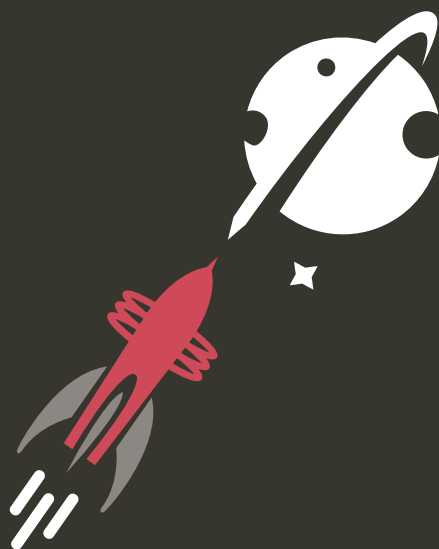


# Journey of the Future Enterprise

How to Compete in the Age of Moonshot Leadership and Exponential Organizations

Jorge Calvo

Business Academics



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# Journey of the Future Enterprise

Jorge Calvo

To survive in the new, competitive digital economy of artificial intelligence and the Internet of Things, companies will have to change their management models. The company of linear, incremental growth is becoming obsolete.

Moonshot leaders like Elon Musk or Jeff Bezos aspire to bringing about massive transformations. These visionaries seek radical solutions to big problems through enabling technologies that are easily scalable and yield increasing returns with decreasing marginal costs that in many cases approach zero.

In his book *Journey of the Future Enterprise*, Jorge Calvo explains what the disruptive change of the Fourth Industrial Revolution consists of, what moonshot leadership is and what exponential organizations (ExOs) are, and having set out the conceptual framework, explains how to gear companies toward the new economy.

In short, this resource-packed book is written for those who want to be part of this change, for those who are suffering the impact of this radical transformation, for those who feel lost as a result of the complexity and speed of the changes that are taking place, and for those who want to better understand the drivers of the Fourth Industrial Revolution.

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*“Life is flux. The only thing constant  
in life is change.”*

Heraclitus,  
Pre-Socratic Greek philosopher  
(535 – 475 BCE)

# Index

|   |     |
|---|-----|
| <b>Introduction</b>   | 9   |
| <b>Part I: The Disruptive Change in Deep</b>  | 11  |
| 1. An Insight into the Fourth Industrial Revolution                                   | 13  |
| 2. The Paradigm Change  | 27  |
| 3. What Makes the Fourth Industrial Revolution Different?                             | 41  |
| 4. Cyber-Physical Systems: The Fusion of the Physical, Digital, and Biological Worlds | 53  |
| <b>Part II: Leadership and Organizations Leading the Change</b>                       | 99  |
| 5. Moonshot Leadership for Massive Transformation                                     | 101 |
| 6. Exponential Organizations that Change the Game                                     | 129 |
| <b>Part III: How Transform Organizations to compete in the Future</b>                 | 159 |
| 7. Strategy in the World of Exponential Change  | 161 |
| 8. Three Basic Principles in Relation to the Future                                   | 179 |
| 9. Conclusion: Speed is the New Currency  | 197 |
| <b>Epilogue: Augmented Business Accelerated by the COVID-19 Pandemic</b>              | 203 |
| <b>Miku Hirano, Interview with a Moonshot Entrepreneur in Japan</b>                   | 217 |
| <b>Notes</b>  | 223 |
| <b>References</b>   | 231 |

# Introduction

This book examines the globalized and digitalized business world in which new leaders and organizations disrupt industries, business models, products, services, and operations through technological innovations. Businesses need to change their management models in order to survive in the new competitive AI-IoT digital economy. Our major focus will be the impacts the Fourth Industrial Revolution is going to bring to light. We will examine how IoT digital platforms and the AI digital era will allow the world to manage time, capital, and businesses ubiquitously with fewer resources and fewer negative impacts on the economy, as well as the society and the ecosystem. Globalization has led to many changes in how businesses operate; today businesses are realizing the importance of technology and incorporating it into their practices and operations. Technology has made it easier for businesses to conduct their operations, eventually leading to a greater profits, efficiency and agility.

This book aims to help all those who want to be part of this change, those who have bold ideas and want to implement them by designing the organizations of the future that will support their mission and vision. This book also aims to guide those who are suffering the impact of this radical change, those who feel lost due to the complexity and speed of the disruptions we are experiencing, and those who want to understand better the drivers of the Fourth Industrial Revolution.

This book also examines moonshot leadership, which seeks to achieve massive transformation and create exponential organizations (ExO). These organizations, which maintain exponential growth that disruptively impacts traditional industries, were born from the vision of innovative leaders, visionary “moonshooters” who pursued radical solutions to big problems through enabling technologies. They have been the driving forces and the leaders of the most recent changes in the economy. Moonshot leadership has changed the way companies relate to competition as well as the challenges of the past. Leadership and communication are still the best way to grow your image and your business in a community.

This book also highlights the strategies of disruptive technology. Understanding these aspects well will allow us to comprehend the changes that are going to the course of human history. A number of major technological solutions are also described here that companies can incorporate into their businesses. The book ends with the conclusion that we can't ignore the disruptive strategies that companies have been implementing over the years in order to change the face of the economy. We have to understand the drivers of what is happening around us and embrace these changes to make a better world.

Shortly before going into press, the SARS-CoV2 coronavirus emerged, triggering the COVID-19 pandemic that brought the world's social and economic activity to a grinding halt, infecting millions of people and leading to hundreds of thousands of deaths. We asked ourselves how, with our experience and knowledge of business management in disruptive contexts where technological innovation can make a difference, we could contribute in order to analyze the impact of COVID-19 and the consequences it will have on the future of companies. We believe this book has been made even more relevant by dealing with moonshot leadership, disruptions, massive transformations, and exponential organizations that use enabling technologies to make their vision a reality. A journey that COVID-19 has accelerated, squaring global volatility, uncertainty, complexity, and ambiguity: VUCA2. Moonshot leadership and exponential organizations will gain even greater massive transformation purposes in the ever-changing new cyber-physical age, accelerated by COVID-19. A business future where technology and people join forces to create synergies, where people strengthen their skills and competences thanks to digital technologies –technologies that are currently mature, easily scalable, with increasing returns and decreasing marginal costs that in many cases reach zero, and which we can turn to in order to survive the crisis and then grow.



# **Part I**

The Disruptive  
Change in Deep

## CHAPTER 1

# **An Insight into the Fourth Industrial Revolution**

An industrial revolution can be described as the appearance of “new technologies and novel ways of perceiving the world [that] trigger a profound change in economic and social structures”.<sup>1</sup> Since the beginning of the First Industrial Revolution, the development of ships, trains, cars, airplanes, and other machines has changed the flow of people and goods, production sites and the way people communicate, work and live. This First Industrial Revolution represented the greatest contribution to economic growth and social wealth since the origin of humankind. From human and animal power there was a shift to steam power and later to electricity, while machinery made from iron and new materials led to mass production. The upsurge in the manufacturing industry worldwide helped to stabilize the global economy and benefit the masses.

However, from as early as the 1800s some restrictions began to appear<sup>2</sup> that encouraged inventors to think again about where factories should be built, how they should operate, and how productive they could become. It was an era in which waterwheels and steam engines had only one central drive shaft. Electricity enabled the redesign of the structure of factories and the way work and everyday processes were carried out within them.

The Second Industrial Revolution meant the expansion of electrification in the late 19<sup>th</sup> century. With the appearance of new sources of energy generation such as oil and gas, with new systems of transport such as the automobile and the airplane, and of communication such as the telephone and the telegraph, together with great technological innovations and the development of chemical industry, interrelated socio-economic changes were experienced, which accelerated its impact, internationalizing the economy and taking the first step towards globalization.

The Third Industrial Revolution in the 1960s brought with it a new ecosystem and environment that changed the perspective of industry and the economy. Major changes were achieved by those factories and businesses that adopted information technology and automation as a part of their systems.

Technology is a tool that humans have used to gain a better understanding of the world. From what is in the skies to what lies beneath the surface, we have used the tools of technology to answer the questions our minds could never have answered on their own. However, in each of the first three industrial revolutions, everyone thought it would be the last. With the current Fourth Industrial Revolution, which connects and synchronizes the physical and virtual worlds, we are witnessing a new shift from human intelligence to Artificial Intelligence (AI) in a world where machines can communicate via the Internet of Things (IoT) and where autonomous vehicles, collaborative robots, and smart cities and factories are being developed. However, AI isn't about replacing human intelligence, but about augmenting human capabilities through the automation of routine decisions and tasks. Soon, people and machines will communicate, work and live in sync. The rise of the Fourth Industrial Revolution has therefore altered the course of the future forever. Not only will these technologies affect the way we do things as a society, they will also fundamentally change our essence as human beings.

Significant changes will be observed in the global economy, as the revolution will also impact institutions and business strategies. New markets will be formed, opening up a whole new world of opportunities to those who can keep up with the advance of technology. New ideas will generate increased economic benefits, will create more skilled jobs than those they replace, and will result in improvements in social wellbeing, health, education, and access to information and, therefore, in democratization. Although progress might be slow at the start, with the passage of time it can teach today's innovators and businesspeople a lot about the future prospects of business.

Business in the 21<sup>st</sup> century has evolved dramatically and is very dynamic and easily adaptable to the changes around it. Globalization has led to many changes in how businesses operate. All businessmen and busi-

nesswomen in today's market need to be strong, enterprising and flexible in the face of sectoral changes. Businesses that don't keep track of changes or don't incorporate technology into their operations stagnate, thus experiencing a fall in their success rates. IoT is "the next big thing" for current enterprises, as it's infusing brains into machines and pushing businesses to develop unprecedented relations with their customers.<sup>3</sup> It systemizes and streamlines operations, thereby elevating productivity.

Technology is undoubtedly a blessing for businesses if dealt with correctly. It makes it easier for businesses to conduct their operations, eventually leading to bigger profits and greater efficiency.<sup>4</sup> However, we need to make sure that the technological advances don't become a burden on humankind. For example, India, being a poverty-stricken country, will only be able to embrace the industrial revolution once the whole population is educated enough and has access to these technologies. It's therefore vital to ensure proper implementation of technical progress in basic education systems –both primary and secondary–, not just in engineering schools in Bangalore.

Some changes define the course of the future as well as history behind it. When the World Economic Forum (WEF) announced the arrival of the Fourth Industrial Revolution, the discussion about it intensified, as it incorporates technologies that blur the lines between the physical, digital and biological worlds. It's clear that the way our society has conducted daily routines is going to change. If we fail to cope with the digitalization and globalization brought forth by the Fourth Industrial Revolution, we will have to pay a high price in terms of social and economic losses. For those who ignore them, the world will become chaotic and they will be incapable of taking advantage of it.

However, the WEF overlook the fact that these new ideas will generate a lot more revenue for the economy and will generate more jobs as well for the pool of talented people who are jobless at the moment. Many executives and companies are limited by their own assumptions and restrictions from the past, which established that the business model was not something that could suddenly change. Startups and new emerging firms rely heavily on AI, while established businesses employ it simply in order to try and check the success rate of the new technol-

ogy. However, when engineers are trained in the skills needed to use new technologies and work closely with business managers, both groups learn quickly not only about how AI works but also about the implications it could have for their businesses.

Let's look at the most important aspects of current technological advances that businesses need to consider:

- 1. Increased output and efficiency:** IoT seems destined to change the way business is conducted, leading to greater advances and developments in less time. It will keep better track of products and result in better control of inventories with less human intervention and fewer mistakes. Its integration makes it much easier to direct and control processes.<sup>5</sup> This will change staff profiles, thereby leading to better management and fewer human errors. IoT will also increase customer satisfaction and loyalty towards the company.
- 2. General improvement in operations:** IoT yields better results because it allows resources and efforts to be systematized, which makes it possible for the business owner or the entrepreneur to identify their needs more quickly, which should imply an improvement in business operations.
- 3. Increased levels of work safety:** IoT helps to track employee efficiency, which has a direct relationship to the success of the business, but in turn makes work safer. A device connected to the employee's body can effectively detect if s/he has a medical condition simply by following his/her movements. The device can also recognize if someone requires medical treatment.

## **The Only Constant in Life is Change**

The need for change, for renewal, is inherent in the development of humanity. The Greek philosopher Heraclitus stated 2,500 years ago that "life is flux", meaning that the only constant in life is change.

Change is an unavoidable part of life. As Charles Darwin (1809-1982) remarked about the evolution of the species, it's not the most intellectual or the strongest of species that survives, but the one that is able to adapt to the changing environment in which it finds itself. Change is an

essential part of a business life too; it enables businesses to enhance their competitive position by adopting better methods or by re-arranging work constraints. Companies evolve over the course of their lives, so all business directors need to put in place procedures in order to manage change.<sup>6</sup>

Joseph Schumpeter (1883-1950), a prominent economist noted for his theories on the vital importance of entrepreneurs, stated that the economy progresses in waves of “destructive creation” that are based on innovation, i.e. on the introduction of new technologies, new materials, new products, new management methods, new forms of business organization, new markets, and new sources of raw materials. All of these are destabilizing for incumbent companies because they destroy old values in order to create new ones.

In his 1995 article “Disruptive Technologies: Catching the Wave”, my Harvard Business School professor Clayton Christensen also linked “creative destruction” with innovation and technology. In his book *The Innovator’s Dilemma: When New Technologies Cause Great Corporations to Fail* (1997), Christensen explained how companies that rest on their past successes and establish a dominant position in the market develop “tunnel vision”, which makes them worry only about their traditional competitors, meaning they’re incapable of recognizing the potential disruptive impact of radical technological innovations that often develop outside their market, outside their focus. Technological disruption occurs when a new business model, a new product or new process based on digital innovation breaks the status quo of traditional industry.

Consider what happened to Kodak, who invented the digital camera but still chose to remain focused on photographic film, believing the quality of digital photographs would never surpass it. What they failed to consider was that there was an infinitely larger market of customers who valued immediate image accessibility over quality. In 1995, 710 million rolls of film were sold and developed at thousands of handling centers. Ten years later, by 2005, approximately 200 billion digital photos, equivalent to eight billion rolls, had been taken.<sup>7</sup> Indeed, digital photography reached professional quality at a price that made it accessible to everyday customers. When digital cameras were integrated into mobile phones, almost everyone stopped buying film cameras, leading

to Kodak's bankruptcy. Nowadays, Internet users upload more than one billion photos a day to sites like Snapchat, Facebook, and Instagram, and AI helps them to achieve results previously only available to professionals.

We may think that these crises only happen in certain industries, but in fact all companies need to adapt to customers' needs. Changes have been exponential; they occur at a breakneck speed that is impossible to follow with traditional business models. Technological disruptions can affect any kind of industry: today, only 12% of the companies that were listed in *Fortune 500* in 1955 remain on the list. Over the last two decades, 14 new companies have been incorporated each year into the *Fortune 500* listing.

With the emergence of big data and access to huge amounts of unstructured information generated in real time, the business world has entered the "winner-takes-all" era. The nature of the Internet and the monopoly of consumer knowledge appear to have modified the rules of corporate rivalry. These days there is practically only one search engine (Google) and one e-commerce site (Amazon). If this trend continues, around 40% of the companies currently listed in *Fortune 500* will disappear within 10 years.

For example, the automobile industry traditionally had no link to disruptive technologies as they wanted to keep the status quo and felt comfortable improving petrol engines for more than a hundred years, with the connivance of the oil industry –two strong dominant industries with powerful lobbies. However, the rise of new technologies has seen this trend change. The emergence of Tesla, the world's first manufacturer of all-electric cars, has significantly disrupted the automobile industry. This will have considerable effects on society as well as on the environment. In August 2018, Tesla was the third largest car manufacturer by market capitalization yet ranked 28<sup>th</sup> in annual car production terms. By the first quarter of 2020 it had reached first place in terms of capitalization in the automotive industry. This implies that investors strongly believed in Tesla's future growth providing that the technology and regulations are in place.

If we take a look at the four industrial revolutions we have described, we can see that the periods between revolutions have become gradu-

ally shorter. The digitalization that emerged during the Third Industrial Revolution has exceeded the limits of the IT industry, converging with other technologies and scientific advances to create new businesses. The Fourth Industrial Revolution represents a new digital age, an era that also has a global impact. In many industries, technologies and markets already depend on AI, big data, etc.<sup>8</sup> Seven of the world's eight largest listed companies are digital and relatively new (with the oldest being founded in 1975). Their digital and global approach allows them to maintain an annual growth in their market value of between 20% and 70%. The list is as follows (market value shown, in billion US dollars, as of June 28, 2019):

| <b>Company</b>                 | <b>Market Capitalization*</b> | <b>Country</b> |
|--------------------------------|-------------------------------|----------------|
| <b>1. Microsoft</b>            | 1,028,000                     | USA            |
| <b>2. Amazon</b>               | 928,540                       | USA            |
| <b>3. Apple</b>                | 911,240                       | USA            |
| <b>4. Alphabet (Google)</b>    | 751,150                       | USA            |
| <b>5. Facebook</b>             | 551,490                       | USA            |
| <b>6. Berkshire Hathaway**</b> | 521,100                       | USA            |
| <b>7. Alibaba</b>              | 439,080                       | China          |
| <b>8. Tencent</b>              | 432,080                       | China          |

(\*) June 28th, 2020

(\*\*) Warren Buffett's investment fund

To give us an idea of the disruptive potential of these companies within the economy, we should consider the fact that the sum of their market value (US\$4.1 trillion) is equivalent to the 2018 nominal GDP of Germany, the world's fourth largest economic power. At least four of them (Google, Apple, Alibaba, and Tencent) are developing their own operating systems for autonomous vehicles, which is something that, together with the demand for environmentally friendly vehicles, will reshape the business model of the automobile industry.



Although this may all seem distant to the consumer (“just stock markets hype”), as happened with the dot-com bubble, this time we are talking about consolidated companies, many of which are also examples of best practices in business management; Apple and Amazon, for example, are considered to be excellent at supply chain management and outstanding in innovation. And they also own some of the brands most valued by global consumers.

Each industrial revolution has introduced a new style of leadership, management and organization. The companies of the Fourth Industrial Revolution emerged from the vision of young entrepreneurs who opted for digital innovation. Some of them didn’t even finish their university studies; none had any prior experience in the business, and often lacked resources. They started in garages and a couple of them even hacked computers to achieve computer capacity. They fundamentally ignored the basic principle of business strategy of having “a plan to achieve a goal with the available resources”. In the absence of available resources, they invented them. Now there are new “moonshot” leaders who are not afraid of “aiming at the moon”, new digital brands and new exponential organizations who are changing the economy and our lives.

If businesses continue to do the same as usual, even if they did it better, they wouldn’t be able to compete with these new disruptive organizations, which seek to be radically different, with products and business models that may fail to convince traditional industry at first –as happened with Kodak– but that break the sectoral barriers to create new, valuable proposals. Faced with this challenge, incumbent companies cannot compete technologically and are thus forced to enter into a cost strategy, reducing prices in order to survive. But this spiral of lowering prices leads to a deep crisis within the sector, to the bankruptcy of many companies, and to the disappearance of powerful industries.

## **Change is Difficult, but Not Changing is Fatal**

The digital age requires businesses to constantly learn, adapt and question their values in order to survive in the global market. They have to focus more on the latest business ideas and models if they want to provide a valid response to their customers’ rapidly changing needs, as

better tools and technologies are redesigning and reshaping opportunities.<sup>9</sup> The “think big, start small, fail often, learn fast” approach is what is guiding the most successful companies of the future. Changes and reconfigurations in the structure of businesses and business models are also critical when it comes to the implementation of the latest digital services.

Let’s consider the example of Encyclopedia Britannica Inc., a company that has reinvented and restructured itself as an educational service, increasing its accessibility and affordability globally. The *New York Times* is a similar case, becoming a free-access online media site in order to gain a wider readership and to attract digital subscribers. It’s one of few media outlets to have transitioned to new technologies and, in addition to publishing its news on the Internet, has also created new apps (a cooking app, an opinion app, and the so-called *Millennials*) as new revenue sources. Its diversified strategy continued with a virtual reality app in partnership with Google, which transformed the company into an \$800-million business.

However, if change isn’t executed the right way, its effect on the business can be devastating. A portion of the workforce may choose to leave as they don’t agree with what is taking place, which puts increased pressure on those who remain. Transparency is of utmost importance when it comes to lowering barriers to change, and all staff should therefore be able to talk about these changes with their supervisors any time. And managers need to be able to answer any questions connected to the reasons behind each change. This way the staff might contribute better to the change and to the new vision.

With the pace of change in digital technology, almost every process, every task is experiencing some sort of change and businesses need to constantly adapt to keep up. Adapting to new technologies also means that companies need to be constantly innovating if they want to keep up with rapidly changing customer demands and increased competition. The use of social media and Internet services has increased at a rapid pace globally in order to address end user requirements. Facebook is one of the digital apps to have transformed most effectively to smartphones. The company has been experimenting with various technologies in smarter ways to enhance the user experience.

In this context, it's interesting to examine the changing role of the board of directors, which has become more complex in recent years. As the demand for better corporate governance has increased, so have the responsibilities of corporate directors. The challenge is to create and embrace a mutually beneficial relationship with technology that automates routine tasks while allowing directors to play a more valuable role in the increasingly complex environments their organizations are facing. There are many key decisions to consider in this context, including:

- Recognizing and identifying the issues, threats, and opportunities in the evolving landscape.
- Moving towards new business models and finding ways to get out of the declining market position.
- Synthesizing and executing a strong brand development strategy.
- Evaluating the potential of digital transactions in the cryptocurrency world.

Globalization has been present in our lives since the beginning of time. It only became evident after the end of the Cold War as a result of the increase in communication and international transport. And now, with the advance of emerging nations and IoT, its effects have begun to spread even faster. Globalization has driven businesses to become international and has served to rebalance the size of economies and markets. However, there are some who still cannot seem to comprehend the breadth of the positive effects it has had on reducing political, economic, and financial instability.<sup>10</sup>

In today's competitive market, conducting business globally is largely a defensive move. Technology has eased the way we shop and purchase products – now we don't even need to physically go to a store to buy things.<sup>11</sup> The introduction of e-commerce has opened up opportunities for both businesses and customers. It has also eased company-customer communication through online channels, and consequently, customer management has become even more crucial.

Digitalization created virtual markets a couple of decades ago. A virtual marketplace is a platform that provides a digital space to vendors and relieves them of the task of delivering to the customer. The product

description, image, pricing, and stock levels are the vendors' responsibility, while the responsibility for maintaining a secure payment environment, safe transactions, the quality of service, and the ability to deliver to the end customer lies with the online store. The advantage of the virtual marketplace is that it eliminates the overhead costs for sellers. It even provides accounting services and secure payment methods. Many of these virtual markets have also developed a mobile app that puts a whole range of products into potential customers' pockets throughout the world. This cutting-edge technology has enabled vendors and manufacturers to dedicate more resources to the quality and innovation of their product without worrying about managing the app. These virtual markets are increasingly expanding by connecting and operating autonomously with physical supply chains. A great example of this is the Chinese company Alibaba.

In short, boosted by AI, IoT and blockchains are rapidly disrupting traditional supply chains and markets.

## **Change Begins at the Top. The Role of a Corporate Advisor**

Kodak and many other companies have disappeared because of a lack of vision at the top of the organization. However, it's not enough to create a new position and call it Chief Innovation Officer or Chief Digital Officer if the majority of the board doesn't know how this new department can contribute to the future of the business. Therefore, the first thing that needs to be done is to increase the technology awareness of the whole board room. And rather than creating a new role, some Asian-Pacific countries, according to the Hong Kong Institute of Chartered Secretaries, believe that consideration should be given to integrating this new advisory function within the corporate secretariat of the board of directors in a regulatory manner. In Western countries this role tends to be carried out by a small group of senior independent strategic advisers, who form an advisory committee at the disposal of the board of directors. In other cases, non-executive independent directors are hired. The idea is that the position of corporate secretary or strategic advisor plays a support role for directors, advising the board

on the governance and suitability of the transformational innovations within their organizations, including the adoption of new technologies and new skills. This role can also be performed by a trusted part-time independent advisor –as an innovation coach– who can bring an external, horizontal vision to the board and particularly advise each of the directors in their area when required. Not all corporate directors should be experts in new technologies, but they should be familiar with enabling technologies to be able to implement their potential in their area of responsibility and to sustain a proactive dialogue with the experts.

The technological knowledge and expertise of board members can vary greatly. A strategic advisor (or a corporate secretary in the Asia-Pacific area) can assist the board by considering whether technology should be a regular item for board committee discussions. Furthermore, advisors and senior directors may require training to understand the risks associated with new technologies, such as data protection and cybersecurity. These corporate advisors should work with the board and the relevant internal bodies to raise the board's awareness, understanding, and ultimate responsibility for these issues and the implications of innovations in business. Having a role in assessing and determining, for example, whether the company's IT controls are adequate to protect information, resources and its sustainability. According to a study conducted by IBM in 2019, 60% of companies without an effective business continuity plan had their brand damaged because of technological disruption. Moreover, the cost of data breaches has increased notably.<sup>12</sup> IBM reported that the total average cost of a data breach amounted to \$3.92 million between 2018 and 2019, and that it took up to 279 days to identify and contain it.<sup>13</sup>

To avoid such data breaches, the first thing to do is to best protect the privacy of the information and limit the amount of damage caused. The corporate secretary, in his/her role as legal advisor and supervising good governance, should have a key role in any data breach management plan, including decisions as to whether there is any need to inform the regulatory authorities or the individuals affected.

## What does the Fourth Industrial Revolution Mean?

The Fourth Industrial Revolution has been in progress since the start of the 21<sup>st</sup> century and has brought with it many changes such as the mobile Internet, which has made the world wide web much cheaper, more accessible and easier to use for people globally. AI and machine learning are added advantages of this revolution. These recent technologies have totally transformed the previous technological era.

However, the Fourth Industrial Revolution has raised a number of concerns, first and foremost of which is that people are not aware of the impacts that this revolution will have on their lives. It's evident that the Third Industrial Revolution involved a paradigm shift from conventional society to an electronic information-based society. With the increased prevalence of IT, including IoT and AI, the Fourth Industrial Revolution is characterized by "zero marginal cost", propelling us towards a society of nearly free goods and services.<sup>14</sup>

There are three schools of thought when it comes to the future impact of AI: the utopian, the dystopian, and the possibilist vision.

- In the utopian vision, intelligent systems will usher in a new era of enlightenment where humans are free from work to pursue nobler goals. AI systems will be programmed to cure disease, resolve disputes fairly, and increase our human existence only in ways that benefit us.
- For the dystopian vision, intelligent systems will steal our jobs, outnumber humans in evolution, become war machines, and prioritize a distant future over current needs. Our dubious efforts to control them will only reveal our own shortcomings and our inferior ability to apply morality to technology that we cannot control.
- The possibilistic vision is somewhere in the middle and thinks that we can use smart systems to improve the way we work and live by fostering progress. This will bring great benefits to humanity, but also great challenges in transformation due to the potential of AI to be used harmfully –like other technologies–, maliciously or unintentionally.

A key function of civil societies in democracies is their ability to promote accountability, transparency, and fairness. Many economists now feel that people should know more about how capital and assets are used both in the global economy and in national economies. The education, labor, union, and corporate sectors must make stronger efforts to ensure public safety and the involvement of the public at a much higher level in the development of the economy.

Many people are concerned about the impact of automation and AI on jobs. Without job security, people worry about how to provide for their families, which will impact society. However, if we look at previous revolutions, the introduction of automation and mass production during the 18<sup>th</sup> and 19<sup>th</sup> centuries did not lead in general to social upheaval or widespread suffering. Nevertheless, the changes in work skills is never easy and if not managed in time, lead to labor conflicts, as happened in Manchester in 1812 with Luddism (1812) and Chartism (1838) movements, when skilled textile workers were replaced by machines operated by apparently less skilled and cheaper employees. Nowadays, many workers have seen their wages stagnate with the digitalization and automation of their tasks. So, the question is whether further automation will eliminate jobs or, in fact, create more jobs that we have not yet envisioned.

Once the resistance against it has been overcome, the Fourth Industrial Revolution will be a solution for fragile economies.<sup>15</sup> The rise of the digital era has seen a decline in middle-class economic power. In order to stabilize society and the economy, we have to increase employee income and decrease the number of working hours. Emerging economies with trans-border connections will play a role in lifting millions out of poverty.

It's now clear that we all have an increasing social responsibility for our decisions and actions. The rate at which we're consuming resources isn't sustainable and we need solutions to reduce it. The Earth's precious resources are diminishing at an alarming rate, and we need to use technology to preserve them and to take advantage of the skills and capabilities of the people in better ways. The Fourth Industrial Revolution will be fully realized when technology is combined with institutional innovation and an open business model that builds on the successful lessons of previous revolutions.

## Jorge Calvo

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### **Education:**

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- Certifications issued by MIT: Artificial Intelligence: Implications for Business Strategy, Digital Business Strategy: Harnessing Our Digital Future, Internet of Things: Business Implications and Opportunities.

**Other books:**

- Jorge Calvo (2018). *Evolución Estratégica del Supply Chain Management: de la eficiencia a la agilidad*. Alicante: Club Universitario. ISBN: 9788417262402.
- Alex Fernández de Castro, Jorge Calvo y Pedro Navarrete (2018). *Wa, Claves de la Cultura Japonesa Corporativa*. Barcelona: Libros de Cabecera. ISBN: 9788494904103.

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