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SITUATION OF IT OUTSOURCING IN SPAIN

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1.INTRODUCTION.

In recent years, the term outsourcing has grown considerably due to the constant and rapid evolution of technologies, which has caused companies to resort to this type of practice in order not to fall into technological obsolescence and to save on costs in order to achieve a competitive advantage over other companies in the market. This term emerged in the 1940s due to the need of American companies to acquire foreign labor to cover the great crisis experienced after World War II. The term did not spread much because companies experienced a strong fear of deprovisioning. In this way the companies gained reliability because they managed all the productive processes in exchange for a loss of specialization and therefore also a loss of efficiency. Due to the evolution of technology and the inability of companies to adapt to it, new management and contracting methods began to emerge in order to keep up with the technological trend. This practice has become more accentuated as companies discover new needs to be covered in order to adapt to the technologies of the market and thus improve the quality and satisfaction of their customers by focusing on the core of their business, the term today, is a very common practice for many companies in the field of technology and information due to the adaptation of companies to technology and management trends. Currently, after the COVID-19 pandemic, companies have realized that they did not have the appropriate technological infrastructure to face a crisis of this dimension. Due to this crisis, companies foresee an increase in spending on technology and communication to cover new needs related to work and production.

This study aims to assess the situation of information technology outsourcing in the current Spanish market, its trends and future practices by investigating what other researchers have found on the subject. The different concepts of outsourcing are presented and the reader is shown what type of outsourcing would be most beneficial depending on the activity to be outsourced and its function in the value chain, the benefits and risks involved in this type of practice, so that companies can make a decision on whether to produce or to outsource and know how it works.

Previous researchers have discovered that outsourcing is no longer only used for cost savings by outsourcing a non-core function of the company to move from fixed to variable costs depending on the volume of work. Today, companies incur in this type of digital transformation practices to meet the expectations of the growing technology needs, due to this companies suffer cyber attacks so they must protect their data by outsourcing data security companies. On the other hand, the change in the work has caused that the companies incur in outsourcing to obtain a personnel management more adapted to the needs of production and projects obtaining specialized workers for the required tasks. Finally, the processes that involve a repetitive task which does not necessarily involve personnel for its realization, so that staff tends to be replaced by robotics and artificial intelligence.

This study is divided as follows. First, an introduction to the topic is given and the background of outsourcing is presented, comparing various definitions of outsourcing among different authors. Secondly, its characteristics are defined, explaining two dimensions to understand what outsourcing is, where the first dimension observed is the type of activity and the second is whether there is a transfer of assets in the arrangement. Thirdly, the objectives are mentioned, followed by a brief history of outsourcing. Two types of outsourcing are then explained, the tactical and the strategic. Information systems outsourcing is then explained, which is divided into reasons and risks of outsourcing, the stages of outsourcing, decisions, and a description of the existence of the different contracts. Finally, the commercial relationship between clients and suppliers is mentioned, as well as the technological situation of outsourcing in Spain, including outsourcing trends. This study will take us through the methodology implemented, in combination with the researcher's conclusions and results, to finally reach a conclusion.

2.METHODOLOGY.

The study is based on a qualitative research strategy. And the data used in the study are retrieved from published documents and bibliographic references on outsourcing to acquire background knowledge for the selection and organization of information. The information has been contrasted and the most relevant has been selected. Once the information was selected, it was organized with the Mendeley tool to save and classify it properly. Subsequently, a descriptive review and conceptual analysis was carried out to expose and understand all the concepts related to technological subcontracting.

For the elaboration of this work we have followed a methodology of theoretical review of descriptive character in which we based on four steps to follow:

The first step determines what we are going to analyze and the purpose of the study to be carried out. At this point, we carry out an extensive study of the published literature on the subject of outsourcing in order to have a general vision and understanding of the concept. Once the general knowledge about the concept has been established, more detailed information is gathered, in this case, about technological outsourcing and its current situation in the Spanish market, in order to obtain a general knowledge about the whole concept and its technological aspect.

The second step is a detailed information search or bibliographic search, where the documents published on technological outsourcing are examined so that, together with the knowledge acquired previously, the information can be correctly selected and organised. For this purpose, different authors and articles have been analysed in order to contrast the diverse information to select the most relevant information in relation to our work. The sources to be analyzed can be primary, that is, they are original documents that transmit the information directly, for example the theses and original articles. Secondary sources where descriptions of the primary documents are offered with the purpose of synthesizing the information. Several examples are databases, summaries or catalogues. Finally, tertiaries which synthesize the primary and secondary documents

The third step is to establish the selection criteria, first we will establish a phase where we will take into account the title and its objectives to make a critical reading identifying the

information with the highest qualitative level. Once the information is selected, it is organized using the Mendeley tool to save and classify the information found during the search.

The fourth step is the analysis of the information. When the information is organized, a descriptive review and a conceptual analysis are carried out to expose and understand the concepts related to technological outsourcing where the research carried out previously by other authors are analyzed to clarify the term outsourcing and to investigate technological outsourcing. The analysis consists of the steps of

Previous research by other authors is analyzed to clarify the term outsourcing and to investigate technological outsourcing. The following steps have been followed for its analysis: to know the research area from the authors' point of view, where the basic concepts and the evolution of outsourcing are expressed in order to clearly and briefly explain the information. Finally, we analyze and expose the current situation of technological outsourcing in Spain.

Finally, after analyzing the research and presenting the results, we go on to elaborate the conclusions we have reached after carrying out the literature review and the current situation in Spain.

3. OUTSOURCING DEFINITION

Different authors have offered several definitions for the English term outsourcing, also known in Spanish as “externalización”, below will be cited several definitions on this term.

- *“Business decision to eliminate an internal service dedicated to a certain activity and contract the provision of that same activity to a third party outside the company” (Real Academia Española, 2020).*
- *Outsourcing means finding a partner with which a firm can establish a bilateral relationship and having the partner undertake relationship-specific investments so that it becomes able to produce goods or services that fit the firm’s particular needs. (Gene et al., 2002)*
- *Outsourcing is a contract established between a company that sells, supplies or provides a service to another company, the customer, by which the former undertakes to provide that*

service to the latter. Such service could be internalized by the client company, which, however, finds some benefit in outsourcing it (Gonzalez et al.,1999).

- *A strategic decision involving the contracting of certain non-strategic activities or business processes necessary for the manufacture of goods or the provision of services through agreements or contracts with high-capacity companies to take over such activities or processes in order to enhance competitive advantage (Gonzales, 2016).*

We can differentiate 3 types of definitions according to the different authors:

- Outsourcing is conceived as a collaborative agreement between both companies, where the company that provides the service or product is seen as a strategic partner, and thus exchange relationships occur between them. (Gonzales, 2016).
- Another concept of outsourcing according to the different definitions is the decision to eliminate a service or activity from your production, which then goes on to hire an external service or activity (Gonzalez et al.,1999)..
- Other authors see outsourcing as a strategic action by which a company outsources a service or activity, as well as risks, responsibilities and information through contracts.

So it could be summarized in the decision to delegate the management of a non-core activity of the company, in order to focus on the core business of the company for a better optimization of resources and thus improve its position in the market that exercises its activity.

4. OUTSOURCING CHARACTERISTICS

The term outsourcing has not been a very clear term over time, it can be confused due to its similarity to the terms subcontracting and vertical disintegration. Of the terms named, the most current is outsourcing, due to its emergence and knowledge as such in the 1940s, as we will see later when we comment on its emergence. So what makes the term Outsourcing different from the other practices mentioned? (Frías et al., 1998) in which 2 dimensions are defined to understand what is the outsourcing, the first dimension to observe is the type of activity. The second dimension is whether or not there is a transfer of assets in the agreement.

- The type of activity, according to Sánchez (2006) in *The Value Chain: A Tool for Strategic Thinking*, in this dimension we can establish basic activities and support activities. The basic activities are those related to the development of the product or service, on the other hand, the support activities are those that are not related to the main activity and give support to the complete structure.
- The transfer of assets, equipment and/or persons passes from the contracting company to the company providing the outsourced activity, thus transmitting its information and/or resources. (Sánchez 2006)

Subcontracting is an agreement in which a duration and outcome is determined by which an agreement is established between the two companies, this agreement does not relate to both companies as there are no transitions of assets and may affect core or support activities (Añez, 2012).

Vertical disintegration however focuses on core activities, i.e. outsourcing a core business activity to another company to take care of it, in this case there is usually a transfer of assets as the company divests itself of equipment and information and forms a cooperation agreement that lasts over time (Frías et al., 1998).

The following table shows the differences between the terms named:

Table 1. Types of contracts.

	Transfer of Assets	
Type of activity	Yes	No
Basic activity	Vertical disintegration	Subcontracting
Supporting Activity	Outsourcing	

Source (Frías et al., 1998).

As we can see in table 1. Types of contracts, we can position the terms vertical disintegration, subcontracting and outsourcing according to the type of activity and whether or not there is a transfer of assets.

The main difference between outsourcing and vertical disintegration is the existing continuity in the relationship after the transfer of assets, since this relationship cannot always be maintained after the transfer of assets, however in outsourcing there is an agreement that links both companies. On the other hand, the main difference between outsourcing and subcontracting is the transfer of the assets, since subcontracting can last over time and establishes a business cooperation contract which links both parties (Frías et al., 1998).

5. OUTSOURCING OBJECTIVES

Taking into account the above definitions, we can observe that, companies incur in outsourcing due to the growing competitiveness in the market, thus decentralizing some non-core activity. Therefore, decision making is determined by the action of producing or buying. That is, if you continue to produce within the company or on the contrary establish a link with an external agent which will be responsible for the outsourced activity (Mora, et al., 2009).

In the changing environment in which we live, markets are becoming increasingly competitive and companies must redefine their strategies to remain competitive. The objective of outsourcing is basically to reduce costs by using an external agent specialized in that activity to focus on its core business, thus achieving greater innovation and flexibility. (Pavón, 2014)

So we can say that some of the most significant objectives of outsourcing are the following:

- Cost reduction, due to outsourcing a company activity, which is now managed by a third party, which has the most appropriate resources and infrastructure. Thus, not having to incur expenses in the activity outsourced to a third party, which will assume the risks and various costs arising from that activity.
- To provide the company with a competitive improvement against competitors, due to the cost reduction and constant innovation from which it benefits.
- Elimination of risks due to technological obsolescence Because the company does not have to worry about renewing the equipment as the technology advances, it can invest those resources in its main activity or in other areas.

6. BRIEF HISTORY OF OUTSOURCING

Outsourcing was born in the early 1940s in the United States, as these companies saw the growing need to seek foreign labor in order to improve the country economic crisis situation, coinciding with the end of World War II. By then, the companies decided to try to concentrate the greatest number of activities so as not to resort to any external agent. This paralyses the process that was started and only a few companies continue with this strategy. Concentrating the largest amount of activities in one company had a great impact at the beginning, seeming to be an effective and secure option for the company. But soon, technology begins to advance creating growing needs which make non-specialized companies lose competitiveness against specialized companies (Pavón, 2014).

In the 60s and 70s, the growing technology makes that the companies will need to redesign their structure and management, so the companies began to form technology contracts to respond to the new needs of the markets and a greater optimization of the resources (Sarmiento, 2016). EDS, a system that created asset management contracts related to data processing that responds to the needs of companies to obtain greater returns on the high technological investments that they had to support because of the great and sudden advance of hardware that emerged in the 1960s, technology advanced faster than companies could

react, which later led to associating outsourcing with the outsourcing of information systems (López, 1999).

The term outsourcing; is not known until 1980 given the growing trend of companies to transfer their information systems and to observe the multiple benefits of this practice (Sarmiento, 2016).

This practice was not formulated as a business strategy until 1989, after it was recognized, many companies started to focus more on cost reduction by outsourcing non-core activities. The different needs of the various companies created new scenarios for the implementation of this practice in order to improve the company finances and management through its partnership (NC State University, 2006). The boom in the sector began when Kodak resorted to this practice, the company having a good market position and having no problems keeping up with technology, as it had the right resources and staff. But its management decided to outsource the activity of manufacturing the photographic film as it was engaged in the production and marketing of photographic equipment (Munir et al., 2005).

Since the 1990s the tendency of companies has been to focus on activities in which they have a competitive advantage and to outsource those activities or phases in which they do not have such an advantage, since another company specializing in that activity would be a profit. This increases productivity and competitiveness among companies which will seek new methods to stay in the market. This leads to a migration of the productive activity that can produce the disappearance of certain productive sectors in some regions.

Due to the advantages that other regions or countries can provide, the decision of where to locate and where to move arises giving way to economies of scale. We can observe several political changes of great importance in recent years that are the reorientation of the Chinese economy and its incorporation into the world economy, which has injected a workforce at a much lower cost than workers in other areas such as Europe and North America. Merino de Lucas (2008) exposes in his work the growing demand for engineers in India for the development of software which increased investment in technology and the transmission of information and skills and also considerably decreased unemployment (Sako, 2005).

The first activities to be outsourced were the simplest activities such as cleaning, for which there was a wide range of companies. Later on, they became increasingly strategic activities

in which a closer and more trusting relationship was needed, in which activities such as logistics, product design and information systems were outsourced. Today, it is possible to observe structures where multiple companies cooperate and take care of their basic competence in order to achieve maximum efficiency (López, 1999).

7. TYPES OF OUTSOURCING

Due to the evolution of the outsourcing concept and the different needs that arise from outsourcing an internal task to be carried out by a third party, different concepts have appeared. We can distinguish 2 categories, which are, tactical outsourcing and strategic outsourcing.

The tactical outsourcing, has as an objective the reduction of costs. Given the outsourcing of a non-core activity of the company. The period of this is usually short or medium term, does not require a high degree of internal information so it does not require a close relationship between both companies as it is simply a strategy to save costs. They are usually simple activities such as cleaning, maintenance or security. Nowadays there is a lot of competition and it is easy to change the supplier of the activity or service without high transmission costs.

Strategic outsourcing, due to the evolution of the concept and the different needs of the environment, activities that can provide strategic benefits are outsourced. It aims to establish a relationship between companies that will last over time. This relationship is considered a strategic alliance. In this activity the company wants to improve its results due to the improvement in the quality of the product/service or to strengthen its capacity. In other words, the objective is no longer simply to reduce the company costs, but to create strategic objectives derived from this relationship, such as improving the position over competitors. These activities are specialized activities of greater complexity and due to the growing technological capabilities. For example, logistics or product design, where a closer relationship between them is already required due to the transfer of important production assets. Another example could be the web service which allows companies to communicate with customers without timetables or having to go in person.

Strategic subcontracting creates different needs for companies, these needs require different subcontracting agreements and practices, which we will describe the most prominent ones below.

- Co-sourcing: is a collaborative kind of outsourcing, where both parts share the risk and the knowledge since they want to reach the same goals making easier for both to adapt to the changing environment, this kind of agreements shows an inter-organizational collaboration. Nowadays IT Co-sourcing had a big impact due to its benefits.
- IT Co-sourcing reach situations where partners exchange information and integrate that knowledge to their business to improve, it works as a information network where they share workers, technology, information, culture, habits...

For example: 2 business with different competences could incur on a co-sourcing partnership looking for develop a new software, then both would share the risk and resources, both would reduce the cost about the lack of IT resources about the project. In fact both will look for a long term partnership because are trying to reach the same goal joining forces.

- Crowdsourcing is the outsourcing of projects that were carried out in the company, where it openly offers the project for external people to bid. The project can be carried out by self- organized communities or by professionals alone. This allows us to find the professional who best suits what we are looking for and brings creativity to our projects (Nitin, 2016).
- Multisourcing: The company obtains different services from multiple sources which can be internal or external to the corporate walls in order to achieve better commercial results. This practice is used when companies no longer only seek to save costs, but also want to obtain competitive advantages over their competitors by dealing with outsourcers (Cohen, et al., 2006).

Nowadays, due to the process of globalization, more and more companies are resorting to multisourcing. This practice is visible where companies resort to contracting Information Technology and other business-related services from multiple suppliers. In markets that require high technology, short contracts can be high cost compared to different long term alliances that reduce risk and improve the knowledge and results. Thanks to multisourcing we can observe a greater capacity to find the

supplier that best fits the need since it works with more than one service provider, this will therefore incur greater management costs but, will reduce the risk and improve the quality of the service as it shows us (Levina et al., 2008). This practice is the most used and the one that evolves the most since, the client company has more power and control over the suppliers.

- Insourcing: Many companies resort to outsourcing in order to obtain a competitive advantage over their competitors, but sometimes, since the market is changing and policies could also happen in different cases, such as The technology required to provide a service becomes economically viable for the client company, new transaction costs between both companies, the training required by the staff becomes more common due to the continuous evolution of education (Forest, et al., 2006).

Therefore, insourcing is a high cost for the company where it will have to transfer and assimilate all the information of the process to be absorbed, increasing the risk and variable costs of the company.

- OnShoring: It is the displacement to a rural area, places in the outskirts where the costs are lower, thus allowing a greater proximity to the customer and can get benefits from not practicing offshoring (Willcocks et al., 2016)
- OffShoring: The phenomenon globalization and the rising technology made able to move part of the production or the whole of it overseas. It is not just a practice for saving costs, it is common to use this practice as a rule-breaking, as it could be tax evasion, tax avoidance or to avoid some laws. Business can move their production overseas or otherwise it can hire the service to other businesses (Urry, 2014).

This practice is associated with intermediate goods and is no longer seen only as a way to reduce costs but also, to find competitive improvements derived from technology, knowledge and location (Tamayo, 2014).

- On Demand Business: The unstoppable evolution of technology has also created changes in consumer habits. With the advent of the Internet, many of the processes were streamlined, making online shopping possible and meeting consumer needs instantly (Lypchak, 2019). This also evolved to the creation of different apps to cover needs instantly as it could be the case of Uber, Airbnb, and Just Eat which are very well known today.

This model gives the consumer the opportunity to satisfy any need at any time and any place without having to travel. This practice is increasingly common among consumers, thus having a rapid growth around the world. The creation of apps is the most common practice to reach the consumer directly. What are the benefits of this practice? (Gupta, 2020).

- New opportunities are generated: More and more companies are launching new apps in any field, transportation, food, lodging, management services, among others. And many well-known companies have collaborated with these companies to provide real time needs to consumers and thus obtaining greater opportunities and growth.
- Entrepreneurial skills improvements: Employees in this practice have more flexibility in their schedules as they can decide on their own schedules and are paid according to their work done. This helps workers who need to combine several jobs, or those who need to work and study at the same time, increasing workers' satisfaction and the growth of the company.
- Customization: Companies analyze the preferences of each consumer according to their purchases and searches in the app, in order to offer a better experience and greater adaptability to needs. Thanks to the information, the app is also adapted to the demands of the users of these. On the other hand, the disadvantages of this practice according to Lexintong (2012) website.

As it is a new model, there is no adequate regulation to which to adhere, and it could therefore have a negative impact on companies. Furthermore This practice considerably increases competition thus, requiring greater efforts to achieve differentiation from other companies in order to attract consumers attention.

- Partnership: It is a relationship that goes beyond outsourcing, since it requires a cooperation in which both parties have perfectly defined rights and responsibilities. A temporary relationship is created according to the agreement between both companies where benefits and risks are shared. This is usually a long-term relationship where both companies pursue a common goal.

From the term partnership and the close relationship between outsourcing and information systems arises (SOP) Software Outsourcing Partnership.

- SOP, is defined by Sikandar and Siffat (2016, p.3) as: “a strategic partnering relationship resulting from a process of transferring the responsibility of developing software for a specific business function from an employee group to a non-employee group including transfer of assets such as personnel”.

Companies exchange strategic information regularly to steer capital in the right direction and get the most return from this relationship. There are different collaborations where we can identify the following (Sikandar, et al., 2017):

- Onshore partnership which is located in the same country.
- Nearshore partnership which is located in the same continent but not on the same country.
- Offshore partnership which is located overseas.

8.INFORMATION SYSTEM OUTSOURCING

Information systems outsourcing : is the total or partial outsourcing of the components of the information technology infrastructure. There are several reasons why information systems outsourcing has experienced strong growth according to González, et al.,(2002).

- Increasing competitiveness: in increasingly competitive markets, companies must adapt to market changes. Companies outsource IT to gain a competitive advantage over their competitors, in order to focus on their core business.

- Uncertainty about new information systems: companies facing possible expenditure on technology without knowing if it will be profitable or not, looking for alternatives in specialized companies to provide this service.
- The control in your costs thus making the fixed costs in this area variable costs, thus reducing your department dedicated to information systems.
- Avoiding technological obsolescence as companies need to be up to date to maintain their market position so, many companies turn to external companies to support this risk.
- Globalization has led many companies to carry out their productive activities in places where there are highly trained personnel and notably lower salaries. India is the leading country in IT outsourcing.
- The Internet has facilitated the communication and transfer of information which has allowed the relocation of companies and reduced the costs of this practice.

From this term arises Crowdsourcing Software development, which hires qualified workers to perform various tasks. To access the position, interested professionals compete in an on-line test in which the external community collaborates in the software development activities. This practice is most useful with the simplest tasks that have no interdependencies. The main problem of the large number of anonymous users we can find are some issues such as intellectual property rights, security, privacy and law enforcement. Despite this, there are several platforms dedicated to the development of collaborative software such as AppStori, oDesk or TaskCity (Nitin, 2016).

Open source software development, professionals without any interest participate, review, improve and redistribute the source code of the improvement made so that all consumers have access to it, the goal is to provide an alternative to proprietary software and can be used for any purpose. Examples of this type can be Linux, FireFox, ApacheOppenOffice among others (Nitin, 2016).

Outsourcing software development the company subcontracts a specialist outside the company to carry out all or part of a project. The external company assumes responsibility for the project, thus freeing us from the cost of carrying it out internally. For the success of this practice the company must make a study to select the appropriate supplier (Nitin, 2016).

On the other hand, there are different types of outsourcing for different needs which can be hired, some examples are the hiring of specialists in cyber security, systems development, artificial intelligence in order to be more efficient and competitive...

8.1.Reasons and Risks of IT outsourcing

The possible reasons and risks of companies that outsource their information systems have evolved along with the concept of outsourcing to reach the conclusion of why this decision was made.

Reasons for Outsourcing:

1. Focusing on strategic issues; non-strategic functions are outsourced to focus on those considered to be a competitive advantage thus improving their efficiency. The contracted company must provide the needs stipulated in the contract (González et al., 2010).
2. Increasing flexibility; outsourcing is used as a measure of flexibility since it is subcontracted to a third party to carry out the project, this allows the redesign of its structure. Thanks to the different suppliers we can redesign the contracts to meet the needs (Willcocks et al., 2016).
3. Improve quality; due to the resources of the supplier company and its knowledge we obtain an improvement of quality of the service when complimenting them with the contracting company, so the company can improve its capacities over the possibilities that it had when developing it internally (González et al., 2010).
4. Getting rid of routine tasks; sometimes very time-consuming tasks, tasks that do not add value or are identified as an internal problem can be managed by a specialized third party to ease the burden and simplify management (Gomez, 2017).

5. Facilitate access to technology; companies want to adapt to the market, so sometimes it can be too expensive to access certain technologies or too risky if you want to experiment with new technologies and do not want to assume the cost of them. Outsourcing facilitates access to new technologies without assuming the direct cost of these and minimizing their risks. In addition, this can lead to savings in mature technology to allocate that money to new technology (González et al., 2010).

6. Reduce the risk of obsolescence; the supplier must be up to date technologically to be able to adequately provide for the needs of the customers therefore, the supplier assumes the direct risk of technological obsolescence (Willcocks et al., 2016).

7. Save on personnel costs; the growing needs and rapid evolution of IT requires constant training which is impossible for many companies so, they decide to outsource some functions of IS and IT thus reducing the staff needed for these activities and obtaining access to specialized professionals trained in these areas (Gomez, 2017)

8. Save on technology costs; the use of outsourcing allows us to convert fixed costs into variable costs according to the needs of the company thus saving on costs by buying or outsourcing a service to another company for a lower price.

9. Alternatives to the internal YES; the company obtains access to the technological and human resources of the supplier so it does not depend only on its internal resources (Gomez, 2017).

10. Fashion; the growing wave of companies that decide to practice outsourcing makes more and more companies eclipsed by the successful results many companies try to copy this type of process.

Outsourcing risks:

1. The qualification of the supplier personnel; some companies, when they get the contract, relax only by covering the needs of the contracting company and send the most qualified workers in search of potential customers, so the quality of the service provided may not meet expectations (González et al., 2010).
2. Dependency; an excessive relationship with the supplier can lead to an increase in costs due to not finding a feasible alternative. In this relationship the supplier is not a strategic partner so it is interested in an increase in costs to the customer (Kremic et al., 2006).
3. Breach of contract; when a task is outsourced and therefore carried out by a third party there is always a risk that it will not be done properly or that the supplier will not fully understand the business idea and will set priorities incorrectly (Willcocks et al., 2017).
4. Loss of technical knowledge; with the passage of time when outsourcing a service the company progressively loses its understanding as the new knowledge is adapted by the supplier. Therefore, the company must retain certain capacities in order to be able to face any problem derived from the outsourcing of the service (Kremic et al., 2006).
5. Inability to adapt on the part of the provider; suppliers, like all companies, tend to want to make the most of their resources, so if technological evolution does not benefit them, they will be reluctant to adopt this technology in the first place. Moreover, if the contract does not contain a clause concerning technological evolution, it is likely that this will not be carried out (González et al., 2010).
6. Unclear relationship between costs and benefits; the client company sometimes has difficulty in transferring in a monetary way all the factors to be taken into account at the time of outsourcing, so generally companies due to this difficulty only look at the observable costs when making the decision to outsource without taking into account hidden costs or benefits that may occur in the long run (Willcocks et al., 2017).

7. Security; if the company contracted for IS functions provides more than one company, security problems may arise which leads us to have to integrate in the contract procedures and clauses necessary to maintain the confidentiality of the information. The security in this case will depend on the subcontracted company (González et al., 2010).

8. Irreversibility; the fear of losing total control by outsourcing a function is high. The company may decide to reintegrate the process into its internal production, but this may be unattainable for the company due to the high costs of rebuilding the IS system, the time required and the difficulty of attracting qualified professionals (González et al., 2010).

9. Problems with the staff; by outsourcing a part of the IS the company has the need to reorganize, a part of the workers can become part of the hired company which can suffer the loss of any beneficial condition they had before, on the other hand it can be compensated since the supplier company makes the worker have more opportunities to make a specialized career where he will improve his skills and have access to more technological advances. Workers who remain in the company may suffer insecurity and demotivation as they have not been selected for transfer to the specialist company and have been relocated within the IS but their responsibilities and status may change due to the restructuring (Willcocks et al., 2017). Outsourcing can generate discontent among workers to the application of this practice, which creates insecurity in their jobs. This fear increases with increasing globalization and the emergence of economies of scale.

10. Hidden costs; turning fixed costs into variable costs through outsourcing can result in additional costs that were not originally expected, these are classified 4 different hidden costs:

- Costs of identifying and evaluating IT suppliers (Willcocks et al., 2017).
- Transition costs are the costs that arise from the outsourcing of the service such as the transmission of information and culture of the company, time spent helping the provider, the reaction time of the provider on external stimuli or learning costs (Gomez, 2017).

- Costs arising from the supervision, coordination and control of suppliers in order to ensure compliance with the contractual agreements between the two companies and to manage any changes necessary for the proper functioning (González et al., 2010).
- Return costs due to the end of the contract with a supplier where the client company makes the decision to change supplier or if the company decides to reintegrate the activities into its internal production again (Rodríguez, 2015).

8.2. Outsourcing stages

Once the decision to outsource is made, the company starts an outsourcing process which consists of 6 steps.

1. Evaluation of the needs; an evaluation is made on our information system in order to determine the competitive advantages and needs of your infrastructure, thus being able to prepare a report to estimate the benefits that could bring us to practice outsourcing.

2. Determination of the Supplier-Customer relationship; the type of outsourcing to be used is determined after evaluating the needs of the company. As Vilanova (2020) pointed out we can distinguish 4 types according to the type of service to be outsourced :

- Low critical support services; which we can find a great offer of providers, are usually related to simple activities.
- Highly critical support services; that do not provide added value are processes that do not directly influence our production chain but a failure in them could mean a shutdown of several areas of the company.
- Low-critical and value-adding services; are processes that directly influence the value chain but are not essential for the company so, it is advisable to outsource them.
- Critical services; that provide value are directly related to our value chain, usually these are not usually outsourced but, in cases where the technological evolution evolves faster than the company can support or there is an excess of demand from customers which has to be

solved. It is necessary that the supplier is the appropriate one since it is a process that contributes direct value to our chain of production.

3. Formalize the agreement at the service level, as we mentioned above there is no decree law that regulates this type of contract, these are governed by the rules SLA (Service Level Agreement). This document explains the need to be covered and the minimum level of service expected, providing legal certainty to protect the interests of customers and simplify communication throughout the process (Vilanova, 2020). It therefore collects information on the service to be received, what service or quality levels are to be established, the time period of the agreement, penalties for breach of contract, form of delivery and what monitoring system will be established.

4. Choice of supplier and formalization of the contract.

It consists of several steps:

- Identification of suppliers where the company shuffles several suppliers according to their experience and needs.
- Request for solution proposal of companies, where the company chooses among the different proposals received to solve the need of the contracting company.
- Selection of the solution that best suits the objectives of the contracting company.
- Negotiation of conditions according to the SLA.
- Formalization of the contract where the information of the rights and responsibilities of both parties is gathered, as well as, the duration and cost.

5. In this phase, a person in charge is designated, who sets up a team and draws up a communication plan. The company transfers the necessary information to the company that provides the service. In some cases, the members who were dedicated to this function are restructured or may even disappear, leaving only the person responsible for coordination and supervision (Rodriguez, 2015).

6. Control and monitoring, a control and monitoring body is created according to the SLA standards established in the contract to maintain some control over the subcontracted process (Rodriguez, 2015).

8.3. Outsourcing decision

The decision of whether to produce or buy is a dilemma for many companies so the dilemma of outsourcing arises. The decision to outsource must allow the company to achieve some of the objectives of outsourcing already mentioned above.

When making a decision, different factors must be taken into account:

1. Position of the supplier, we must analyze how much power the supplier has so as not to be in a weak position which could bring negative consequences or have to accept unfavorable conditions.
2. Analyze the financial position of the supplier in order to guarantee a good and stable relationship and thus create a stable long term relationship.
3. The compatibility of the service with our production chain, since no matter how good the supplier is, if he does not comply with the needs of our company, it causes failures in the production system, losing reliability in front of the customers.
4. The quality and quantity contracted, It is necessary to know the product and have alternatives for any type of inconvenience that may arise. In addition, the quantities demanded must be well studied because if by any chance our production is stopped we will still have to pay for the agreement.
5. Entry barriers are a factor to take into account since if these are high, companies tend to outsource, but if these are non-existent or almost non-existent, companies will incur less in this practice.

Therefore, if the company, after evaluating the different factors, believes that it will achieve a lasting competitive advantage in time by saving on costs thanks to adding a supplier company to its value chain, it will opt for the purchase option. If, on the other hand, it is not

clear that it will be beneficial for the company, it will decide to continue producing the good or service internally.

8.4.Contract

There is no decree law that regulates it in Spain shall be governed by the general terms and conditions of business law (Service Level Agreement).

Aspects that define an outsourcing contract according to (Cullen et al., 2005):

1. The scope of the relationship.

It describes in detail what services we are going to request, from whom and where so we can observe 3 facets Service, Recipient and Geographical Location.

The service describes the nature of work with the outsourcing of one or more IT functions. The various services provided are therefore recognised as value-adding services. This can be selective or total outsourcing depending on your needs.

The target groups are those identified within the company to receive IT outsourcing services. In this the contract has contractual provisions to meet the particular needs of each group.

The geographic location is the place of physical location that is identified to be the object of the IT outsourcing (ITO).

2. The number of suppliers.

It is the decision of the number of suppliers you need, according to this we can identify different options sole supplier, prime contractor, best of breed, panel.

Sole Supplier: a single supplier provides the service. It is preferable when you want to have a single responsible and uninterrupted service.

Prime contractor: there is a prime contractor who is responsible but, he uses any number of subcontractors to perform the service. Subcontractors are experienced companies or companies where the leading company does not operate.

Best Of Breed: is a network of companies but it acts similar to the market structure as the suppliers are interchangeable. The organization has any number of suppliers. The term consists of choosing the best software option for a specific job (HighJump, 2011).

Panel there is a list of competing providers. Service providers are not guaranteed to provide services and therefore compete for contracts in this area. The most common cases are software development, purchase of hardware and consulting services as these tend to vary with each project.

3. The financial scale.

It indicates the degree of outsourcing by describing the financial value for the organization, these can be relative or absolute (Rodriguez, 2015).

4. The price structure.

According to the price analysis we can identify 3 payment options to suppliers these are, Lump-sum Fixed, Unit Priced and Cost based.

Lump-sum fixed is the payment agreed in the contract between 2 companies for the provision of a service and this will not change once the agreement has been made. It is only possible when demand and cost levels are predictable.

Unit priced contracts establish a price per unit used. In this case the applicant company only pays for what it consumes. However, this can be a problem for the supplier since he needs to have supplies to be able to guarantee his services and cover the costs of these.

Cost based contracts are those that include an added value for the service received, these can be fixed or variable. A fixed fee would be the payment of an exact amount of money as an expense. A variable fee would be the payment of a % of the profit.

5. The duration of the contracts.

The different options offered to us in the duration of the contracts are:

- Single term are contracts with a fixed term which end on a certain date and no extension is foreseen (Rodriguez, 2015).
 - Rollover contracts are contracts with a fixed term and have options for extension. This gives more security to the supplier and can be an extendable relationship in time which implies a reduction of costs and a greater cooperation between companies.
 - Evergreen contracts these contracts have no termination date, the contract will be in effect until one of the parties uses its right to terminate the contract. These contracts can be short or long term regardless of the option we choose from those explained above.
6. Ownership of resources. The contract specifies the ownership of the resources where it describes . The degree of specificity of the assets is a factor to be taken into account since if it is very specific or the competitive advantage is due to a configuration of resources the supplier will have greater power due to its dependence. Ownership can be differentiated into 7 different types (Lacity et al., 2009).

Table 2. Resource ownership alternatives between parties.

Resource	Party "Owning" the Resource (S = supplier, C = client)												
	S	C	S	C	S	C	S	C	S	C	S	C	S
Assets (e.g. hardware, software)	✓		✓			✓	✓			✓		✓	✓
Facilities (e.g. office site, data center)	✓			✓	✓			✓	✓			✓	✓
Labor (direct and/or management)		✓	✓		✓			✓		✓	✓		✓
	Infra-structure		Onsite		Service & Facility		Asset Buy-in		Facility Host		Labor Buy-in		Total Owner-ship
Type of Resource Ownership													

Source: Cullen, S. at al., (2005) *IT outsourcing configuration: Research into defining and designing outsourcing arrangements. The journal of strategic information systems. Vol. 14*

1. Infrastructure: Allows easy access to the required technology without a capital investment but can result in high switching costs.
2. Onsite: They share the location and cooperation, it increases confidentiality.

3. Service & Facility: This alternative allows us to choose between a supplier or to include it again in the company at a reduced cost. But this does not motivate innovation.
4. Asset Buy-in: There is direct control and you only pay for the goods you consume.
5. Facility Host: You have control over decisions but use external facilities which do not require maintenance costs.
6. Labor Buy-in: Allows us access to qualified professionals while maintaining production management.
7. Total Ownership: The company that provides the service assumes all risks and responsibilities, this causes a loss of control and can negatively affect the company. Return costs are high due to complete outsourcing.

7. The business relationship between customer and supplier.

It describes the relationship and business structure of the organizations. In his study (Lacity et al., 2009).

Arms-length: An agreement between unrelated parties due to perfect competition, this is known as a market relationship.

Value-add: Companies with independent services that share commercial initiatives, both cooperate to market new services, which have different obligations and remuneration.

Co-sourced: Companies combine their resources and share responsibility, this practice is based on the term Co-sourcing where both companies complement each other in order to achieve objectives which would be unattainable independently. Equity: shares in other companies are assumed in order to obtain equity among their services.

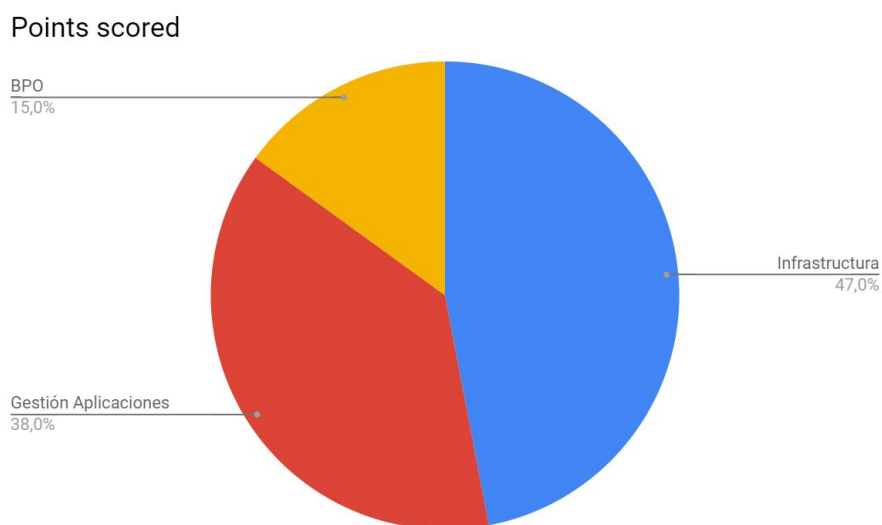
Equity: shares in other companies are assumed in order to obtain equity among their services.

9. SITUATION OF TECHNOLOGICAL OUTSOURCING IN SPAIN

Spain has a large number of companies in the ICT sector due to the growing technological needs of companies and their entrepreneurship in areas such as big data, robotics, cloud services or artificial intelligence. This sector maintains a growth of approximately 3.2% each year with respect to the previous one according to Whitelane Research and Quint Wellington Redwood (2018).

With respect to 2017, the only indicator that is reduced is investment, which has fallen by - 8.3%, as explained in the annual report on the ICT and content sector in Spain (López et al. 2019). As it is a growing sector, according to data from the (DBK,2020) from 2008 to 2018 there is a positive trend in this practice, going from 965 million euros to 2,050 million euros. The main segment of the outsourcing activity is in the area of infrastructure with 47% of the total, followed by application management with 38% and BPO with 15% as it can be seen in the Graph 1.

Graph 1. Outsourcing work areas



Self-made.

The international outsourcing of Spanish companies increased by 5.9% in 2017 and 2018, thus taking advantage of economies of scale or as a strategy to increase its extension.

In the study conducted by IDT Research España, it is shown that 82% of large Spanish companies have incurred in the practice of total or partial IT outsourcing. 46% of these companies outsource in order to achieve greater competitiveness and obtain greater benefits as they seek beneficial and lasting relationships for both companies.

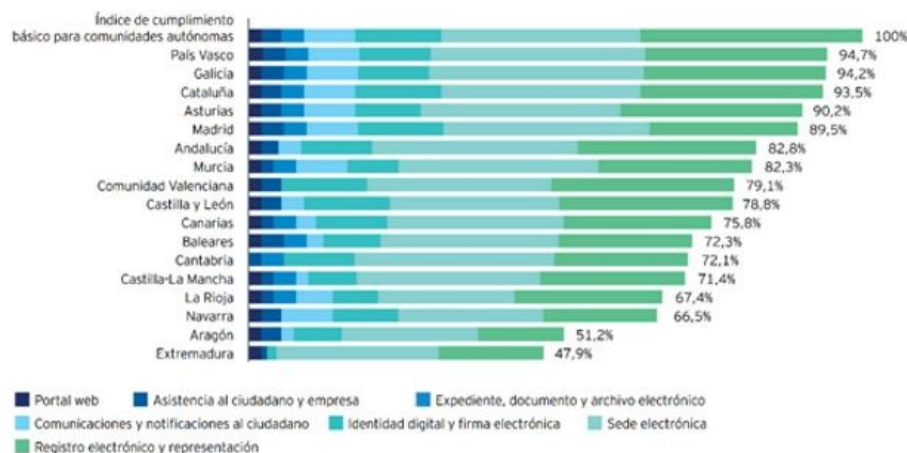
According to the publication on IT service outsourcing published by Whitelane Research and Quint Wellington Redwood (2018), 82% of the companies interviewed say that they will maintain or increase their use of IT outsourcing in the next 2 years, with further growth expected in energy, banking and health services.

It is possible to identify 4 sectors that benefit most from IT outsourcing. These are telecommunications, public administration, banking, services and industry.(IT Digital Media Group, 2018).

- In the telecommunications sector, 50% of companies resort to outsourcing to be able to respond quickly to the environment and the growth of work. This sector is of vital importance since it supports communications and therefore needs a reliable infrastructure with a high capacity. One example is the new 5G networks and the Internet of Things (IoT).
- One of the difficulties encountered by public administrations is that of contracting, since this involves bureaucratic processes or public tenders. Outsourcing positively affects this sector, making it easier to select the right candidate.

Public administrations are analysed in the report on digital administration in Spain by the consultancy firm EY, which shows us the degree of maturity of these.

Graph 2. Digital maturity of public administrations



Source: IT media group (2019).

The study focuses on the degree of compliance with 132 regulatory requirements. In which we can see that none of them meet the compliance rate 100%. In which it should be noted that the Basque Country, Galicia and Catalonia meet almost all of these requirements while communities such as Aragon and Extremadura are far from meeting expectations. However, subcontracting for the provision of a service does not exempt the public administration from responsibility for the service. (IT Digital Media Group, 2020)

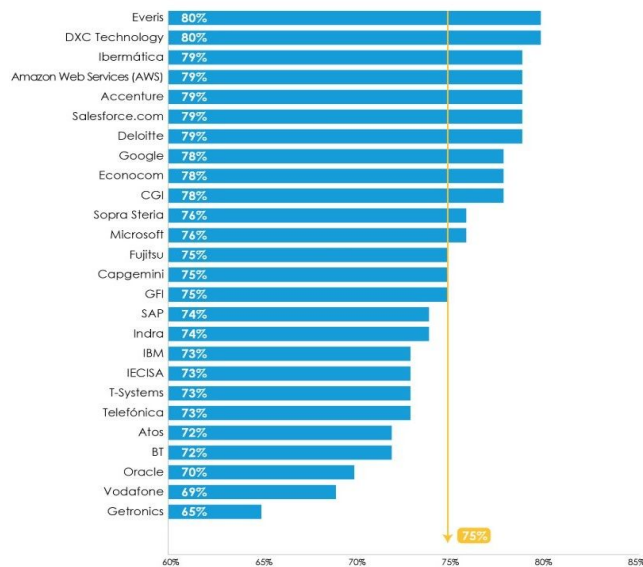
- The growing technology and use of it has given rise to digital banking. This bank has a regulation of outsourcing services with the aim of avoiding failure of the providers affecting the economic activity. The banking industry is undergoing a digital transformation due to the increased use of applications. In order to facilitate this transformation, third parties are used to carry out these activities.

- The industry and services sector is conditioned by the constant introduction of new technologies such as the Internet, robotics, software development. Outsourcing helps companies to find new tools and processes which were not available to them with the knowledge they had. In 2019, 20% of the industry invested in outsourcing services.

Most companies in Spain resort to IT outsourcing due to the difficulty of keeping up with the evolution of technology, process automation and digital transformation, among other factors, which will maintain the positive demand curve towards this type of practice.

In Spain, a study on IT service outsourcing by Whitelane Research and the consulting firm Quint (2019), shows that satisfaction with IT service providers far exceeds the European average with 94% of companies satisfied, with Everis and DXC Technology at the top of the list.

- **Graph 3. IT Business outsourcing satisfaction.**



Source: Quint consultants (2019)

9.1 IT Outsourcing Trends.

In the global environment in which we live every day it becomes more necessary to interact effectively, intuitively and quickly between companies and their customers. For this reason there is a growing demand for technology and communication services that has led more and more companies to outsource these services in purely technological aspects to reach their users and / or customers and thus enhance their business relationships or services. This leads to the study of trends that can be observed in the markets according to various consulting firms such as Hasten Group:

The tendency for most companies to join this practice is the efficiency and savings that specialization produces in the different processes since, in this way, they can focus on their main activity while maintaining certain specialized services to maintain competitiveness and customer satisfaction.

Therefore, a trend is detected that is projected in a strong transformation of the companies, even some of their central activities are starting to be outsourced in order to have a greater capacity for innovation and differentiation in the market that allows them to stand out from their competitors.

Today's companies are in an ever-evolving environment and therefore, the great advances in technology and the digital transformation create the need to hire specialized workers and thus meet the expectations of the growing technological needs, which has led to a boom in information and communication technology. Examples of this can be the Cloud Service or the Big Data which is in great demand today as a work tool.(AYCE Laborytax, 2019).

Another of the main issues that companies face on a daily basis is data privacy, which is a big problem for companies today, since a loss of data would mean a loss of trust deposited by customers in the company, so many companies resort to hiring a specialized external company to take care of the security of their data. Furthermore, compliance with the Data Protection Regulation obliges companies to protect data and information in an effective manner to avoid administrative sanctions with possible heavy economic fines.

Therefore, specialized workers are in high demand, which, due to the law of supply and demand, may make it difficult to retain such workers in the workplace for a long time due to numerous economic and social situations. The outsourcing provides a personnel management suitable to these times, since a specialized company is hired which is responsible for having the appropriate personnel for the performance of the various tasks required without the concern of being without the appropriate or unsuitable or specialized personnel.

Companies often carry out numerous processes that are very repetitive in their systems and that could be replaced by robotics and artificial intelligence, which carry out these tasks repeatedly with a considerable saving in time and in a more efficient manner, and which do not require human personnel to carry them out.

9.2 Current situation with COVID-19.

Nowadays in Spain, like rest of the world, is suffering the consequences of the COVID-19 pandemic, which is going to cause a great economic and social recession due to the economic paralysis produced. In Spain, this situation has had a great impact on all sectors of the national economy, with total or partial cessation of production and services, producing an unprecedented crisis that will lead to profound changes in the typology and distribution of work and in the organisation of companies in all its facets.

Technology has been a fundamental factor in ensuring that the economy does not come to a complete standstill as it allows us to communicate and continue with many productive processes, (IT digital media group, 2020) shows us that 56% of Spanish companies plan to increase their expenditure on communication and information technology. The COVID-19 pandemic has made companies realize that they were not prepared to face the change that this crisis represents. This means that companies have increased their demand for these types of services in order to meet the growing needs of their markets. In order to face the unexpected changes that the pandemic has brought about, the need to find new practices and methodologies based on technology arises. Companies are adapting to the new normality in which we find ourselves. As a result of these changes, certain trends have increased, some examples being the increased importance of human resources and occupational risk management to ensure the welfare and peace of mind of their workers by offering a safer environment adapted to the jobs. On the other hand, the increase of teleworking and digitalization has had a great impact on providing the appropriate equipment and software and offering training to workers for their correct use. The use of working methods such as software and web development and cloud services has increased.

A very visible example is the digital charts of the establishments, in one of the most affected sectors as it is the hotel and catering industry that by protocol has been forced to have these digital charts. Some of these letters are managed through an app, so many companies which did not even consider this type of management are now forced to train and learn about this type of practice and enter the e-commerce. Another example in sectors such as education has had to adapt quickly to the needs of online teaching and the use of new methods to be able to teach the subject. The use of digital video-conferencing platforms with a very high level of quality and technology. The problem that this type of digitalization entails is the possible cyber attacks that are suffered by sectors such as education, finance, e-commerce and healthcare.

10. CONCLUSION

In conclusion, outsourcing is a practice that provides a relationship between two or more companies, offering competitive advantages, as well as, a strategic action by which a company subcontracts a service or activity transferring risks, responsibilities and information through contracts. Today, outsourcing is increasing rapidly due to the changing environment in which we live and the increasing competition in the market. Therefore, outsourcing companies are trying to reduce costs by using an external agent specialized in that activity to

focus on their core business, thus achieving greater innovation and flexibility. In addition to cost reduction, the company also achieves greater competitiveness and a reduction in the risks due to technological obsolescence, since the company does not have to renew the equipment as the technology advances, it can invest those resources in its main activities or in other areas of interest.

However, subcontracting has drawbacks when followed by decentralization because it creates unemployment, also leads in some cases to the temporality of contracts and a worsening of the quality of employment, which worsens occupational health. In addition, companies leave behind activities that are not competitive for them and therefore opt for outsourcing, which leads to a migration of productive activity that can result in the disappearance of certain productive sectors in some regions. The companies lose partial or total control over the process, which produces a dependence which can be very negative depending on the power that the supplier company has, since if the latter has little competition and plays an important role in the development of the client company's activity, the latter will incur a greater expense derived from the strong market position of the supplier company. The contract can be counterproductive as it can lead to additional costs due to the failure to specify the clauses correctly, these may not be well defined so the company will have to deal with hidden costs arising from outsourcing. Failure to comply with the contract can have consequences such as the loss of confidence of the client company as it has not had the necessary resources at the time required to meet the needs of the demand. On the other hand, the supplier may be unable to comply with the deadlines or clauses agreed in the contract which will cause an economic loss as well as reliability. Finally, companies must protect their data. Data privacy is one of the most important trends today, since due to the digitalization of companies, they suffer attacks with the purpose of boycotting companies or stealing relevant and private information.

The undeniable evolution of technology and social changes that occur by external agents such as changes in policies, new laws or the emergence of new working methods causes new needs to businesses and consumers, these needs must be met by the company in order to meet the demand incurred by new management methods, realizing that bringing together most functions of the value chain to ensure production was not a very efficient practice because in that case companies can not focus their resources on their main production. Because the fastest growing sector is technology and communication, many of the companies cannot keep up with the same pace, so as markets become more competitive

and mature, this type of practice grows. Today, in Spain there has been a positive evolution in the demand for this type of service, especially in the area of technology and communication. This has caused companies to be attracted by its many advantages and good results. To regulate this type of practice, a contract is used, which is not regulated in Spain, that is to say, it is an atypical type of contract in which the companies regulate through clauses the obligations of each of the parties, the ownership of the resources and the duration. With the use and evolution of technological outsourcing and the competitive environment surrounding companies, new motives and trends are emerging for this type of practice, apart from cost savings. The most notable trends at the moment are digitalisation, since due to the COVID-19 pandemic, companies have been forced to engage in this type of practice in order to continue with their production. The use of apps, cloud service, web service, big data, e-commerce and other practices has been very important for data management and communication due to the obligation of teleworking to avoid having to stop production altogether. The increase in teleworking means that companies may suffer more cyber attacks, so it is necessary to hire companies that specialise in security and data protection systems. In addition, companies need to adapt to the new reality of the production system by applying new working methods and security protocols to ensure the welfare of customers and workers.

In the current situation, there is a notable increase in investment in ICTs, due to the forced need for digitalisation. Companies are resorting to new practices which had not even been considered before the appearance of COVID-19. This need has shown companies that in reality most of them are not prepared to face a crisis of this level as they lack the necessary training for a telework situation and health protocols. Many are the sectors that have been very affected by what was created in Spain an initiative of cyber volunteers to help people, companies and institutions helping to solve doubts and informing about the most used practices for each professional so they can continue with their production with the minimum possible impact within the company. The first one, where the companies incur in outsourcing simply to adapt to the new work situation has forced the companies to digitize part of their work for security reasons, and they conceive this practice as a necessity to continue with their production without caring about the benefits of this practice. However, in the second point of view, companies have accepted that they were not prepared for this crisis so when analyzing the new market situation, they have realized that IT outsourcing is more than just a procedure to continue producing, but can bring many benefits to companies such as cost savings, flexibility of work, new management methods ...

Watching above, it can be seen that IT outsourcing follows a growing trend despite having decreased its use a little from 2018 to the beginning of 2020, but with the entry into the scene of the COVID-19 in recent months along with the end of the confinement suffered, companies have to implement new strategies for the adaptation and training of their work by investing in information and communication technology. This pandemic will mark a before and after in the working life, probably, never again being as we had been accustomed, forcing a digitalization, robotization and waiting changes in the most demanded jobs and with the possibility of new jobs never seen before as for example the controllers of the beaches or controllers of distances. The work methodologies applied by companies such as the waterfall or the agile methodology, which today is probably the most used by technology outsourcing companies for its great efficiency and regular contact with the customer. With the passage of time it will be possible to observe what tendency this crisis has produced to the companies and the real impact on the economy and the companies. The main problem that is exposed is if, the current situation will be maintained in time or if the opposite will be temporary.

I recommend for future work the study of methodologies applicable to outsourcing to see how they have been affected after the changes introduced in companies and their way of working after the pandemic. As well as its impact on society, protocols of each sector, new management methods and the increase and changes in the use of technological outsourcing due to new market needs that appear.

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