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New horizons and strategic implications from the digital transformation revolution

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Introduction

In the courses of my studies, I have been always interested in finding a **correlation between the corporate strategy theories and the best practice of the successful business model of international firms.** That's why I decided to elaborate my work in the light of the digital transformation and the implications for the corporate strategies of the big firms and of the small and medium enterprise.

The world is right here, right now in an era of transformation. The globalization is going on, international competition is increasing, and social problems are growing. In the light of these changes, new technologies like AI, big data, IoT, robotics and automation are continuing to progress and are becoming the ground of the new economy: **the digital economy.**

Digital transformation is not only for companies, but it also impacts other organizations like governments and no-government agencies involves in social issues. In the most digitalized countries there is the aim to leverage this transformation for the good of the entire society, to move to an industrial automation, using new technologies to improve the labor conditions and increase the productivity, efficiency and quality of good and services.

The size of the digital transformation revolution will differ from country to country, depending on the industry structure, work organization and digital skills. The digitalization, in fact, could have a significant impact on those workers who are not able to make the transition to new jobs. The reality is going beyond the theories and it's necessary to create a new framework to understand the real impact of this transformation on the economy, that it's seems more like an authentic revolution than a simple transformation.

It's important to understand that it's not enough going on with the application of the new technologies in the business, but **that technology is secondary to a cultural change.** Digital transformation is a revolution that it's going to modify radically ours views of our world.

This transformation has a lot of implications on the organizational aspects and on operating processes of the firms, but the way which these implications should be assumed by the firms are not so clear for now, and this thesis, exactly, has the goal to clarify the change. It's sure that there is the awareness to elaborate new managerial frameworks, skills and attitudes, as **the prioritizing of customer centricity,** to change this transformation in an opportunity. This is the new strong competitive advantage for companies. Not product's quality or cost.

In the next few years we will assist to a complete reset of all the aspects to do business with new theoretical methods and best practices all over the world. That's the reason why I decide to work on this argument in my thesis with the aim to define and analyze the phenomenon giving a framework of digital strategies for the small and medium companies for best competing with the new multinational digital firms.

But if it's so, why the small and medium enterprise doesn't strongly invest in digitalization? I will try to investigate to this question with the purpose to find a reason for why they should implement a digital strategy. Sometimes to **find the right answers is required, before, finding the right questions.** Leveraging the innovations and technologies through a strong governance and a new approach in the decision makings and internal processes, the SMEs will be able to fight and implement the digital disruption.

New digital technology has an important role in enabling this transformation, but technology alone does not guarantee transformation. The first step must be by the firm vision for the future and I think that the most interesting case to take in analysis is **Amazon, the major digital transformation disrupter.**

Amazon is one the of the five biggest companies all over the world and it has achieved its competitive advantage through the development of new technology internally. **The company has a clear strategy of growth,** through diversification in the services and products, internationalization all around the world, M&A deals and partnerships with complementary companies and with strong long-term investments in R&D and technologies.

In my investigation I took in account the **R&D costs** that are named in the Amazon's financial reports, technology and content costs. In this way I started to analyze the way in which Amazon finance these costs, and if these costs ensure a future growth for the net income. I searched for a positive correlation between them, using the Amazon's case, to demonstrate that invest in this R&D costs during the digital transformation revolution will bring strong benefit even for the small and medium enterprise. In this new era, is not important the size of the business **but the attitude to the disruption revolution.**

The aspect that I want to underlie in my thesis is the following: studying the correlation between the R&D costs and other variables taking in account the most positive ones for demonstrate that investing in these costs bring to a significative growth of the profitability. In the end I'll show that this strategy, focused on the R&D costs, could be implement even by the SME's finding the percentage of Equity and Liabilities used to finance these costs proportionally to the size of the company.

Studying the Amazon's annual reports, I was able to find other relevant information about the investments in technologies and digitalization skills and acquisitions of Fintech companies. Investments in technologies and digitalization are a priority for Amazon and this makes Amazon the perfect candidate for my study. Financial technology market is growing in a rapid way, creating new opportunities for companies and for private customers and disrupting, at all the levels, traditional financial services.

Amazon showed the way to wave this digital transformation revolution starting from the culture and processes of the company focused on the digital economy, investments in technologies and on digital labor skills, to the propension to the risks only in relation to the pay-back of the investments and the ability to be customer-centric in the way to do businesses. It's also true that for the SMEs the environment where to operate is different, and the processes, roles and activities are assigned in a different way from a big firm as Amazon. It's necessary a focus on the people than on the processes.

In other word, in a digital economy based on platforms where all the companies could have the same visibility, the Amazon's way could be also implemented by the SMEs with more investments in the digital world. The new technologies, the international financial platforms and the social networks give to SMEs a great possibility.

Through them, SMEs could achieve what they missed: the visibility all over the world. In this new era, the priority is not more the product and the quality of the output, but the customer perception of the company and of the product. Changing this paradigm, SMEs will be able to solve the problem of disruption, becoming themselves protagonist of the digital disruption.

The SMEs are following this trend from distance, as to see if it will be the right choice or a wasting of time enter in the digital economy. From a strategic point of view, this is not the right answer, waiting, because the real problem is on the question. It's not important now how the things will change, but the real question that the firms should ask is **What will remain untouched in the next 5 years?** Established what will not change, we can be able to develop new strategies for the digital transformation.

The future is right here, right now, and in today's digital world the SMEs should pay attention not only to the opportunities but also to the possible new risks. That's why is needed a strong enterprise-level governance aims to increase the level of coordination. Even if companies do this, it could be too late, not every company will survive at the digital transformation. Companies need to evolve, but the evolution process must be deliberate and well-planned.

CHAPTER I

Go digital or go bust: a framework for digital transformation

1.1 The Digital Transformation Revolution

The *digital transformation* is an authentic revolution that it's going to modify radically our environments, lifestyles and view of our world in every aspect of life. This transformation has a lot of implications on the organizational aspects and on operating processes of the firms, but the way which these implications should be assumed by the firms are not so clear for now, we are at the beginning of this radical and drastic change, and they should be still defined, analyzed and evaluated. We are now, in this exact moment, inside this **huge revolution**.

It's sure that there is the awareness to elaborate new managerial frameworks, skills and attitudes to change this transformation in an opportunity. In the next few years we will assist to a complete reset of all the aspects to do business with new theoretical methods and best practices all over the world. That's the reason why I decide to work on this argument in my thesis with the goal to define and analyze the phenomenon giving a framework of digital strategies for the small and medium companies for best competing with the new multinational digital firms.

Digital transformation consists **in restructuring your company's culture** and redefining your value proposition by focusing on both customer engagement and enhancing products and services with technology. In other words, it is the transformation of the business, of the core and complementary activities, of the internal processes, of the competencies and models to understand and to use the opportunities of a mix of digital technologies and their impact on society in a strategic way in a med-long term[1].

[1] Definition in the Article of Emily Rinde, communications managers of the blog Nerdery, called: "*Evolution vs Revolution: Embracing Digital Transformation in 2018*", Published on 01/15/2018

That's the reason why a lot of organizations are going to redefine their businesses in a rapid way, because this global change is very fast, and although the possible disruption never been so large and the only way to stay ahead in business is to be the first to change. It's important to understand that it's not enough going on with the application of the new technologies in the business, but that technology is secondary to a **cultural change**. Julie Woods-Moss, in her article for The Forbes, says *"Creating a digital culture isn't about who's in charge — it's about building an agile structure that can adjust to changing employee and customer needs as new technologies and platforms emerge to fuel another shift in this constant cycle of change."*

Actually, the majority of the world's biggest firms in all the main markets is implementing digital transformation strategies, creating new horizons of corporate strategies theory and best practice to analyze the phenomenon. That's why it's not just a transformation, but **a real revolution** because it's not only about the business, but it also impacts other organizations like governments and no-government agencies involves in social issues. In the most digitalized countries there is the aim to leverage this transformation for the good of the entire society, to move to an industrial automation, using new technologies to improve the labor conditions and increase the productivity, efficiency and quality of good and services.

That's the reason why a lot of initiatives and protocols was born as the ***society 5.0*** or the ***Industry 4.0***. The term ***Industry 4.0*** is a European initiative, inspirited by a German project government, and means the trend to move to an industrial automation, using new technologies to improve the labor conditions and increase the productivity, efficiency and quality of good and services. The new concept of this trend is the "*smart factory*" composed by:

- **Smart production**: new production technologies that create a complete integration with all the elements of the company.
- **Smart services**: digital infrastructure and technique and new information system that are used for the integration and cooperation with the external environment.
- **Smart energy**: systems more efficient to control the energy consumption.

The results achieved in Germany was so good, that's why a lot of big companies, as McKinsey and BCG, studied the phenomenon and the impact on the society and economy.

The report, *The Future of the Jobs*, presented at the *World Economic Forum* shows that in the next few years the technology factors will influence consistently the labor market. From a research of the Boston Consulting group emerges that the 4th Industry Revolution will adopt six main new technologies: advanced robotics automation, virtual and augmented reality, The internet of Things (IoT), digital platforms, cyber-security and Big Data Analytics.

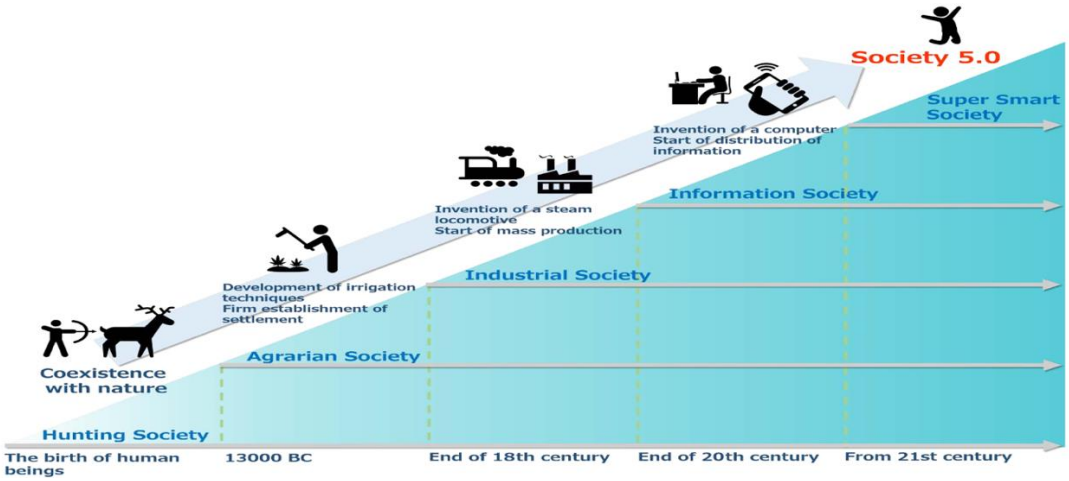
These new digital technologies will affect not only the single market, but the entire society. A social useful use of them was create, for the first time, by Japan with the ***Society 5.0*** initiative. It covers many aspects, but, firstly, it describes the **Super Smart Society,** with the definition of: "*A human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space".*

The idea is that these new digital technologies can allow the combination between the information and the real world. In other words, the cyber space with the physical space. This union creates the **Cyber Physical System**.

About this, for the Japanese experts, this system gives us the possibility to solve a lot of social problems, that's why this new type of society is called: **Super Smart Society.** Currently we are in between this new type of society and the previous one, the Information society, where information is the key element that influence our lives.

The interaction between the new digital technologies is now becoming more and more complex, because a framework to best use them still doesn't exist. In the current society, the information was collected through networks and then it was analyzed by humans[2] (Figure 1.1).

[2] Definition by Cabinet Office in the "*Science and Technology Policy*", Tokyo 2018.



In the **Super Smart Society.** people and systems are all connected in cyberspace and optimal results obtained by AI are exceeding the capabilities of humans[3]. This process seems to bring some added value to companies and people through the leverage on innovations, promoting economic growth and finding digital solutions to social issues.

In other words, the customer experience optimization and innovation in the processes and activities, are the key drivers of the digital transformation. This phenomenon can be described as a holistic approach that covers all the aspect of an enterprise that wants to be competitive in the modern market**.**

The term "**digital economy"** was created by Tapscott in his book: "The digital economy: promise and peril in the age of networked intelligence" (1997). The term "digital economy" describes an economic system where the usage of ICTs is widely spread[4], formed by:

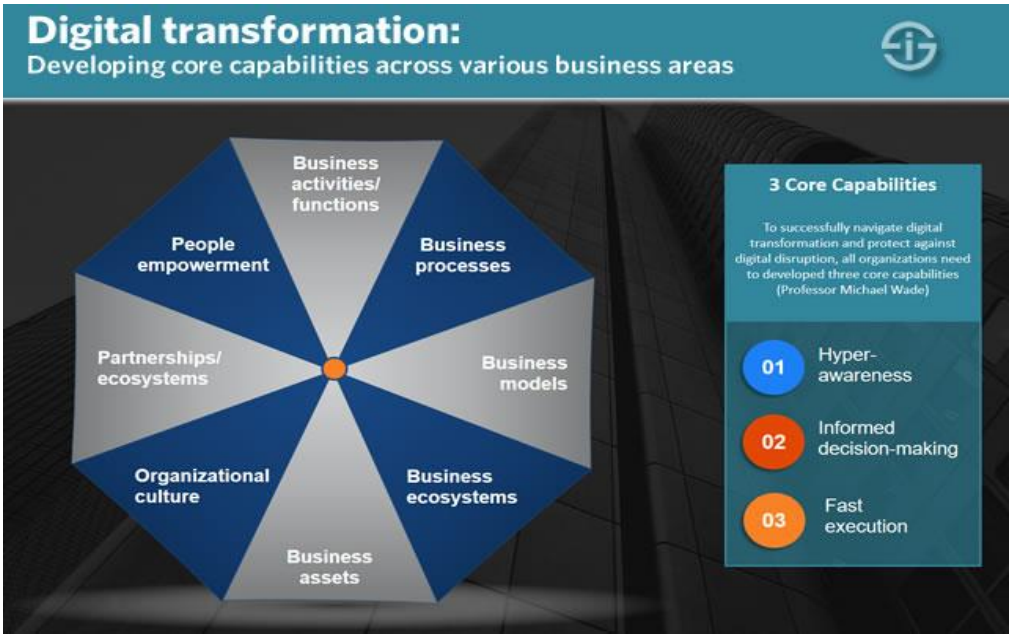
1) **base infrastructur**e (high-speed Internet access and security services),
2) **e-business** (high utilization of ICT),
3) **eCommerce** (usage of the ICT in B2B, B2C and C2C) transactions.

[3] *Evolution of Societies up to Society 5.0* (Source: Keidanren website)

[4] Tapscott in "The digital economy: promise and peril in the age of networked intelligence" (1997)

Technological evolutions, from the ***Big Data*** and analytics to cyber security and **AI** are the main challenges for all the organizations. For this reason, the most important role of an organization is to avoid internal silos strategies (from the processes to the activities) in all the activities and processes, in this way it will be possible to reach different goals of efficiency with a more sophisticated and **integrated interconnection.**

Company digital transformation requires a clear leadership system, decision maker processes and internal controls regardless of how it is organized (Figure 1.2).



In the figure 1.2 we can oversee all the areas where the digitalization impacts an organization:

- **Business activities/functions**: in the marketing service, routine activities, administration functions, and internal controls.
- **Business processes**: in automatization processes, procedures and linked operations through function.
- **Business models**: finding new sources to make money, sometimes leveraging new digital opportunities
- **Business ecosystems**: the stakeholders and all the environment influencing the business.
- **Business asset management**: major focus on information and customers.

- **Organizational culture**: clear customer-centricity presence which is achieved by acquiring competencies in leadership, decision makings and digital skills.
- **Ecosystem models**: a rise of collaborative, co-creating and new ecosystem approaches.
- **Customer and worker approaches:** people and strategy are put before technology, this is expressed in many customer centric change projects.

That's the reason why is needed an integrated digital transformation strategy. The real aim of this integrated strategy is to build new capabilities to adapt and to leverage the new digital technologies and their impact in a rapid way. The problem is that it's not so easy elaborate an efficient strategy from zero, without taking risks and using strong investments[5]. It's a necessary condition building a digital transformation journey for creating an efficient strategy. This journey needs an approach with a clear roadmap.

The professor Olivier Van Duüren, professor at the Innovation & Technology Business School, describes the Digital Transformation Revolution putting together three pillars: "the customer as the Heart, people as the Soul and digital as the Oxygen." These need to go hand-in-hand with the company's mission, vision and values finding a right balance for the interconnection of them. We can find three fundamental questions to make digital transformation real. How do you:

1. Engage your customers and enhance the customer experience for products and services, and put the customer at the heart? Are you a customer centric organization? Can you track your metrics real-time?
2. Transform your business, such as your business model, operations, process to be more responsive, efficient and predictive?
3. Empower your employees and organize yourself in the most productive way, develop the right skills, and attract and retain the right talent by having people as the soul? Reward performing and transforming and cross-boundary collaboration[6].

[5] Source. Expert interviews: McKinsey analysis, 2017

[6] From a speech of Olivier Van Duüren, professor at the Innovation & Technology Business School, regarding the Digital Revolution in 2017

First, you must determine your purpose, and your aspiration before you can identify your heart, soul and oxygen pillars. Simon O. Sinek, author, speaker and consultant wrote "*Start with Why: How great leaders inspire everyone to take action*" (2009), says, "Feel inspired and inspire others. Do you know why? The purpose, cause, or belief that inspires you to do what you do?". He discovered that all good leaders of the world think, act and communicate in a similar way. They do not only know *what* they do and *how* they do it, but they know exactly *why* they do it. The goal is to do business with people who have the same beliefs and you will attract people who believe what you believe[7].

In other words, This transformation is not just about technology, innovation and science; it's about people, culture, behaviors, talents. Through these data we can now state that digital transformation revolution is not only about new digital technology, but It's more a real business revolution that it's going to disrupt the way we think about doing business.

This digital transformation could bring to companies to a potential benefit in growth and profitability. Digital transformation is a revolution that it's going to modify radically ours views of our world. It's important to understand that it's not enough going on with the application of the new technologies in the business, but **that technology is secondary to a cultural change.**

The talent and skills of the dependents are now the driver of digital transformation to achieve good results in growth and profitability. But, digitalization requires that the firms will review their existing business models through the usage of the new technologies in order to achieve relevant benefits.

These new opportunities will determine which business, market, sector and company will survive. Yet Platforms and manufacturing industries are redefining business value and their ability to develop insights from the data, leveraging platform economics by connecting people and products. This means that the digital strategy and culture need to work together to achieve transformational changes. The key is to understand the final outcome of the revolution in his own core business defining the vision.

[7] From a speech of Simon O. Sinek, in 2015

After that it could be possible developing the strategy considering four fundamental zones: platform revolution, service revolution, intelligent design and Human-to-machine convergence.

Platform Revolution: inter-connected platforms combined with digital technologies will lead to real-time monitoring and controlling of a product performance in his entire lifecycle.
Service Revolution: advanced technologies, as the *Industrial Internet of Things* **(IoT**), robots and blockchain, will create new automated value networks.
Intelligent Design: organizations will adopt virtual models maintained in parallel with physical assets and processes, to control, and deliver business value without problem.
Human-to-Machine Convergence: automation will transition into autonomy. In the next years virtual reality systems will close skill gaps and improve work safety.

I talk about the digital transformation using sometimes the word revolution near, it could seem exaggerated but now I'm going to explain deepest why we can use this term.

Fourth Industrial Revolution

The fourth Industrial Revolution started in 1969 brought about new electronics, IT, and computing, but now we're in the age of a technology jump, where we're destroying the lines between **actual and virtual reality**. In the last year we are living a transformation in this fourth digital revolution, an example is that we are at a point where most every process, aside from the delivery of a firm's core services, may be accomplished without direct employee intervention. However, for the experts the four pillars to completely understand this digital transformation for the companies today are:

Engage Customers. Customers are active actors in the process of production using their habits and preferences.
Empower Employees. Recruit digitally-savvy employees and create employee experiences.
Optimize Operations. Use data and software for predictive analytics to identify issues and maximize product and overall operational success.

Transform Products and Services. New data and information can drive demand, creating new service offerings, improving customer satisfaction, and driving lower cost models.

Contrary to the general public opinion, companies founded in the cloud are not the only business models who can make this transformation happen. Analytically there are five differences between traditional organizations and the digitally transformed ones:

1. Where traditional business models are product-based, digitally transformed business are service-based.
2. Where traditional mindsets center around selling products, digital mindsets center around selling customer.
3. Where traditional pricing models focus on price per unit, transformed pricing models focus on price per hour of uptime.
4. Where traditional revenue generators think, "just sell more," digitally transformed revenue generators sell both products and service.
5. Where traditional profit generators come from lowering maintenance costs, the profit lever in digitally transformed organizations lies in maximized product uptime.

So, how can companies use this digital transformation to grow today? By a systematic and integrated continuous process of adapting, learning and improving, with the motto "**The failure is good, it gives you a chance to learn.**" Only 25% of companies today have Chief Digital Officers, said Klaus Schwab, founder of the World Economic Forum (WEF), that suggests that what is needed is a "**systems leadership**" approach to fully understand and take advantage from the digital transformation.

In his latest book, Schwab contends this approach is necessary because: "It took the world more than a decade to develop a collective response to climate change," he says. "If we take the same amount of time to respond to the Fourth Industrial Revolution, we will have lost the opportunity to influence the development of the technologies that shape the way we work, live and act. If we act now, we have the opportunity to ensure that technologies sustainably improve the lives and prospects of as many people as possible."

Shaping the Fourth Industrial Revolution is necessary adopt in a rapid way, a **flexible but strong governance of new digital technologies,** "matching the nimbleness of the technologies and the private-sector actors who create them in constantly updating and rethinking rules in collaboration with other sectors[8]".

As I said, we are on the cusp of a new second wave of the digital revolution, which promises to be far more transformative than the already disruptive first wave: The Internet.

One of the main interesting elements of the first wave is that it hasn't affected all industries equally. In fact, businesses and sector as retail, manufacturing and entertainment has been disrupted and transformed, by the news digital platforms as Amazon, Netflix and Spotify. However, for the other sectors there weren't big and relevant changes.

In these years, we are spectators and actors of a new wave, which will leave no industry untouched: **The Internet of Things.** Jeremy Rifken, in his "*The Zero Marginal Cost Society*", describes the **IoT** as the biggest innovation for the humans, because it allows every person to communicate with each other by connecting every machine, process and activity within a single comprehensive operating system.

According to Steve Case, the founder of **AOL**, in an interview on the TechRepublic website, the **IoT** transforms "the Internet from something we interact with to something that interacts with everything around us." One of the most important attributes of the **IoT** will be its ability to recognize weak signals before they become strong ones, allowing humans to recognize elements before they cause problems. Weak signals are patterns that a human mind doesn't notice because these signals are usually understated when they first emerge and then are likely to remain hidden in plain sight.

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[8] Article by Richard Chiumento, Award winning growth & transformation specialist. LBS entrepreneur of the year finalist, 2017

The Internet of Things will change everything because by connecting every person and everything into a single global network. **Digital transformation is the second wave of fourth industrial revolution and will disrupt every single industry.** It sounds exaggerated but imagine a world where every company has instant insights from technology like machine learning algorithms, customer interaction bots, and other types of IoT, all built to increase the connectivity, integration and transparency across every element of the organization. Well, that world is now.

1.2 Customer Centricity as A New Strategic Priority

When we think of customer-centric, companies like Amazon, Netflix, Spotify, Airbnb come to our mind. What these organizations have in common is that they took advantage of this second wave of digitalization and **disrupted the status quo of their respective industries** while keeping the customer at the center of their operations.

The raison d'etre for any significant business that take a customer-centric approach should be motivated by the priority of delivering a better consumer experience at all levels, leveraging digital technologies to better understand why they decide to buy that products or another ones. Implementing a digital solution, like the customer centricity as a business priority, could lead to huge benefits through the interconnections of people and systems without other significant problems.

Customer centric is a way of doing business with your customer in a way that provides a positive customer experience before and after the sale in order to drive customer loyalty and profits[9].

Customer-centric is becoming increasingly important in all organizations and businesses, it is a new management priority derived from the digital platform exponential visibility and it consists in the creation of a corporate customer culture. In other words, the focus on customer-centricity could be interpreted as the need to create a new mindset across the organization about the importance of the customers, with an integrated system where all the departments work from a customer-centric point of view.

A key factor for the successful of some companies is becoming the increasing of the acquisition and retention consumers rate over the competitors by using a strong relationships consumer, giving them an amazing product experience.

[9] How to Create a Customer Centric Strategy For Your Business, Posted by Steven Macdonald on 17.07.2018

Externally, the increasing in the point of sales and the functions of the customer service have improve these rates, giving the opportunity to better perform and positioning in the consumer mind (personalize offers and discounts). While internally, the activities have reached a new level of efficiency through the implementation of optimized processes and digital labor skills.

For example, Peter Fader, in his book "*Customer Centricity: Focus on the Right Customers for Strategic Advantage*", said: "being customer-centric means focusing on marketing efforts on the **real-world,** high-value customer segment in order to drive profit. Unfortunately, 66% of marketing leaders do not know how much their customers are worth, while companies have a potential 17% increase in sales when they identify and maximize top value customers".

To better understand the relevant importance of costumer centricity, a survey elaborated by Deloitte stated that companies, with a customer-centric priority on their strategy, were up to 60% more profitable than companies without a real focus on their consumers. In this case, companies like Amazon comes to mind because they have entirely built their brands on their customers thoughts and perceptions, and this is why they have a so big success.

In the end it's of extraordinary importance to have clear in mind that to become a customer-centricity focused, is needed the usage of a customer journey maps.

Customer Journey Maps

To analyze and to segment the customers is needed a **Customer Journey map** that shows in a precise way, exactly which are the perceptions and past experiences of the consumers with the brand. To really used these data, it's important to considerate all the contexts and environments in which customers might use the products and services of the brands. Starting by collecting all customer data. Watching how consumers interact, react, think and respond, companies are able to really understand what they need, through a targeting and segmentation of the consumers. Then they identify data anomalies finding the reasons behind these anomalies.

At the end They could be able to find the areas, situations and activities that need corrections and adjustments. In other words, it’s needed to build correct procedures and activities that really meet the consumer needs, perceptions and expectations. After that they should never forget to continue to monitor and control customers, and the way they are responding to the activities and procedures created for them. Although they should use data to elaborate new metrics that identify opportunities for improvement.

To meet the expectations of the customers, new digital technologies could be useful to efficient the activities, for example with the automation of the delivery, continuing to evaluate the experience from the customer point of view. When digital technologies and the customer expectations and perceptions have the same priority, companies are implementing a digital strategy, and this could happen only when firms see the customer journey as of a fundamental step of the strategy.

In fact, an excellent example of this is Starbucks business model. This company based his strategy on a **customer's perspective**. This company decided to modify the processes and activities, giving relevance only to the costumer behaviors. In this way they were loved from all the millennial consumers, the ***digital natives,*** that are looking for these brands and companies because they have a very little time to process advertisements, they are bombed from the same advertisements all the time in a subliminal way on devices and the first attracting thing that remain in the minds is the importance given to them, to what they think and what they want, from the company.

In this, digital platforms are so good because are experts in the usage and leverage of a vast amount of data and consequently they manage to share information with other platforms or companies with the required amazing ability to track, monitor and share customer behaviors for better perform year after year, day by day.

A huge benefit derived from the digitalization of the economy is the enormous range of data that businesses can have access to. Through them companies can understand perfectly the needs, perceptions and expectations of the possible consumers giving them exactly what they hope and what they want.

In conclusion, customer-centricity is a new strategic priority for companies, the type of business not matters, it is easily a new competitive advantage for companies. This is the new strong competitive advantage for companies. Not product's quality or cost. That's why it becomes a new strategic priority.

Now, as never before, companies must capture the potential of the digitalization of the entire economy within their customer journey and transform the customer experience, while digital technologies continue to represent an important new challenge in allowing companies to learn more about their customer behaviors and tastes. Firms must create and implement IT systems that track customer behavior and expectations, and this is fundamental for them to make better decisions about how to upgrade their business processes. That's why mapping the customer behaviors will help to identify customer expectations, experience and pain points, this is exactly what *Airbnb* did in the first years.

But how can we manage to ensure that the consumer centricity becomes a priority for companies? Well, first we should create a customer strategy and then we should try to evaluate the financial aspects and impacts of being a customer centric enterprise. Once we have analyzed the data we can take decisions, always based on real data.

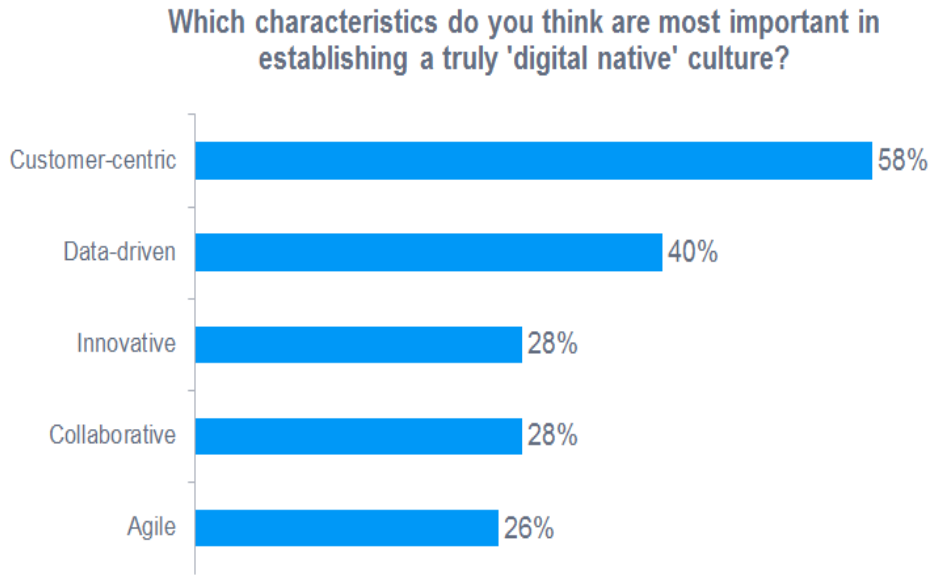
A recent report presented by the consulting company Bain & Co., the 80% of CEOs believe that the enterprise where they operate, provides a good consumer experience rate, but if we look at the data collected, only the 8% of them customers are agreed with them. It's important these percentages, because they give us the opportunity to study and give a feedback about them, that's why we should look at the customers journey searching for all the possible problems.

But to create customer-centric capabilities, we have to find right measures, making the customer journey measurable. This means that you must use intelligence and analytics to capture the whole of your customer journey rather than focusing on isolated points. A recent study conducted by ***McKinsey*** supports this claim and states that "performance on journeys is substantially more strongly correlated with customer satisfaction than performance on touchpoints—and performance on journeys is significantly more strongly correlated with business outcomes such as revenue, churn, and repeat purchase".

Having the right metrics, in a holistic way, allows companies to capture important information to develop customer-centric capabilities that can enhance the digital features of the company. For this reason, the companies must map their customer journey, make questions, measure the satisfaction and perception and translate the answers into metrics within each step of your customer journey.

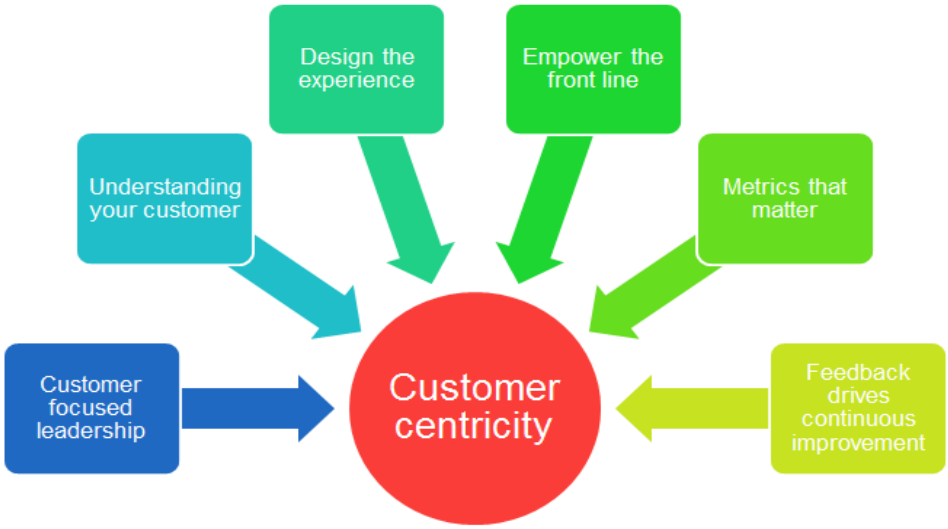
To sum up, in the end, **companies must develop measures that are customer-centric** on the performance for the customer perception. In this context, the IT function plays an important role in installing the intelligence and analytics needed to trace customer insights data. With this customer-centric information, companies will be able to make right and awareness decisions about their business processes. Such choices can drastically improve the customer experience and can be reached by leveraging on digitalization. To develop customer **digital solutions**, companies must stimulate the aligned collaboration between different functions and departments to give a customer centricity priority to the business.

The goal is building a long-term relationship with customers through the use of digitalization. The *Econsultancy* company on his website recently posted a study asking: "Which characteristics do you think are most important in establishing a truly digital-native culture?". The chosen from the 58% of the respondents to this study answer that it is: to be customer-centric[10] (Figure 1.3).



[10] Graph posted on the Econsultancy website, in February 2018

It's also true that becoming a customer-centric company with a strong vision and culture focused on it and with a clear strategy doesn't happen in a day, but it needs more time. Customer centricity is a real strategy characterized by **putting the consumer first and at the core of the business** (Figure 1.4).



A survey by Deloitte stated that these companies that give an extraordinary priority to the customers are **60% more profitable** compared to the others who aren't focused on customer. In the last year after the crisis, social media marketing exploded and became fundamental for customer journey. In conclusion, this is a huge challenge for many brands. In the following graph, Deloitte report has underlined the main challenges for a firm to achieve a good customer centric perspective (Figure 1.5)

[11]

[11] Graph used by the report of Deloitte on the customer behavior in the 2017

The major one is the functional silos of the organization that prevent customer data sharing (**52%**), followed by the culture, (**39%)** not truly aligned around the customer needs, and the missing key technology platforms to manage data (**31%**).

These data show how it's still hard to achieve an integrated approach to the digital revolution, using common answers that are not completely fully understood by the employees (culture) and leveraging potential technologies and platforms to use them that are not easy to learn how to use them. More over there is still a not common definition of customer centricity around and inside the organizations (**31%**) and an insufficient expertise in data analytics (**28%**).

Recent researches from a wide range of important consulting firms, demonstrate that when the customers decided that a company is perfect for them, this is always linked to a long-term revenue growth, and this is of extraordinary importance.

In the end a firm should understand the customer behaviors, experiences, expectations and attitudes to create a strong relationship with them, based on a real correlation. But to do it, companies have to innovative their internal processes, functions, roles and activities **to create a cultural change within the organization**, through the use of new technologies, to align deeply the enormous flows of data available, to achieve sustainable results.

1.3 Impacts on organizations: the ability to adapt and learn quickly

Innovation across industries can be classified into two classes: radical and incremental. The incremental adds something, while the radical destroy what there was before and can be defined also for product (**differentiation**) or process (**cost leadership**).

The preference of this choice would define the business strategy adapted by the firm. It's also true that it's not just a choice of the firm, but it's driven by needs of customers, technologies and costs. The appropriation of a type of technologies is ensured by a complex system of patent, trademarks, trade secret, private contract and copyright all over the markets but after the adaption of a technology the firm is path-dependent of this first choice.

It's very important not making mistakes because the switching costs now are really very high in every business and **time is a resource.**

In the last years the ***learning effect*** has become fundamental for a firm. The experience curve through the absorptive capacity made the business style of efficient firm more attractive for the other firms. But it's better to lead or to follow? This is a very important questions and the evidences are mixed all over the world. In conclusion, it depends but to sum up, the benefits of being one of the first movers depends on these three elements:

- **The extent to which an innovation can be protected by copyrights, property rights, licenses and patents**
- **The importance of complementary resources (exploiting an innovation and risk of pioneering)**
- **The potential to establish a standard**

Maybe in this era the right solution are the alliances. In the last year the cost of investments in the technologies and **R&D** has increased, that's why a lot of efficient firms decided to create alliance (joint venture) to share the costs of innovation without over-paying.

Digital transformation in this new age empowers every person, every organization, and every nation to have the capabilities to be bigger and more established players. Through the globalization, this is the first Industrial Revolution that **happens all over the world in real time.**

Digital technology is evolving rapidly, even more than the rate at which many organizations can adapt. That's why the real challenge of transforming their business is about enabling their workforce to be able to operate and use the new technology to enhance performance. To become data driven, companies need to develop internal skills, so they can use data to create business value by making smarter decisions.

In addition to data and analytic skills, organizations need skills in areas such as artificial intelligence and user experience. The problem is that most companies realize that their staff are far from to be ready for the digital world. An 18-country study from the **Technical University of Munich** found that 64% of respondents felt their company personnel did not possess the skills necessary for successful digital transformation. And only 16% had established a dedicated recruitment or training program to build digital skills.

The following question is: **Why organizations adopting digital strategies don't invest in digital training?** The answer is that they fear that their staff will be assume by other firms. A lot of organizations believe they can find the skills they need by recruiting from outside the business or outsourcing to a third party without exaggerated cost problems. However, it's relevant to say that develop internal capacity is an internal investment. While it seems to have sense for an organization to selectively work with service providers to source certain technical skills, it also needs to reshape its workforce into a team that is ready for the digital future. The technology, used to drive powerful customer engagements, gather data from every channel and touch point, and analyze it, is already available. The challenge that most companies have to face is probably the implementation of digital skills, culture and processes**,** and to use them effectively.

It's a trip that demands an investment in training, a commitment to developing a culture that values curiosity and innovation, and the ability to build a workforce that has the tools to continually **adapt and learn.**

In general, many companies are looking at their business strategies and realizing that they need to have a significant online presence in order to remain competitive in a business environment where there are new rules, but as we said it's not sufficient just the technology adoption to achieve the same results, it's necessary a strategic transformation of the business, using an holistic strategy that combines all the new digital strategy as the VR strategy, a cloud strategy and AI strategy.

These *silo strategies* are often difficult to integrate and manage. They will progress at different rates and will compete for board attention, budget and resources. These individual strategies have a very defined lifetime, once they are implemented; they are in essence complete. That means that these strategies fail to address opportunities that are not directly enabled by them. In other words, the bigger transformation opportunities are not ever realized. The digital transformation must be a shared responsibility of the entire board. **It becomes a long-term strategy**. This means creating a transformative vision and engaging all stakeholders (internal and external) in that vision. Communicating the intent and then being strongly focused on how to get there. This means orchestrating the entire business and coordinating smaller projects into one stream.

One of the major dangers is not failing to transform, but rather it is succeeding in transformation and then having to **convince all your stakeholders why it was a good idea changing in the first place**. Everyone needs to know why it is happening and what the end goal is. That's why it's fundamental now to pay particular attention to the business problem and new challenges with a holistic approach, prioritizing and involving all stakeholders in any digital transformation process[12].

To finally understand and leverage the huge opportunity and advantages of the digital transformation, some experts decided to divide in 3 elements all what companies needs to leverage this digital transformation and show how, breaking it down into steps, allowing companies to build a digital strategy based on change in decision making, technologies and culture:

[12] From the eBook of Capgemini: "The Digital Advantage: How digital leaders outperform their peers in every industry", 2017

1. Digitization

This means using the same activities as before while optimizing them through the use of new technology.

2. Improvement through technology

The second step is about improving the offer and core business of the company; beginning the company's transformation without changing its business model or disrupting market conventions. During this phase, the company takes advantage of technological opportunities: opening new markets, developing new offers, exploring sectors and business activities, organizational changes and bringing the company in a digital era.

3. Disruption

Companies must reconsider their core activities and business model in view of the real needs of individuals. This is the strength of digital disruptors. They should study the needs of individuals, placing more emphasis on their core business than on market conventions.

Digital transformation is, using other words, a business transformation made necessary and possible by the implementation of new technologies. Necessary, because individuals have new needs and new expectations. Possible, because technology allows companies to offer lucrative responses to these needs. Jet many companies have already launched good initiatives and joint ventures, but few have a long-term vision of the business revolution they must carry on. That's why Enterprise-wide digital transformation requires a strategic approach.

Sometimes to **find the right answers is required, before, finding the right questions.**

From a digital transformation revolution perspective, this means that digital risks and changes are factors to take in consideration, but that the real problem is not to implement the technologies but in which way and why it has to be done, surely with the help of intermediate checks and balances and an ability of continuous improvement or change. Another element that we have to consider when we talk about digital transformation is the optimization process.

While companies are employing digital technologies to create new revenues and improve efficiency, they often fail to think through consequences of such technologies.

Successful leaders will balance transparency, privacy and intellectual property to leverage trust as a competitive advantage, and it means having a plan in place to mitigate negative consequences[13]. In conclusion the challenge of organizational adaptation and strategic change is fundamental. Why sometimes and for some firms is change so difficult? Some experts talk about barriers:

- **Organizational routines**: patterns of coordinated interaction among organizational members that develop through continual repetition over time.

- **Social structures**: change represents a threat and a risk to the power of those in positions of authority (strong leadership based on hierarchy).

- **Conformity**: the propensity of firms to imitate one another in order to gain power.

- **Limited search:** the propensity of firms to terminate the searches when they reach a satisfactory level (maybe this is the definitive more important problem of the society approaching the digital economy)

- **Complementarities between strategy, structure and systems:** evolving through a process of equilibrium between change in the leadership.

Not all the technology changes have to be adapted for a company, **just because something is new it doesn't mean that works, and if it works for others it doesn't mean that works for us.** Clay Christiansen distinguished between sustaining and disruptive. The first augments existing performance attributes, the second incorporates different performance attributes than the existing technologies[14].

[13] Accenture Strategy report on Digitalization, published in 2017
[14] C.M. Christensen, "Disruptive technologies", Harvard business review, 1995

Crises create the conditions for strategic change, making true the possibility to change the way to do business and to be leaders. That's why we are in the perfect time to combat the *organizational inertia.* The ability of some firms to adapt rapidly to new circumstances is an organizational capability called: "***Dynamic capability***". It is the firm ability to integrate, change and built internal competences to address changing environment[15]. Dynamic capability can be reconfigured into the capacity to see and use opportunities and risks, to measure them.

In the end we can state that through the dynamic capabilities and the clear vision of a strategy a firm can managed to avoid the changing barriers, leveraging the innovations and technologies (digitalization) to better perform and to be ready for the next challenge: **the disruption.**

[15] D. J. Teece, "Explicating Dynamic Capabilities: The nature and foundations of enterprise performance", 2007

1.4 Disruption

The term “digital disruption” is used to describe various technological changes that affect markets and businesses in a way that wasn’t be possible prevent previously. The term “digital disruption” was introduced by Clayton Christensen, who defines the digital disruption as "the change that occurs when new digital technologies and business models affect the value proposition of existing goods and services".

Another professional expert, Gartner, describes digital disruption as "an effect that changes the fundamental expectations and behaviors in a culture, market, industry or process that is caused by, or expressed through, digital capabilities, channels or assets."

In the current digital disruption, the technologies and devices that are leading the wave are interconnected devices and according to Bill Bodin, CTO at Kony, Inc. “With mobile, we now have an expectation for enterprise to deliver multi-channel solutions…Employees and consumers alike expect a premium experience no matter what device they’re using. With the IoT, we see distributed computing and applications taken to a new level of convenience and personalization.”

In other words, **digital disruption influences the enterprise from the depths to the operations, changing the processes, procedures, controls and technologies:** “Automotive companies have created cabins which are now interactive and in many ways dependent on mobile devices and health care with personal mobile monitoring is now extending the quality and length of lives,” says Bodin. “These scenarios and many more are wrapped in security implications and privacy concerns, but all these concerns are addressable when each solution is developed with a platform that combines strong client security with solid back end service safeguards.”

The consequence of disruption in the new digital economy is creation of a **new ecosystem** based on the usage of digital platforms and technologies that will increase the efficiency of the business: “This is why the need for a standardized and common language will become increasingly important from a business, technology, and marketplace perspective,” says Craig Bachmann, another important digital experts.

"One of the biggest opportunities for disruption in the reality of IoT is determining how to monetize it," says Bachmann. "New IoE business models lack the simplicity of traditional pipeline supply chains, and as technology provides a digital set of capabilities to overlay complex business models, we will see significant changes brought on by new ways of doing business."

Leveraging how to manage this amount and flow of data through the usage of new digital technologies, is one of the current challenges of enterprise in every industry or country. Technologies, in fact, can drastically change the workforce and the jobs as we consider them now in a negative way. The huge shift to digitalization will have intrinsically the power to leverage the value of data**,** but also all the possible risks, as that this data can be stolen[16].

"In fact, the same increase in data quantity and value will actually provide even greater incentives for attackers to steal information," says Geoff Webb of Micro Focus. "If at its heart digitalization increases the value of data, and it does, then it also acts as a siren song to hackers who will want that very same data."

He is talking about the born of the cyber security market, based on a complex interaction of technologies as Cloud, Robotic Process Automation, combined with Cognitive Automation systems and Artificial intelligence. In the industry, complex processes that in the past were responsibility of humans will be re-conduct to framework of automation of intellectual work, especially activities with a strong component of routine, that's why it needed a security on this new technology component.

The *disruption* uses technologies as IOT, the 3D printing and the addictive manufacturing that premise a pervasive interconnection between people, things and digital world. For Klaus Schwab, the founder of Davos that invented the 4th industrial revolution term, the transformation in act is so deeply that modify "***not only what we do, but also what we are."***

[16] Antonio Julio, "Digital transformation is the people's revolution" 06.09.2017

In other words, Digital disruption is a revolution that enters in our lives and jobs without our authorizations. In conclusion, to succeed in the digital economy, enterprise should not only offer an excellent experiences to customers but giving the certainty that it was the best one and the only one they want because it was fast and more efficient compares to the other competitors.

Digital disruption creates a complete change in how companies do business, creating a new ecosystems based on platforms and interconnections. **The opportunities are exponential,** but only for organizations that understand how far and fast they need to transform.

The famous ***"fail fast, fail often"*** mantra captures the real meaning of the new digital economy because it teaches that rapidity is a comparative advantage in this new market. That's why digital disruption, anthropologically, is caused by fast drastic changes for the usage and implementation by people of new technologies and by their behaviors, attitudes and expectations, and mostly, by the company approach to the new digital risks and opportunities.

The causes of disruption and transformation

- ***Technological innovations.*** We have to remember that the drivers of disruption could be a lot in the economy, composed by various types of technological innovation, that could be implemented also by consumers and competitors. But the most potential scenario happens when these new technologies are connected each other, forming new possible applications of the technologies and outputs.

- ***Customer behavior.*** As I said this revolution is strongly related to the new strategic shift in priority in favor of the customers.

- ***Innovation.*** Sometimes to **find the right answers is required, before, finding the right questions.**

- ***Ecosystem-induced.*** Economical, regulatory, geo-political changes are also elements that we have to count. There are calls to regulate the IoT, calls to regulate blockchain, and also banking regulations are changing[17].

This ecosystem point of view means that finally we oversee the essential element and consequence of this revolution through the disruption: **the completely interdependency and interconnectedness of everything**. The consumers have a complete access at most of the information and they use it to make decisions in real time. They expect an experience that is fast, simple and intuitive, in fact now they expect immediate access and connectivity between all types of devices show no patience for products, services and businesses that fail to meet expectations.

What connectivity also brings to the society and to the firm is **the ability to collect and use data**. That's why governments think that the digital transformation can bring benefits to everyone. With digitalization, society can better understand where to improve controls and measures to overview the success of their social issues, improving the citizens welfare.

Digitalizing markets and finding new digital metrics can help create more productive economies in line with the modern era. The technological revolution could still hold many surprises in these next years. For example, it could create new types of jobs that didn't exist before in the innovation and technology fields and improving the productivity of less- skilled workers through the automation and robotics.

In general, looking at human history, **every technological innovation has left some workers behind**, as Gemma Tetlow of the Financial Times explains in her analysis of an International Monetary Fund report: "Yet innovation creates demand for new and often more sophisticated disciplines. For example, while the banking industry cuts jobs, most banks are hiring data scientists to interpret the reams of big data they collate. As digital transformation becomes the norm, business schools are adapting to the demand to arm MBA students not against failure but against the fear of failing".

[17] Article by Shahz Afzal, Vice President Marketing of IBM; "Cloud digital revolution: disrupt or be disrupted, 1.02.2017

A new report by Fujitsu, “Fit for Digital: Co-Creation in the age of Disruption”, suggests that, ready or not, the digitization of the manufacturing industry is an unstoppable force, and this is something that we should take in consideration.

Companies can no longer try to negate the disruption around all the businesses and try to go on as nothing happened. We are living this revolution and companies should move with attention to not being overwhelmed, but in a rapid and strong way to better placed themselves in the new digital economy. To help these companies, *Forbes* lists seven emerging truths of digital disruption:

- **Digital transformation is hard work.**
- **Digital transformation is *not* about technology.**
- **Corporate culture and speed matter.**
- **A digital-savvy corporate culture *goes deep.***
- **Ability to measure progress.**
- **Digital leaders are open leaders.**
- **Digital transformation means thinking like an entrepreneur.**

The 4th industrial revolution is Digital Disruption

With the word ***Disruption Revolution,*** we refer to all the world that is inherent of the way managers, citizens and investors are approaching and are linked to the disruption. From the economic crisis of the 2008, yet many companies were forced to change their business plans, models and structure, exploring new ways of generating revenue, and lowering their fixed costs. In fact, in these years, some visionary leaders invested in innovations, platforms and in all the new digital technologies, taking many risks but with the awareness that it was time to change.

It started the era of the digital platforms like Facebook, Twitter, YouTube and Amazon.

That’s why a lot of companies now are trying to **re-imagine their business** processes because of the 4th industrial revolution. Our lives are being transformed through a combination of various digital technologies; this is creating value for business at an unprecedented scale.

In our days, the maturity of Big data analytics, Artificial intelligence and the Internet of Things are coming together to bring to an integrated new approach of the way to do business.

To start the digitalization, organizations need to pay particular attention on some aspects of the change, that before weren't even calculated, as impacts of the risk and opportunities, changing in the structure cost, in other words companies should to answer to why, where and how implement digital technologies and skills.

Just few example to understand the extent of this change, for instance the human resource function could be able to lower in a significative way the hiring costs, or if we talk about the finance department we can strongly increase our databases to better perform.

Digital disruption is not just about reshaping the industry by disrupting existing businesses and operating models, **it's also about having a social impact on the entire society.** Companies are using digital technologies to get closer to their customer through services which are personalized based on the consumer's needs.

Related to this, digital transformation is still causing a debate among business leaders and policy makers about its social impact, and there are still discussing about it. However, adaptive organizations that prepare for digital disruption can gain business value and secure their place in their industry.

We are at the beginning of a fundamental change of the economy and of the global society. In fact, drones, robots, and software automations will deeply change our lifestyle at work and at home.

For the small or medium enterprises (**SMESs**) digital transformation revolution might not seem a disruptive figure as it could be for big companies. Some SMEs consider that their size manage to overcome the disruption problem, in fact if something of new happens in relation to the digitalization, as the invention of new technologies for their business. They think that, because they are "small", with different processes, activities and people, they don't need to approach to this digital transformation revolution.

But this is not the truth.

In fact, digitalization is changing the lifestyle and the typical approach to do business, from the consumer purchasing to how firms conduct the business. In other words, this is now the new social phenomenon happens today all across businesses and societies.

Following the digitalization doesn't mean to transform completely in a digital enterprise, for example, companies should not adopt every new trends in the market just because it's something related to digitalization, but rather it is a drastic change in the way to do business, finding the real new questions on the customers and on the competitors, leveraging a strong modern know-how and digital skills to reach new level of efficiency.

In conclusion, digitalization and the approach to digital disruption is something that SMEs couldn't anymore avoid because it is vital for company survival and growth. It could be different from every businesses, markets, it could depend on the employee skills and firm's culture, and on the size of the company, but it always starts with a change in the normal attitude to do something, and digital transform is exactly this.

CHAPTER II

Successful strategies in the digital transformation revolution

2.1 Digital transformation across industries

Businesses from every industry are fighting where legacy business models are stay behind and that's the reason why now digitalization could really bring an amazing potential for **growth** all over the businesses where the legacy business models are still not developed**.** Technology plays an important role in this revolution as I said before, but just technology does not guarantee transformation. The digitalization process is not just an activity that have to be implemented, but it's an integrated part of company's vision and through this approach, companies can find some advantages only if they start to put an effective digital framework into action. Anyway, it could be still difficult to achieve good results because there aren't for now best practices, scientifically approved, even if there are some good example of digital disrupter across the world, but the most important thing is that the strategy has to be supported by a corporate mind-set focused on their financial requirements and backed by **strong governance**[18]**.**

After the economic crisis, at least companies realized that it is becoming relevant to embrace digital to meet changing customer expectations, monitoring new risks related to the new technologies and improving internal processes. For example, some new technologies are affecting the world in every aspect, as the Internet of Things (IoT), one of the major new technologies, that has born thanks to the growing number of devices having the ability to wirelessly communicate and share data with one another.

In the era of digital platforms, the network of digital devices is growing: Some 30 billion objects could be connected via the IoT within the next few years, leading to incremental economic growth that could exceed $11 trillion by 2025, according to a recent McKinsey study[19].

[18] Report by Accenture: "Digital transformation: a view across industries", 01.03.2016
[19] Report of McKinsey on the digital transformation, 2016

Integrating digital capabilities requires an increasing attention on the consumers, giving centricity to them, and the skill to work efficiently thanks to an integrated strategy. This huge transformation can vary from businesses and from countries, but it's always started from the vision and culture.

That's why a **cultural change is needed across all the companies, from the internal to the external environment.** Giving digital skills to employees but also to leaders through digital training programs, the organizations could start to move the first steps in the new digital world.

In fact, now the use of robotics, as other advanced manufacturing technologies, is strongly increasing and can lead to quicker product availability. To meet customer expectations, needs and priorities, companies should establish new metrics and analytics to analyze their behaviors in all the acquisition process. To successfully design digital solutions that improve customer experience, a company must create structures that facilitate the integration and interaction of different functions within your company. From this point the modern concept of **cross-functional teams** is born: it is the key to approach to digital economy and gives continuity to overview the customer journey holistically.

For example, *Spotify* is a company that has gotten attention in this field. Spotify's way-of-working through self-managing project teams with different functions, such as office developers, database administrators and marketers, not only encourages the interaction within teams but also between different teams. In fact, it is a good example of an efficient cross-functional team, basing on the idea of needing a culture of sharing expertise and working together to create integrative solutions.

To further demonstrate the connection between mapping the customer journey and cross functional teams, *Starbucks* is a company that we can quoted. From this specific point of view, it started with the *myStarbucks* app in 2009 that allowed customers to find the nearest store and after 3 years gives the opportunity to preorder and make payments online. This integrative solution significantly changed customer experience.

It allowed customers to earn and save points directly from one app in their smartphones and use these points to pre-order and pick their order in the *Starbuck* store instead of waiting in line. All of this could be possible only thanks to cross-disciplinary teams made of people from operations, IT, and business.

Starbucks business model is based on a simple idea: to formalize interactions between divisions. In this way they can steer its talented people to holistically think about their customer journey. These cross-functional teams allow the holistic mapping of the customer journey and identification of the points for which new digital solutions can be developed to optimize the firm's business processes and activities. In general, looking at the real world, we can classify **ten different business models** in relation to the disruption of the digital revolution to have a global view of the models that a modern digital firm can implement:

1. **The Subscription Model.** (major examples are Netflix and Apple Music store) Disrupts through "lock-in" strategy

2. **The Freemium Model.** (Spotify, LinkedIn, Dropbox) Disrupts through paying for a basic service and then charging to upgrade to the full offer.

3. **The Free Model.** (Google and Instagram) Disrupts selling personal data by offering consumers a 'free' product or service.

4. **The Marketplace Model.** (iTunes and App Store) Disrupts bringing together buyers and sellers directly in a marketplace.

5. **The Access-over-Ownership Model.** (AirBnB) Disrupts providing temporary access to goods and services traditionally only available through purchase.

6. **The Hypermarket Model** (Amazon and Apple) Disrupts using market power selling below cost price

7. **The Experience Model** (Tesla) Disrupts providing a superior experience than competitors, for which rich privates are prepared to pay more and more

8. **The Pyramid Model** (Amazon, Microsoft) Disrupts recruiting a large number of resellers.

9. **The On-Demand Model** (Uber, Spotify) monetizing time and selling instant-access at a premium.

10. **The Ecosystem Model** (Apple and Google) Disrupts selling products and services that increase in value as more are purchased, creating consumer dependency.[20]

After that we can identify seven major strategies that can be implemented to respond in an excellent way to digital disruption revolution:

1. **The Block Strategy**. Using licenses, patents or property rights, creating legal barriers.

2. **The Milk Strategy**. Leveraging the most possible value from weak businesses.

3. **The Invest in Disruption Mode**l. Investing in the disruptive opportunities.

4. **The Disrupt the Current Business Strategy**. Inventing a new product or service that competes directly with the disruptor.

5. **The Retreat into a Strategic Niche Strategy**. Focusing just on a niche segment of the core market, but always profitable, where disruption is not required.

6. **The Redefine the Core Strategy**. Building an entirely new business model, often in industry where it is possible to leverage existing knowledge and capabilities.

7. **The Exit Strategy**. Exiting the business entirely, through a sale of the business while value still exists[21].

[20] Joan Enric Ricart, "Business models for the companies of the future", 13.04.2018
[21] Joan Enric Ricart, "Business models for the companies of the future", 13.04.2018

Below there is a list of the main business industries drastically change by the digital disruption with a short description to fully describe this change, the new opportunities and what now really works.

The Music Factory: Spotify

The explosion of the digitalization and technologies useful to leverage the value of data, have radically transformed all the aspects of the sector. During the rise of the digital economy, we have assisted to the survival of the world's biggest music labels wave after wave of new technologies and social changes**.** In an industry found on the property rights the coming of the digital transformation have brought a real disruption. The songwriter now can create, mix, master, publish and distribute on his own his music.

But, probably, the major disrupter is **Spotify.**

Spotify is a **free music digital platform**, through artists and labels can publish their music, characterizes by a huge database of songs of all genres, that uses analytics and cookies to give a better service for their clients suggesting new music but similar to the one that they love.

The premium user costs $9.99/month, with various benefits as ad-free music and the ability to listen to playlists offline. while it's free for the others, but without these benefits, you can listen to playlist only with internet, there is the ad-music at the end of a song and you can skip songs. Spotify was launched in 2008, and after only 10 years is the largest on-demand music platform all around the world.

In an easier way we can state that Spotify business model works with a freemium model, as I explain above, and it makes money through paid subscription fees and advertisements. But why Spotify is becoming an international phenomenon? Maybe looking to these data, we can understand why. In fact, daily, Spotify users create an enormous flow of data (analytics talk of about 600 gigabytes!) that they use through the use of special algorithms and machine communication to improve their customer experiences and perceptions of the brand.

Five years ago, **the traditional music business model was collapsing** as a direct consequence of illegal music downloading (Emule, Torrent websites), and Spotify appears with his new disrupter business model that saves all the sector, even the division of big firms as Warner Bros and Sony related to the music sector, through a legal and efficient usage of royalties.

Spotify's sustainability depends on finding novel models to reduce their reliance on labels, either by entering new verticals (as video, podcasts, news) or by signing their own artists and developing exclusive contents to drive differentiation and elaborate new elements.

Now Spotify platform products include also a friend-to-friend messaging, Facebook integration, playlist curation and collaboration, artist and user pages with information and the history and next concerts and curiosities.

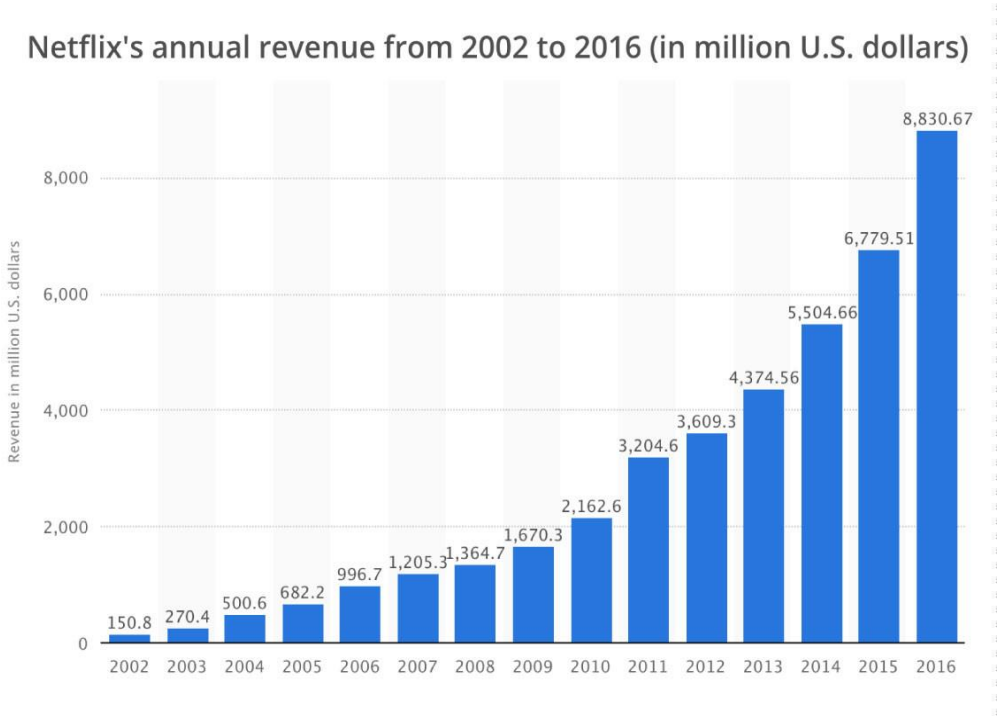
It becomes a **social experience**. That's why it's a win to win situation. In conclusion we can state without doubt that legal music streaming platform has saved the music sector.

Without a doubt Spotify has changed forever the music sector, and it has also built a better user experience compared to Apple or Amazon (the major competitor disruptors), but the future is still to be written and the evolution of these platforms maybe can disrupt the labels forever, or maybe the labels will create their own platforms that could be more user friendly. In other words, the war is still to be fought by the parts, for now there is a sort of temporary peace between them to analyze the possible consequences of their actions.

The entertainment factory: Netflix

The adventure of Netflix started as a DVD rental company in 1997. Only in 2007 Netflix decided to diversify around the core business, starting the online digital platform. Today the company is one of the bigger digital platforms, with about 100 million customers around the world. Looking the Annual Financial Statement, they had about 9 Billion USD in 2016, which grew about 30% YoY and gross profit margin of over 30%. They have a business model, based on a digital culture strongly focused on the customer centricity and usage of technology.

Their business model approach is new because consists in being driven by **simplicity.** It's a friendly user platform from the access to the payment. Moreover, the business model consists in no installation of software or hardware, but just the download of the application to enter in the platform. Looking the graph below, we can see how the revenues are increasing in the course of years, even if in the last two years there is a negative trend, probably depending on the increasing competition and investments in diversification (Figure 2.1).



Digital platforms are the future and one important point about this is that differentiates Netflix from all the other competitors is the culture, as Reed Hastings, the CEO and Co-Founder of Netflix said at Mobile World Congress in Barcelona in 2017:

"We don't measure people by how many hours they work or how often they are in the office. Sustained B-level performance, despite A for effort, generates a generous severance package. With respect. Sustained A-level performance, despite minimal effort, is rewarded with more responsibility and great pay[22]".

[22] the CEO and Co-Founder of Netflix said at Mobile World Congress in Barcelona in 2017

From a financial interesting perspective, Netflix uses 10% of their revenues, which means something like 900 million USD, in **R&D costs**, and the data shows that is going to increase more in the next years. Netflix uses Open Source programs, without the support and help of copyright, licenses and patents, and to leverage this choice has create a strong community. In fact, the business model and the digital platform of Netflix has been replicated and copied by other companies, but this is not a big problem for Netflix, that decided to work on the incremental upgrades to the platform, differentiating their services and products.

Netflix has been able to create alliance to consolidate their position with competitors and complementary companies through joint venture, leveraging the possible synergies and deciding to establish partnerships, as the one created with Amazon Web Services. Through them Netflix could use and leverage thousands of servers of storage in a rapid and efficient way. Maybe for some companies could be strange depending so much on a competitor, but Netflix preferred to choose a strategy based on the cloud with the help of an external company.

In fact, Netflix in his stakeholder letter examined the reasons why they chose Amazon as partner in the cloud: "*While the retail side of Amazon may compete with us, we do not believe that Amazon will use the AWS operation in such a manner as to gain competitive advantage against our service*."

These are the main relevant elements:

1. Need to **re-organize** the entire business model, and this allow to question everything (right questions), including if keeping data internally or externally (they decided to work with an external entity).

2. Letting Amazon the control on **data,** allows engineers to pay particular attention only on building and improving core business.

3. technology costs will always be more than it would be for some other specialized companies (as Amazon, outsourcing reason)

4. **Cloud storage of data is the future** and their cloud competencies were limited to research and experimentation[23].

The autos industries:

The automotive and airlines industries were one of the first industries to pioneer robotics, automation, AI and real-time pricing.

In particular, the first one is testing driverless and seem no-more something related to the future, but something related to the present reality, as Google has demonstrated in their last digital conferences and also traditional auto companies such as Mercedes-Benz, Nissan, and Toyota are developing strategies around this new possibility.

The real consequences of chances sometimes are not fully understood from the customers, in fact, for example, driverless cars technology is thinking that the autos will be individually driven, but it's not just this, the big difference is that the AI system will be at the controls, through the leverage of the IoT interconnections.

Thanks to this technology and the utilization of sensor **interconnected** device, we will be able to leverage a new digital technology for the best of the society and this is fundamental achievement. IoT will create a holistic transportation network that allows to drive all the vehicles at the same times, with an incredible increase in the citizen welfare and a drastic diminution of car accidents. Maybe it will need a little bit of time, but in few years, we will assist to a drastic change in the transportation sector.

This holistic approach, with the use of this technology, has the potential to reduce car accidents in the future as I said before, because driverless cars will essentially become a highly sophisticated automated system, without the human trivial.

More over **Electric vehicles** are considered to be key in the move to a smart, low carbon future. However, the EVs do not just represent technological developments, but an **evolution** in the way we buy our energy for our cars and select our energy supplier.

[23] "The Digital Matrix: New rules for Business transformation" by David J. McGrath, 16.04.2017

The EV market is innovation-led, evolving with and being shaped by emerging technologies, business models and consumer behaviors that are not yet fully matured or understood. In the end all the regulation and society thinking need to evolve to support progress in automotive design and intelligent transport systems, with sufficient flexibility and rapidity to leverage innovation in the medium and longer terms.

In the end the "*car sharing"* phenomenon is going to change the auto-motive sector, with the growth of Uber. The idea behind the born of the company, as a mobile application, was **to connect directly supply and demand transportation**.

In other words, it is a digital platform where private drivers can give the same service oaf a taxi but with a lower prices. Today Uber is known all over the world, but at the same time it raised some polemics for the Taxi drivers[24].

The concept behind the great success of Uber is simple but **revolutionary and disrupted the transportation sector.** The Uber business model is based essentially on "**Big Data**", including its pricing system. In other words, the company succeeded through the use of these data to understand the customers (customer centricity) becoming a lovely brands, supported by the customers.

The consequences of the Uber revolution are bigger than planned and the transportation business world is divided about the coming and possible implications and horizons of the digital sharing economy.

In conclusion, we can state that **platform revolution is only at the beginning** and it will disrupt the old way to do business in all sectors. Also the quantity and the types of jobs will be impacted, new professional figure will born, but other, especially low profile jobs, will disappear. The only useful choice is not fighting this change but understanding where it's going to modify our businesses.

[24] Celine Notelet, "Digital transformation of the economy: The case of Uber", 09.12.2015

Digital transformation in the supply chain: logistics and transportation

In this context, digital transformation is of extraordinary importance and priority. A recent Research from McKinsey, based on a six-month study covering 16 countries around the globe, provides insight into this fast-changing market[25]. These new Internet platforms are attracting considerable investment because of elements market dynamics, growth potential, and customer behaviors[26].

Until now, the most common form of delivery is still the traditional model, however, the rise of digital technology is strong and is going to modify radically the business. It's enough to see the use of drones for deliveries for Amazon, or the pony-expresses of Foodora, Just eat and Deliveroo to understand how the transportation of good has changed.

Consumers, of the shopping online through apps or websites, love the convenience and transparency of this type of transactions and this mindset, along with the other functions offered, has let other giants like Uber, Netflix, Tesla, or Airbnb create their models along the same line, with the plus of being supported on their platforms to operate[27].

In the last years, companies in every industry have made a huge amount of initiatives to explore and exploit new digital innovations and technologies and to leverage their benefits and opportunities but with a few attention on the possible risks to wrong an investment.

It's important to remember that adapting a technology is not enough, a cultural change is needed and required in every aspects of the organization, from the processes and activities to the skills and decision making of the management. If companies start to **establish good practices regarding the usage of new digital technologies** the potential benefits for them will be enormous, taking particular attention to the implementation of the vision.

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[25] Paul Simpson, "Supply chain, technology", 21.01.2016

[26] Catlin, T., Scanlan, J., Willmott, P., 2015. *McKinsey Quarterly report*, June 2015.

[27] From a study of Good Rebels's efforts in divulging the keys to the digital transformation, 2017

In other words, leveraging the innovations and technologies through a strong governance and a new approach in the decision makings and internal processes, companies will be able to fight and implement the digital disruption.

New digital technology has an important role in enabling this transformation, but technology alone does not guarantee transformation. The first step must be by the firm vision for the future and, in my opinion, the most interesting case to take in analysis to demonstrate this is **Amazon, the major digital transformation disrupter.**

2.2 The Amazon's case

Amazon.com is now probably the best icon in the new world of the digital platforms. In modern life, almost, every product is a platform of some kind. Right now, we can't imagine our life without platforms and the trend is that with introduction of **Industrial Internet** everything will become a platform by definition. The most classical example of platforms is **Amazon.** It was started in 1994 by Jeff Bezos and he decided that the core business of his company would have been focused on e–commerce and on the selling of books over the Internet. So initially Amazon was just an online bookstore.

It had a very unusual business plan, it was not going to generate any profits for the first 5 years. It created value by offering bigger variety of titles than any existing bookstore. In 1997 Amazon went IPO on NASDAQ. Before dot-com bubble burst Amazon started to scale up its platform to sell not only books, but also music and movies. That helped Amazon to pass through dot-com crash and even to become **the leading e-commerce platform.** In the end of 2001 Amazon.com became profitable making $5 million net income with revenues of $1 billion. After this, Amazon decided to scale up its platform even more to sales of all of the products that can be shipped. It added toys, games, electronics, video games, clothes to its lineup (completely diversification in the products), but more important, it also has created an online digital platform, called **Marketplace**, where third party companies can sell products to customers (B2C), and to other companies (B2B)[28].

In 2000–2010 Amazon platform customer base has grown to 30 million people. But this was not enough for Bezos, he wanted more. That's why Amazon decided to continue to scale up its business into other areas. It launched **Amazon Web Services (AWS)** – the cloud computing unit, that became a significant part of the company. Amazon also continues to launch additional services, like **Prime** shipping membership and **Amazon Studios,** scaling up to content production and **Prime Video**, a streaming service. The latter was a big failure though. In 2015 Amazon launched Flex delivery service and opened its first physical book store in Seattle.

[28] Slash Gear, "Amazon Prime had a ridiculously good", 02.01.2018

Amazon's strategy

Amazon has achieved its competitive advantage through developing its technology internally, in particular, with a significant investment in the R&D costs.

As the CEO, Jeff Bezos, explains in SEC (2005): "using primarily our own proprietary technologies, as well as technology licensed from third parties, we have implemented numerous features and functionality that simplify and improve the customer shopping experience, enable third parties to sell on our platform, and facilitate our fulfillment and customer service operations. Our **current strategy** is to focus our development efforts on continuous innovation by creating and enhancing the specialized, proprietary software that is unique to our business, and to license or acquire commercially-developed technology for other applications where available and appropriate."

In other words, Amazon works because it captures value through multiple channels (omni-channel strategy) offering a large variety of products and services. In practice, the company **owns the whole value chain**, with the goal to become the lowest cost customer centric online marketplace of the world. This is one of the strongest characteristics of Amazon: even if they are the biggest one and have won the battle for competitors, they want and consequently invest a lot to constantly grow.

That's what we see in the case of Amazon: **constant diversification and growth.**

Amazon started his empire "by focusing on business-to-consumer relationships between itself and its customers and business-to-business relationships between itself and its suppliers and then moved to facilitate customer-to-customer with the Amazon marketplace which acts as an intermediary to facilitate transactions" as Damian Jolly wrote on Financial Times after an interview of Bezos.

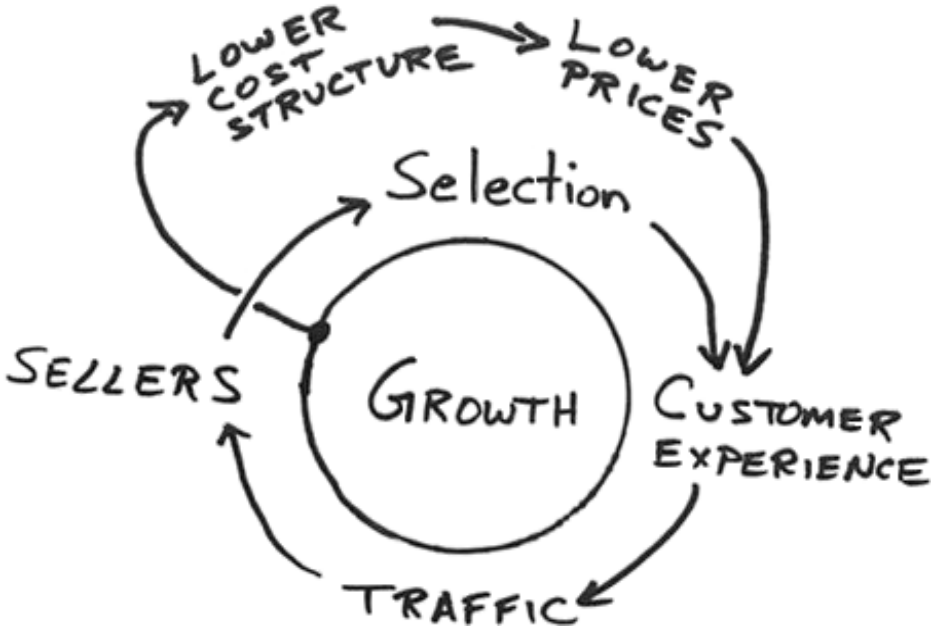
The company decide to use a business model where anyone can access to the platform service, selling anything they want to offer, and this is his strength. In fact, other digital retailers, in the e-commerce, use Amazon platform to sell their products in addition to selling them through their own websites. Generally, these types of partnerships are beneficial for Amazon because the major companies in relationship are complementary to Amazon platform.

In Amazon's case cooperation is mutually beneficial and through the introduction of Amazon Web Service, now the most important activity of Amazon, the company has be able to reach a new type of customer:

"this goal continues today, but Amazon's customers are worldwide now and have grown to include millions of Consumers, Sellers, Content Creators, Developers, and Enterprises. Each of these groups has ***different needs****, and we always work to meet those needs, by innovating new solutions to make things easier, faster, better, and more cost-effective."*

But how really works the **profitability** of Amazon services? In practice, in the figure below, created by Jeff Bezos, we can understand the central goal of Amazon is the growth.

To achieve this goals the strategy is clear: using a lower cost structure to lower prices and attract all types of customers through the visibility of the global platform, that allows every types of products or services to be available all over the world in few times. In this way they improve the customer experience (customer centricity priority) and the traffic on their platform increases. Other seller companies note this and understand the potential to make a lot of money and decide to join the Amazon platform, increasing the Amazon selection of products and service. This will lead to another upgrade in the customer experience, leading inevitably to a unique **growth** (Figure 2.2).



Next-generation computers and digital technologic logistics are two of Amazon's top R&D priorities as I could be able to see studying their financial reports. The focus on logistics is deriving because Amazon announced plans to launch its own delivery service, directly targeting the growing number of third-party sellers on Amazon. This service will allow Amazon to cut costs and reduce reliance on carriers like UPS and FedEx[29].

One curiosity about Amazon's zealous use of intellectual property is about the first early patents, "***1-Click***", that was granted in 1999. Actually, the 1-Click patent ended in 2017, and many other retailer competitors, decided to duplicate this technology to avoid high internal R&D costs. But this is not a big problem for Amazon, because the first patent "1 click" now is an old technologies and recently Amazon's investment strategy was focused on putting money to increase their intellectual property efforts, to protect their future innovations. From a modest 582 patents filed in 2010, the company filed over 1500 patents just a few years later in 2014[30].

SWOT Analysis

Going deeply the SWOT analysis could help to understand the real force and strategy adopted by Amazon:

Strengths

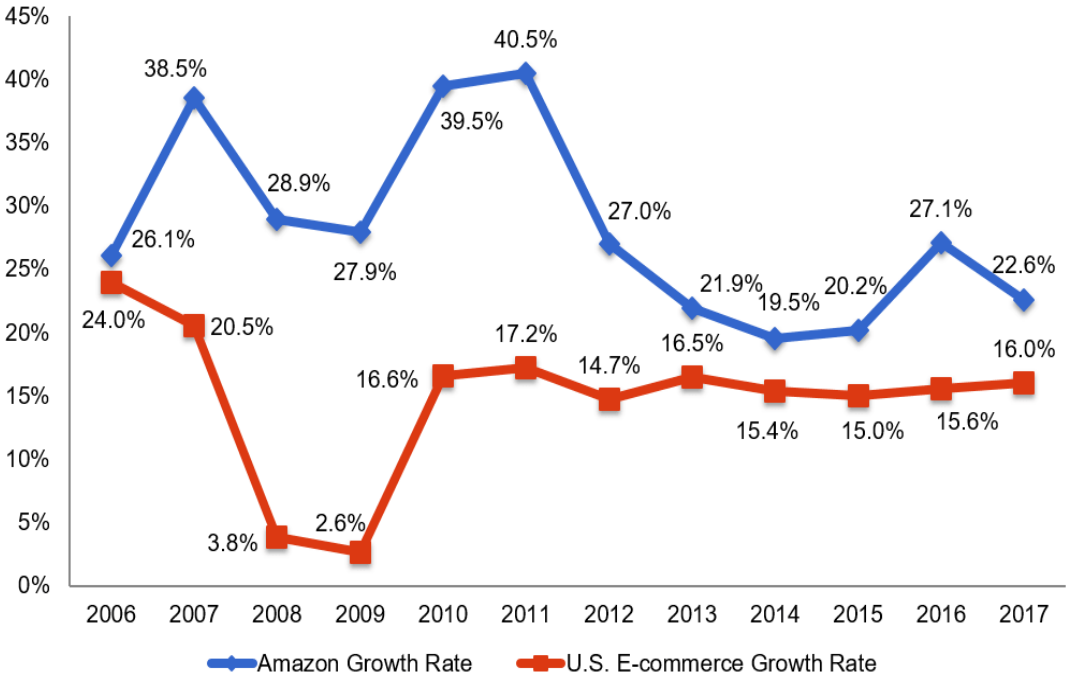
Low cost structure, the largest merchandise selection and a huge number of third part sellers. Amazon now is the largest online retailer in the world. Amazon has grown a lot in the last years, much faster than the entire U.S. e-commerce market and this is an important fact, because this means that the company has actually increased its market share by taking it from competitors.

the company's real success lies in its low-cost structure and wide variety of merchandise. By mainly selling online, the company doesn't have the huge amount of costs related to physical stores. Moreover, online marketplaces allow to sell more units without any increase in marginal costs.

[29] Steve Dennis, "IS Amazon finally getting serious about retail profitability?", 08.03.2018

[30] Amazon disruption symposium where so far? Morgan Stanley, 18.09.2017

All these are supported by the optimal results of the **customer experience**. Using superior logistics and distribution systems, the company has been able to achieve competitive advantage over its rivals (Figure 2.4).



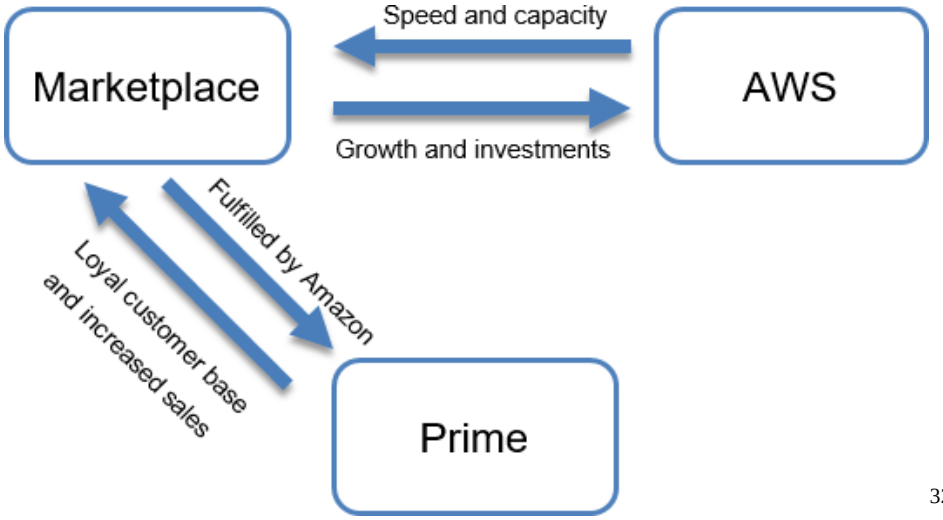
1. **Synergies between Marketplace, Amazon Web Services and Prime**

   Its internal competitive advantage is leveraging IT (Information Technology) and uses of e-Commerce as a platform that ensures that the company is well ahead of its competitors. Amazon is involved mainly in 3 key businesses:

- Amazon Marketplace
- Amazon Web Services (AWS)
- Amazon Prime

All three Amazon offerings support each other and create benefits that would not be achieved if the businesses operated independently[31] (Figure 2.5).

[31] [31] Source: strategic Management Insight, 2016



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2. **Unmatched brand reputation in the retail sector**

   The company has a huge **brand reputation.** Forbes have respectively listed Amazon as the 6th most valuable brand all over the world, at US$64.8 billion and US$54.1 billion.

   Amazon brand value is strongly related to **awareness and excellent reputation.** It could be strange, but these factors are much more important for online retailers than for offline ones. In fact, if we think about it, Amazon's competitors are just a click away and if the company's customers are not satisfied with the brand they can easily switch to another online retailer, without any problems.

Weaknesses

1. Amazon has to be aware that every time it decided to change strategy, There will be possible negative effects, for example the loss of its strategic advantage as it moves away from its core competence.

2. The company operates in near zero margin business models for the object to grow and to capture all the customer segments but even if the company has high volumes and huge revenues, the high costs in investments could be to negative income if the global situation of markets will change.

Opportunities

1. The company can increase the number of products under its own brand

2. Amazon can increase their offerings putting inside more products for every needs of consumer and this can translate easily into higher revenues.

In the med-term, digitization can reduce costs by streamlining its fulfillment costs and shipping costs. While, in the long-run, it can affect sales by better integrating, predicting, changing and monitoring consumer demands. For example, to lower expenses, Amazon has started to integrate its supply chain, by process of machine learnings.

Digitization could help to improve forecasting on where demand will grow geographically and by category products. It can **enhance productivity of Amazon's warehouses and manufacturing plants.**

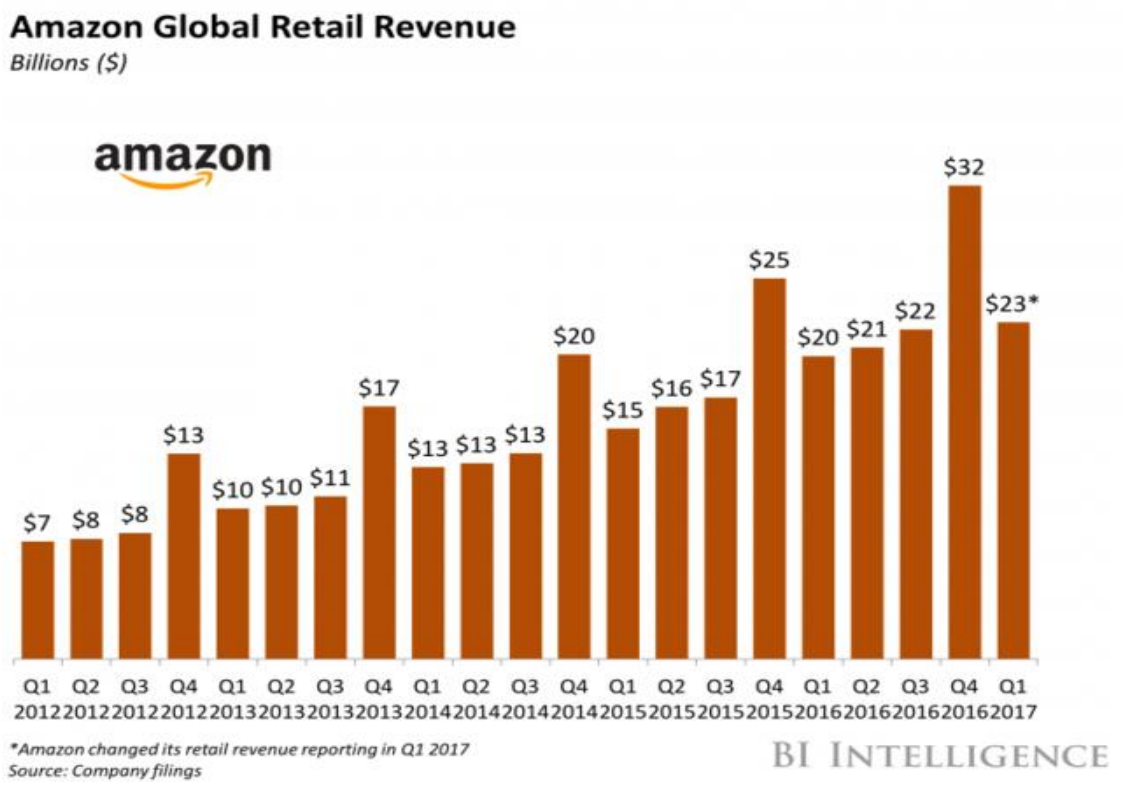
Threats

1. The increasing concern over online shopping because of identity theft and hacking profiles which leaves its consumer data exposed.

2. Because of its aggressive pricing strategies, the company has had to face lawsuits from publishers and rivals in the retailing industry.

3. It faces significant competition from local online retailers who are more agile and nimble when compared to its behemoth type of strategy.

Anyway, studying the SWOT analysis, we can now better understand the financial situation and growth strategy of Amazon. Amazon has an immense amount of revenues that it is good to analyze where then these revenues are used. The graph below shows that Amazon's global retail revenue continued to climb quarterly, in the last years, with peaks in the Q4, this is because the working capital cycle of the the online retailers industry (Figure 2.6).



Moreover, as any other competitors in the retailers or digital platforms market, Amazon will need to consider some of the following risks to develop a strategy based on strong investments:

- **Geopolitical conditions:** Each international relationship is subject to a constantly changing of the economic and political conditions in accordance with the country stability.

- **International regulations on ecommerce:** Paying attention to government regulation about taxes and export laws.

- **Business licensing across borders:** permits might be necessary for certain imports and exports of goods and services across countries.

- **Net neutrality:** The access to internet is not obvious in every developed countries (as China, but also some strict politics from conservative countries) and this could be one of the major problems to the viability of e-commerce digital platforms.

Moreover, the strong revenues growth of the last years will accomplish:

- **Technology**: The speed at which technology advances can pave the way of a significant amount of risks, that wasn't previously considered.

- **Stock value**: As a publicly traded company, Amazon has to answer to investors to every business strategy. It's important to remember that the stock value is extremely volatile and can be influenced.

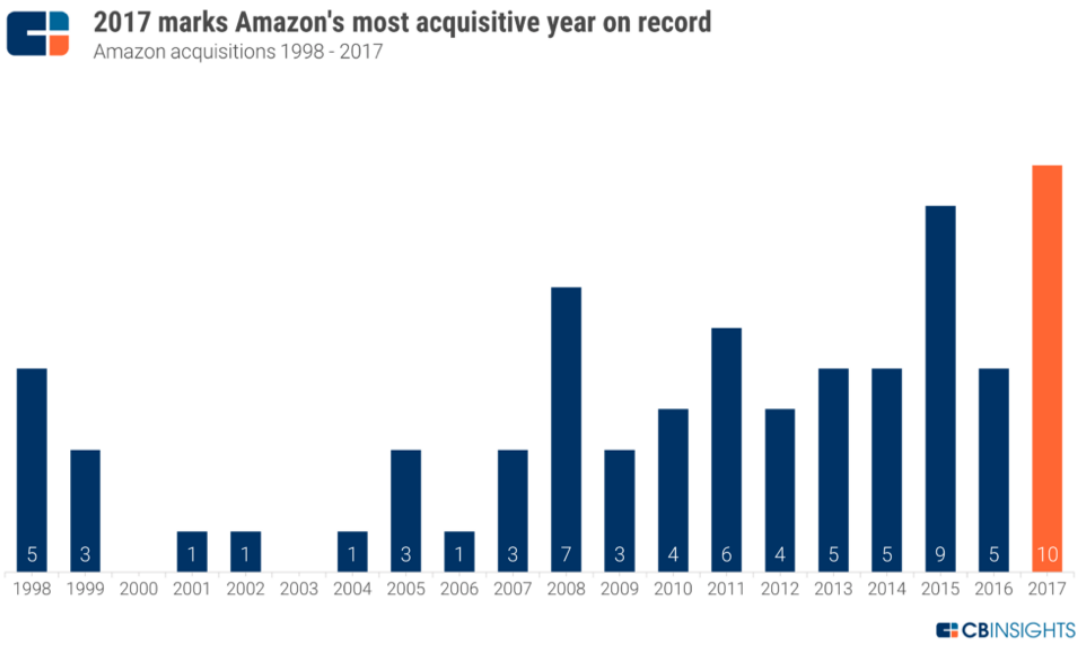
Investments and deals

In a 2016 interview to the Financial Times, Bezos said that the business will go on through the synergies between 3 main areas:

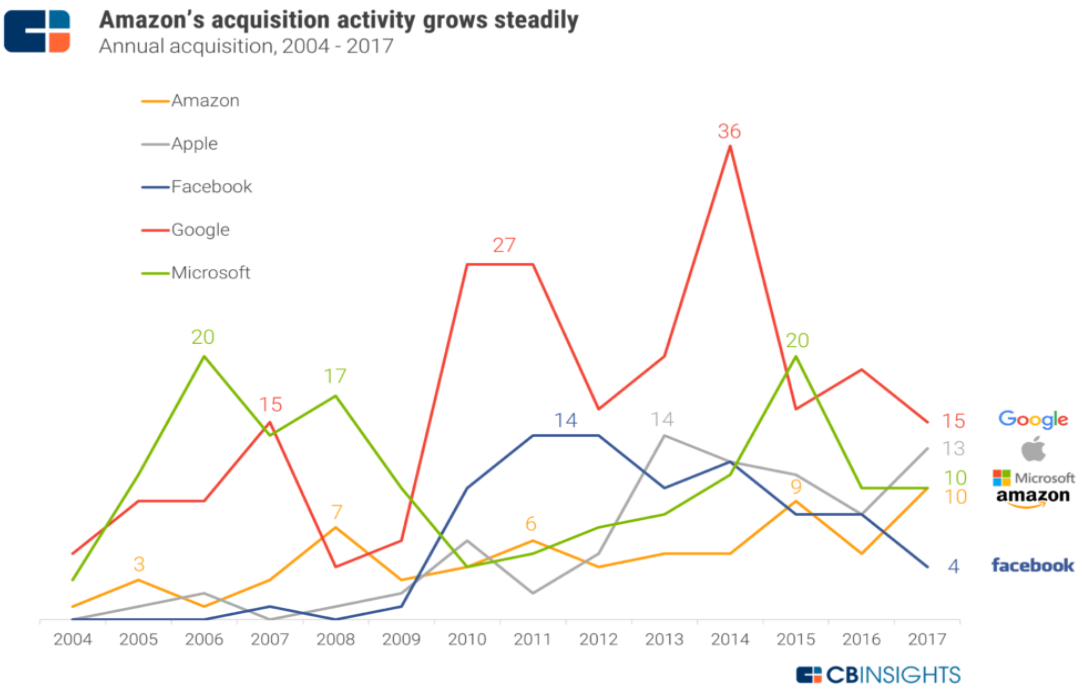
1. **Amazon Prime**
2. **Amazon Web Services**
3. **Marketplace**

An interesting view that shows the growth of Amazon is notable in all the business aspects, by taking particularly attention to Amazon's annual acquisition history. Looking the graph below, we can see that M&A deals are increasing in the last three years, especially in 2017, with almost 10 M&A deals, and this shows another relevant element of the growth strategy of Amazon. In fact, Amazon has spent $14B in only the 2017, which saw the acquisitions of **Whole Foods** ($13.7B) and **Souq.com** ($750M), the so-called "Amazon of the Middle East". This acquisitions show the implementation of the strategy based on "increasing the physical presence".

While the other M&A deals are regarding FinTech and cybersecurity companies, this is because with a forward-looking vision based on growth and innovations, it's important to consider all the possible scenarios, taking care of the possible risks and weakness of the markets and of the investments. As Nat Burgess, an M&A specialist at TechStrat, stated: "Amazon is a conservative buyer. They think long term and they don't get seduced by high-flying valuations. Amazon is unlikely to overpay for a high-flying, fully baked platform as the basis for the next dreamy business" (Figure 2.7).



The dreamy business is explained in the stakeholder letter of the 2015 by Bezos: "A dreamy business offering has at least four characteristics. Customers love it, it can grow to very large size, it has strong returns on capital, and it's durable in time, with the potential to endure for decades. When you find one of these, don't just swipe right, get married. Notably, many of Amazon's M&A deals meet some or all of these criteria, proving to be capable of growth and **durability in the long run"** (Figure 2.8).



Looking the graph, we can state that Amazon is following the trend compared to the other main global digital companies, increasing the number of transactions. In the last year there is a modest growth of transactions, but in relation to the 2014 numbers there is a significant reduction. Finally, it's interesting see that all the M&A transactions for the fifth bigger innovation disrupters are going to be on the same levels, like if they were correlated, in fact, in other words, they are implanting almost the same strategy regarding the digital transformation.

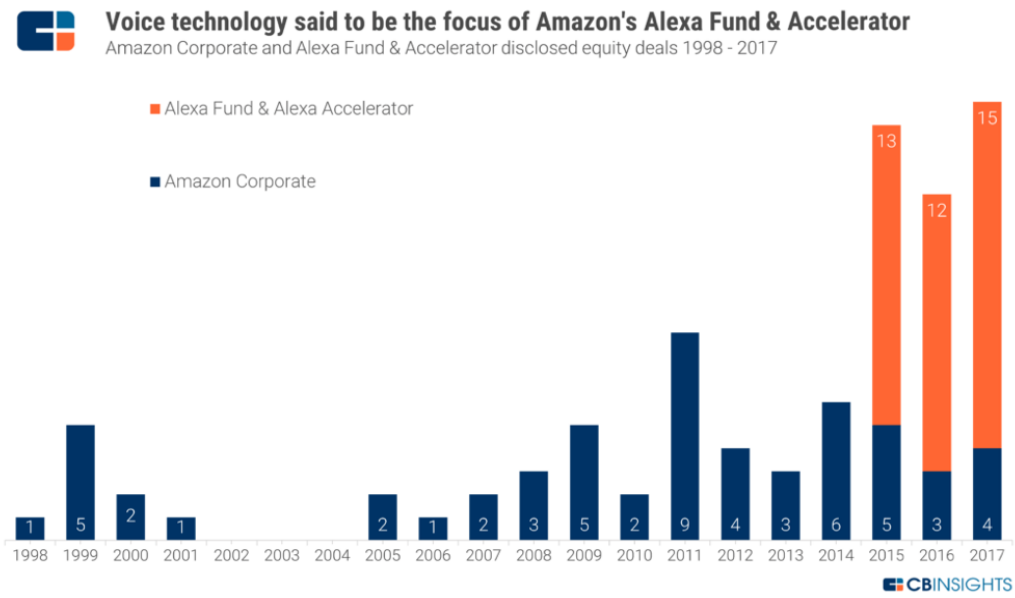
As the CEO Jezz Bezos explains:

"*We will continue to make investment decisions in light of long-term market leadership considerations rather than short-term profitability considerations or short-term Wall Street reactions. The latest example of innovation in their business model is the launch of* ***Amazon Go****, a new kind of store with no checkout required. The Amazon Go app users enter the store, take the products they want, and go with no lines and no checkout.*"

Historically, In the second part of the 1990s, Amazon lost a lot of money investing in dot-com startup failure (wrong investment strategy, but as Bezos said "Failure is good, it gives you the change to learn"), and only in recent years, Amazon's investment seems to shift to more forward-looking ventures across industries, after same years of no outside investments (just on internal R&D costs). Obviously, the majority of these investments are linked to the **AWS ecosystem**. In June 2015, Amazon committed $100M to create its first corporate venture capital (CVC) unit, the **Alexa Fund**[33]**.**

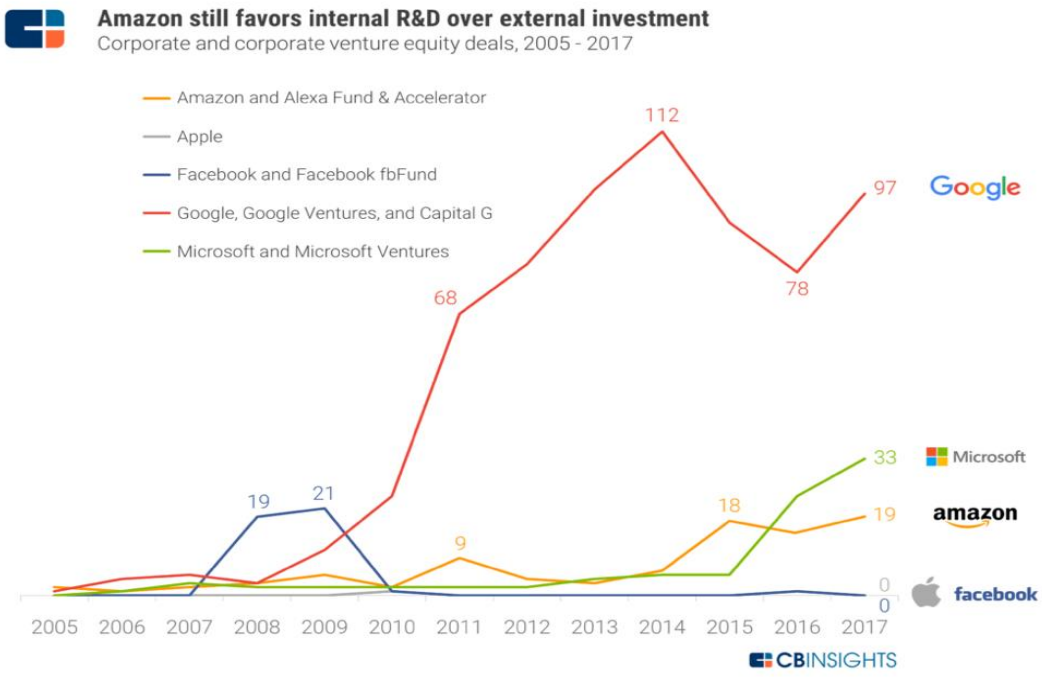
However, Alexa Fund is also growing year after year. The company has given an additional $100M to the Alexa Fund in 2017, to create its accelerator program, Alexa Accelerator. Below a graph is presented to analyze the number of M&A deals for the Alexa Fund & Alexa Accelerator and Amazon corporate (Figure 2.9):

[33] A. Meola on Business insider, "The top financial service providers and fintech startups", 25.12.2016



From the birth of Alexa Accelerator program, we can see a strong shift to the number of Equity deals. The Amazon corporate equity deals decrease while the Accelerator disclosed equity deals strongly increased.

In the following graph we can see the number of corporate and corporate venture equity deals over the years. Compared to its tech competitors, regarding the investments, Amazon falls **in the center, and this means that Amazon still favors internal R&D cost over external investment** (Figure 2.10).



The Amazon's corporate investments are not so used, because in the last two years, Amazon decided to invest through the Alexa Fund Accelerator program. The only investments that seems interesting for the corporate are related to supply chain and **logistics**, **cloud apps**, and **media**. In fact, Amazon corporate strongly prefer to invest in companies and sectors where it's possible creating **strategic partnerships with the competitors**.

For instance, Mumbai-based ShoppersStop, one of the main retailers in India, might help the expansion of Amazon in India, that's why they decided to create a partnership with them, to enter that market in that country. Partnerships, alliances and joint ventures are starting to be a priority for Amazon growth strategy all over the world, to increase their presence geographically talking, offering new products from the new countries to the same platforms used for the old countries.

In my investigation I took in account the **R&D cost** that are named in the Amazon's financial reports, **technology and content costs.** In this way I started to analyze the way in which Amazon finance these costs, and if these strong costs ensure a future growth for the net income.

I searched for a **positive correlation** between them, using the Amazon's case, to demonstrate that invest in this R&D costs during the digital transformation revolution will bring strong benefit even for the small and medium enterprise. In this new era, is not important the size of the business but **the attitude to the disruption.**

The R&D costs in Amazon financial reports are classified as technology and content costs, if annual, and in the Goodwill, if pluri-annual. They include payroll and related expenses for employees involved in the research and development of new and existing products and services, development, design, and maintenance of the websites, curation and display of products and services made available on the websites, and infrastructure costs. Infrastructure costs include servers, networking equipment, and data center related depreciation, rent, utilities, and other expenses necessary to support AWS[34]**.**

[34] Amazon's Annual Report, 2017

Amazon seeks to invest strongly in various areas of these costs. In fact, the Amazon's business plan consists in spending in R&D costs to grow over time, that's why they decided to add employees and improving the technology infrastructure.

The increase in R&D costs, compared to the prior year periods, is primarily due to increased payroll and related costs associated with technical teams responsible for expanding the existing products and services and initiatives to introduce new products and service offerings, and an increase in spending on technology infrastructure[35].

On May 12, 2017, Amazon decided to acquire Souq Group Ltd., an e-commerce company, for approximately $583 million, and on August 28, 2017, they acquired Whole Foods Market, for $13.2 billion. Both acquisitions are intended to **expand their retail presence, following a precise growth strategy.[36]**

"We expect spending in technology and content will increase over time as we add computer scientists, designers, software and hardware engineers, and merchandising employees. Our technology and content investment and capital spending projects often support a variety of product and service offerings due to geographic expansion and the cross-functionality of our systems and operations. We seek to invest efficiently in several areas of technology and content, including AWS, and expansion of new and existing product categories and service offerings, as well as in technology infrastructure to enhance the customer experience and improve our process efficiencies. We believe that advances in technology, specifically the speed and reduced cost of processing power and the advances of wireless connectivity, will continue to improve the consumer experience on the Internet and increase its ubiquity in people's lives. To best take advantage of these continued advances in technology, we are investing in initiatives to build and deploy innovative and efficient software and electronic devices. We are also investing in AWS, which offers a broad set of global compute, storage, database, and other service offerings to developers and enterprises of all sizes[37]*".*

[35] Amazon's Annual Report, 2017

[36] Amazon's Annual Report, 2016

[37] Amazon quarterly financial report, 30.06.2018

In this statement we can see the **global vision of Amazon.**

The future is right here, right now, and through the guided of brave and illuminate leaders as Jeff Bezos, this company had **no fear of the unknown.**

For the first ten years Amazon had always big losses, but the management and the investors didn't give up because they believe in the project, in their vision, and so they continued to invest for the future.

Regression model

The aspect that I want to underlie in my thesis is the following: studying the correlation between the R&D costs and other variables taking in account the most positive ones for demonstrate that investing in these costs bring to a **significative growth of the profitability.** The variables, that I studied for this, were:

- **Revenues**
- **Gross Profit**
- **Operating Income**
- **Net Income**

And these are the variables that I studied to search how Amazon finance these costs:

- **Cash**
- **Goodwill**
- **Liabilities**
- **Equity**

In the end I'll show that this strategy, focused on the R&D costs, could be implement even by the SME's finding the percentage of Equity or Liabilities or Goodwill used to finance these costs and proportionally to the size of the firm. Initially I started to study the Amazon's Annual and Quarterly reports, from the 2008 till the Q2 of the 2018 (Table 2.11)[38]:

[38] Data on Millions on the Amazon's Annual Reports

data	Revenues	Cost of Sales	Gross Profit	Operating income	net income	R&D cost
30/03/08	$ 4.135	$ 3.179	$ 956	$ 198	$ 14	$ 234
30/06/08	$ 4.063	$ 3.096	$ 967	$ 217	$ 158	$ 258
30/09/08	$ 4.264	$ 3.265	$ 999	$ 154	$ 11	$ 264
30/12/08	$ 6.704	$ 3.656	$ 3.048	$ 273	$ 226	$ 277
30/03/09	$ 4.889	$ 3.741	$ 1.148	$ 244	$ 17	$ 275
30/06/09	$ 4.651	$ 3.518	$ 1.133	$ 159	$ 142	$ 299
30/09/09	$ 5.449	$ 4.176	$ 1.273	$ 251	$ 199	$ 315
30/12/09	$ 9.520	$ 4.976	$ 4.544	$ 475	$ 384	$ 334
30/03/10	$ 7.131	$ 5.501	$ 1.630	$ 394	$ 299	$ 366
30/06/10	$ 6.566	$ 4.957	$ 1.609	$ 270	$ 207	$ 408
30/09/10	$ 7.560	$ 5.786	$ 1.774	$ 268	$ 231	$ 442
30/12/10	$ 12.947	$ 7.236	$ 5.711	$ 474	$ 415	$ 523
30/03/11	$ 9.857	$ 7.608	$ 2.249	$ 322	$ 201	$ 579
30/06/11	$ 9.913	$ 7.525	$ 2.388	$ 201	$ 191	$ 698
30/09/11	$ 10.876	$ 8.325	$ 2.551	$ 79	$ 63	$ 769
30/12/11	$ 13.931	$ 9.564	$ 4.367	$ 260	$ 176	$ 834
30/03/12	$ 13.185	$ 10.027	$ 3.158	$ 182	$ 130	$ 945
30/06/12	$ 12.834	$ 9.488	$ 3.346	$ 75	$ 7	$ 1.082
30/09/12	$ 13.806	$ 10.319	$ 3.487	$ 30	$ -274	$ 1.192
30/12/12	$ 17.745	$ 11.505	$ 6.240	$ 389	$ 98	$ 1.222
30/03/13	$ 16.070	$ 11.801	$ 4.269	$ 171	$ 82	$ 1.383
30/06/13	$ 15.704	$ 11.209	$ 4.495	$ 79	$ 23	$ 1.586
30/09/13	$ 17.092	$ 12.366	$ 4.726	$ 33	$ -41	$ 1.734
30/12/13	$ 25.586	$ 17.355	$ 8.231	$ 463	$ 211	$ 1.880
30/03/14	$ 19.741	$ 14.055	$ 5.686	$ 146	$ 108	$ 1.991
30/06/14	$ 19.340	$ 13.399	$ 5.941	$ -15	$ -126	$ 2.226
30/09/14	$ 20.579	$ 14.627	$ 5.952	$ -544	$ -437	$ 2.423
30/12/14	$ 29.328	$ 20.671	$ 8.657	$ 591	$ 214	$ 2.635
30/03/15	$ 22.717	$ 15.395	$ 7.322	$ 255	$ -57	$ 2.754
30/06/15	$ 23.185	$ 15.160	$ 8.025	$ 464	$ 92	$ 3.020
30/09/15	$ 25.358	$ 16.755	$ 8.603	$ 406	$ 79	$ 3.197
30/12/15	$ 35.747	$ 24.341	$ 11.406	$ 1.108	$ 482	$ 3.571
30/03/16	$ 29.128	$ 18.866	$ 10.262	$ 1.071	$ 513	$ 3.526
30/06/16	$ 30.404	$ 19.180	$ 11.224	$ 1.285	$ 857	$ 3.880
30/09/16	$ 32.714	$ 21.260	$ 11.454	$ 575	$ 252	$ 4.135
30/12/16	$ 43.741	$ 28.958	$ 14.783	$ 1.255	$ 749	$ 4.545
30/03/17	$ 35.714	$ 22.440	$ 13.274	$ 1.005	$ 724	$ 4.813

30/06/17	$ 37.955	$ 23.451	$ 14.504	$ 628	$ 197	$ 5.549
30/09/17	$ 43.744	$ 27.549	$ 16.195	$ 347	$ 256	$ 5.944
30/12/17	$ 60.453	$ 38.494	$ 21.959	$ 2.127	$ 1.856	$ 6.314
30/03/18	$ 51.042	$ 30.735	$ 20.307	$ 1.927	$ 1.629	$ 6.759
30/06/18	$ 52.886	$ 30.632	$ 22.254	$ 2.983	$ 2.534	$ 7.247

Looking these data, it's evident the drastic growth of Amazon in the last years. Amazon in the first ten years from the birth had a negative Net Income, justified to the investors as inevitable to achieve the long-term goals, the investors agreed, and they continued to invest in Amazon[39].

Well, the table demonstrates that they were right, the business model of Amazon works. In the last ten years Amazon's net income increases more and more, looking at the Annual Reports there is an average net income's growth of 134%, operating income growth of 130% and gross profit growth of 31%.

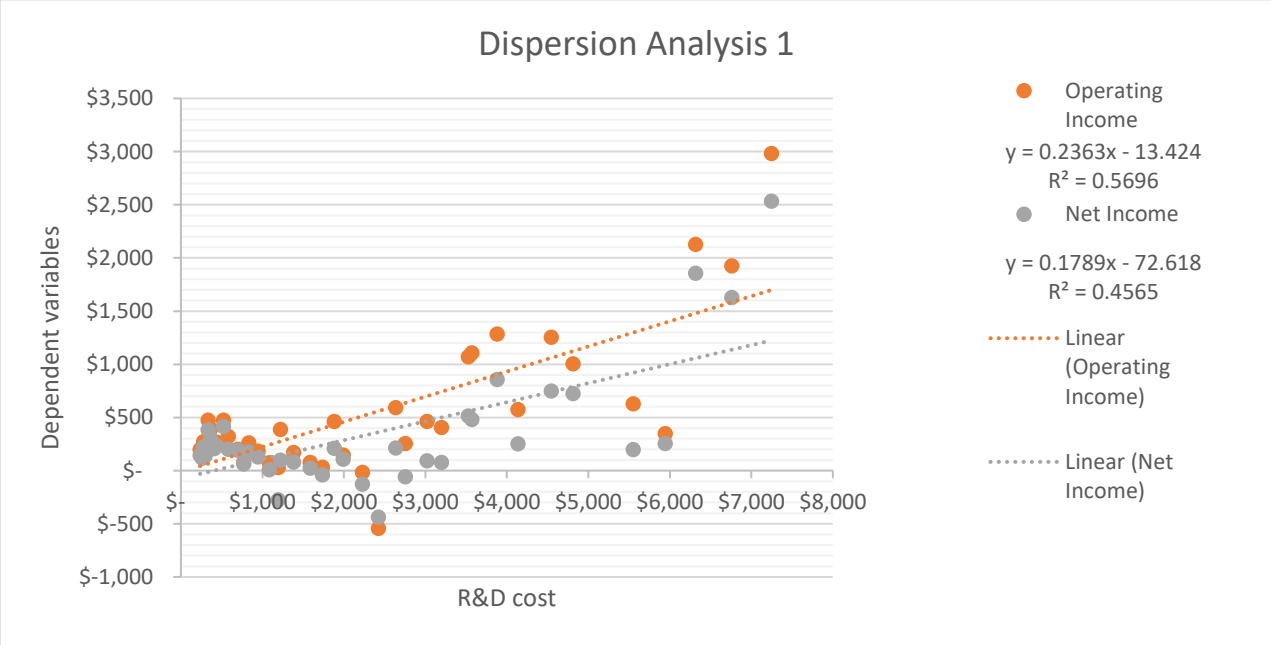
The reasons for these big changes are: a general increase for the operating expenses in the 2011, a significant increasing in the provision for income taxes in the 2012, and a strong increasing in the interest expenses on the debts and investments in the 2014 (re-structuration of the debs and investments). In the 2015 the sales went up thanks to the internationalization strategy and the acquisitions of physical retail stores and tech firms while the operating costs didn't show a significant change (Table 2.12).

Data	**g Revenues**	**g Gross Profit**	**g Operating Income**	**g Net Income**
30/12/09	24%	36%	34%	40%
30/12/10	43%	32%	25%	28%
30/12/11	41%	8%	-39%	-45%
30/12/12	25%	40%	-22%	-106%
30/12/13	28%	34%	10%	805%
30/12/14	19%	21%	-76%	-188%
30/12/15	14%	35%	1154%	347%
30/12/16	23%	35%	87%	298%
30/12/17	27%	38%	-2%	28%
average tot	**27%**	**31%**	**130%**	**134%**

[39] Data from the Amazon's quarterly reports

Studying the Amazon's annual reports, we can understand the **strong volatility** between the years for the variables Net Income and Operating Income. To analyze the business, and for my research they are not so useful. The Net Income variable comprehends the financial activities and tax payments, while the Operating Income takes in account other costs that depend on other aspects (marketing costs, and general and administration costs) and this is not what we want to for understanding the real efficiency of the strategy regarding the **R&D costs and the digitalization.**

As I will show there is not a significant correlation between them. In this regression model (graph 2.13) I study the correlations between an independent variable (R&D costs) and 4 dependent variables (Revenues, Gross Profit, Operating Income and Net Income).



Analyzing the **Net Income – R&D costs** on Excel, I find these values, putting a confidence level of 95%:

Statistics of the regression	
R	0,67567292
R^2	0,45653389
R^2 corrected	0,44294724
Standard Error	402,5501
Observations	42

Y = 0,1789X -72,618

Y = Net Income

X = R&D cost

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	-72,617521	92,046331	-0,7889236	0,43480797
R&D cost	0,17892777	0,03086722	5,79669264	9,1271E-07

R^2 shows a moderate correlation between the variables:

0,3 < 0,457 < 0,7

The P-value shows that this correlation is significative between the variables with an α = 0,05:

0,000* < 0,05

Analyzing the **Operating Income – R&D costs** on Excel, I find these values, putting a confidence level of 95%:

Statistics of the regression	
R	0,75471696
R^2	0,56959769
R^2 corrected	0,55883763
Standard Error	423,517495
Observations	42

Y = 0,2363X – 13,42

Y = Operating Income

X = R&D cost

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	-13,42439	96,8406951	-0,1386234	0,89044328
R&D cost	0,23627931	0,03247498	7,27573393	7,7696E-09

R^2 shows a moderate correlation between the variables:

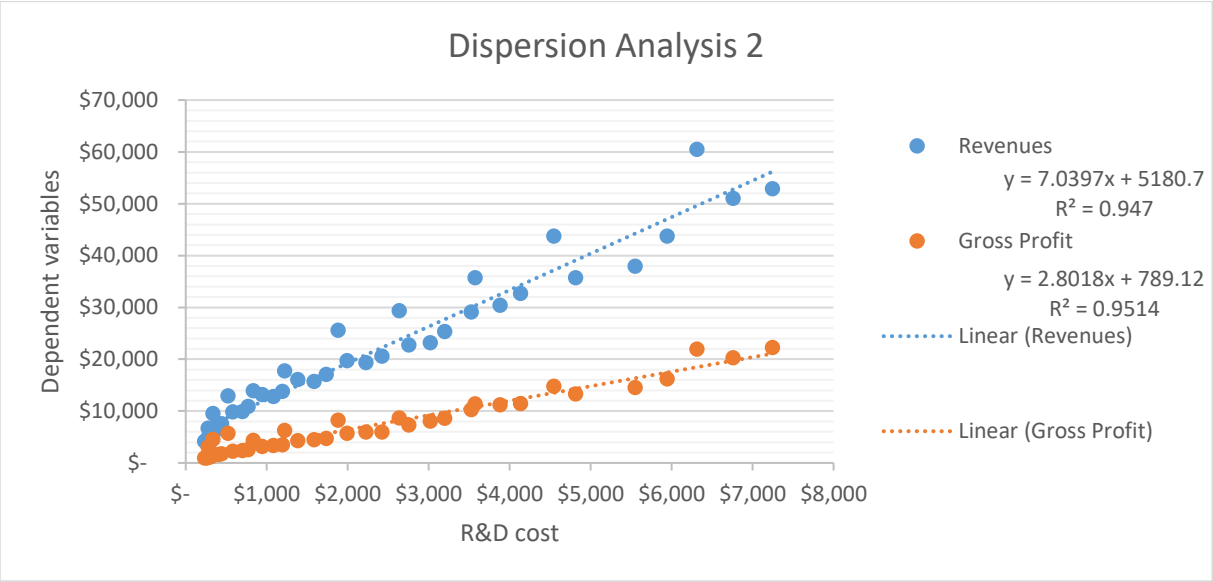
0,3 < 0,569 < 0,7

The P-value shows that this correlation is significative between the variables with an α = 0,05:

0,000* < 0,05

Because of the strong volatility in the Operating Income and Net Income, deriving from the marketing costs and general and administration costs for the first one, and the financial and taxes aspects for the second one, the major variables that we should consider in our analysis is the Revenues and the Gross Profit= Sales – Cost of Sales (graph 2.14).[40]

[40] Data from the Amazon's Annual reports



Analyzing the **Gross Profit – R&D** costs on Excel, I find these interesting values:

Statistics of the regression	
R	0,97538609
R^2	0,95137803
R^2 corrected	0,95016248
Standard Error	1306,07428
Observations	42

Y = 2,8018X + 789,12

Y = Gross Profit

X = R&D cost

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	789,121147	298,644431	2,64234342	0,011695
R&D cost	2,80179071	0,10014872	27,9763	0,000000

R^2 shows a strong correlation between the variables:

0,951378 > 0,7

The P-value shows that the correlation is strongly significative between the variables with an $\alpha = 0,05$:

0,000* < 0,05

Analyzing the **Revenues – R&D costs** on Excel, I find these interesting values too:

Statistics of the regression	
R	0,97313971
R^2	0,94700089
R^2 corrected	0,94567591
Standard error	3434,03149

Y = 7,0397X + 5180,7

Y = Revenues

X = R&D cost

Observations	42

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	5180,73305	785,219032	6,597819	0,00000
R&D cost	7,03967642	0,26331877	26,7344274	0,00000

R^2 shows a strong correlation between the variables:

0,947 > 0,7

The P-value shows that the correlation is a strongly significative between the variables with an $\alpha = 0,05$:

0,000* < 0,05

Looking these data, we can state that the gross profit is the strongly dependent variable of the R&D cost variable.

So Now we can study this type of relation to illuminate the Amazon's strategy for the Small and Medium Enterprise too. That's why I search what is the average R&D costs on the Gross Profit: around the 29%.[41]

If now, we try to focus on the balance sheet we will be able to find other relevant information. Amazon put all the investments in technologies and digitalization skills and acquisitions of Fintech companies, in the goodwill when they are capitalized, so it's interesting studying the relationship with the other macro areas to have a bold vision of the total impact and importance of the R&D costs on the financial statement.

I want to show how is the average Goodwill on Equity in the last decade: 30%. The Goodwill is the 45% of the cash and on the Liabilities the relationship is: 11%. It's very high, this means that it's one of the major voices in the financial statement to understand the financial situation and priority of the shareholders of Amazon, **investments are a priority**.

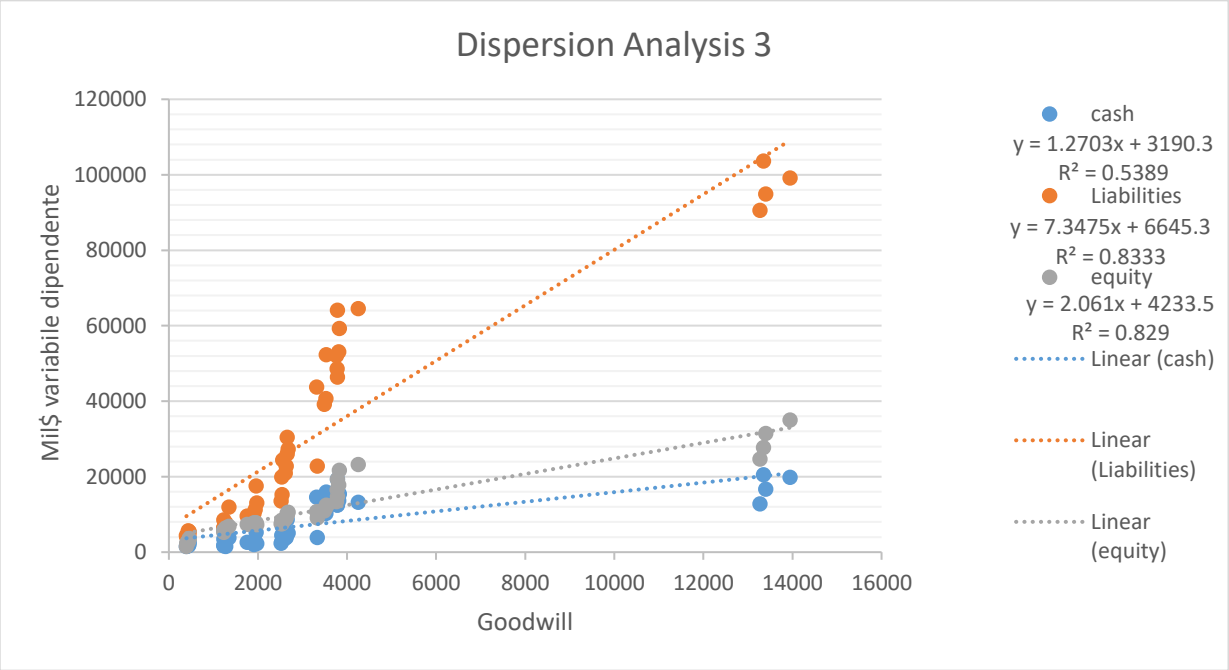
That's why I decided to calculate the Δ of the Goodwill between the quarter to understand in a better way the growth strategy of this company and if in the course of the years they have increased the investments. This value it's important because through this clean value we can study if there is a significant relation between the new investments and other

[41] Data from the last ten Amazon's annual report

variables to understand how Amazon could have finance these investments (the principle voices are in technologies, digitalization and labor skills).

the Δ of the Goodwill on the Δ of the Equity, on the Δ of liabilities and on the Δ of cash is: 40,42%; 14,31%; 73,95%. This means that the average amount of changes in investments is very important and is growing in the years, so in other words in the last ten years Amazon is investing more. This is a fundamental achieving.

More you grow, more you invest to have a constant future growth. Then I built another regression model using the Goodwill (general investments) as independent variable and cash, liabilities and equity as the dependent variables. The goal is to find the major correlation to understand how they finance the most the investments (graph 2.15).



Analyzing the **Cash - Goodwill** on Excel, I find these values:

Statistics of the regression	
R	0,73406982
R^2	0,5388585
R^2 corrected	0,52732997
Standard Error	4199,89692
Observations	42

Y = 1,2703X + 3190,3

Y = Cash

X = Goodwill

	Coefficients	*Standard Error*	*Stat t*	*P-value*

Intercept	3190,34161	897,506496	3,55467245	0,00099
Goodwill	1,27027068	0,18580013	6,83675888	0,00000

R^2 shows a moderate correlation between the variables:

0,3 < 0,53886 < 0,7

The P-value shows that the correlation is strongly significative between the variables with an $\alpha = 0,05$:

0,000* < 0,05

Analyzing the **Equity - Goodwill** on Excel, I find some interesting values too:

Statistics of the regression	
R	0,91048234
R^2	0,82897809
R^2 corrected	0,82470254
Standard Error	3345,83818
Observation	42

Y = 2,061X + 4233,5

Y = Equity

X = Goodwill

	Coefficients	*Standard Error*	*Stat t*	*P- value*
Intercept	4233,51248	714,996479	5,92102563	0,00000
Goodwill	2,06104729	0,14801724	13,9243729	0,00000

R^2 shows a strong correlation between the variables:

0,82898 > 0,7

The P-value shows that the correlation is extremely significative between the variables with an $\alpha = 0,05$:

0,000*< 0,05

Analyzing the **Liabilities - Goodwill** on Excel, I find these interesting values too:

Statistics of the regression	
R	0,91285425
R^2	0,83330288
R^2 corrected	0,82913546
Standard Error	11745,3063
Observations	42

Y = 7,3475X + 6645,3

Y = Liabilities

X = Goodwill

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	6645,30282	2509,93986	2,64759444	0,012
Goodwill	7,347492	0,51960309	14,1405856	0,000

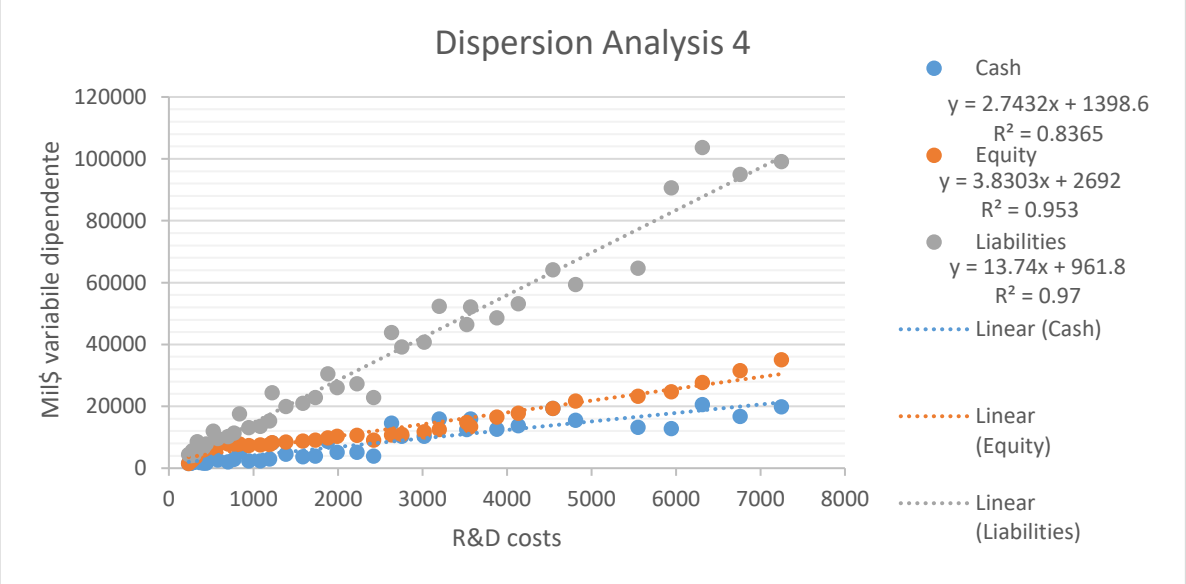
R^2 shows a strong correlation between the variables:

0,8333 > 0,7

The P-value shows that the correlation is strongly significative between the variables with an $\alpha = 0,05$:

0,000* < 0,05

Now we can state that the goodwill (investments) is equally split between Equity and Liabilities through a strong correlation. The final point that I want to underlie is to show if there is a significant correlation between the R&D costs and as dependent variable the Liabilities, Equity and Cash; the answer is **positive** (graph 2.16)



This is analyzing the **Liabilities – R&D costs** on Excel:

Statistics of the regression	
R	0,98488996
R^2	0,97000824
R^2 corrected	0,96925844
Standard Error	4981,97235
Observations	42

Y = 13,74X + 961,8

Y = Liabilities

X = R&D costs

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	961,79777	1139,16821	0,84429829	0,404
R&D cost	13,7402789	0,38201362	35,9680337	0,000

R^2 shows a strong correlation between the variables:

0,97> 0,7

The P-value shows that the correlation is not significative between the variables, with an $\alpha = 0,05$:

0,000* > 0,05

This is analyzing the **Equity – R&D costs** on Excel:

Statistics of the regression	
R	0,97621734
R^2	0,9530003
R^2 corrected	0,95182531
Standard Error	1753,9879
Observations	42

Y = 3,83X+ 2692

Y = Equity

X = R&D costs

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	2692,01842	401,063497	6,71220002	0,00000
R&D costs	3,83030279	0,13449438	28,4792781	0,00000

R^2 shows a strong correlation between the variables:

0,953> 0,7

The P-value shows that the correlation is strongly significative between the variables, with an $\alpha = 0,05$:

0,000*> 0,05

This is analyzing the **Cash – R&D costs** on Excel:

Statistics of the regression	
R	0,91458542
R^2	0,8364665
R^2 corrected	0,83237816
Standard Error	2501,06455
Observations	42

Y = 2,743X+ 1398,59

Y = Cash

X = R&D costs

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	1398,59345	571,888605	2,44556972	0,02
R&D cost	2,74317388	0,19177961	14,3037826	0,00

R^2 shows a strong correlation between the variables:

0,8365> 0,7

The P-value shows that the correlation is significative between the variables, with an α = 0,05:

0,000* > 0,05

Looking these data, we can state that the equity and the cash are the most related to the R&D costs. To re-collect to the previous dispersion analysis, on the goodwill (that for the most are related to capitalized R&D costs and investments in technologies, digitalization and labor skills and acquisitions of firms related to technologies), finally we can state that the most dependent variable in relation to them is the Equity and the Liabilities (long – term). **Amazon finances his annual and capitalized R&D cost mostly with Equity and long-term Liabilities.**

2.3 Results achieved and future perspectives

These results achieved give us the opportunity to track a pathway for other companies for changing the structure of their strategy. The R&D costs have an average growth of 9% per quarter, while the Gross Profit growth is around the 31%. The average of the R&D costs on the Gross Profit is around the 31% and the R&D costs on the Equity is the 17,61%, while the Equity growth is 8,72%.[42] It's interesting to see the similar quarterly growth of the R&D costs and the Equity, around the 9%, and through the results of the regression model, this shows an important fact: **Amazon uses the Equity and long-term liabilities to finance the R&D costs.**

So, using these percentages, The SMEs could be able to have a similar growth, if they start to invest in the IOT, digitalization and online platforms, the only problem is that only the most riches could finance these costs with the Equity, that's why they should find another way, maybe with outsourcing programs and strategic alliances.

Investments are a priority. **More you grow, more you invest.** In fact, Morgan Stanley, for example, expects that Amazon will continue growing at a rate that no company its size has ever done before, estimating 16% average compound growth in sales through 2025[43]. But while Amazon and the other digital platforms can be considered similar in the eyes of consumers, that could soon change with the expansion of AmazonGo, Amazon's new physical world experience. As Walmart and other traditional retailers rush to catch up to Amazon on the e-commerce front, the company is expanding into brick-and-mortar retail.

But AmazonGo is not like any existing store, these stores have no cashiers and no checkout lines, and it was launched as the first retail stores. Moreover, Amazon bought Whole Foods, the mere announcement of the acquisition was enough to cause stock market prices and the value of its competitors, other retailers, and suppliers to plummet by 35 billion dollars.

[42] Data from the last ten Amazon's annual report

[43] Amazon disruption symposium where so far? Morgan Stanley, 18.09.2017

From the Whole Foods perspective, the acquisition provides a very high level of digital capability, that it never had in his business life. In fact, Amazon is superior and more efficient than Whole Foods from various reasons as driving operating efficiencies, sophisticated pricing strategy and logistics and customer satisfaction. An interesting factor that we should consider for understanding Amazon's growth story is how it leverages the **synergies** between its businesses in an amazing way. In particular, AmazonGo, for example, uses Amazon Web Services to power the AI, through a service called Kinesis.

Applying and extending the artificial intelligence and machine learning the result was a virtuous cycle with each business contributing to the success of the other. This is illuminating, something that Amazon shows us, because many industries do not operate at their efficient frontiers leveraging in a no-efficient way the synergies.

They see opportunity everywhere. It's also true that, each time Amazon decide to expand and invest, there's a significative **risk of failure.** Competition will not simply sit there and watch Amazon that progressively accumulates market share thanks to a customer centricity strategy and a leveraging of the internal generated new digital technologies, especially in the artificial intelligent.

About the AI, in a letter to shareholders published in April 2017, Bezos wrote extensively about it and on machine learning because for him it's very relevant to maintain the competitive technologies advantages over its competition.

Controversies

Since the beginning, the company has attracted a lot of criticism from multiple journal, website and no-profit organizations over its actions, the main two are:

- **poor conditions for workers**

- **anti-competitive actions and price discriminations**

The New York Times published in the 2015, described "evidence of an intimidating and confrontational working culture for the company's office workers".[44] In the last two years Amazon employees have still been protesting against working conditions. The supporters of this protest have received support from many politicians from all over the world, and this is damaging the Amazon's brand reputation.

Employees are worried about this situation, are worried about their rights that seem be worth nothing and, in some case, some workers have reported that they were pressured to under-report warehouse injuries and problems.

Jeff Bezos, rarely does interviews, but this time has responded to the criticisms, even for the stock market pressure of investors**,** saying that there's no evidences about the problems raised by the workers. They are paid proportionally to what their jobs required. Moreover Amazon, thanks to the acquisition of Whole Foods, added 87.000 workers, achieving the extraordinary workforce number of 566.000 worldwide.

In other words, Amazon is creating jobs and allows low-skilled workers to rapidly adapt to the new digital economy, learning new jobs (as supervising and controlling the robotic units and correction of AI errors in new procedures and their maintenance).

In these days, from the US to the EU a lot of governments seem that are just looking for opportunities to attack these big firms as Amazon, to earn more taxes and sanctions in defence to the workers, but this trend, even if it could be reasonable, could lead to a change in the strategy of these firms that consequently will lead to less investments and less creation of jobs in some countries.

Amazon and the other innovation disrupters are in some ways too big to fail, but not in a negative way, but in the sense that their presence gives an overall welfare benefit. In fact, the reality shows that the Amazon's business model works and brings a global advantage for all the parties. Amazon gives opportunities, and opportunities give jobs.

[44] The New York Times about Amazon workers poor condition, published on August 16, 2015

In an era where a lot of jobs are disappearing for the automations and robotics, AI and clouds, the Amazon's opportunity seems too important to be fought, but instead understood. Taking in account all these information, now we can take the positive element of Amazon strategy in relation to the digital transformation for all the other firms:

1. Being customer-centric

As a company continuously ranked at number 1 for numerous customer satisfaction indexes, Amazon is incredibly customer-centric in both its technology and in the way that it handles customer feedback. Mike Bainbridge, chief digital technologist at Rackspace, sups up the approach:

"Look at the companies that have been successful; brands like Uber and Amazon, they have made it so easy for their customers to book taxis and buy goods, and it is all driven by technology. They know exactly what customers want. The key to this is to put yourself in your customer's shoes, put your customer-centric business goals first, and deliver a seamless customer service."

2. Driven by digital technology

Amazon's entire business structure bypassed traditional retail distribution channels and went straight to suppliers all using the **new digital technologies.** As a company, Amazon has always been at the forefront of digital technologies to either expand its business offering or improve core business functions. For example, through its acquisition of warehouse robotics company, called *Kiva*, Amazon was able to optimize its database systems to cut costs and increase its capability.

In the last years, Amazon installed thousands of robots to improve the production, used drones for deliveries and created own payment system. This is showing us that it's necessary being **open-minded** about digital transformation and thinking in terms of future capabilities.

3. An agile business that can execute change

Amazon has always experimented with new services to dominate new markets and displace other industry giants with a business model based on **diversification, innovation and internationalization.**

The point is that the organization must have the **ability to move quickly**. That's why it needed a technology that allows for change and growth in undefined directions and staff training programs for the digitalization.

4. Workplace culture that drives innovation and change

For Amazon, the workplace culture drives innovation and the best outcomes. Moreover, various software is used to monitor individual performance, relationships and helped decision making. Achieving technological advantages is possible not only with the introduction of the new technologies but with the digital skills and the innovation-oriented culture of the people inside the organization. Innovation needs to be in built into organizational culture.

5. Thinking outside the box

Some of Amazon's failed ventures include 'Block View' and an auction site that aimed to rival eBay. These failed experiments were absorbed by the company's enormous profit margins in other areas, that's fail sometimes is good because you can learn and adapt rapidly, but the problem is that not likely many other companies could sustain these types of failures. However, it's also unlikely Amazon would have had such enormous profit margins without the success of other experiments, such as its foray into ebooks, Kindle[45].

[45] Michael Osborne, "Amazon: competition or sidekick?", 24.05.2018

2.4 The challenge for the small and medium enterprise

Alliances and partnership are the two main strategy that can be implement by a small-medium enterprise to follow the digital revolution. This is because now the digital platform can ensure a rapid growth in all sectors, now the important is to stay there, follow the lead to increase the own visibility.

In fact, Amazon has announced deals to sell Nike on their site and Kenmore appliances, which will be equipped with Alexa AI and the acquisition of Whole Foods, and these partnerships could only bring to a positive outcome, it's a **win to win business model.**

In the last years almost every small and midsize enterprise has started to adopt some form of digital technologies but without an integrated strategy oriented to a looking forward vision. The real problem is that SMEs are oriented to a profitability strategy culture, rather a growth strategy based on digital innovations. In other words, the SMEs invest only if a precise technology is going to radically transform market. It's a risk that should be taken only if the costs will be transform into revenue immediately, without disruption, and with a little impact on cash flows. They seem to not have patience, even because the SMEs capitalization is very low.

According to an IDC global study, "Thriving in the Digital Economy: How small and midsize enterprises are adapting to digital transformation", sponsored by SAP, small and midsize businesses worldwide see some challenges in digital transformation:

- 49.2% feel that the digital economy is forcing them to be "always available" to deal with work-related issues.
- 45.0% think social media poses challenges since mistakes are quickly visible on the Internet, making it impossible to hide anything from customers and prospects.
- 41.3% are concerned that they will become too reliant on data to make effective decisions and will draw inappropriate conclusions.

Transitions can be challenging. But, SMEs shouldn't have a limited mentality base on "if it's not broken, don't fix it" . Otherwise, they may miss out on significant opportunities to expand operations, gain new customers, and strengthen brand loyalty[46].

Most people view digital transformation as a cost to sustain to be fashion and follow the trend, without a real gains but it's not so. If it's implemented through culture and vision may have some strategic and operational advantages over competitors when undergoing such a change:

1. **Being small is the first advantage**

   Flexibility. Management adaptability. These are key advantages that only a SMEs could have to exploit gaps and leverage opportunities in the marketplace with technology. As a beneficiary of those attributes, the small-medium company is better equipped to readjust operations and meet ever-evolving needs quickly.

2. **Smaller footprint accelerates impact**

   The company must be very, very specific and focused, especially when selecting technology. Because of the smaller size, the organization doesn't need to purchase thousands of cloud subscriptions. Generally, it can take few times to implement the dynamic capabilities needed and leverage this later as the company grows, without disrupting operations and sales in the first time.

3. **Less diversification brings greater focus**

   The less diversification of the small or midsize business can implement focused solutions that can help the entire company use a multi-channel approach to entering new markets and targeting new customers.

Actually, digital transformation revolution is impacting businesses of all sizes, markets, industries and countries. The characteristics of being a SMEs could be used to help them to compete with larger rivals, something that couldn't be done before.

[46] Rodolpho Cardenuto on Digitalist magazine, "The new challenges" 12.04.2016

But a recent Accenture research shows that the majority of the world's leading companies are not currently translating their digital investments into better financial performance. In the particular, 18% of 343 companies assessed by the Accenture Digital Performance Index have made sufficient investment in digital across their company to be categorized as Digital Leaders. Yet 60% of companies have not achieved leadership in either digital or business performance. Only 6% of the companies studied were able to couple broad levels of digital investment with a broad level of business success, the companies we call the Digital High Performers.

These companies need to apply digital to increase gains transforming the current business, in order to create the investment capacity necessary to build a sustainable future growth. The problem is that this shift to digital investments was used only to improve short-term competitiveness, typically through lower cost structures and leaner operating models.

The point is that first is necessary a change in the culture and vision of the company on digital, in fact, the Accenture research shows that companies achieved high performance only after they have gone beyond cost cutting to release the "**trapped value**." There are three sources of trapped value, areas where trapped value resides: in the business, in the value chain, and in the emerging value chain models within and across industries[47]. It is released by:

Improving the Business - value is trapped in the way companies manage their core operations, day to day. Digital creates opportunities for dramatic improvements in efficiency but also for value, as Netflix, Amazon, and Apple.

Improving the Value Chain – digital transformation creates opportunities for value chain improvements through the creation and implementation of new platforms and extended ecosystems of value chain participants. It creates frictionless markets of goods, services and information, allowing companies new ways of operating at lower cost.

[47] Ryan Fox, "Amazon captures value in a low margin business", 07.03.2015

Redefining the Value Chain - Disruptive competitors are setting the rules with value chain alternatives that are better on all strategy and performance dimensions versus the old company offerings.

This brings to two important definitions that are becoming more and more important in today's digital world, are multi-channel and omni-channel. The first one aims to get the word out via the maximum possibility of channels.

The **omnichannel approach** is based on the idea "to interconnect every channel to engage with customers at a holistic level to ensure they are having a significative good experience with the brand across every channel. The focus is on building stronger relationships between consumers and the brand through the use of all the possible channels" (definition from AT Kearney survey on Omnichannel). The focus of omnichannel is on the customer's experience. Omnichannel businesses are diligent in ensuring their customers receive the same experience and messaging across every channel[48]. This is exactly what Amazon is trying to do all over the businesses. For example, Augmented reality helps the omni-channel, in fact, can place physical shopping with digital shopping.

In conclusion, the new digital technologies are changing retailer sectors increasing the control, the training programs, the digital skills and the innovation culture. This can lead to a significative increasing of **reliability, efficiency, and profitability.**

We are entering in an era where these professional figures will find less opportunities because many of some services will be replaced with new digital technologies. For example, in some companies we can assist to the creation and activity of "robot-advisors", that it's a growing market. Anyway, the possible advantages are enormous from these new technologies. In practice, they can improve speed and reduce costs, error rates and human mistakes.

[48] A.T. Kearney. On Solid Ground: Brick and Mortar Is the Foundation of Omnichannel Retailing, 2014

In conclusion when we are using robotics, cost often goes down while speed and accuracy increase. But as always, even for the probable loss of jobs this provides a great opportunity for employees to get involved in more new advanced jobs. In the light of all of these the small-medium enterprise can apply this revolution through:

Develop an integrated digital strategy across functions, processes and activities. Firms that don't do this will not be able to survive to the digital disruption, only through an integrated digital strategy it could be possible to go on.

Experiment. Some of the experiments will be successful, and others won't, it's the reality, but it's a necessary step to stay up-to-date.

Engage younger staff to better assess likely current and future opportunities for innovation in the digital revolution.

Integrate carefully and thoroughly. The implementation requires significant effort. it must be integrated into the business model and operations, and this is a difficult step.

Be bold. These innovations are changing all the old ways to do businesses. As strategy to increase improvements or copy current competitor activities won't likely be enough to succeed.

All over the world, digitization services firms are helping SMEs to integrate their operations into the digital economy. Businesses everywhere are expected to spend more than $2 trillion on digital transformation projects by the end of 2019[49].

A study by Harvard researchers found that the top digital transforming companies achieve higher gross margins and stronger earnings. Along the same lines, McKinsey's study of success factors in digital state that in hard numbers, their study found that early digital adopters enjoyed 2X the revenue growth of competitors who took a wait-and-see approach.

[49] Report on Digital economy by KPMG, 2017

While the following adopters of digital strategy will still be able to improve internal efficiencies and sales results, but not in the same ways as the first movers, because they will have another one technologies available.

It's important to understand that the time between the creation and the adoption of new technologies are drastically decreased and thorough the used of just one-year copyright a company can be the first movers. In other words, now a SMEs should be first changing the processes and the culture inside them, to be able in the future to rapidly learn and adapt new technologies in few time. They have to get it quickly because the wrong investment or implementation can be hard to contain when it goes off the rails. This is the main reason that stop the small-medium enterprise to invest in the digitalization[50].

To understand if and where beginning, SMEs should be firstly to know which projects can be expected to deliver the greatest ROI in the shortest term. In setting their goals, aims and future expectations, SMEs should start from:

- How to offer a better customer experience and reduced churn
- How to secure productivity gains and reduce operational expenses
- How to get better data and advanced analytics to make better decisions
- How to be more agile and adapt to market changes before competitors do
- How to create or join a wider digital ecosystem of suppliers and partners

Firstly, they should start by setting goals that support the company's strategic plan and the **pay-back** of the investment. For example, if organizational efficiency is the first goal, a digital transformation project should prioritize streamlining back office processes while maintaining output. Regardless of how a project team sets priorities, the business strategy should ultimately be comprehensive, comprised of projects for the short term, the middle term, and the long term.

Short term projects should be able to be implemented right away without waiting on partners or market conditions, making only minimal changes to the business model.

[50] C.M. Christensen, "Disruptive technologies", Harvard business review, 1995

Middle term projects should emerge more out of a brainstorming of possibilities that would require to business to bring in new skills, maybe new employees or outside contractors as partners.

Long term projects should investigate the feasibility of major projects that can remake the business model over the coming decade. It may take the business into entirely new directions and industries[51].

Secondary, It's important if the focus in on growth or on profit. There are many areas where digital could impact your performance, but it makes the most sense for a small business to start with a digital transformation project that can pay for itself or at least provide a high enough ROI to fund the next round of digitalization.

Thirdly, **Small businesses don't have to mean small operations.** Many new business models are based on small groups of full-time employees in administrative roles and large numbers of freelancers or contractors doing field service work. Below some data reported by ATKearney on digital transformation results that included:

- Improved routing and remote monitoring technology, which allowed the company to deliver 40% more deliveries per mile
- Better mobile communication platforms added 30 hours per work week in the customer service department, making more time for upsells and cross-sells
- Automated auditing to practically eliminate billing errors, further improving brand quality for the customer

Why SMEs face a difficult time undertaking digital transformation

The digital transformation is not exclusive to large companies or that it necessarily involves huge investment in consulting or technology, but, instead, it is **a process that begins with personal transformation and requires leadership and change management.**

[51] Interview on The Financial Times, The Clean Growth Strategy: Leading the way to a low carbon future, October 2017

In **SMEs**, this is fundamental: the extent to which the founder or CEO of an SME understands digitalization is reflected in the extent to which the company is digitized or will be able to implement a successful digitalization process[52].

In other words, the main thing to do is changing the mind of the management. After changing the mind of management, understanding how much is important the digitalization, the next phase of digital transformation is about internal processes. Companies don't go paperless or adopt digital processes spontaneously but toward inertia and isomorphism. Therefore, to achieve real and significative changes SME must make important decisions in this direction.

In the end, **SMEs need to think about their business model to overcome the digital revolution.** Internal transformation is about how the company uses information, processes that allow for the stable and constant production of data that can be analyzed and used. Digital transformation can be monitored using machine learning metrics.

The reasons why SMEs are investing in digital technology are essentially to attract new customers, improve employee productivity and streamline operations. The driver varies significantly based on company size:

- Small business: attract new customers
- Medium business: keep up with competitive pressures
- Upper midmarket: improve employee productivity

The Report states "the results indicate that 48% of SMEs are currently planning to engage employees in activities that will help them adapt and transform their core businesses for a digital future. Meanwhile, 36% are already implementing activities to support digital transformation, and 16% have no plans underway"[53]. But digital transformation, as I said, is correlated strongly to company size even for the SMEs for the rapidity of adaptation and importance of technologies in use.

[52] Ellen Tannam, "SME leaders must focus on digital transformation in order to survive", 06.07.2016

[53] SMB Group's 2017 U.S. *Small and medium business digital transformation study*

One of the major problems for SMESs is given by the budget and resource constraints. The capital structure doesn't allow to strongly invest in new costly digital technologies. Other key obstacles that SMEs will need help to integrate new technologies with older ones are the lack of goal settings and of IT skills, that's why is a priority changing the company culture about digitalization and his implications in the business.

While most SMEs are just starting to understand the implication of this new challenge, they started to organize plans to face the situation but without an integrated approach between vision and short-term goals and this is the reason why for now digitalization seems just a cost and not an opportunity.

However, time goes on and, in this way, the specific goals become clearer and SMEs could focus on clear targets but, in this sense, **SMEs will need education and guidance** to overcome these problems and achieve their digital transformation goals[54]. Below a table where are described the top challenges for the SME are, depending on the size:

Top 5 Digital Transformation Challenges by Company Size	
Less than 100 Employees	**100-1,000 Employees**
1. Lack of Expertise to Lead Digitization Initiatives 2. Employee Pushback 3. No Overarching Strategy for Digitization 4. Business Partners Unable to Support 5. Limited Budget	1. Employee Pushback 2. Organizational Structure Gets in the Way 3. No Overarching Strategy for Digitization 4. Limited Budget 5. Lack of Expertise to Lead Digitization Initiatives
1,000-5,000 Employees	**More than 5,000 Employees**
1. No Overarching Strategy for Digitization 2. Lack of Expertise to Lead Digitization Initiatives 3. Limited Access to the Required Technical Expertise 4. Employee Pushback 5. Limited Budget	1. Lack of Expertise to Lead Digitization Initiatives 2. Organizational Structure Gets in the Way 3. No Overarching Strategy for Digitization 4. Limited Access to the Required Technical Expertise 5. Employee Pushback

[54] Source: Jabil Digital Transformation Survey

The table show that these companies have more or less the same problem, it's not so important the size. **So how can they face the challenges?**

1. Humans love their comfort zone. This is the first point. To understand the real potential impact of digital revolution they should go out from their comfort zone and change, investing in new opportunities.

2. Develop a Digital Transformation Strategy. It is needed to clarify a looking forward vision based on innovations and set goals to develop and implement a strategy. But not only for the management, but for all the employees, because the digital transformation passes for the entire companies.

3. Finding the Expertise to Lead Digitization Initiatives

It requires digital skills in new technologies and to reevaluate the technology alliance and partnerships and what they have to offer until now.

4. Don't Let Organizational Structure Dictate Your Digital Future

The digitalization requires changes in roles, departments and in organizational structure.

5. Managing Your Budget Through the Digital Transformation

It requires new investments in your company and con employees and customers. Building a strategy, it's important to have in mind the constraints of the budget.

In the past, being a small business meant disadvantages when talking about technology. Now, the situation is nearly the opposite. The first shift necessary before everything else is the outsourcing of services to the cloud. The new technologies are drastically reducing internal administration costs.[55]

Finally, SMEs have a clear advantage if they use the right required technologies for them, because they are more flexible and could adapt in a rapid way in the sector.

[55] Emily Rinde, "Evolution vs Revolution: Embracing Digital Transformation in 2018", 01.15.2018

But It's also important integrated the decision-making process on digitalization even on all the employees, that's why it becomes fundamental ensuring that employees are able to collaborate effectively. According to a recent and important McKinsey report, social tools can help, "By using social technologies, companies can raise the productivity of knowledge workers by 20 to 25%".[56]

The power of information is growing all over the world and in all the aspect of doing business, and businesses now have access to real-time information like never before. This is an authentic revolution for the companies.

SMEs have an advantage, and this advantage is the talented, young, digitally native workers that can help the old workers and leaders to understand the potential of some technologies. Anyway, for older small businesses, such transformation is difficult to manage.

A lack of strategy from leaders also could be a problem: "The big difference between the companies that are just doing technology initiatives and the companies that are leading a technology-based transformation is how they're putting the leadership frameworks in place[57]" stated George Westerman, a famous expert of MIT on the digital economy, "it's fundamental also changing the way employees are judged, by attaching KPIs to digital transformation, along with brainstorming sessions and other activities, such as identifying staff to help spearhead new initiatives, in this way, transformation can become a cultural effort".

In conclusion, Amazon showed us the way to wave this digital transformation revolution starting from the culture and processes of the company focused on the digital economy, investments in technologies and on digital labor skills, to the propension to the risks only in relation to the pay back of the investments and the ability to be customer-centric in the way to do businesses.

[56] *How winning banks refocus their IT budgets for digital*. McKinsey December 2014
[57] MIT's George Westerman interview on the financial times, 03.05.2017

It’s also true that for the SME’s the environment where to operate is different, and the processes, roles and activities are assigned in a different way from a big firm as Amazon. It’s necessary a focus on the people than on the processes. That’s way a cultural shift to a digital economy is required in every aspect of the business life, before everything else, starting from the management to the employees, investing in digital training programs or in the acquisition of new workforce grown in the digital era.

In other word, in a digital economy based on platforms where all the companies could have the same visibility through digital platform open to everyone, **the Amazon’s way** could be also implemented by the SMEs with more investments in the digital world (even if it’s impossible using the same percentage on Equity to finance the digital investments and the same FDI strategy but the Amazon’s percentage could be a good index to start with).

The Amazon’s case teaches us that if the idea behind the business or the investment is good, then investors will continue to support the companies year after year, over and over again, attracting new investments all over the world from different sources. Through the great possibility offered by digital platform, SMEs could be known as anyone else, as the biggest ones.

The new technologies, the international financial platforms and the social networks give to SMEs a great possibility. Through them, SMEs could achieve what they missed: the visibility all over the world. In this new era, the priority is not more the product and the quality of the output, but the **customer perception of the company and of the product.** Changing this paradigm, SMEs will be able to solve the problem of disruption, becoming themselves **protagonist of the digital disruption.**

CHAPTER III

Opportunities and risks: the future is right here, right now

3.1 Between present and future

Amazon lead the innovation market with a strong diversification strategy and it seems the right monumental bridge between present and future. **Not everyone can be a digital platform** but the use of these platforms and the possibility to use their services provide the potential basis for temporary competitive advantage for a lot of SMEs.

One key factor to success is managed transformation and innovation within an open IT platform integrated approach around the processes and activities that includes partners services to generate unique value for customers, even if it's not easy because it requires a deep understanding of the various factors and entire ecosystem of future business systems, partners, IT systems, processes and activities.

If these elements are unaligned, then every project fails. Without excellence in data quality, integration and the creation of an agile IT architecture built on loose coupling principles, which maintains the ability to evolve and still offer highly available services, projects are not yet on the path to success and cannot achieve the necessary profitability levels.

Digital Transformation has the intrinsic potential to change business models and ways of working together inside the companies and in the communication with customers. The successful use of platforms, the Internet-of-Things requires a rethinking of business models, learn and thrive on these trends and opportunities. Technology can increase the independency to reshape processes and increase flexibility, but only if management and employees are open to reducing hierarchy in order to achieve a faster response to new requirements and seize new opportunities[58].

[58] Accenture, *Stretch Your Boundaries – Accenture Technology Vision,* 2015

Correctly applied, an effective and efficient digital transformation can help to identify a new balance between stable organization structures and the flexibility to innovate and adapt in order to better work in an uncertainty environment.

The new technologies, the international financial platforms and the social networks give to SMEs a great possibility. Through them, SMEs could achieve what they missed: the visibility all over the world.

On the other hand, SMEs are following this trend from distance, but from a strategic point of view, this is not the right approach, just waiting, because the real problem is on the question. It's not important now how the things will change, but the real question that the firms should ask is: **What will remain untouched in the next 5 years?** Established what will not change, we can be able to develop new strategies for the digital transformation.

For example, Jeff Bezos is now developing a project that may seem no-sense and useless, but that has a relevant symbolic value: "a high-tech millennium clock. Built inside a mountain, the clock will operate for 10,000 years. It's a symbol of long-term thinking. Just knowing such a clock exists could help humanity change its perspective on problems ranging from world hunger to interplanetary migration", he explained. "Ten thousand years ago, we really couldn't do very much damage, however now times have changed".

The future is right here, right now, and the focusing should be not on what it will be, but on what it is right now. In fact, the final goal is to find now the transformation and evolution of the own business leveraging the digital technologies. The only problem that could rise in the bridge from the present to the future is **the loss of jobs,** as I said before.

Yet there has already been a loss of jobs involving mid-level skills across every industry in every country, but at the same time, the demand for high-skilled workers has increased considerably in most advanced economies. This suggests that workers have to be ready to change their job in a rapid way, adapting to the new job opportunities, because even if a lot of jobs are disappearing, it's also true that many others are born.

Today, we don't have enough data to analyze if these trends will play out in the future, because other structural changes are taking place at the same time. Some experts suggest that the technological change could lead to a decline in overall employment.

All new technologic devices are becoming sources of data and platform where we can use them. That's why the value of data is increasing, for the myriad of people that interconnected with them. Data can be turned into revenue and private companies but even government can used them[59].

In the most digitalized countries there is the aim to leverage this transformation for the good of the entire society, to move to an industrial automation, using new technologies to improve the labor conditions and increase the productivity, efficiency and quality of good and services.

That's the reason why a lot of initiatives and protocols was born as the ***society 5.0*** or the ***Industry 4.0***. The European Union aims to achieve benefits in climate change, through partnerships, managing aging population, and intelligent transport systems[60]. The European Digital Agenda asks for a stronger leveraging of the potential of information and communication technology in order to foster innovation, economic growth, and progress by focusing on**:**

- **achieving the digital single market**
- **strengthening online trust and security**
- **investing in research and innovation**

Oxford university and Accenture developed a **Digital Density Index** (DDI) that "measures how digital technologies impact the economic growth. The aim of DDI is to guide further investments of both the public and business community in order to stimulate economic development. This is highly relevant within single economic markets with the goal of increasing their competitiveness by sharing best digitalization practices and properly targeting investments."

[59] Source: World Economic Forum in collaboration with Accenture analysis, 2017

[60] Report by European Commission, 2016

The real problem on it is that the speed of change is making it difficult to clearly understand digitalization and fully understand its implications.

It may be a difficult challenge for all the SMEs, but **the time to start to develop digital skills and dynamic capabilities is now.** Another aspect that business leaders should think on is how best transform themselves in a digital company. Technology is an integral part of an organization and its strategy and to ensure this transformation SMEs should focus on[61]:

The Internet of me: Through the personalization of apps and services created on measure for the customers.

Outcome economy: Enterprises have an increasing ability to measure the outcomes of the services they deliver.

The Platform revolution: These platforms offer huge potential for innovation and the delivery of next-generation services.

The intelligent enterprise: By turning big data into smart data, firms can achieve higher levels of operational efficiency and innovation.

Workforce reimagined: creation of new opportunities to empower human talent through technology.

Technology is not just a cost, it is starting to become an important enabler of revenue generation not only in reality but also in the mind of the companies. Many leaders have recognized this, in fact, with a recent PwC report finding that 45% of business and IT executives across 51 countries saw growing revenue through digital enablement as a top priority.[62]

[61] World Economic Forum, 4.01.2016

[62] Lauchlan, Stuart, "Top ten digital transformation actions from PwC", 01.10.2015

In other words, digitalization is a clear business opportunity to increase the profitability. Disruptive technologies are already being applied enabling increased efficiency and new revenue. These technologies include:

Machine-to-machine communication is reducing maintenance costs and optimizing productivity. Robotics and Drones are used for deliveries and monitoring. 3D printing is reducing inventory sizes and repair costs. Virtual and augmented reality are reducing costly maintenance work. AI/cognitive machines are enabling computers to accurately perform new tasks. With the right technology in place, SMEs have the opportunity to leverage some advantages:

Greater flexibility. Respond in a rapid way to changing demand, advances in technology and new opportunities.

Lower profit volatility. Firms with high-fixed costs base all their business on revenues to cover those costs.

Creating an effective digital strategy solution is difficult, and now we can assist to a trend for firms to hire a chief digital officer (CDO) to drive through the changes that are needed to become a digital enterprise. Installing a CDO, however, does not guarantee success. Digital transformation is a huge challenge and it needs to be a change in the corporate culture, transforming it in a more oriented-innovation culture, to achieve a looking forward vision.

Corporate decision making has been a long-drawn-out process in the past, with scenarios spread over a year not unheard of. Decision-making process is different, decisions, in fact, are no longer taken on the basis of managerial instincts but are backed by insights driven by data. Companies need to reassess every aspect of their operations, to ensure they are fit for purpose in a digital world[63].

[63] Swati Joshi called "The digital disruption of our lives" on The Blog published 04.28.2016

A possibility to leverage the digital transformation without the use of strong investments, is to use the **crowdsourcing.**

Crowdsourcing is based on the idea that people are energized by their own collective and individual motivations and interests. Some research suggests that within two years, more than half of consumer goods will obtain 75% of their consumer R&D capabilities from crowdsourcing. The crowdsourcing is correlated with the transparency of the project. In the digital economy, transparency has become a priority for the investors. Transparency and communication contribute to better performance through improved creativity, later thinking, conflict resolutions and problem solving.

Moreover, access to new talent, digital staff skills and the ability to hire the right people at the right time and place will become a big competitive differentiator. Digital skills like app development, data analytic and social marketing will become the new standard for software development with a specific focus on automating actions based on real-time data analysis. The Internet of Thing will be a catalyst for the expansion of digital transformation to all corners of the economy[64].

[64] Sasha Viasasha, "Can a small business make digital transformation pay for itself?", 1.03.2018

3.2 Automation, robotics and cybersecurity

There is a general economic argument that worker wages should grow in line with productivity growth and in doing so improve everyone's living standards. There is an enormous amount of data about rising economic surpluses from automation, recent evidence indicates that the growth of productivity and the growth of workers' wages are not actually linked. Since the 1970s, across most OECD countries, the share of income going to wages has been decreasing, and the share being reinvested in capital has been increasing[65].

Clearly, profits arising from productivity gains have been going to capital rather than labor, reflecting growing income inequality in general. Automation eliminates many routine tasks performed by people at work. When human workers produce more by putting in more time or energy, they expect, and agitate for, an increased share of the gains. But when automation leads to increased productivity, and subsequently increased profits, it's less clear which workers should receive the increased share of the gains.

In economics, in general theory and reality shows that **everyone benefits from economic growth and productivity, but it's not clear if this will happen in an automated world too.**

In the next future, there is no evidence that can suggest that economic surplus from automation will be used to fund wages. For example, studying the OECD report about AI and jobs, we can underlie partial results about the problem of lost jobs with the increasing of the productivity from the digital world[66].

While technological innovation is positively associated with employment in all groups of occupations (OECD, 2015), artificial intelligence (AI) and digitalization challenge routine job. **The rapid progress in AI** is raising the prospect that a lot of other jobs could be carried out by machines.

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[65] Amount by which labor share declined, 1995–2014. Source: OECD

[66] Deloitte Access Economics, "*Digital Government Transformation, commissioned by Adobe",* 2015

Yet there has already been a hollowing out of jobs involving mid-level skills across every industries in every countries and this is a real problem for a thousands of workers. At the same time, the demand for workers in high-skilled has increased considerably in most advanced economies, this suggests that workers have to be ready to change their job in a rapid way, because even if a lot of jobs are disappearing, it's also true that many others are born.

In the end, the **job polarization by skill level** is interesting many but not all OECD countries. We don't have enough data to analyze if these trends will play out in the future, particularly because other structural changes are taking place at the same time. Some experts suggest that the technological change we are experiencing in this 'second machine age' not only risks displacing some specific types of jobs but could lead to a decline in overall employment[67].

The risk of a technological unemployment can be discounted for several reasons. First, while the number of new jobs directly created by the ICT sector may not fully compensate for jobs displaced elsewhere, new jobs are likely to appear as technological applications develop and other sectors expand as costs fall and income and wealth increase, even if the latter may take some time to materialize[68].

Moreover, some estimates from some university suggest that for each job created by the high-tech industry, around **five additional, complementary jobs are created,** and this is a good new for all the people terrify from the digitalization of the jobs**.** These estimates of job automation rely on the possibility of technology displacing existing jobs, but ignore if these technologies are actually adopted, which may lead to overestimating the overall impact of technology on the number of jobs in the economy[69]. Finally, even if there is less need for labor in a particular country, this may translate into a reduction in the number of hours worked and not necessarily a reduction in the number of jobs[70].

[67] From the book "The second machine age" by Brynjolfsson and McAfee, 2014

[68] From a study conducted by Berger and Frey, 2016, in OECD report 2015

[69] "New Jobs" by Moretti, Einaudi editore 2015

[70] Report of OECD by Spiezia and Vivarelli, 2016

The size of these changes will vary from country to country, showing differences in industry structure, work organization and the skill of the workforce. These changes, in fact, can have a strong impact on those workers who are not able to make the transition to new jobs. The reality is going beyond the theories and it's necessary to create a new framework to understand the real impact of this transformation on the economy, that it's seems more like an authentic revolution than a simple transformation.

The reality is that it's impossible to stop this change, and even a solution it's difficult to find because there aren't enough data to analyze. What we know is that this is the future, indeed Robotics and Drone Market Growing 19.6% annually, which means sales will reach $201.3 billion by 2022, according to a recent study from analyst firm IDC. Breaking down the cost in more specific category, spending on robotics solutions is expected to total $86.6 billion in 2018 and will account for more than 85% of all spending throughout the five-year forecast.[71]

Through these data we can state that these costs are considered R&D costs, and firms start to understand that to maintain market-leading positions and develop new products**, they should strong invest in them**[72]**.**

Amazon is expanding its financial reach by launching **Amazon Cash**, "which allows users to add to their Amazon balance by showing barcodes at brick-and-mortar checkout locations. The company has also improved its own line of **credit cards**, partnering with Chase to release the Amazon Rewards Visa Signature Card".

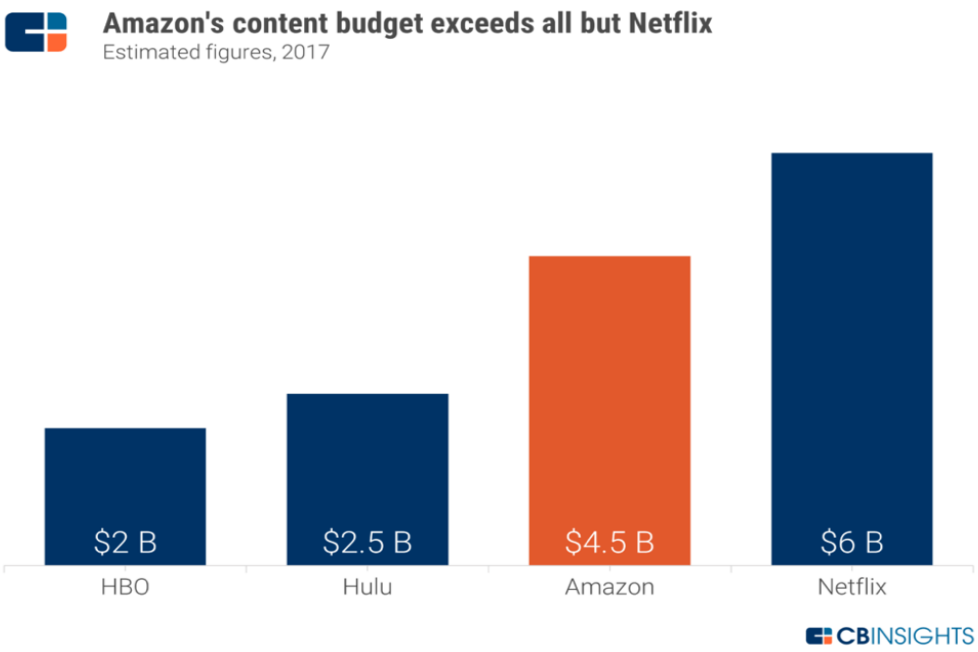
Beyond fintech, Amazon is investing in the **augmented and virtual reality**. In November 2017, Amazon added an augmented reality feature to its iOs Amazon app, allows users to visualize certain goods in their homes before purchase.

[71] Report of IDC on robotics and drone market, 2018

[72] Article on MH&L staff, 27.06.2017

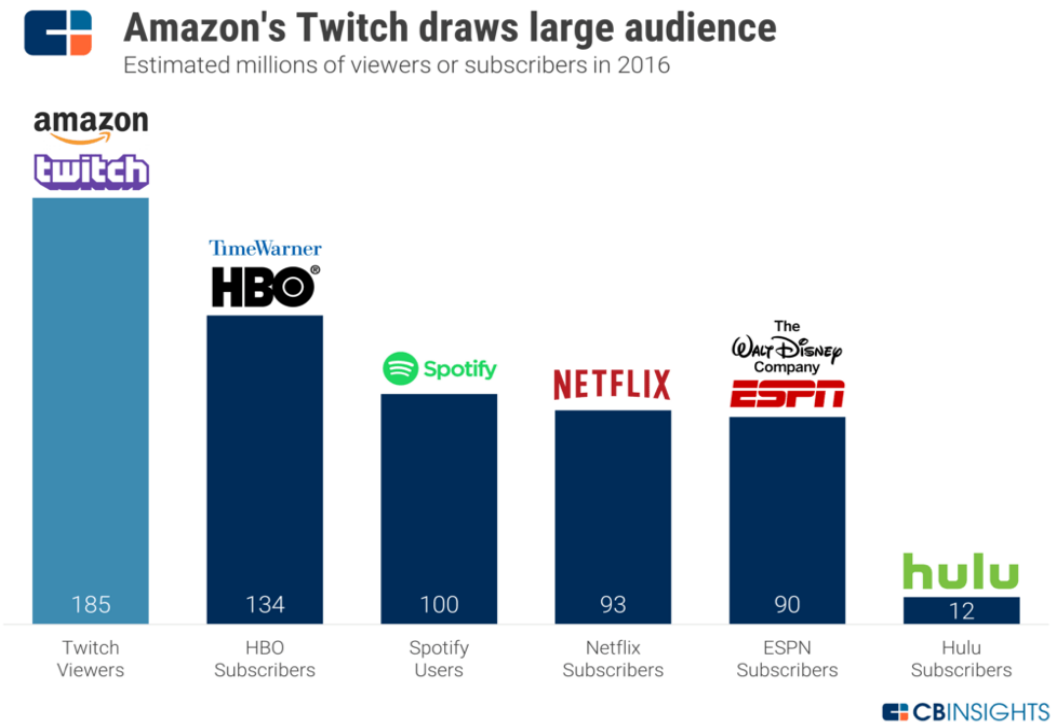
To bolster its Prime subscriptions, which represent Amazon's third-largest source of revenue, after e-commerce and Marketplace, Amazon has introduced another special benefit to membership: Prime Video streaming[73].

ezos has publicly explained this decision: "Amazon Studios is making original content for Prime Video…Winning a Golden Globe helps us sell more shoes and it does that in a very direct way. If you look at Prime members, they buy more on Amazon than non-Prime members. One of the reasons they do that is because they've paid their annual fee, they're looking around to see how to get more value out of the program." (Figure 3.1).



Amazon is also entering and disrupting the gaming space. Twitch, the Amazon video game platform, has grown to become one of the largest platforms all over the world. In this way, the company has attracted the curiosity of YouTube gaming stars and pop culture celebrities. The platform also now sells video games directly on the site, an expansion that competes with the game marketplace world of Steam and Valve. With its unique incentive to sell more subscriptions by offering more content and services, Amazon is able to offer a premium media suite at a cost its competitors cannot compete with (Table 3.2).

[73] Richard A Betts, "The future of the Amazon: new perspective from climate, ecosystem, and social sciences", 27.05.2018



Moreover, Amazon is working a lot in AI in its Alexa Voice Service (AVS), to offer a voice interface powered by the cloud. Amazon's voice tech is built atop technology developed by a startup called Evi Technologies, which Amazon acquired in 2013[74]. On the **AI**, Bezos has said in relation with the application of this technologies in all the businesses and firms: "Right now, bigger companies like Amazon have a bigger advantage especially because of the training data sets required to do this. You need a lot of data to do extraordinary things with the algorithms we have."

As I said, Amazon's AI strategy is about **being everywhere**. For example, the company has started to sell Machine Learning-as-a-Service, a product that offers users the ability to create, train and deploy machine learning models without the need for the weighty and expensive infrastructure typically required, with the goal to serve both big and small developers who want AI[75]. In fact, the data stated that AWS is now Amazon's second-largest source of revenue, with nearly $17.5B in sales in 2017 and close to $4.5B in profit.

[74] Report by Statista, "Number of Amazon prime Video subscribers worldwide in selected countries in 2022", 2018

[75] Interview on Financial Times of Jeff Bezos, 2017

AWS began as a result of Amazon overhauling its own internal capacity for cloud services. Repurpose as a service for external clients, AWS allowed startups to migrate from expensive server hardware and software[76].

Prioritize security

With cybersecurity heating up as a startup category, Amazon starts to be very focused on improving and securing the stack. Prioritizing security can, in fact, reduce operating costs. But despite the cost savings that improved security can bring, many companies need to rethink their approach to security. Cyberattacks target are the SMEs with a strong potential or big companies without a culture on the cyber security, for the most, because they are the targets easier to attack without big problems or consequences.

With the convergence of information technology, cybersecurity is no longer "somebody else's problem." In this age of the Industrial Internet of Things, **cybersecurity is everyone's responsibility.** IIoT architecture is multilayered and multidimensional. Typically, attackers will find the weakest link[77].

In a regulatory point of view, the International Electrotechnical Commission (**IEC**) in agreement with the International Society of Automation (**ISA**) published a series of standards and technical reports that define procedures for implementing secure Industrial Automation and Control Systems (**IACS**). The Cybersecurity Standards for Automation contain requirements with the aim to guide enterprises to create products, integrate systems, and operate industrial automation and control systems (FR):

- FR 1 **Identification and authentication control**. Protect the device by verifying the identity of and authenticating any user requesting access;
- FR 2 **Use control**. Protect against unauthorized actions on the device resources by verifying that the necessary privileges have been granted before allowing a user to perform the actions;
- FR 3 **System integrity**. Ensure the integrity of the application to prevent unauthorized manipulation;

[76] Report by Bloomberg & Company, "Amazon Prime's monthly price hike will generate $300 Million a year", 22

[77] Tanya Anandan, "Cybersecurity a must for safe IIot Robots", 22.06.2018

- FR 4 **Data confidentiality**. Ensure the confidentiality of information on communication channels and in data repositories to prevent unauthorized disclosure;
- FR 5 **Restricted data flow**. Segment the control system via zones and conduits to limit the unnecessary flow of data;
- FR 6 **Timely response to events**. Respond to security violations by notifying the proper authority, reporting needed evidence of the violation, and taking timely corrective action when incidents are discovered;
- FR 7 **Resource availability**. Ensure the availability of the application or device against the degradation or denial of essential services. If properly addressed, these requirements will reduce many cybersecurity risks across an industrial robot system.

In today's digital world, decision-makers can't afford to be held back by cyber risks. Companies need to make decisions carefully and feel confident that their cyber strategy, defenses to protect their business and support their growth strategies. A strong cyber security strategy should be aligned to the business vision, objectives and innovation projects. It should involve every aspects of the business of a firm[78].

If this digital strategy through the application of technologies are implemented in an efficient way, it can enhance product integrity, customer experience, operations, regulatory compliance, brand reputation, investor confidence and more leading to a return on your cyber investments. That's why cyber security demands attention also from the rest of the C-Suite, the board and, indeed, employees and business partners throughout the organization.

[78] Wall Matthew, "Six things firms should do to improve cybersecurity", *BBC News*, 27.10.2015

3.3 International digital platforms

The companies use platform technology to connect parties offering and seeking accommodations, so users can both offer and book accommodation remotely. The digital economy is based on platforms. That's why it's interesting analyze the phenomenon of the FinTech.

Financial technology is "the new technology that aims to compete with traditional financial methods in the delivery of financial services". In other words, FinTech is a new industry that uses technology to improve activities and processes. Financial technology companies consist of startups and technology companies trying to replace or enhance the usage of financial services provided by existing financial companies[79].

In these days, many financial institutions are implementing Fintech solutions and technologies (as Blockchain) in order to improve and develop their services and to follow the digital transformation. In fact, digitalization has changed in the way financial firms interact with their customers, through it, customers now can access automatically to online platforms, allowing for more convenient experiences.

According to a recent report elaborated by PWC, 49% of consumers now conduct their banking primarily on their digital devices, desktop or smartphone. At the same time, the number of bank branches in the US has already shrunk by about 8% from their peak, and some analysts expect the number to fall by another 20% through 2027[80]. Digitalization presents two key challenges for traditional financial firms that are significant opportunities for FinTech.

First, developing intuitive websites and apps in addition to automate many services requires banks to spend billions of dollars each year on technology. These firms are able to build specialized software for market, risk analytics, and regulatory software, among other areas.

[79] A. Meola on Business insider, "The top financial service providers and fintech startups", 25.12.2016

[80] Jay Jacobs, "What's driving FinTech growth?", 19.06.2018

The second is that **digitalization increases competition within the industry**. Consumers are no longer limited to the local firms, but instead now they can choose for the best pricing through hundreds of companies online on digital platforms.

FinTech seek to leverage their structure and added value from their expertise in technology to disrupt the actual status quo in the financial sector. In these days, many institutions are incorporating these FinTech services into their financial lives, for example a report by EY on the explosion of FinTech estimates that 33% of the global active population has already adopted FinTech. Some of the most active areas of fintech innovation include these technologies are:

- **Cryptocurrency and digital cash**
- **Blockchain technology**, a distributed ledger technology that maintain records on a network of computers but has no central ledger.
- **Smart contracts**, which utilize computer programs to automatically execute contracts between buyers and sellers.
- **Open banking**, a concept that leans on the blockchain and posits that third-parties should have access to bank data to build applications that create a connected network of financial institutions and third-party providers.
- **Insurtech,** which seeks to use technology to simplify and streamline the insurance industry.
- **Robot-advisors**, they utilize algorithms to automate investment advice to lower its cost and increase accessibility.
- **Unbanked/underbanked**, services that seek to serve disadvantaged or low-income individuals who are ignored or underserved by traditional banks or mainstream financial services companies.
- **Cybersecurity,** given the proliferation of cybercrime and the decentralized storage of data, cybersecurity and fintech are interlocked.

Many FinTech firms are exploring new technologies to complement their core offerings, one area receiving considerable attention **is blockchain technology**. Many of these firms view blockchain as a disruptive high growth potential technology and are leveraging their expertise in programming, payments, or market structure to help advance this field.

With the blockchain technology, this companies offer the potential to execute transactions in rapid and efficient new ways than the existing traditional network in financial services. As innovation accelerates, proponents are eagerly seeking solutions that may work within the current regulatory framework for financial services[81].

Blockchain technology was originally designed for financial institutions, in fact, the ledgers it created were automatically notarized, which created a high level of security. This disruption technology automatically timestamps each entry and creates a link to a prior block, which makes the system very hard to tamper with.

In practice, for the real world it means that a private business network can be used by a financial firm allowing this firm to have access to any information and data of the customers while in the meantime protect these data against outsiders. At the same time, blockchain can be publicly hosted for bank customers, enabling them to access their accounts anytime, even when the bank is closed, and it's already used by 80% of financial businesses.

But, as always, the experts about this new technologies are divided. The proponents of blockchain say, within the next 10, it is expected to be the main technology used in financial services. In other words, there will be a replacement of conventional financial institutions for the currently track transactions. Blockchain is going to modify radically the financial sector reducing costs and expediting business processes, but we still not have evidences on it.

Blockchain is one of the most important trends in digitization in the current financial year.

Other implications of this technology could be also offer great support in the recruiting process or in the utilization of digital currencies.

[81] Debra Walton, "The platform revolution changing the financial industry", 12.01.2018

In conclusion **these emerging technologies are here.** Digital transformation through the disruption of some of these technologies will transform small business, large corporations and everything in between. It seems of extraordinary importance to jump on the bandwagon today, to not lost this opportunity.

The new technologies, such as Blockchain in the digital world can be used to revolutionize everything, that why a lot of big firms are investing a lot on FinTech, because these startups are the future of the digital economy.

3.4 Companies of the future

The largest firms are already taking actions. They are using technologies like social media, mobile, analytics and devices to change their customer engagement, internal operations and their business models. Only few firms have positioned themselves to capture the real business benefits in the digital economy. In fact, **digital maturity matters.** It matters in every industry. And the approaches that digitally mature companies use can be adopted by any company that has the leadership drive to do so[82].

"Digital technologies and approaches aren't just for tech, media, and retailers anymore, they are infusing all aspects of the business world," says Lars Fæste, a senior partner at BCG, "Through artificial intelligence, advanced data analytics, and 3D printing, to name just a few emerging digital innovations, companies in many industries can do great things for customers and create new levels of value."

But a lot of companies in various industries are accustomed to a routine approach to technology: "It's understandable. These industries are rigid and process oriented and for many, the frame of reference is an enterprise-resource-planning migration that takes five years from start to finish," says BCG senior partner Jim Hemerling, "But any company that takes that long on its digital transformation risks wasting immense amounts of time and money."

Some companies have the digital maturity not only to build digital innovations, but also to drive enterprise-wide transformation. They have significantly higher financial performance than their less digitally-mature competitors. Digital maturity is a "combination of two separate but related dimensions, in fact, the first, **digital intensity**, is investment in technology-enabled initiatives to change how the company operates, its customer engagements, internal operations, and even business models. Companies of all the businesses, industries and markets are investing in interesting digital initiatives. However, in many firms, these investments are uncoordinated and sometimes duplicative"[83].

[82] Report of CapGemini on Digital Advantage, 2015

[83] Report of Deloitte on Achieving Digital Maturity, 13.07.2017

So ,if we start to talk about the companies in the second dimension, transformation management intensity, they are creating the leadership capabilities necessary to drive digital transformation revolution in the organization. Transformation intensity consists of the vision to create an organization perfectly integrated with the possibilities of the future. The elements of transformation management intensity work together through a combination of leadership and innovation to drive the required digital transformation[84]. However, in a lot of companies, these elements still are overly slow or conservative, and this in some ways is preventing the firm from investing in new digital opportunities. We can separate all the firms in beginners, fashionistas and conservatives in relation to the digital economy.

The beginners do very little with advanced digital capabilities, by choice or for the commerce or may be unaware of the opportunities, perhaps because of regulation. Manufacturers firms are beginners.

The Fashionistas are motivated to bring on digitally-powered change, but the digital transformation strategy is not founded on real knowledge of how to maximize business benefits. Telecom and travel are in the Fashionista space.

The conservatives are favoring prudence over innovation. They understand the need of a strong vision for governance and corporate culture to ensure investments. Insurance and utilities are examples of conservatives. Some insurer companies are focused on innovating with new technologies and with the use of platforms, but many are being held back by regulatory concerns or difficult organizational legacies, because there isn't a fixed standard to follow but just theories and best practices

The Digirati are companies who truly understand how to drive value with digital transformation. Through vision, they develop a digital culture that can implement digital strategy. High Technology firms lead in digital maturity. Banking and retail are considered Digirati firms[85].

[84] Report of Deloitte on Achieving Digital Maturity, 13.07.2017

[85] David J. McGrath "New rules for Business transformation", 16.04.2017

Achieving this digital vision transformation was and is more difficult than new technology implementation. It was and is needed a program to achieve cross-channel consistency, engage employees, secure the right skills, and develop strong IT-business relationships.

As with all transformation, CEOs first need to ensure that the leaders have a common vision of how to proceed and what processes and activities realized. In other words, they need to understand the why behind is necessary to change, and how the future will be better than the current situation and for how long and how much it costs.

The first step to beginning is to understand the threats and opportunities that digitalization represents to the organization in this modern age. Without a strong vision, based on the necessary to change, the employees tend to do what they have been doing for years, even if it is no longer useful in the digital world, simply because they are familiar to do it in this way.

To make the digital vision a reality, leaders must ensure that their organizations invest in the right areas and in an efficient way, without over-paying. Basically, Leaders must **identify where the company should excel**.

An important question is to **decide if you need to adapt your business model or to revolutionize.** In some industries, there is no choice. The structural changes somedays are calling for a radical rethinking of how organizations do business. For example, companies in some sectors, where the pace of change is less rapid, have the opportunity to create value by adapting their business models, bringing add-value to products and services, reaching new customers.

That's why is needed a strong enterprise-level governance aims to increase the level of coordination, but it's also very important to encourage employees to identify new practices, processes, activities and opportunities that will advance the vision. Successful examples of digital transformation are built on the strong foundation of core digital skills and capabilities.

To fill skills gaps, it could be a good idea to consider hiring some experienced executives who can make an impact quickly and coach existing employees. Then it can be useful also redesign your training programs to develop skills your company needs. In other case, some big companies, avoid the cost to create new technologies or the investments in R&D costs, and decide a strategy focus on small firms to gain specific digital skills such as mobile marketing or analytics.

Quantifying, controlling and monitoring digital progress toward the traditional KPIs is limited and incorrected. That's why SMEs have to change also the KPIs used to measure performance, giving more emphasis on the digitalization, This also help to change the culture.

Finally, it's important to understand that no transformation can be planned fully in advance, no-one has the magic wand. As they continue in their transformation, better understanding the impact of digitalization, leaders should look for opportunities to iterate and improve the process.

Digital transformation is different for every business, industries and countries.

Understood this point, the way of a company to evolve depends on its environment, internal and external, on budget and on current dynamic capabilities. A modern company needs to function on a common platform, needs to communicate internally and externally in a cohesive and integrate way. But first it's useful to evaluate inefficiencies and develop a complete vision of company processes, understanding where trying to improve it's the **starting point.**

Even if you do this, **it could be too late,** not every company will survive at the digital transformation. In fact, many companies failed, fails and will fail for two reasons in relation with digital revolution. First because they think that digitalization will not occur in their business or market, the wrong attitude is thinking "if I survived so far, why I should change something?". Second, it's important to choose where and how changing. Companies need to evolve, this is an anthropologic truth, but the evolution process must be deliberate and well-planned.

Today's cloud technology now means that even small and medium-sized businesses are no longer at a disadvantage. Nowadays, small businesses have access to "every piece" of technology used by their larger rivals, thanks to the cloud. They don't want to manage infrastructure, install software or buy hardware. But they can now have the same software and platforms as the largest companies. By this point, every business is either embarking on or is in the midst of a digital transformation.

It seems that no longer is the idea of digital transformation a strategy to gain a competitive advantage, rather, it is a necessity to survive. There is no doubt that cybersecurity is increasingly on the minds of consumers and businesses. Leaders of companies play a critical role in orchestrating and prioritizing cybersecurity.

In fact, as cybersecurity and defense evolves in the digital transformation, no one can avoid these problems, that's why it's necessary anyway there **to invest in security and infrastructure constantly.**

In the future, demand for advanced digital security experts will rise, new professional roles will be born, and top talent will likely demand high earnings. The digitalization of products, services, and operations will continue to be a primary driver for growth and innovation to an exponential rate and it's important to leverage this opportunity now that we are in time. Increasingly, multiple platforms are being designed to integrate other platforms with other characteristics, forming ecosystems where everyone are linked, as the blockchain technology.

It's true that the design and implementation of a single digital platform yet requires technical talent and specialized knowledge and planning, and so we can understand the difficulty to build an ecosystem of interconnected platforms. Obviously, this will require **a clear vision and a shared strategy** for the use of data and processes between systems.

In conclusion, the "fail fast model" adopted by startups and the rise of "growth hacking" will begin to change the corporate culture and companies will become to invest in digital training skills and internal technology development. Moreover, with the introduction of better tools for measurement, eco-systems and digital processes there will be more opportunity to capture data and make informed decisions.

Conclusions

The 2018 brings in the economy a number of changing dynamics regarding the new intersection of technology with business. In fact, advances in artificial intelligence, digital platforms and machine learning are making it easier for companies to take advantage of technologies as IoT and Big Data. At the same time, digital transformation contributes **in restructuring your company's culture** and redefining your value proposition by focusing on both customer engagement and enhancing products and services with technology.

Amazon is the best practice of the digital transformation that enabled to create an international giant that connects millions of people by allowing the access to good products and services at an affordable price.

The secret of Amazon is the orientation to future, the strong investment in R&D costs, the capability to use the new technologies and the evolution of the culture and organization. All these elements can be replaced, with the appropriate adjustments linked to the structure and size, from the SME's.

As we have seen in the thesis, the digital transformation has a lot of implications on the organizational aspects and on operating processes of the firms. It's sure that all over the industries, there is the awareness to elaborate new managerial frameworks, skills and attitudes to change this transformation in an opportunity. Companies are starting to **re-imagine their business** processes through the implementation of Big data analytics, Artificial intelligence and the Internet of Things.

As I said during my thesis, digital transformation consists **in restructuring your company's culture** and redefining your value proposition by focusing on both customer engagement and enhancing products and services with technology. In other words, is the transformation of the business, of the core and complementary activities, of the internal processes, of the competencies and models to understand and to use the opportunities of the new digital technologies.

That's the reason why a lot of organizations decided to redefine their businesses in a rapid way, because this global change is very fast and pervasive, and it's important to understand that it's not enough going on with the application of the new technologies in the business, but that technology is secondary to a **cultural change.**

The answer to the question "why the organizations adopting digital strategies don't invest in digital training" is that they fear that their staff will be assume by other firms. Another reason is that some SMEs think that they can source the skills they need by recruiting from outside the business or outsourcing to a third party, but this is a significative cost that in the long term doesn't have the expected results.

It could be right doesn't strongly invest if we were talking about a trend that it's going to die in few years but it's not this, as I said, **we are right here, right now, inside a huge revolution,** and like every revolutions in human history people doesn't think that they are in a revolution, only people with a vision can see, understand and try to react to this transformation.

In fact, if we want to develop a long-term strategy, absolutely building internal capacity is the best investment we can do. Therefore, the challenge for a lot companies in implementing this strategy lies in the **development of digital skills, culture and processes** that will work efficiently with the new technologies. Getting digital transformation is a trip that demands an **investment in training**, a commitment to developing a culture that values curiosity and innovation, and the ability to build a workforce that has the new digital tools to continually **adapt and learn in a rapid way.**

For the small or medium enterprises (**SMESs**) digital transformation revolution might not seem a disruptive figure as it could be for big companies. Some SMEs consider that their size manage to overcome the disruption problem, in fact if something of new happens in relation to the digitalization, as the invention of new technologies for their business. They think that, because they are "small", with different processes, activities and people, they don't need to approach to this digital transformation revolution.

But this is not the truth.

In fact, digitalization is changing the lifestyle and the typical approach to do business, from the consumer purchasing to how firms conduct the business. In other words, this is now the new social phenomenon happens today all across businesses and societies.

Following the digitalization doesn't mean to transform completely in a digital enterprise, for example, companies should not adopt every new trends in the market just because it's something related to digitalization, but rather it is a drastic change in the way to do business, finding the real new questions on the customers and on the competitors, leveraging a strong modern know-how and digital skills to reach new level of efficiency.

It could be different from every businesses, markets, it could depend on the employee skills and firm's culture, and on the size of the company, but it always starts with a change in the normal attitude to do something, and digital transformation is exactly this.

The ability of some firms to adapt rapidly to new circumstances is an organizational capability called: "***Dynamic capability***". Not all the technology changes have to be adapted for a company, **just because something is new it doesn't mean that works, and if it works for others it doesn't mean that works for us.** In the end we can state that through the dynamic capabilities and the clear vision of a strategy a firm can managed to avoid the changing barriers, leveraging the innovations and technologies (digitalization) to better perform and to be ready for the next challenge: **the disruption.**

Digital disruption creates a complete change in how companies do business, creating a new ecosystems based on platforms and interconnections. **The opportunities are exponential.**

This journey must pass by the firm vision for the future. In other words, all industries and all companies, no one excluded, can benefit from digital transformation if and when they put an effective framework between technologies, processes, activities, people and culture into action.

The Amazon's case shows a **clear strategy** of growth, through **diversification** in the services and products, **internationalization** all around the world, **M&A deals and partnerships** with complementary companies and with strong **long-term investments in**

R&D and technologies. Indeed, A key factor in understanding Amazon's compelling growth is how it leverages the **synergies** between its businesses, with the result that Amazon created a **virtuous organization cycle in which each business contributing to the success of the other**.

What's becoming clearer today is how many industries do not operate at their efficient frontiers where they are getting the maximum output from their investments in capital and labor. This is a key reason why Amazon recognizes no borders. In my investigation I demonstrate a **strong positive correlation** between the R&D costs and the Gross Profit and Revenues, and this means that strong investments in the technologies will lead to strong benefits (**significative growth of the profitability)**.

The Amazon's business plan consists in spending in R&D costs to increase over time in revenues, continuing to add employees and technology infrastructure. A part of these costs is capitalized in the Goodwill and I found a strong positive relation between the Goodwill and the Equity and partial to the long-term debts. This shows that Amazon finance these costs with the Equity (Retained income) and the Liabilities (long-term debt)

These results achieved give us the opportunity to track a pathway for other companies for changing the structure of their strategy. The R&D costs have an average growth of 9% per quarter, while the Gross Profit growth is around the 31%. The average of the R&D costs on the Gross Profit is around the 31% and the R&D costs on the Equity is the 17,61%, while the Equity growth is 8,72%**.**

So, using these percentages, The SMEs could be able to have a similar growth, if they start to invest in the IOT, digitalization and online platforms, the only problem is that only the most riches could finance these costs with the Equity, that's why they should find another way, maybe with outsourcing programs and strategic alliances. Obviously, there are some considerable differences, but instead of what some SMEs think, these are positive for them. Being small is the first advantage in the implementation of digital strategy for the flexibility and management adaptability. Moreover, they are more selective for the technologies to use and focused on them.

To make the digital revolution a reality, the management must ensure that their organizations invest in the right areas and in an efficient way, without over-paying. Basically, leaders must **identify where the company should excel**. An important question is to decide if they need to adapt your business model or to revolutionize.

That's why a strong enterprise-level governance is needed to increase the level of coordination, but it's also very important the enterprise culture and to encourage employees to identify new practices, processes, activities and opportunities that will advance the new vision base on digital technologies. Then it can be useful also to redesign your training programs to develop those skills your company needs.

But the main thing to remember is that digital transformation is different for every business, industry and country. Understood this point, the way of a company to evolve depends on its environment, internal and external, on budget and on current dynamic capabilities. A modern company needs to function on a common platform and to communicate internally and externally in a cohesive and integrated way.

Even if companies do this, it could be too late because not every company will survive at the digital transformation. In fact, many companies failed, fails and will fail for two reasons in relation with digital revolution. First because they think that digitalization will not occur in their business with the wrong attitude is thinking "if I survived so far, why I should change something now?". Second, it's important to choose where and how to change. Companies need to evolve, and the digital transformation is the chance to do it.

A digital strategy can consist in partnership with FinTech, synergies with joint venture, FDI, internal-made technologies (automation and robotics). Anyway, the possible advantages are enormous from these new technologies. In practice, they can increase speed and reduce costs, error rates and human mistakes.

The successful use of platforms, the Internet-of-Things and the likes requires a rethinking of business models, learn and thrive on these trends and opportunities. Technology can increase the freedom to reshape processes and increase flexibility, but only if management and employees are open to reducing hierarchy in order to achieve a faster response to new requirements and seize new opportunities.

The digital transformation is not exclusive to large companies or that it necessarily involves huge investment in consulting or technology, but, instead, it is **a process that begins with personal transformation and requires leadership and change management.** Technology is a fundamental aspect of all of these, but the real differential element that make a company able to undertake it successfully is **personal transformation through the culture and vision.** In **SMEs**, this is fundamental: the extent to which the founder or CEO of an SME understands digitalization is reflected in the extent to which the company is digitalized.

In conclusion, **Amazon showed us** the way to wave this digital transformation revolution starting from the culture and processes of the company focused on the digital economy, investments in technologies and on digital labor skills, to the propension to the risks only in relation to the pay back of the investments and the ability to be customer-centric in the way to do businesses. It's also true that for the SME's the environment where to operate is different, and the processes, roles and activities are assigned in a different way from a big firm as Amazon. It's necessary a focus on the people than on the processes. That's way a cultural shift to a digital economy is required in every aspect of the business life.

In other word, in a digital economy based on platforms where all the companies could have the same visibility, **the Amazon's way** could be also implemented by the SMEs with more investments in the digital world (even if it's impossible using the same percentage on Equity to finance the digital investments and the same FDI strategy but the Amazon's percentage could be a good index to start with). The Amazon's case teaches us that if the idea behind the business or the investment is good, the other investors will continue to support the companies year after year, over and over again.

The new technologies, the international financial platforms and the social networks give to SMEs a great possibility. Through them, SMEs could achieve what they missed: the visibility all over the world. In this new era, the priority is not more the product and the quality of the output, but the **customer perception of the company and of the product.** Changing this paradigm, SMEs will be able to solve the problem of disruption, becoming themselves **protagonist of the digital disruption.**

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Executive Summary

In the courses of my studies, I have been always interested in finding a **correlation between the corporate strategy theories and the best practice of the successful business model of international firms.** That's why I decided to elaborate my work analyzing the impact of the digital transformation and the implications for the corporate strategies of the big firms and of the small and medium enterprise.

As the economy grows, life is becoming more prosperous, the demand for energy is increasing and the aging society is advancing. In addition, the globalization of the economy is progressing, international competition is becoming increasingly high, and problems such as the concentration of wealth and regional inequality are growing. In the light of these major changes in the world, new technologies such as IoT, robotics, AI, and big data, are continuing to progress and are becoming the ground of the new economy: **the digital economy.**

This phenomenon can be described as a holistic approach that covers all the aspect of an enterprise that wants to be competitive in the modern market. The term "digital economy", introduced by Don Tapscott in his book: "The digital economy: promise and peril in the age of networked intelligence" (Tapscott, 1997)", describes an economic system where the usage of ICTs (*information and communication technologies*), is widely spread, embracing the:

1) **base infrastructur**e (high-speed Internet access, computing power, security services),
2) **e-business** (business models with high utilization of ICT functions),
3) **eCommerce** (usage of the ICT in B2B, B2C and C2C) transactions.

For this reason, the most important aspect of an organization is to avoid internal silos strategies (from the processes to the activities) in all business areas in order to reach different goals of efficiency with a more sophisticated and integrated interconnection. That's the reason why an integrated digital transformation strategy is needed. The real

objective of this integrated strategy is to build new capabilities, new opportunities through new technologies and to leverage their impact for the growth of the income in the future. Digital transformation consists in restructuring your **company's culture** and redefining your value proposition by focusing on both customer engagement and enhancing products and services with technology. In fact, this transformation is not just about technology, innovation and science; it's about people, culture, behaviors, talents.

So, how can companies use this digital transformation to grow today? The answer to this question is the development of a continuous process of communication and production using the new information technologies to reach a large number of customers in a rapid and easy way all over the world.

The vast majority of the world's largest companies are putting digital transformation at the center of corporate strategies, creating new horizons of corporate strategies. it's not just a transformation, but **a real revolution** because it's not only about the business, but it also impacts other organizations like governments, public sector agencies and organizations which are involved in many social challenges such as pollution and aging populations.

In the most digitalized countries there is the aim to leverage this transformation for the good of the entire society to move to an industrial automation, using new technologies to improve the labor conditions and increase the productivity, efficiency and quality of good and services. That's why a lot of initiatives and protocols was born as the ***society 5.0 (****a government Japanese initiative based on the balance between economic advancement with the resolution of social problems by a system that integrates cyberspace and physical space)****,* or the ***Industry 4.0*** v(*European initiative took by the German government based on the new digital technologies*).

Oxford university and Accenture developed a **Digital Density Index** (DDI) that measures how digital technologies impact the economic growth. The aim of DDI is to guide further investments of both the public and business community in order to stimulate economic development. This is highly relevant within single economic markets with the goal of increasing their competitiveness by sharing best digitalization practices and properly targeting investments.

Digital transformation is the second wave of the 4th industrial revolution and through the globalization, this is the first economic revolution that **happens all over the world in real time.** Let's imagine a world where every company has instant insights from technology like machine learning algorithms, customer interaction bots, and IoT, all built to increase the connectivity, integration and transparency for creating new products and services. In other words, using these digital technologies to create welfare and added value to the consumers and citizens.

For example, **the Internet of Things** allows every person to communicate with each other by connecting every machine, process and activity within a single comprehensive operating system. One of the most important attributes of the IoT will be its ability to recognize weak signals before they become strong ones, allowing humans to recognize elements before they cause problems.

A critical issue is that the rapid progress in AI is raising the prospect that a lot of jobs could be carried out by machines. Yet there has already been a loss of jobs involving mid-level skills across every industry in every country, but at the same time, the demand for high-skilled workers has increased considerably in most advanced economies. This suggests that workers have to be ready to change their job in a rapid way, adapting to the new job opportunities, because even if a lot of jobs are disappearing, it's also true that many others are born.

Today, we don't have enough data to analyze if these trends will play out in the future, because other structural changes are taking place at the same time. Some experts suggest that the technological change could lead to a decline in overall employment.

This risk can be discounted because while the number of new jobs directly created by the new technologies may not fully compensate for jobs displaced elsewhere. On the other hand, some estimates suggest that for each job created by the high-tech industry, around five additional, complementary jobs are created, and this is a great news for all the people terrified from the digitalization of the jobs**.** These estimates of job automation rely on the possibility of technology displacing existing jobs, but ignore if these technologies are

actually adopted, which may lead to overestimating the overall impact of technology on the number of jobs in the economy.
In this context, it's clear that there is the awareness to elaborate new managerial frameworks, skills and attitudes, as **the prioritizing of customer centricity,** to change this transformation in an opportunity. This is the new competitive advantage for companies. Not costs, not product differentiation.

In the next few years we will assist to a complete reset of all the aspects to do business with new theoretical methods and best practices all over the world. To follow this trend companies needs to develop the ability to adapt rapidly to new circumstances, called: "***Dynamic capability***". Dynamic capability is the firm's ability to integrate, change and build internal competences to address changing environment.

That's why the real challenge of transforming their business is about enabling their workforce to be able to operate and use the new technology to enhance performance, fighting the *organizational inertia*. But it's also true that not all the technology changes have to be adapted for a company, just because something is new it doesn't mean that works, and if it works for others it doesn't mean that works for us.

Getting the right answers requires the right questions, and this is the first step to understand and leverage the digital disruption. Digital disruption is a way to describe various changes that affect technology markets and other related markets. In other words, digital disruption affects the entire enterprise by forcing a drastic change of the processes and technologies or in creating entirely new operational models. Digital disruption creates a complete change in how companies do business, creating a new ecosystems based on platforms and interconnections. **The opportunities are exponential,** in my opinion, the most interesting case to take in analysis is **Amazon, the major digital transformation disrupter.**

The Amazon's case

Amazon is the fourth most valuable public company all over the world probably thanks to a **clear strategy of growth,** through diversification in the services and products, internationalization all around the world, M&A deals and partnerships with complementary companies and with strong long-term investments in R&D and

technologies. Amazon has achieved its competitive advantage through developing its technology internally, in particular, with significant investments in R&D costs.
In other words, Amazon works because it captures value through multiple channels (omni-channel strategy) offering a large variety of products and services, **owning the whole value chain**.

But how really works the profitability of Amazon services? In practice, the lowest prices are for the most popular products, with less popular products commanding higher prices (excellent algorithms). Now, there are over 76 million customer accounts, but just 1.3 million active seller customers in its marketplaces. For this reason, members are also encouraged to join a loyalty program, Amazon Prime, a fee-based membership program in which members receive free or discounted express shipping.

For the growth strategy, Amazon decided to invest in focused FDI programs, mainly where it can make strategic partnerships with the competitors and the linked ones to the AWS ecosystem **(**Amazon Web Services). Partnerships, alliances, synergies through businesses (AmazonGo uses AWS to power the AI, through a service called Kinesis), M&A deal (Whole Food) and joint ventures (Alexa Fund) are starting to be a priority for Amazon growth strategy all over the world, to increase their presence geographically, offering new products from the new countries on the same platform used for the old countries.

Studying the Amazon's annual reports, I was able to find other relevant information about investments in technologies and digitalization skills and acquisitions of Fintech companies. Investments in technologies and digitalization are a priority for Amazon and this makes Amazon the perfect candidate for my study.

For them, the **more you grow, the more you invest.**

Applying and extending the artificial intelligence and machine learning, the result is a virtuous cycle with each business contributing to the success of the other. This is illuminating because many industries do not operate at their efficient frontiers leveraging in a no-efficient way the synergies.

In my investigation I took in account the **R&D costs** that are named, in the Amazon's financial reports, technology and content costs if annual and Goodwill, if pluri-annual. They include payroll and related expenses for employees involved in the research and development of new and existing products and services, development, design, and maintenance of the websites, curation and display of products and services made available on the websites, and infrastructure costs. Infrastructure costs include servers, networking equipment, and data center related depreciation, rent, utilities, and other expenses necessary to support AWS**.**

The Amazon's business plan consists in R&D costs to grow over time, that's why the increase in technology and content costs is evident compared to the comparable prior year periods, due to increased payroll and related costs associated with technical teams responsible for expanding the existing products and services and initiatives to introduce new products and service offerings, and an increase in spending on technology infrastructure.

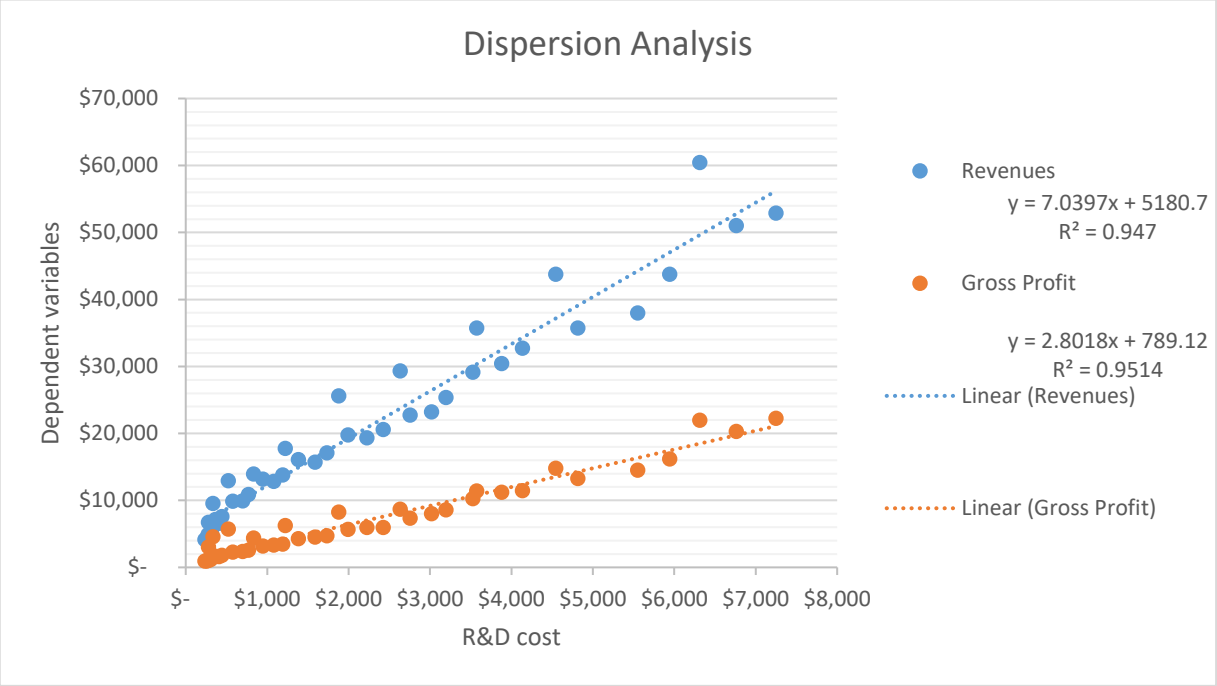
Regression model

The aspect that I want to underlie in my thesis is the following: analyzing the correlation between the R&D costs and other variables taking in account the most positive ones for demonstrate that investing in these costs brings to a **significative growth of the profitability.**

For this reason, I analyzed the quarterly financial reports and the annual financial reports from the 2008 to 2018 studying the economic and financial variables. I took as variable the revenues, the R&D costs, investments, cash flows, total debts and net equity studying the correlations between them.

Looking the Amazon's annual reports, The first result is that the variables Net Income and Operating Income are not that useful for my research. The Net Income variable comprehends the financial activities and tax payments, while the Operating Income takes in account other costs that depend on other aspects (marketing costs, and general and administration costs) and this is not what we want to for understanding the real efficiency

of the strategy regarding the R&D costs and the digitalization, so the major variables that we should consider in our analysis are the Revenues and the Gross Profit.



Analyzing the **Gross Profit – R&D** costs on Excel, I find these interesting values:

Statistics of the regression	
R	0,97538609
R^2	0,95137803
R^2 corrected	0,95016248
Standard Error	1306,07428
Observations	42

Y = 2,8018X + 789,12

Y = Gross Profit

X = R&D cost

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	789,121147	298,644431	2,64234342	0,011695
R&D cost	2,80179071	0,10014872	27,9763	0,000000

R^2 shows a strong correlation between the variables:

0,951378 > 0,7

The P-value shows that the correlation is strongly significative between the variables with an $\alpha = 0,05$:

0,000* < 0,05

The dispersion analysis shows that the Gross Profit is the most correlated variable to the R&D cost (0,951).

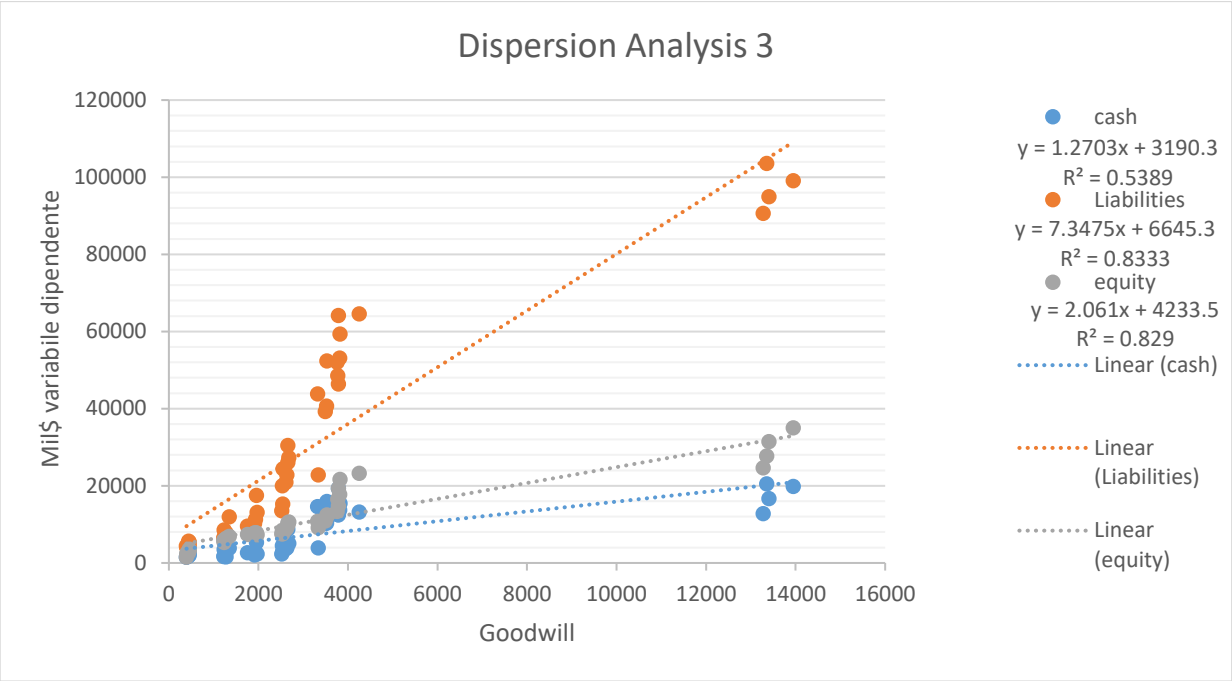
If then we try to focus on the balance sheet, we will be able to find other relevant information. Amazon put all the investments in technologies and digitalization skills and acquisitions of Fintech companies in goodwill, so it's interesting studying the relationship with the other macro areas, to have a bold vision of the total impact and importance of the pluriannual R&D costs on the financial statement.

The average percentage of goodwill on equity in the last decade has been 30%, while the goodwill has been the 45% of the cash and on the Liabilities the relationship has been 11%. These results are very high, this means that goodwill is one of the major items in the financial statement to understand the financial situation and priority of the shareholders of Amazon.

That's why I decided to calculate the Δ of the Goodwill between the quarters to understand in a better way the growth strategy of this company and if in the course of the years they have increased the investments. This value is important because through this clean value we can study if there is a significant relation between the new investments and other variables to understand how Amazon could have finance these investments.

the Δ of the Goodwill on the Δ of the Equity, on the Δ of liabilities and on the Δ of cash is: 40,42%; 14,31%; 73,95%. This means that the average amount of changes in investments is very important and it grows in the years, so in other words in the last ten years **Amazon is investing more.** This is a fundamental achieving.

Then I built another regression model using the goodwill (general investments) as independent variable and cash, liabilities and equity as the dependent variables. The goal is to find the major correlation to understand how they finance the most the investments.



Analyzing the **Equity - Goodwill** on Excel, I find some interesting values too:

Statistics of the regression	
R	0,91048234
R^2	0,82897809
R^2 corrected	0,82470254
Standard Error	3345,83818
Observation	42

Y = 2,061X + 4233,5

Y = Equity

X = Goodwill

	Coefficients	*Standard Error*	*Stat t*	*P- value*
Intercept	4233,51248	714,996479	5,92102563	0,00000
Goodwill	2,06104729	0,14801724	13,9243729	0,00000

R^2 shows a strong correlation between the variables:

0,82898 > 0,7

The P-value shows that the correlation is extremely significative between the variables with an $\alpha = 0,05$:

0,000*< 0,05

Analyzing the **Liabilities - Goodwill** on Excel, I find these interesting values too:

Statistics of the regression	
R	0,91285425
R^2	0,83330288
R^2 corrected	0,82913546
Standard Error	11745,3063

Y = 7,3475X + 6645,3

Y = Liabilities

X = Goodwill

Observations	42

	Coefficients	*Standard Error*	*Stat t*	*P-value*
Intercept	6645,30282	2509,93986	2,64759444	0,012
Goodwill	7,347492	0,51960309	14,1405856	0,000

R^2 shows a strong correlation between the variables:

0,8333 > 0,7

The P-value shows that the correlation is strongly significative between the variables with an $\alpha = 0,05$:

0,000* < 0,05

Now we can state that the goodwill (investments) is equally split between Equity and Liabilities through a strong correlation (0,8333 and 0,828).

Looking these data, we can state that the gross profit is the strongly dependent variable of the R&D cost variable. So Now we can study this type of relation to value the applicability of the Amazon's strategy for the Small and Medium Enterprise too.

Amazon finances his annual and capitalized R&D cost mostly with Equity and long-term Liabilities with a relationship of 30% and 11%. These results achieved give us the opportunity to track a pathway for other companies for changing the structure of their strategy. The R&D costs have an average growth of 9% per quarter, while the Gross Profit growth is around the 31%. The average of the R&D costs on the Gross Profit is around the 31% and the R&D costs on the Equity is the 17,61%, while the Equity growth is 8,72%.

So, using these percentages, The SMEs could be able to have a similar growth, if they start to invest in the IOT, digitalization and online platforms. The only problem is that only the richest companies could finance these costs with the equity, that's why SMEs should find another way, maybe with outsourcing programs and strategic alliances. In other words, best practice will emerge in the future. Using the Amazon's case strategy on the R&D costs, we can state that also the small and the medium enterprise can use this strategy to have strong benefits from the digital revolution, proportionally to the financial

structure and size of the company. In fact, in this new era, is not important the size of the business **but the attitude to the digital disruption revolution.**

In other words, **Amazon showed the way** to wave this digital transformation revolution starting from the culture, processes, investments in technologies and on digital labor skills. It's also true that for the SMEs the environment is different, and the processes, roles and activities are assigned in a different way compared to big firm as Amazon. However, it will be necessary to adapt organization, culture and procedures to the required innovation strategies.

The challenge for the SMEs

SMEs will need education and guidance to achieve their digital transformation goals. Amazon leads the innovation market with a strong diversification strategy and it seems the right monumental bridge between present and future. **Not everyone can be an international digital platform,** but the use of these platforms provides the potential basis for temporary competitive advantage for a lot of SMEs.

Only models that support partnerships and platforms will survive in the future. Digital Transformation has the intrinsic potential to change and to evolve business models and ways of working together inside the companies and in the communication with customers.

In a **digital economy based on international platforms** where all the companies could have the same visibility, the Amazon's way could be also implemented by the SMEs with the increasing of investments in the digital world. The new technologies, the international financial platforms and the social networks give to SMEs a great possibility. Through them, SMEs could achieve what they missed: the visibility all over the world.

On the other hand, SMEs are following this trend from distance, but from a strategic point of view, this is not the right approach, just waiting, because the real problem is on the question. It's not important now how the things will change, but the real question that the firms should ask is: **What will remain untouched in the next 5 years?** Established what will not change, we can be able to develop new strategies for the digital transformation.

The future is right here, right now, and the focusing should be not on what it will be, but on what it is right now. In fact, the final goal is to find now the transformation and evolution of the own business leveraging the digital technologies.

To make the digital revolution a reality, the management must ensure that their organizations invest in the right areas and in an efficient way, without over-paying. Basically, leaders must **identify where the company should excel**. An important question is to decide if they need to adapt your business model or to revolutionize.

That's why a strong enterprise-level governance is needed to increase the level of coordination, but it's also very important the enterprise culture and to encourage employees to identify new practices, processes, activities and opportunities that will advance the new vision base on digital technologies. Then it can be useful also to redesign your training programs to develop those skills your company needs.

But the main thing to remember is that digital transformation is different for every business, industry and country. Understood this point, the way of a company to evolve depends on its environment, internal and external, on budget and on current dynamic capabilities. A modern company needs to function on a common platform and to communicate internally and externally in a cohesive and integrated way. Even if companies do this, it could be too late because not every company will survive at the digital transformation. In fact, many companies failed, fails and will fail for two reasons in relation with digital revolution. First because they think that digitalization will not occur in their business with the wrong attitude is thinking "if I survived so far, why I should change something now?". Second, it's important to choose where and how to change. Companies need to evolve, and the digital transformation is the chance to do it.

Therefore, the challenge for a lot companies in implementing this strategy lies in the development of digital skills, culture and processes that will work efficiently with the new technologies. Getting digital transformation is a trip that demands an investment in training, a commitment to developing a culture that values curiosity and innovation, and the ability to build a workforce that has the new digital tools to continually **adapt and learn in a rapid way.**

Some SMEs think their size creates some kind of immunity when it's talking about digitalization because they assume, because they are "small," they don't need to approach the digital transformation, that is something related only to the big multinationals.

But this is not the truth.

In the future, demand for advanced digital security experts will rise, new professional roles will be required, and top talents will likely demand high earnings. The digitalization of products, services, and operations will continue to be a primary driver for growth and innovation to an exponential rate and it's important to leverage this opportunity now that we are in time. Increasingly, multiple platforms are being designed to integrate other platforms with other characteristics, forming ecosystems where everyone is linked.

Conclusion

The 2018 brings in the economy a number of changing dynamics regarding the new intersection of technology with business. In fact, advances in artificial intelligence, digital platforms and machine learning are making it easier for companies to take advantage of technologies as IoT and Big Data. At the same time, digital transformation contributes **in restructuring your company's culture** and redefining your value proposition by focusing on both customer engagement and enhancing products and services with technology.

Amazon is the best practice of the digital transformation that enabled to create an international giant that connects millions of people by allowing the access to good products and services at an affordable price.

The secret of Amazon is the orientation to future, the strong investment in R&D costs, the capability to use the new technologies and the evolution of the culture and organization. All these elements can be replaced, with the appropriate adjustments linked to the structure and size, from the SME's. In a digital economy based on platforms where all the companies could have the same visibility, **the Amazon's way** could be also implemented by the SMEs. To reach this object SMEs have to solve their financial problems through the research of new partners, strategic alliances, joint ventures, synergies and additional share capital.

The new technologies, the international platforms and the social networks give SMEs a great possibility. Through them, SMEs could achieve what they missed: the visibility all over the world. In this new era, the priority is not more the product and the quality of the output, but the customer perception of the company and of the product. Changing this paradigm, SMEs will be able to solve the problem of disruption, becoming themselves **protagonist of the digital revolution.**