mentioned, to complement and support the evidence for this report a series of interviews will be used as ways to gather evidence of the outcomes gained from digital transformation processes in different industries and companies.

To tackle this approach, the following subsection of this report will contain information regarding the main elements of this investigation:

6.1.1. Interview structure

The structure that the interviews follow for this report is a set of pre-defined topics that will be the focus of each one. The idea of each interview is to create a comfortable space for participants so they

can feel safe to share their perspectives and points of view. Mcleod, S. (2014). The idea of each interview is to allow each participant to develop their ideas from different perspectives regarding a main topic.

To develop a scenario that resembles a conversation, the questions asked to each interviewee are open letting them express from their perspective how these processes impacted their business areas.

6.1.2. Profiles selected

To provide relevant information about the activities developed during the internship period the people selected for the interviews will be experts and professionals developing activities in the areas of:

- Telecoms
- Medicine industry
- Digital transformation

But the idea of this report is to provide the public with a deeper analysis of the potential that this changes in different business areas such as:

- Public tenders
- Music
- Education

This second phase of interviews can give a wider perspective of the benefits that companies and professionals can get from developing their daily activities in a more digital and automated way.

6.1.3. Interviews analysis

In this last section of the report the interviews that took place will be analysed individually to get a conclusion of each one and then to get an overview conclusion of the investigation.

The script for each interview was semi – structured, meaning that each interview had its own different focus, to make it possible to gather as much information from each participant's point of view and expertise. Each interview was intended to last on average the same amount of time, to ensure that the amount of information gathered was the same but from different perspectives.

In the following table is possible to demonstrate each participant and the perspective that has been taken from each one of them, taking advantage of their years of experience in their field and their expertise on each of the topics of focus for the interview.

Participant	Country	Company	Position	Perspective	Industry
Christian Rodriguez	Panama	GlaxoSmithKline	Vaccines Regional Manager	Marketing	Medicine
Mildred Valencia	Ecuador	Telefonica	Planning and Operations Manager	Digital Transformation and Investments	Telecoms
Maria Fernanda Claderon	Ecuador	Diners	Digital Channels Manager	Customer	Banking
Jose Xavier Espoz	Ecuador	Banred	CEO	IT and Customer	Banking
Axel Gerke	France	Orange	Consultant	Commercial Strategy. Sales & Marketing	telecoms
Diogo Palhinha	Portugal	Vortal	Manager	Public Tenders	Public Tenders

Table 1

6.2. INTERVIEWS ABSTRACT

6.2.1. Christian Rodríguez:

<https://www.youtube.com/watch?v=a041bJtvvXc>

To open the interview with Christian Rodriguez he was asked to give a bit of background to give a perspective of the topics that would be covered. Christian is originally from Quito; Ecuador and he is currently working at the pharmaceutical company “GSK” as a “vaccines manager in Central America” where he has been working for 7 years already. He started as an intern for the marketing department where he learned how this department was managed and the strategies applied. After this he started by explaining what his perspective on how digital transformation could add value into an organization, where he said that an essential tool from a commercial point of view is to implement a good CRM tool that can store multiple pieces of information about the customers, because it is a good way to start building a customer’s data base from scratch. He explained that the way that the company generates value is by making their sales agents, which are commonly known as “medica visitors”, the centre of digital transformation by enabling them to create digital campaigns on their own and to manage their portfolio as they consider best, also to ensure that they are aware that these changes will not imply that they will be replaced, as he said that is the most feared factor. It was also mentioned that it is a good practice to spot the agents that adapt faster and easier as they can become the leaders in the group, both leading and teaching good practices.

Christian then mentioned that this process is the last part on the chain of value creation, because to get to that stage with the sales agents many departments must be involved to comply with the different laws and regulations that exist within data privacy and protection. Moving forward from this topic, the conversation continued with an overview of the digital tools that they use and the data that they gather to create customer’s segments, which came from presential and online activities, he also pointed out that with the help of this tools they could understand the effectiveness of a mailing

campaign by analysing the KPIs, and then proceed to create communication strategies that will engage better with their customers.

He also mentioned that a good practice for any digital transformation process is good to be open minded when reviewing the results obtained from these changes, because if something that was implemented results in a drawback of the KPIs measured, it needs to be changed, otherwise it will become a snowball of problems for the company.

As a conclusion, Christian said that digital tools help organizations and managers to make better and more accurate decisions, because it becomes a decision based on data and not on speculations. Digital transformation has shortened the time spent making long calculations to make a corporate decision, the results are portrayed in visual dashboards with interactive information. Also, that this new uprise in technologies have opened the field for new working opportunities in organizations.

6.2.2. Mildred Valencia:

<https://www.youtube.com/watch?v=satwe5A-UyM>

To understand how digitalization impacts an organization from the operative point of view an interview was arranged with an expert in digital transformation, Mildred Valencia. To begin the interview Mildred was asked to describe her background and her current responsibilities. She's currently working as operations and commercial strategy manager for Telefonica, in Quito, Ecuador, she is a commercial engineer with a Master's in Business Management and another one in Digital Transformation.

Firstly, she was asked about her perspective on what digital transformation implies, she answered that the main element surrounding any digital transformation process is technology, meaning that there must be an adaptation of new technologies into the internal processes. While technology is important, she also mentioned the importance of realizing that these technologies have a cost and that organizations and managers should be aware of it, because, from a strategic point of view, every investment should be made because it will be profitable.

Mildred said that digital transformation could imply the digitalization of an internal or external process, she mentioned that sometimes these changes are seen as something that only happens in-house, but it is every productive process that the company has that can be digitalized to help the company perform better.

One thing that she said that people and organizations should be aware of, before going into a digitalization process, is that as with any improvement, it has its costs. it must be seen as an

investment, and that in the long run it should bring benefits to the company. Part of this improvement process companies should also be aware of is that processes are managed by people, which means people skills should also be improved, that if someone knows a lot of marketing then how can that same person improve their knowledge about digital marketing, or how can a salesperson who is great at selling then improve their digital sales skills.

Mildred also pointed out that digital transformation involves all the headcount of a company, but the changes should be done gradually and strategically, depending on the path that the organization wants to follow. As mentioned previously, these transformations can be applied to internal or external processes, and Mildred's opinion on what should start first is that they should start at the same time, hand in hand. Customer facing processes cannot be the only one digitalized, leaving the collection or supply chain processes to a side, because this practice will be counterproductive with each other. Always focusing on improving the customer's experience.

When talking about who is responsible for the transformations, she answered that it depends on the process that will be improved. Typically, organizations think that because a process will be digitalized, then it should be the responsibility of the IT department and that they should oversee these changes. From her perspective, this approach is not the best practice as each process is managed by different people, and that in the first place, the company should identify the owner who is responsible for accomplishing this process. The person selected to lead the process needs to go through a training process that will allow them to accomplish their tasks whilst increasing their productivity.

Mildred then said that the next steps are about defining budgets and objectives, also to align with all the other departments of the company, because they will help as support through the different transformation stages.

The next topic discussed was about the culture inside a company and their people. Mildred started saying that digital transformation processes can be successful when the people inside the company are tech friendly. One of the biggest fears that people have whilst talking about digital transformation is that they will be replaced by machinery, when what happens is that new technology will be added to their tasks, and it will be beneficial for them. Mildred said that although employees get their hands on these tools, they are not necessarily well prepared for this it requires some survival instinct from that person.

Mildred then spoke about potential reasons why a company decides to go through a digitalization process and said that one of the reasons needs to be customer centred, saying that it should benefit the customer, otherwise they will stop buying from them and will go to their competition. The reasons

why it is decided may vary but it is also important to do a company environment analysis. These reasons may vary from company to company, the region and country where the company is based, as these factors will determine how changes happen, but the main reason of these changes is that they will be for improvement.

6.2.3. Maria Fernanda Calderón:

https://www.youtube.com/watch?v=wxGMrmrR_aw

Maria Fernanda Calderon is part of the group of experts interviewed for this section of the research. She is from Quito-Ecuador, and she explained that she is currently working in Dinners Club, which is one the major credit card companies in the country and a worldwide known pioneer in the credit card world by being the first independent payment card company. There she works in the digital channels department, that is the one in charge of the customers digital experience by monitoring the different interactions that a customer can have with the company. She also has experience in leading digital transformation activities as she was previously in charge of the digital transformation department at Telefonica Ecuador. She continued by saying that the digitalization process begins because there is a need to accomplish tasks better and faster but keep in mind that every transformation that a company decides to apply needs to be customer centred, because they are the ones demanding better solutions for their interactions with the company. Continuing, she said that these changes may have either one of two impacts, they improve the customer's experience, or they help the company to save money and accomplish goals with fewer resources, making their operations more profitable and efficient.

Although customers are one of the main drivers for digital transformation changes, it often happens that when a process becomes digitalized, customers are not aware of it or they are not prepared to adapt to the new process flow, for this reason organizations need to put a big effort into strategies to help these customers. Typically, when customers adapt to new technologies to interact with the company, they are reluctant to go back to a slower and more manual way of doing a certain activity, banks are the most common examples as today most of the daily transactions are done digitally, because they are used to the ease of the task.

Another aspect that companies face when applying digital changes into their activities is how to improve their internal processes that are accomplished by the internal client, or better said their employees. When talking about digital transformation as a solution for the companies' activities it is necessary to review of the flow that a process has. Maria Fernanda said that if a process is wrongly

structured, any change applied won't have any positive impact, as it hasn't been productive, and it won't add any value to the organization.

Continuing, with adaptability as a key requirement for both sides of the digital transformation, Maria Fernanda was asked who she thought was more resistant towards change, the external customers, or the internal customers? She responded that in her experience internal customers are the ones with the most difficulties, because they feel that their jobs are being jeopardised due to the idea that they will be replaced by a system or a machine. When talking about the same difficulties but from the customer perspective, she said that if the changes aim to improve their experience during their life cycle and they are well communicated, customers are easier to adapt. It is also easier for the person responsible for leading these transformations to persuade the rest of the organization to support the changes because they have a positive impact on the customers, as it is easy to quantify the ease of the adaptation process.

An example of it can be seen in the upgrades that banks have been implementing to enable users to complete transactions with faster and easier-to-use applications for smart phones. Nowadays, a bank customer can make purchases from any part of the world with a few clicks, users do not need to go to their bank institution to accomplish such tasks. With this being said if users were forced to go back in time and depend on going to the establishment to complete a transaction they would find it very difficult to adapt so they would find a better solution from the company's competition. Because of this, Maria Fernanda said that communication is a key factor of digital transformation, when all the stakeholders have been communicated with and they are aware of a change done, the process of adapting to it is faster and easier.

Another important aspect of digital transformation is communication. Maria Fernanda spoke about the benefits that leaders and organizations can see when they empower and involve the whole company to be a part of the change, as this is a way for people to understand and adapt to changes in an easier way. People tend to react better to changes when they feel that they belong and that they are being part of the transformation, instead of only being notified of changes.

Continuing with the interview, Maria Fernanda was asked about how security should be seen in her working field when talking about digital transformation as she is working in the banking industry. She answered that there are a lot of customers that are still afraid of using technology for completing transactions and sometimes they would rather go to an establishment than using an online app. This barrier could be overcome by having good communication with them. Technology-wise things are somehow more difficult because everything is a novelty, so there is no record of the potential outcome. She gave an example of technologies that are currently being used by banking companies

that allows customers to login into their account by using double factor authentication, which, as any other system, sometimes fails and must be improved. This is usually a complicated task in most industries but in this one it is especially more complex as when security is compromised, people could potentially lose their savings or become victims of a scam. Because of this, security and digital transformation departments should work hand in hand to appeal for the best experience that could be offered but at the same safeguarding their privacy.

The last section of the interview was dedicated to talk about the value that the data coming from the response and behaviour that customers have towards a solution, as they will prove the real value that digitalization of processes has. When customers have any interaction with the company and the overall experience is improved it is a win, because it proves that all the efforts required to implement digital solutions within a process were necessary.

6.2.4. Axel Gerke:

<https://www.youtube.com/watch?v=IOSYrm-oM4Q>

To analyse the impact that digital transformation has in departments such as marketing and sales a session was held with Axel Gerke, who has been working in the telecommunications industry for several years. The first part of the interview was used to understand better Axel's background, where he spoke about his years of experience where he called them the "three blocks". Firstly, he started as a consultant for 10 years where he was part of international projects, then he moved on and started working for Telefonica where he managed different marketing operations, he did it for 14 years in 3 countries. He is currently working as a freelance consultant for Orange in France.

Moving on Axel was asked about the changes that he has seen technology wise in the telecom world to what he answered that one of the most impressive and significant changes that he has seen is communication, and more specifically the communication between company and customers. The digitalization era has enabled companies to evolve and improve their processes by facing two fronts, cost reduction and customer service quality, even though they seem that they could be opposite, both aim to improve the operation behind the customer service. The digitalization of these interactions has empowered customers to manage their accounts by themselves through a web site, or as he calls it "Customers self-care". Organizations have been developing websites that allows them to manage the services that they have, by adding or withdrawing benefits for their service package. This has become a new commercial machine that requires zero human effort. When a digitalization process has been properly implemented organizations can use data in many ways, one of them is RTM (Real Time

Marketing) that analyses data from different usage sources, in the telecom world is how much of each service the customer uses such as (phone call minutes, internet data, messages, among others) that combined with data analytics can give unique insights about the behaviour of each customer. These insights can be used to create custom service packages that adjust more to the customer's life, increasing the value perceived by the customer and allowing the company to push for service upgrades. Another benefit that RTM has brought is the ability to increase the ARPU (Average revenue per user) with the usage of this data obtained from customers, companies have been creating fully digital brands that interact on a completely different way than a regular company and that are used to target different segments of the market.

With these topics in mind, the following question was, how do organizations used to do these analyses? He said that the analysis done was done with old data or data that with the technology available at that moment was impossible to gather. Information of each customer was very basic making almost impossible to identify segments.

In 2006 he was responsible for the implementation of the first business intelligence tool in the company. This transformation comes from the necessity of understanding their customers in a more meaningful way as it was typically done using more simple programs such as Excel with data from at least three months old. After this the company decided to add a CRM for their sales processes, which improved the quality of the data gathered for their customers. This also allowed to have access to customers data anytime as it was gathered daily. Once these two tools were implemented, they started to receive insights coming from data that has never been analysed before. These insights enabled them to target different customer segments in a more strategic and revenue centred way.

Axel oversaw the B2B segments while these implementations happened and he said that the information that they were receiving from the data analytics tools was a game changer as they started telling them about consumption habits, trends, accurate customer segments, among others.

In the final section of this interview Axel was asked about one of the learnings that he got from this digital transformation process that he participated, he answered saying that one important part of it is to do an analysis of the results obtained so it can be measured and can work as a benchmark for the future transformations, but the most important part of these changes is the human variable. When people learn how to do their job, they feel extremely attached to the routine that they follow which in some cases leads to resistance to change, this people often think "I already know how to do my job, so why would I change the way I do it?", this type of thinking builds a barrier between the person and the innovation. This is the reason why is so important to have a good communication between all the people involved in the transformation process, as the main objective of a digital transformation within

a company is to increase the productivity by enabling people to develop strategic tasks and machines to do all the repetitive and less complex tasks.

6.2.5. Diogo Palhinha:

<https://www.youtube.com/watch?v=iFRhImk3-o>

Another business area that has evolve through the past years is the public tender's market, it is common practice in some countries to use digital platforms to carry out an investment with the use of public funds. With the intention to understand on a deeper level how the digitalization of processes have changed with private and public entities, an interview was planned with Diogo Palhinha who has been working in this market for years.

To begin the interview Diogo was asked about his experience with digital transformation processes. He said that his whole professional career has been around this topic because he started by supporting the digitalization changes in construction companies. He continued to be part of digitalization projects for the public sector, specifically the public tenders. These last projects were developed while working in Vortal.

Vortal is a Portuguese company that offers business services for public and private sector by providing them with digital tools that give insights into their market in the public sector regarding potential customers, competitors, business relationships and more. This type of information is used by companies to become more competitive and more aware of the business environment in which they operate.

The way businesses are made has evolved greatly in the last years, with the appearance of internet negotiations and transactions being done from different points in the planet. With the intention of better understanding how these changes have impacted the public tenders the next request was for Diogo to explain, with a timeline, from his experiences how different things are being done now in comparison from when he began working in Vortal. He said that public finance administration had been practiced for many years from the Greeks to the Egyptians and it's an important aggregate of a country's economy because it represents around 15% to 20% of their GDP. From his experiences, he explained that some years ago every country used to have their own regulations for public tenders, and they managed them as they thought was most suitable, all this documentation was managed with paper and to make a tender public they needed to publish it through the local newspapers. This meant that they had to carry an excessive amount of paper that needed to be presented to participate. Typically, when organizations present their offers for a tender, they will need to clarify information in

the documents, rearrange the offer and submit it again. All this process made public tenders a very complicated, manual, and long process. To complement this explanation, he spoke about the implementation of the 3G network in Portugal, when this tender was resolved the team that had to carry all the documentation needed to hire a van to fit all the paperwork and documentation that was required. This is an example of how complex public tenders used to be before becoming digital. When the digitalization of public tenders happened, people were quite scared of how this transformation would impact on operations, but he said that after some years it is possible to say that it was a success, as it enabled both companies and public state entities to meet in a marketplace that allows both to do business with the best option in the market. Also, it made these processes become more transparent because the information could be found on the internet with free access by anyone, as public tenders are being paid with public funds.

The digitalization of the process of applying to a public tender also meant for the people that they didn't need go to an establishment because it became possible to find the information on a website, sending a commercial offer was one click away. It helped to save resources like time and money for the companies and people. Also, it made the application process much easier, someone who was 500 kilometers away could also present their offer, increasing the competitiveness in the market. The entrance of new players to the public tender's market meant a decrease of prices paid for public works and maximizing the potential of investment that public funds have, this increase of companies competing in the market could be seen as a good sign because it means that the process of participating in a public tender became easier and more trustworthy.

Diogo spoke about the impact these changes have had on companies and people, as mentioned before, companies were able to make more and better business and for people it meant that they could have a better balance between work and personal life, people didn't needed to spent the same amount of time as that they needed previously, faster and easier processes led to saving time that could be used for their personal activities, family time or self-care. With these changes public tenders became processes that could be done completely online.

When talking about the different types of procedures followed to implement a public tender platform, Diogo explained that there are two ways to do it, the on-premises way and the SAAS or software as a service way. The difference between them is that when public administrations want to manage the platforms independently without the help of private organizations, they usually buy the license to 'install' the software in their data centres and they are responsible for feeding it with data and for the maintenance of it, which will require a specific team for these tasks. The other way that Diogo mentioned was the SAAS way, or as he calls it the "Portuguese way" to implement it, by following this

path public administrations will find a private company to take care of the implementation and maintenance of the platform, which simplifies the process and ensures that the deadlines are accomplished within the time established.

Finally, Diogo was asked about the future of these processes as the first step was the digitalization of public tenders and all the changes that this implies for public administrations, private organizations and for people in general, this also meant that a large variety of data started to be stored in data centers which could be used for analysis and interpretation. He answered that the next step is already in development, Vortal created a BI solution called Armilar, which analyses all this data and presents the results in user-friendly dashboards that allows its users to understand the market they develop their activities in an easier and more significant way with the usage of data analysis and AI. He also mentioned that these types of BI tools have changed the perspective of what BI requires, as typically these systems would require a big economical investment, a complex software and hardware that is used specifically for doing analysis, also this would require people with vast knowledge in data analysis. By simplifying these process users can anticipate contracts, predict fluctuations in the market and be prepared for any scenario ahead.

6.2.6. José Xavier Espoz:

<https://www.youtube.com/watch?v=k-FoyAe4XaE>

José Xavier Espoz was invited for an interview to understand how digital transformation can be seen and used from the perspective of the highest management rank in a company as CEO. To get to know him better he was asked about his background and his current role. He has been working for the past 20 years in tech companies in different departments and now he is the CEO of Banred, which is a company that works as the transactional switch between financial institutions in Ecuador providing connectivity with ATMs and money transfers, he also acts as part of the Ecuadorian financial system.

To begin the interview, he was asked about the technological evolution of systems used for financial transactions, he answered by saying that this topic has two different fronts, connectivity, and security. Connectivity needs to be overseen because they work as the joint between users and financial institutions so if their system goes down, all the ATMs and money transactions in the country goes down, making this one of the key points of these processes. Furthermore, security, which is needed to reduce the number of fraudulent activities and to protect their user's information and money. To ensure that transactions are accomplished in the most secure way they used a transactional switch provided by an external provider, which despite being highly secure, it was also very heavy and slow and made the processes less efficient. As such they have decided to change their transactional switch and are currently undergoing a transformation process to change it. The problem behind the old

system is that for every change or improvement that they wanted to implement, software development work was necessary, which meant that they would need a full team of software developers in order to achieve it, making it more expensive by the working hours of this team and slower because it would need time for testing and adjustments. This is reason why they needed to find a better way to accomplish it. José said that the best way to do this was by changing to a system based on application integration, which meant that independent systems could be modified, improved, and changed with the usage of external programs with a more efficient connectivity.

Integration application not only allowed organizations to manage their digital assets in a simpler way, but also helped new business partnerships be created. José explained that nowadays organizations cannot think as themselves as isolated entities in a market, there is no space for a mindset of “it is either me or you” because digitalization has opened the possibility to create alliances that some years ago were impossible to imagine. These associations between companies are ensuring the growth of them both and an increase in the customer satisfaction.

Another aspect that the digitalization changed in the world is that before, everything was far away, and accessing certain information was somewhat complicated. Nowadays people can access to information easily, which has given consumers power over companies, unlike in the past, where companies had the last word in front of customers since they didn’t know that are other companies providing the same product or service. José said that options are the determining factor in business relationships, today with the access to internet customers have gained much power and organizations must adapt to survive.

Continuing, José was asked to explain his perspective as CEO of a company on the impact that digital transformation has had over the company’s internal culture. He started saying that this topic has been misunderstood multiple times and has led organizations to fail during these changes. People used to talk about it as if it was something very complex and that it was a long-term project. But, in 2020 when the whole world was paralyzed because of Covid-19, organizations were forced to digitally transform their operations, which proved that this idea was wrong and that digital transformations could be done in short periods of time. As time was not the decisive factor in it, organizations saw that the main driver of digitalization are its culture and strategy. These transformations should not be seen as something that had to be done just because, but instead it is necessary to answer the question “Why go through a digitalization process?” because changing without a real reason makes no sense. It is imperative to create a map of the process and an action plan for it. He also said that these changes should also go hand in hand with customer-centred vision because, the idea of any change within a company should be focused on how that improvement or change will increase the customer experience and

satisfaction. When technology is the centre of the digitalization it is possible that it could have a negative impact on the customer, which would lead to a negative impact for the company. Another important factor that needs to be considered when transforming any internal process is the people, in the sense of how adaptative is the culture of the organization, when people have high resistance for change it becomes a more challenging task. The last factor that is critical for any digital transformation are the internal processes, because if they are unclear, too long, or complicated, the whole transformation may be jeopardised to follow the same pattern but in a digital way, becoming something obsolete and that will most likely have a negative impact for the organization.

Finally, José spoke about the impact that digital transformation has over people, because it is a disruptive change in processes that adjust the way organizations operate, subsequently it has a big impact on how people develop their activities. He said that it is true that during these changes some people will lose their jobs, this is not because a computer will replace them but because they will not adapt to the changes. People who don't want to adapt to changes can be toxic for the culture of a company as they can even try to sabotage the transformation, only because they do not want to change the way they work. He also said that digitalization also opens the doors for new talents, that it is not only linked to adaptability but also to the new talents required to accomplish each process. To ensure that a digitalization process is successful, organizations need to prepare their employees and give them all the tools that they will need along the process and ensure that they understand that the process is being implemented because of the customer, so they can have the best experience possible.

7. LEARNINGS

The information retrieved from the interviews suggest that even though digital transformation processes can bring positive results to the company that implemented them, there are some aspects that should be carefully considered during these changes. People and reasons are the two factors that the interviewers expressed that are the most critical factors. While going through a stage of digitalization people from the organization need to have good preparation to face the challenge of changing the way they work. Digital transformation is not only change based on technology but also on organizational culture and work teams, people will have to learn how to develop their activities in a different way and could make some think that their jobs are in jeopardy. Digital transformation is as much a technological change as it is a human change. Strategy is the other decisive factor that organizations should consider before thinking of digitalizing their internal processes, this is not a trend as many people confuse it, these changes should be thought of as a solution to their problems and a way to increase the value that the company is generating.

8. CONCLUSIONS

The different sources used for this investigation have proved that digital transformation has a positive impact for organizations in multiple ways, from the smallest and least impactful processes to the most complex and important ones. It has allowed people inside organizations to develop their activities in a faster and more efficient manner increasing the value of their time because they can use it to work on more strategic tasks rather than repetitive and time-consuming activities. Although digital transformation is a popular topic now and many organizations see it as a strategy to overcome their competitors and to set a competitive advantage against them, it has been happening for a long time. From the creation of the first calculators that helped regular people to make simple calculations with large numbers to the most cutting-edge AI systems that are fed with data and that use machine learning to predict outcomes, digital transformation is not something new to businesses and by the evidence found it is very possible to say that it will continue to expand to different professional activities.

To conclude this investigation, it is necessary to analyse the results obtained from two different perspectives, the practical evidence obtained during the internship completed in Pegasus consultancy and the qualitative results obtained from the interviews with experts.

While working in Pegasus consultancy it was possible to see in real life how a system based on application integration could ease multiple daily problems that different companies can face by allowing their work teams to develop their activities in a better and more efficient way. Clockworx system could be used by any company that are facing problems with slow digital processes which are not adding value to the company. The time spent could be used for more strategic tasks whilst increasing the working time value, an example of it is the document management capability that allowed work teams to gather multiple sources of information and to place them in a knowledge base repository, that would save them time when they are developing a task and need a guide on how to face a problem without depending on the rest of their colleagues. These types of solutions prove that digital transformation can have a positive impact on different teams of the same company, allowing them to work closer and better while increasing the value added by each member of the organization.

The results and insights obtained from the qualitative investigation show that different organizations coming from different countries can provide evidence that they have obtained positive results from the digitalization of processes, all the participants agreed, saying that they have witnessed the benefits of it. Although they all agreed that it is beneficial for the company, they had different opinions on what should be the focus of the transformation as some of them mentioned that the strategy followed while

going through a digitalization process should be customer centred, other said that it should be strategy based and other said that the focus should be on the people because they are the ones leading the processes. The results vary because each of the participants come from different backgrounds, and they approach these transformations with different perspectives.

Finally, I can say that after digesting all the information gathered it is possible to conclude that digital transformation has a positive impact on organizations, people, results, and customers. When digital transformation operations are properly implemented, measured, and exploited, they will have a positive impact on each of the different stakeholders involved.

9. LIMITATIONS AND RECOMMENDATIONS FOR FUTURE WORKS

The following study has been done while undertaking an internship in an IT company which can lead to being mostly focused on the IT business world and can present scenarios that companies developing their activities in different economic sectors are not necessarily facing and might not be relatable to their necessities. The people that participated in the interviews have already faced a digital transformation process at some point which could be the reason why they all agreed on the positive impact of these changes. People that have not been part of a similar process could think in a different way. Also, all the answers given talked about positive outcomes evidenced by companies that have digitalized some sort of process, this can also limit the spectrum of commentaries from evidencing the results of digital transformation.

For future studies it could be a good idea to look for companies that have obtained negative results from digitalizing an internal process as this could bring some different perspectives on how these changes should be approached.

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