

The Development of Disruptive Organizations and Technologies

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Abstract

Technological innovations usually have an impact on society by marking notable and lasting changes, generating advances that transform the social visa, this type of technologies better known as disruptive that provide a potential being reflected in the activities of the business environment obtaining greater opportunities in the market; where the organization can better adapt to globalization to stand out from the competition seeking to manage tasks in an agile and Simple. Although technological transformations increase productivity and/or profitability, each company has different needs, but the purpose of most is to manage processes. The development of this work allows us to identify the advantages of disruptive technologies which break the established schemes, defining new ways of solving business needs for a comprehensive improvement where business environments transform the way of doing business by improving the performance of tasks by the operational level, offering great advantages and opportunities for growth applying a series of particularities of the field innovative.

Keywords: *Technology, Disruptive, Development, Organization.*

Introduction

Technology evolves minute by minute. Every day, millions of people work in different parts of the world to surprise with the launch of a new smartphone model, a super-fast PC and even with washing machines that are controlled remotely. However, at certain times in human life, advances are transformed into truly disruptive technological innovations, capable of having an even stronger impact on society, to the point that they not only leave a mark on it, but change it forever. So, in this article you will learn about what disruptive technology is, when it began to be used, what its potential is, and what are the technological innovations that promise to generate another abysmal change in our daily lives. [1]

To cite some historical examples, it could be said that in the first decades of the twentieth century, the personal computer (PC) appeared, which displaced the typewriter and forever changed the way of working and communicating. The combination of affordability and a user-friendly interface of the Windows operating system were central to the rapid development of the personal computing industry in the 1990s. Personal computing disrupted the television industry, as well as a large number of other activities. Email transformed the way of communication, greatly displacing letter writing and disrupting the postal and postcard industries. Cell phones made it possible for people to call anywhere, and they disrupted the telecommunications industry. Laptops and mobile computing made a mobile workforce possible, allowing people to connect to corporate networks and collaborate from anywhere. In many organizations, laptops replaced desktop computers. Smartphones largely replaced cell phones, and because of the apps available, they also disrupted: pocket cameras, music players, calculators, and Global Positioning System (GPS) devices, among many other possibilities. For some mobile users, smartphones often replace laptops. Others prefer a tablet. [2]

Objective

The objective of this paper is to show the application of different disruptive technologies depending on the business area through some examples. They will provide a better understanding of their use and in some way aim to increase knowledge about them.

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Disruptive Technologies

The business environment, globalization and competitiveness have adapted to the new technologies that are necessary to obtain greater opportunities in the market due to the need to stand out from the competition; therefore, each company has different needs, but the vast majority seek to manage processes and tasks in an agile and simple way.

Disruptive technologies, a term popularized in 1997 by the world authority on disruptive innovation Clayton Christensen in his publication *The Innovator's Dilemma*, are transforming companies and the way they consume. Christensen's publication argues that no matter what type of industry it is, any company will be left behind if it does not abandon traditional business practices and choose to use these types of technological tools. The innovator's dilemma defines disruptive technologies as opposed to sustainable technologies that focus on growing existing technologies by improving their performance through an extended or higher-capacity function, such as those that change the landscape of an entire industry or trigger a new one by solving a problem in a completely innovative way. [3]

Disruptive technology is a technological innovation that makes those that were being used until that moment totally obsolete. At the present time with the large number of innovations that are produced, companies are obliged to constantly renew themselves to avoid falling behind in the race with their competitors. [4]

According to Professor Christensen, disruptive technological development was not simply a breakthrough that turns good products into better products. Rather, the original term refers to transforming a product that was historically very expensive and complicated to obtain, to the point that the only ones who could access it were those who had the economic means and skills to operate it. Therefore, in this case, disruptive technological innovation makes it more affordable and economically accessible to a greater part of the population, while identifying it as a technology capable of revolutionizing the entire world. Hundreds of products have gone through this situation, but, if you want an example of disruptive technology from the past, the emergence of computers is perfect. Computers, in their early days, cost thousands of dollars and took years to train people to operate. That is why, as part of the process of disruptive technologies, large corporations and the most prestigious large universities were introducing them into their operations, giving them greater accessibility. And, as the history of disruptive technology shows, this small progress on computers was unstoppable. Since then, production has grown and evolved to launch the market from the large computer to the mini, to the portable and, later, to smartphones. However, not everything happens by magic. A disruptive technology takes time to appear as such in the eyes of the consumer, as consumers must adapt to incorporate it into their daily lives. In fact, many disruptive technological innovations experience a high failure rate when launched due to the natural resistance of consumers. But, to understand it better, it will be necessary to evaluate what its true potential is. [1]

Here are some examples of disruptive technologies: [11]

Artificial Intelligence

Artificial intelligence is a technology that allows computers to solve problems and reason in the same way that humans do. Examples of artificial intelligence include:

Robots

Self-driving cars

Home assistants

Chatbots Found on Retail Sites

Digital Travel Agents

3D printing

3D printing

It is used in various industries, mainly in the medical and aeronautical fields, and is the process of creating three-dimensional objects from a non-three-dimensional source, such as a digital font. Objects are created layer by layer in this process and this allows people to print unusual shapes with fewer materials.

Blockchain

Bitcoin and cryptocurrencies are examples of currencies that are exchanged in digital ledger transactions through what is called a blockchain service. While this process is still evolving and has yet to reach the masses, it is considered a disruptive technology that is changing the e-commerce industry. It's important because it involves a cashless system that will change the way we exchange money.

E-commerce

E-commerce makes almost any product accessible over the internet. Shoppers no longer have to leave their homes and shop in physical stores and start-ups don't need physical retail locations to sell their products. E-commerce revolutionized the retail industry by making it possible to shop online and receive anything from shoes to produce in a matter of days or even hours.

Ride-Sharing Apps

With the advent of rideshare apps, customers can now request transportation from individuals instead of a taxi company. Customers use an app to organize where and when they would like to be picked up. Ridesharing changed the industry, both for the consumer and the driver, who can now work independently for rideshare companies, setting their own hours and choosing jobs.

GPS Systems

Global positioning systems (GPS) have replaced paper maps. Drivers once had to consult paper maps to find their location if they got lost. Modern GPS technology can instantly find users via satellite and provide route options for their destinations. With convenient turn-by-turn instructions and rerouting options for traffic and road obstacles, the driver can concentrate on driving.

Social Media Networks

Social media disrupted traditional social interactions in many ways. It made it possible for people to see what their friends were doing, without having to call, email, or text them. With the ability to control friends without talking to them, some opportunities for deeper connections were missed. Social media has influenced not only personal interactions; but also those that take place with companies.

Entertainment streaming

With the invention of streaming entertainment, cable networks and local programming are no longer necessary for viewers to watch their favorite TV series. Consumers don't need to buy or rent DVDs or Blu-rays to watch the latest movies at home. Some movies are even available to stream while still in the theater, so customers can stay home and watch them.

Disruptive Innovation

To compete in the new environment we have to innovate. And you can't innovate if you are not able to observe others to detect what small-big changes we could make to improve their experience through our products and services. The truth is that observing the other, drawing conclusions and changing our way of

doing things or our business model, is unfeasible if within the organization we find resistance from the upper managers who are, ultimately, the ones who make the decisions. This is being the main obstacle denounced -off the record- by the middle managers. Which, as a general rule, are young professionals who have already acquired some experience and are eager to encourage creativity for innovation, but who find a brake on their initiatives, for example, to carry out market studies or to have the results of the study taken into consideration with a self-critical mentality. Innovators run into the fiefdoms of power that oppose revising the company's culture, or are ignored when they make relevant changes to the business model. Thus, the following strategic problems continue to be perpetuated: [8]

A vision with a focus on the short term.

Focus on the product and not on the market, which leads to investing little budget in marketing actions.

Panic in the face of the risk involved in innovation.

Little culture of creative teamwork.

Continuing to ignore the global world and the fact that competition will come from anywhere.

An easy example of disruptive innovation is the social network Facebook and how it has become a leader in a short time. Another example is Skype, which opted for the IP voice model, when large telecommunications companies did not deal with this technology. Music over the internet versus the traditional marketing model or tablets versus computers are other clear examples. Disruptive innovation has a series of its own particularities that make it special within the field of innovation. They are as follows: [5]

Disruption as a process

This concept refers to the evolution of the service or product over time. It must be borne in mind that innovation is still a way of experimenting, but not so much with the product but with the business model that is offered with that product. When innovation guarantees success, its inclusion in the market will begin to affect companies that are already consolidated within the sector.

Disruption Moves Competition

The theory of disruptive innovation highlights the emergence of a new rival in the market. This results in the competition starting to think about how they should improve the product or service, the price or even consider absorbing the new company in order to counteract its success.

Different Business Model as A Result of Disruption

This means that by creating a new product you can create a change in the business model. This happened with the launch of the iPhone in 2007. This Apple phone was an innovative product not only because it was superior in terms of quality to the rest of the existing mobiles but because it changed the way of browsing the Internet from the computer to the mobile.

Disruptive Innovations May or May Not Succeed

It should be borne in mind that not all disruptive trajectories lead to success, nor have all successful companies developed a disruptive innovation strategy. The success of a disruptive idea has a lot to do with what the product brings to the user, the need for that product that exists, but it also has to do with the moment in which it appears and with other factors out of reach such as "luck".

Disruption is Not Possible in All Companies

Most companies do not have the capacity to invest large resources to research new models. In addition, not all research processes are successful, but can lead to large financial losses. Therefore, the cost within the innovation process must be minimized so that companies can assume it, even if it is under the figure of subcontracting companies.

Finding or designing something that humanity would not have foreseen and whose use results in the solution of a problem is what is defined as disruptive innovation. Examples of that something can be a technology, a model or a process. This type of innovation happens from one moment to the next, radically and without warning. Such characteristics differentiate it from incremental innovation, which occurs in a methodical, slow, and controlled manner. Allowing people to get a glimpse of what's to come.

Advantages and Disadvantages of Disruptive Technology

Risk-taking companies can recognize the potential of disruptive technology in their own operations and innovate by targeting new markets that can incorporate it into their business processes. However, there are other companies that take a more risk-averse position and only give space to an innovation after seeing how it works for others. While it's a strategy that provides more security, in this case companies may find themselves losing market share to competitors who have figured out ways to integrate disruptive technology. So... Should you place your trust in the possible benefits of an unknown disruptive technology or is it preferable to stay on the safe side? The decision is a personal one, but if you look at tech giants like Uber, Netflix, and Amazon, they all conquered the world through the great potential of disruptive technologies. [1]

Innovation theory holds that when a rival appears in the market with a new product, competitors are forced to develop innovative strategies to counteract the effect of the new company, either by improving their products or services, reducing prices, or buying the new company. That is why the theory distinguishes two actors: the company that introduces the disruptive product and service and the companies that are forced to react in an innovative way. [9]

One of the key characteristics of disruptive technology is its ability to offer consumers new and noticeable benefits. When this type of technology enters the market, it changes the entire industry. The internet disrupted previous ways of gathering information, such as libraries, newspapers, and even social interactions. It also revolutionized the way people could conduct research. By embracing disruptive technology, both individuals and businesses can enjoy the benefits that technology offers to their regular activities. [10]

It can take time for a disruptive technology to find its place in the market. The potential applications of the innovation are not proven at first. Users may doubt whether they can use the product to replace its predecessors. For example, when small kitchen appliances were made available, cooks doubted that electric mixers could deliver the same quality as their own skilled hands. They were also unaware of the myriad applications of these products, which have since become a staple in most households, eliminating the need for a professional hand and hours to produce quality home-cooked meals. Almost all innovations go through a period of problem-solving. Modern consumers are used to experiencing this with a newly developed app or software. Updates and patches are necessary to overcome the glitches and other challenges that the technology could present. The same process applies to any disruptive technology and can make early adoption more challenging. [10]

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