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The illegal dimension of business model innovations: how do big firms deal with disruptive competitors? From the case of Airbnb to Microsoft's revolutionary approach against piracy

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ABSTRACT

This paper has two aims: (1) to explore in depth the illegal dimension of business model innovations and (2) to understand if something undeniably illegal such as digital piracy could paradoxically bring a business model innovation to the market.

I then illustrate how these two aims are deeply connected.

For the first one, I started from a practical consideration: when a new business model innovation tries to revolutionize the market with its disruptive power, the industry incumbents try to lobby and push national and local governments to declare the business model innovation illegal.

Governments are thus required to address these fundamental questions: What is the right thing to do?

Is it the best choice for the society to declare illegal a successful new business only because it creates damage to the sector's previous leaders?

Does it make sense to protect something that the market has clearly shown to be inefficient?

I examine this situation, illustrating the point of view of leading researchers, analysing some real-world cases and giving my own analysis.

The second aim is related to the fact that, according to some recent theories, the phenomenon of digital piracy, in this case undoubtedly illegal, could be itself a disruptive business model innovation, as shown by a revolutionary strategic decision of the software company Microsoft in 2015.

I talk about the dimension of this crime in order to explain why it is so relevant for the market as a whole.

Then I analyse Microsoft's decision and its consequences, to try to understand if this new point of view regarding this issue is a new path to pursue or another failure.

SECTION 1: INTRODUCTION

This thesis is focused on the topic of business model innovations and, in particular, on two sides of their illegal dimensions.

My first aim is to analyse some successful business model ideas, from the past to the recent present, and find similarities between a few cases in which the companies that deployed those models, after a period of incredible success, were declared completely illegal or were hindered in some ways by the law.

Then I shift my attention to the problem of digital piracy, which is currently one of the most important issues in the field of the copyright industry.

Starting with the evolutions of digital piracy in the last decade, I try to show how all of the measures taken against it since then, by both governments and private companies, have been completely ineffective.

I then introduce an interesting theory recently proposed by some researchers. According to this theory, piracy is not only a problem to eradicate but can also be a powerful source of innovation, particularly for its potential in the field of viral diffusion.

This idea caused a global impact when in March 2015, one of the most important software companies in world, Microsoft, announced a revolutionary change in its selling strategy for the launch of Windows 10.

I analyse the decisions of this firm and connect them with the main debate, arriving at unexpected conclusions.

I decided to write my thesis about this topic because the illegal dimensions of business model innovations and the new considerations regarding digital piracy are part of a field in which the academic debate is quite new and vivid.

As shown by the bibliography, considering that the majority of the cases that I discuss are extremely recent, there has yet not been an adequate amount of research on this topic.

The debate, particularly the one regarding the case of Microsoft, is continually evolving and difficult to sum up.

The most thought-provoking book I have read regarding the positive effects of piracy is "*The pirate's dilemma: How youth culture is reinventing capitalism*", written by Matt Mason in 2009, which was a considerable amount of time before Microsoft's case.

I have also been helped by some studies issued by the University of Oslo, one of the institutions that has produced more material about these events, particularly by researcher Arne Rodge Gramstad (who tried to reveal further positive effects of piracy besides those already taken into consideration).

The most important contributions comprised the hundreds of newspaper articles, scientific journals and specialized blogs to which I had access through Internet and the university database.

To sum up, the most important questions that I try to answer with my study are the following:

What is the difference between a successful business idea and unfair competition?

Do governments make the right choice by legally protecting the previous leaders in a given sector?

Is it possible to stop late-comers to the market simply because their idea is too successful?

Is it economically efficient, both in the short and in the long term, to save businesses that, even if they employ a considerable part of the population, have been declared inefficient by the market?

How is piracy, an illegal act, related to this issue?

Are theories that describe piracy as a powerful source of unexpected innovation valid?

Before discussing the results of my research, I would like to describe the structure of the thesis.

The introduction and conclusion are Section 1 and Section 5, respectively.

In addition, the thesis has three other main sections.

In the four chapters of the first body section, Section 2, I start with a general introduction about what a business model innovation is and why these ideas usually meet some legal difficulties (Chapter 1).

I then go through the analysis of four cases that I found relevant to the topic: the case of Airbnb (Chapter 2), the case of Uber and the related “world Uberification” (Chapter 3), and the past dispute between car manufacturers and horse carriage producers compared to the recent Tesla Motor Company case (Chapter 4).

In Section 3, I introduce the problem of digital piracy, explaining why it is related to the previous issues.

I start with a brief introduction to the phenomenon (Chapter 5) and a historical overview of the completely ineffective legal and private measures taken in order to downsize it (Chapter 6).

In chapter 7, the last of section 3, I introduce the idea of digital piracy as a source of innovation, discussing the past case of pirate stations in the British Broadcasting network of the 1960s and the contemporary case of Wolf Video’s creation of WolfeOnDemand in 2013.

The last section, Section 4, is focused on the contribution made by Microsoft to the issue of digital piracy with their revolutionary change of strategy in 2015.

I start by contrasting the previous attitude of the company to their radically new one (Chapter 8 and Chapter 9).

I end in Chapter 10 with some considerations, drawing from both market results and academic papers, to attempt to understand whether Microsoft’s decision can be considered a trail-blazing success or a failure.

Lastly, the conclusion summarises all of the contributions that those cases made to my research and evaluate if the previous questions have been satisfied or left unanswered.

SECTION 2: THE ILLEGAL DIMENSION OF BUSINESS MODEL INNOVATIONS

Chapter 1: Unfair competition or disruptive innovation?

1.1) *Business models*

According to the definition by The Boston Consulting Group (December 2009) a business model consists of two essential elements, the value proposition and the operating model, each of which has three sub-elements.

In defining a business model, the managers of the firm try to answer six specific questions.

When considering the value proposition, the managers are choosing a specific target segment, a product or service offering, and a revenue model.

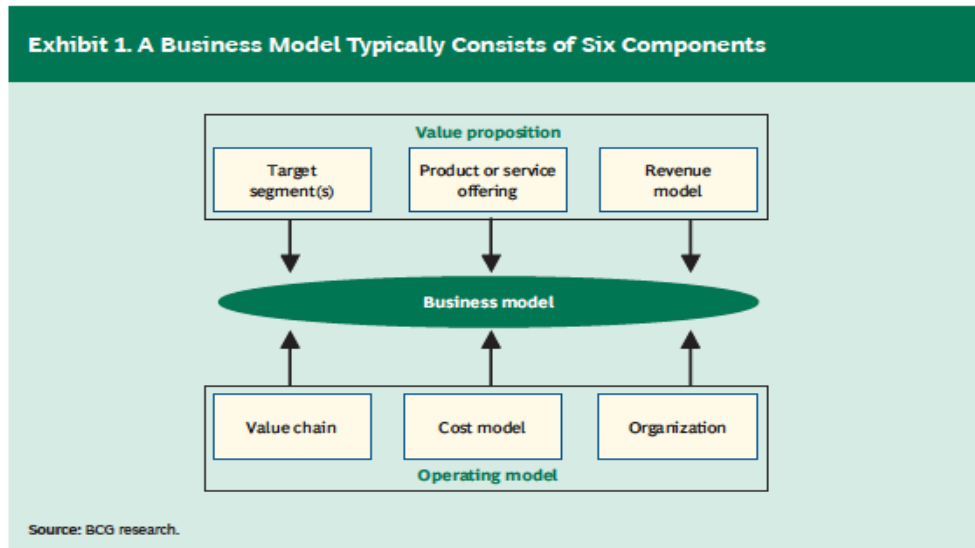
In this phase, the firm is asking itself: which kind of people am I going to address? Which type of product or service am I going to sell them?

How do I want to make money?

When considering the operating model the issues are the following: value chain, cost model, and organisation.

The questions related to those three issues are: how do we, practically speaking, want to produce our final product? How are we going to handle costs?

Which will be the structure of our company?



Graph 1.1

The six components of a business model, Source: BCG, December 2009

By properly considering all these questions before its creation, a firm preemptively tackles the majority of the problems that it will face during the first period of activity.

Specifically in the world of start-ups wishing to receive funding, the main task of an investor, who can be a private business angel or a company that operates as a start-up incubator, is to evaluate the quality of the candidate's business model.

Without the systematic planning of the above process, even the entrepreneur with the best ideas or the strongest capital flow is bound to fail.

1.2) Business model innovations

A firm is a highly dynamic environment, in which every aspect is subject to change and reprogramming at any moment, not excepting, of course, the business model adopted.

First of all, it is important to understand what a business model innovation is in order to avoid confusion with the other simple processes of innovation that a firm frequently undertakes, such as a change in the technology adopted or an improvement in the product or the process.

A business model innovation is much more than that: it is a change in more than one of the six aspects previously analysed through which a company, while basically continuing to do what it or its competitors have already started, puts itself in relation to the market and the customers in a completely new way. A business model innovation involves adopting strategies and paradigms nobody had thought of until that moment.

One of the best recent examples of business model innovations is undoubtedly the Irish airline company of Ryanair.

Founded in 1987 by Tony Ryan, this firm was a regular airline company operating in Western Europe who did not achieve great success during its first years.

The turning point occurred in 1991 when the visionary CEO Michael O'Leary took leadership and decided to change the business model of the company in a way Europe had never seen before.

Taking inspiration from the success gained in the United States by Southwest Airlines, O'Leary subtracted all the frills that cost passengers extras, leaving only what was essential.

This meant a complete restructuring of the internal organisation.

O'Leary started by creating a fleet exclusively made of Boeing 737-800s, an airplane which allows significant fuel savings and permits an efficient optimisation of the aircraft's interior space.

Then he formed contracts with lesser-known small airports in the suburbs of major cities, such as London Stansted, in order to provide the same services with lower taxes.

His final move consisted in reducing the personnel both on and off the airplane, a policy that in the final years of the twentieth century found a perfect connection with the emergent Information Technologies and the World Wide Web.

The success achieved by Ryanair is a concrete example of a revolutionary business model innovation.

Ryanair did not invent anything new.

Like its competitors, it continues to do business by satisfying the need of people to move quickly in the world from a certain point A to a point B, and it does so with the help of airplanes.

The business model innovation here consisted in changing the basic components of its business model in a way that made the market perceive the firm as new and innovative: Ryanair's target demographic became travellers with a low budget, and the cost and organisational models were completely modified.

In the digital era, where everyone can potentially find the means to exploit a successful idea, business model innovations are something becoming more common.

Like Ryanair, hundreds of companies have managed to outstandingly reshape the essence of the sector in which they operate. Take, for example, Ikea, which brought into our families the do-it-yourself idea, or EBay and its non-physical commerce.

When we consider Amazon's promise to reinvent shopping by using drones, or the potential of the 3D printing in the manufacturing industry, or dozens of similar cases, the future seems to be as rich and stimulating as the present, which makes the problems I am going to introduce later of central importance.

1.3) What is illegal?

As described by Joseph Schumpeter (1942), innovations are winds of creative destruction; more specifically, he said that they "incessantly revolutionize the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism." (Capitalism, socialism and democracy, 1942, pg.83)

Business models innovations can surely be disruptive in the same way.

Depending on the situation, companies that were previously operating in the market can either survive even if their profits are affected by the latecomer and if they lose a share of the market; or can be forced to go out from the business. For example, in the case of Ryanair, due to the fact that its revolutionary approach was targeting only a particular niche of the market (people with low budget expenditures), other airline companies did not close and, with lots of difficulties, tried to readapt to the new market.

However, it is not possible to say *a priori* whether radical innovations, such as those analysed in the previous paragraph, will undoubtedly bring wellness to the whole economy.

Indeed, especially in the short-term, they are more likely to cause instability and crisis with the consequent failure, in given sectors, of many previously leading companies.

Especially in recent decades, once the inability to compete with the latecomer through economical means becomes clear, one of the defence mechanisms that affected company's try is that of legal attack.

Usually, the attempt consists of accusing the business model innovator of unfair competition.

What is the difference between unfair competition and what is simply a successful idea?

Is it a good choice for the economy in a long-term view to legally protect the first-comers even if the market has stated that their business ideas are not efficient?

Like in all tangled situations, it is not possible to provide a single answer to those questions. Before introducing the point of view of a company who radically thought out of the box regarding one of those issues, I will describe in the next chapters some cases of innovative firms who faced similar problems.

Chapter 2: The Case of Airbnb

2.1) The business idea and the consequences in the market

Airbnb is a website whose aim is to create a connection between people wishing to rent their properties and people searching for a place to sleep. It has turned out to be one of the best entrepreneurial ideas of recent years.

Founded only in August 2008, the company now has over 1,500,000 listings in 34,000 cities and 190 countries.

Airbnb's business idea came out in 2007 when the founders, Joe Gebbia and Brian Chesky, both aged twenty-seven, were struggling to pay their rent.

There was a design conference coming to San Francisco and the city's hotels were fully booked, so they came up with the idea of renting out three airbeds on their living-room floor and cooking their guests' breakfasts.

Motivated by the first earnings, Gebbia and Chesky decided to create a website, airbedandbreakfast.com. They created the company with the help of business angels and venture capitalists who understood the power of this model.

Airbnb magnificently exploits the potential of the so-called "collaborative consumption economy."

That basically means "*taking us back to old market behaviours, such as sharing, swapping, lending and renting but re-invented with the help of technology*" (Rachel Botsman, 2012).

The incredible success of Airbnb is due to the conjunction of several factors: the easy usage of the idea, the broad market served, and the reduced costs generally asked by the site and the hosts.

The site has its peak turnout in cities where the presence of a particularly extraordinary event consequently creates an increase in hotel rates and makes it difficult to finding a place to sleep if not booked months in advance.

For example, according to *The Telegraph*, during the 2012 Olympics when the city of London hosted more than 4,500 bookings from over 6,000 guests with a total value movement of £770,000.

The problem that such a successful model can bring to the global economy is its clear opposition to the hotels.

Unlike Ryanair, which, as mentioned above, in the field of air transport decided to do business with only a certain share of the market, Airbnb is currently open to all those looking for a place to sleep.

Originally aimed at young students from San Francisco who could not afford to pay a lot for accommodation, the site has evolved to include all of the United States and has a global presence.

In each of the 190 cities Airbnb's offers vary from extremely cheap studios to luxurious properties, which caused the average age of the users to increase. Even rich married couples seem to have no more reason to book a hotel if they can have a complete apartment of the same high standard.

In April 2015, the *Economist* reported that, if Airbnb continues to grow at its current rate, by the end of 2016 it will be taking a 10% bite out of hotels' takings. This is more than enough to send many businesses to failure.

2.2) Legal issues. The Japanese point of view

Given the premises I previously stated, the response of hoteliers, through their representatives in government, has been fast and focused primarily on legal action.

Governments in different parts of the world tried to hinder Airbnb by demonstrating that the renters were breaking local regulations, particularly those regarding local housing obligations and touristic tax issues.

The city of New York, for example, has recently pointed out that owners or tenants cannot legally rent their apartments out for short periods (less than 30 days) unless they are also living in the property.

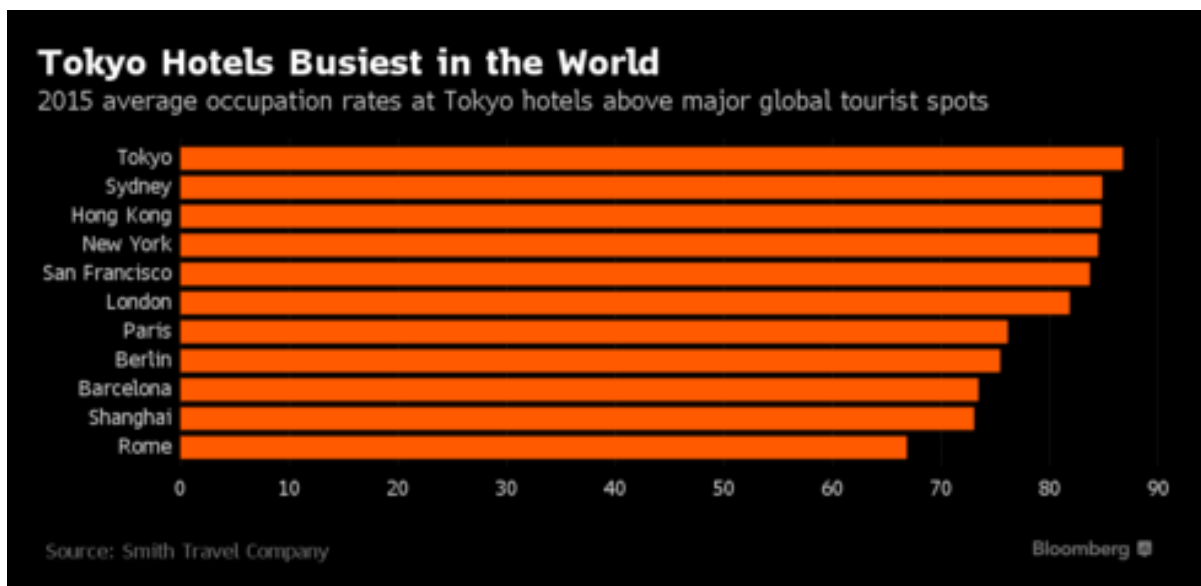
Moreover, in Barcelona, the website has been fined for \$30,000 because renters were not required to obtain daily fees to be paid to the Catalan government.

In Berlin officials pointed out the existence of an housing law banning regular short-term letting of rooms without permission from the authorities.

Although local initiatives like these have been taken by several other cities around the world, nowhere was there a reaction so strong as the one from Japan.

Presently, in Japan, the tourism industry is growing at a rate never seen before: in 2015 the nation released 19.7 million of touristic visas, rising from the 8.4 million foreigners who visited the state in 2012.

The hotel industry is flourishing and, as shown by the graph, the average occupation rates in Tokyo hotels are above the ones registered in other major global tourism spots.



Graph 2.1 2015 Average occupation rates in the major global touristic spots, Source: Smith Travel Company and Bloomberg Institute, 2016

Such a lively market is also of crucial importance for Airbnb, which, with 26,000 owners already reliant on its channels, has pointed several times to Japan as one of its main future growth goals.

Pressured by the Japan Accommodation and Lodging Foundation lobbyist Taito Itoh, in February 2016 Japanese prime minister Shinto Abe released guidelines for home sharing—called *minpaku* in Japanese—that make the majority of Airbnb rentals in the country barely legal.

Airbnb can now rent to guests only for periods longer than seven days, a minuscule slice of the potential market.

These national guidelines will become law only if local municipalities decide to ratify them, but that is beginning to happen.

Ota, one of the 23 districts within Tokyo, became the first municipality to fully adopt Abe's proposal. The government of Osaka, the country's third-largest city, has also already stated that it is going to adopt the new rules as soon as possible.

The radical difference between the Japanese government's position and that of the cities mentioned above is that for the first time Airbnb is being fought not on grounds of illegality but for the need of preserving the stability of the growth of the national economy and safeguarding one of the most important businesses of the country.

Premier Abe stated that Japan has made a concrete investment in the tourism industry in previous years and its efforts are expected to be rewarded when, with the Rugby World Cup of 2019 and the Olympic Games of 2020, more than 35 million people per year are expected to visit the country.

Based on such incredible forecasts, it would have been extremely risky to let Airbnb take away a significant market share of the hotel industry. Thus the Japanese government, rather than declare Airbnb illegal based on previous regulations, has created a special new one in order to resize it.

Only time will tell if, considering the exceptional sporting events of the next four years, the Japanese government has chosen the right long-term policy or if it has made a mistake by ensuring the survival of a business model which will become more and more inefficient and out-dated and will downsize with even worse consequences in the future.

What is certain is that a government taking such an explicit economic position regarding a business model innovation cannot be ignored. The Japanese government's stand could lead to similar considerations and actions in other parts of the world.

Chapter 3: The case of Uber

3.1) Birth, success and “Uberification”

The city of San Francisco has proven to be an outstanding incubator for startups and successful ideas in recent years.

In fact, this city is the birthplace of the second disruptive business model innovation on which I would like to draw attention to: Uber.

Uber is an agency that provides a service in the field of passenger local transport.

It allows everyone with a phone or a smartphone to ask for a car ride, by simply sending a text message to Uber’s local centres, or by submitting a request through the app.

Uber guarantees that at the agreed appointment time you will find the model of the car you requested, driven by a chauffeur, which is also the car owner, who is selected and certified by the company itself, and is available to carry you on the preselected routes.

The payment is made by credit card directly to Uber.

Born in 2009 with the name of “Ubercab”, this firm started to expand internationally in 2012 and nowadays is available in 58 countries and 300 cities worldwide with an estimated value of \$62.5 billion.

The extraordinary innovation brought by Uber is not only limited to having created a successful outstanding business model.

Aside from transportation, Uber has brought a concrete change in the mentality of the services sector starting from a simple point: the world is composed of people providing a service and those in need of it.

Those in need can either find a normal person wishing to give them what they require or pay a professional.

The Internet can be used to avoid the need of professionals: the World Wide Web creates a network between users and provider and going to dramatically reduce the costs of services as we actually know them.

The proliferation in every field of apps, inspired by Uber or just autonomous similar intuitions, whose purpose is to create a network among applicants for a service and citizens willing to offer it, has been called "Uberification."

How can I fail to mention, for example, the European and Italian success of Blablacar, a website connecting people with cars to other individuals wishing to make the same journey?

Airbnb itself, which creates a network for people searching for a place to sleep and house renters, can be considered a part of "Uberification."

On the 11th of August 2014, the famous internet marketing blog "Digital Intelligence Today" published a list of the most important businesses and startups in the world who operate according to Uber's model. It is impressive to see how much Uberification has touched unexpected fields.

THE UBERIFICATION OF EVERYTHING: DIRECTORY / MASTER-LIST

- Uber for Liquor Delivery: [Saucey](#), [Drizly](#), [Minibar...](#)
- Uber for Cannabis Delivery: [Eaze](#), [Canary...](#)
- Uber for Errands: [TaskRabbit...](#)
- Uber for Odd Jobs: [GladlyDo](#)
- Uber for Hotel Rooms: [HotelTonight](#)
- Uber for Beauty Services: [Swan](#), [Stylebee](#), [StyleSeat](#), [Manicube](#)
- Uber for Home Cleaning: [Handybook](#), [Homejoy](#)
- Uber for Car Repairs: [YourMechanic](#)
- Uber for Babysitting: [Urban Sitter...](#)
- Uber for Pizza Delivery: [Push for Pizza...](#)
- Uber for Medical Equipment: [Cohealo](#)
- Uber for Quiet Spaces: [Breather](#)
- Uber for Vet (Home Visit): [VetPronto](#)
- Uber for Dog Sitters: [DogVacay](#)
- Uber for in-home Massage: [Massage](#), [UnwindMe](#), [Zeel](#), [Soothe](#)
- Uber for Doctor House-call: [Medicast](#), [Pager](#)
- Uber for Doctor (Remote) Consultation: [Doctor on Demand](#), [dvisit](#)
- Uber for Courier Deliveries: [Deliv](#), [Postmates](#), [Shyp](#)
- Uber for locksmiths: [KeyMe](#), [KeysDuplicated](#)
- Uber for Childcare/School Run: [KangaDo...](#)
- Uber for Dry Cleaning/Laundry: [Cleanly](#), [Dashlocker](#), [Washio](#), [Flycleaners](#)
- Uber for Hotel Dry Cleaning: [Oliom](#)
- Uber for Mobile Repairs: [iCracked](#)
- Uber for Removals: [Moveline](#)
- Uber for Lawnmowing: [Lawnstarter](#), [Plowz&Mowz...](#)
- Uber for Restaurant Home Delivery: [Seamless](#)
- Uber for Taxis: [Lyft...](#)
- Uber for Home Maintenance: [RatedPeople](#), [HouseCall](#), [RedBeacon](#)
- Uber for Home Decoration: [PaintZen](#)
- Uber for Home Deliveries: [Anyvan](#), [Doorman](#), [Instacart](#), [UberRUSH](#)
- Uber for Dog Walking: [Wortheem Swifto](#), [Urban Leash](#), [Trottr](#)
- Uber for Private Jets: [BlackJet](#)
- Uber for City Parking: [ParkingPanda](#), [MonkeyParking](#), [SpotHero...](#)
- Uber for Language Tuition: [Cambli](#)
- Uber for Storage [Valet]: [Caddy](#), [MakeSafe](#), [Boxbee](#)
- Uber for Bodyguards: [Bannerman...](#)

Graph 3.1 A list of “Uberified” firms, Source: Digital Intelligence Today, 11th August 2014

Given these circumstances, the question from the legal point of view could only be even thornier than in the previous case.

3.2) Legal issues

Since its birth, Uber has been involved in disputes with several governments including some local ones in the United States.

The company has faced more than one hundred lawsuits and the number of problems is expected to grow dramatically.

The legal deficiencies of this system are under accusation all over the world are numerous. Some of the most important ones are these: Uber's inability to ensure passenger safety due to the weak connection between companies and drivers (as anyone can be an Uber driver), and the privacy problems related to the app's controversial treatment of customer data, including sensitive numbers of credit cards.

Moreover, the drivers are allowed to refuse passengers without a specific reason, creating cases of real discrimination. Above all, the firm does not respect the labour conditions for the transport of passengers.

In contrast to the Airbnb situation, in Uber's case Italy has also reacted harshly. At first there were strikes and demonstrations organized by taxi drivers (culminating with episodes of pure violence such as in Milan in July 2014, when a Uber user was physically assaulted), then local governments also expressed themselves with ad hoc new regulations.

In Genoa, on 25th September 2014, an Uber driver was issued a fine with the seizure of the vehicle for the first time.

Hundreds of episodes like this, all with appeals and trials, took place and are taking place since that day in this country, making the situation more and more chaotic.

3.3) Considerations

The market affected by Uber, particularly the one of paid rides and taxi drivers, is a very complex area.

The issue faced here is extremely delicate and has potential unpredictable consequences that could completely eradicate the economic model with which we live.

Since 1920, taxi drivers in the United States are part of a category of professionals who pay a costly license and some other fees in order to be allowed to operate.

Some of the costs that we face when taking a ride are connected to the reabsorption of the initial expenses.

We could say that the real business model innovation of Uber consists in having found a trick to keep the costs low by avoiding all of these tax charges.

The defence of Uber (and of the Uberification system in general) has traditionally been that the company is not offering a professional service, but rather is simply putting customers in connection with various people willing to operate in an unprofessional way, as a sort of gentlemen's agreement.

The question raised by this assumption, if taken as true, is very strong. It would differ greatly from the case of Airbnb, which we discussed only insofar as it was necessary to preserve a key sector of the economy, even if that sector proven to be less efficient.

Here the issue is much more intricate. Governments are rightly coping with it in a strong way.

Can professionals be put aside just because an app creates a connection network that lets us get what we need without them?

Are we ready to and could we accept a future in which a network will give us a chance to find a counterpart for any service we need, from labourers to repairers to private teachers, without having to go through professionals?

Would it still make sense to be officially specialized in something, or will the world become simply a competition for the most extensive network?

It is even conceivable for our economy to adapt to an Uberification?

The answers are still clearly very negative and, although one cannot ignore these extraordinary phenomena, it is necessary that governments continue to intervene and make a distinction between a simple successful business model innovation and a complete distortion of the market as known so far.

Chapter 4: A glance to the past: horse carriages, car manufacturers, Tesla

4.1) From horse power to horsepower

Attempts to counteract an efficient innovation by first-comers are certainly not limited to the present.

In the past some innovators have also been embroiled in lawsuits.

This is what happened to the first car manufacturers, a situation that I decided to highlight for comparison with the behaviour that the same industry of car manufacturers is taking against its competitors today.

After numerous models and prototypes, the birth of the first modern automobile is considered to be in 1886, when the German inventor Karl Benz obtained a patent for his Motorwagen.

At that time, the major means of land transport were railroads, which were beginning to take a widespread extension especially in the United States, and, above all, horse-drawn carriages, which held an absolute monopoly especially for short urban trips.

When in the early years of the twentieth century, some entrepreneurs such as Henry Ford began a massive production of vehicles, it was clear that the world of horse carriages was destined to disappear.

Compared to the coach, the production of the car was not revolutionary in terms of its business models. But it was a huge disruptive innovation for the impact the product had in terms of costs and convenience.

The most influential coach producers tried to put pressure on some governments, mostly local, to protect them by placing legal limits on the spread of cars. They relied mainly on the perception of cars' great lack of security (the first incidents aroused a great stir among the public).

Despite some isolated cases, the governments did not welcome these proposals, and cars gained the success they still enjoy.

The reasons of non-intervention were both economic and social.

Despite the sacrifice of the majority of the horse-related field, the potential of cars was widely recognized as a future source of greater well being.

Moreover, as shown by a 2007 University of California study, “From horse power to horsepower,” cars were accepted as “*environmental saviours*”—though it may seem ironic now—as they solved the hygiene problems that major metropolises faced at the end of the nineteenth century due to the large number of horses.

4.2) From being oppressed to become oppressors: the case of Tesla Motor Company

The lawsuits taken against Tesla company by car manufacturers in recent years source a lot of rumour in the United States and demonstrated how, also in this field, like it happens in all the industries who have amassed power and market share, the step from being a latecomer fought by the previous monopolies and became in turn an intransigent company is extremely short.

Tesla was founded in 2003 and began to accumulate massive profits in the last years of that decade.

It deals with electric luxury cars, super-equipped and environmentally friendly. Investments made by the company and supplemented by an enormous initial public offering of \$226 in 2010 have been astonishing: the firm did not simply pay off all phases of the typical car’s production chain but also had to finance an entire national network of recharging stations.

In fact, with the recharging network that was previously present in the United States, a typical Tesla machine such as the Model S, would have taken twelve hours for a full autonomy (260 miles), an unsustainable amount of waiting time for many of the company’s target users.

Tesla projected and financed a network of 3000 “Supercharger stations”, not all of which are in the US.

These are places where the model S can gain 80% autonomy in less than one hour, a complete revolution in terms of efficiency and planning never undertaken on this scale.

The electric car is not a recent invention and Tesla is actually serving a niche market of luxury models (Model S, for example, costs between \$70000 and \$90000).

So why did the company meet the fierce opposition of other producers who target completely different customers and are not affected at all by Tesla's success?

The reason relies under the concrete business model innovation that Tesla is trying to achieve. In order to better handle the already-large costs and assist the customer in a more intimate way, the company does not want to use the car dealership system as all the producers in the country are obligated to do, but rather wants to establish an autonomous system of stores managed by itself. This is possible in other fields, as shown by Apple stores or Nike stores.

The case of Tesla is relevant because, for the first time in history the request for legislative protection by first-comers to the field has anticipated the emergence of an economic damage and affected a firm who is only barely related to the main issue. So far the first-comers' attempts have been successful, since many states have forbidden Tesla to sell the vehicles in its stores.

Tesla has not been charged for directly damaging the economic system but rather because, if its business model innovation is recognized as legitimate, we would soon see other car manufacturers with different targets (such as the low budget one) that would imitate Tesla's idea, creating a series of personal stores and completely excluding those who cannot adapt from the market.

Local governments of the United States have so far decided to act in a conservative manner. In this situation as well, it is hard to determine in advance whether the choice was far-sighted.

From my point of view, unlike the other cases I have treated, the decision regarding Tesla does not provide a potential advantage to economy in general. Major firms most likely will be able to restructure themselves to conform to a car dealership system directly owned by the companies themselves avoiding the failure.

Moreover, the benefits to consumers, who would enjoy lower prices and efficient assistance would be impressive and must not be placed second to some companies' interests.

SECTION 3: PIRACY

In the previous section, I provided a general introduction to what a business model innovation is and why it often ends up being the object of legal disputes.

I analysed some famous cases and I compared the opinions of some academic studies with my personal point of view in order to understand when an innovation has to be considered simply outstanding and disruptive and when, on the other hand, first-comers, even if less efficient, must be legally protected for the safety of the entire economic system.

I will now shift my focus to a related issue: can something surely illegal and extremely difficult to fight, such as online digital piracy, paradoxically be used by companies as a kind of business model innovation?

Chapter 5: Online digital piracy: the dimension of the phenomenon

5.1) History and statistics: is piracy actually declining?

We are in facing a case of piracy when there is an illegal use or distribution of software protected under intellectual property laws.

This violation is an extremely relevant issue, which currently affects each part of the so-called copyright industry, from computer software to music, books, movies, video games, and much more.

Firstly, piracy is not as recent of a phenomenon as is often thought. In 1976, Bill Gates, the founder of Microsoft wrote “An open letter to hobbyists” asking everyone who used his system Altair Basic for work or leisure to pay for it, estimating that he had received only the 10% of the royalties he deserved.

For some decades, piracy was largely reserved for those who had great technical skills in the computer field, or to criminals performing it in “analogue” (shooting a film with a camera, registering a song with a recorder, etc.).

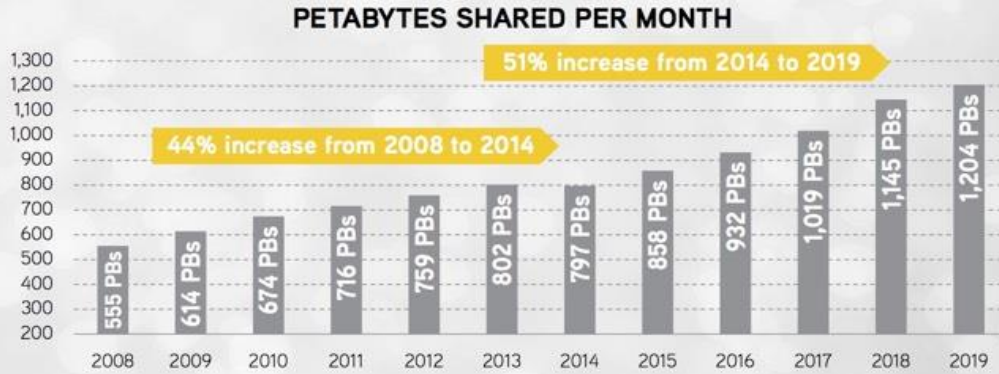
The situation completely changed when, at the end of the nineties, the advent of the World Wide Web and in particular of the P2P file sharing file system made it possible for anyone to become a digital pirate.

From that moment actions like listening to a song, reading a book, watching a movie, or playing a video game without paying the necessary copyrights became common in the lives of millions of people around the world.

It is interesting to look at concrete data on the exact dimensions of the phenomenon, not only to frame it better but also to confirm or refute the assertions of researchers who believe that, due to the increase of regulation in some nations and the opening of legal streaming websites like Netflix, the trend in digital piracy has declined sharply in recent years.

I focused on the statistics provided by the Cisco Visual Networking Index Forecast and Methodology, a deep analysis of 2014 made by two parts: a summary of the situation, divided into the different regions of the world, between 2008 and 2013, and a reliable forecast for the years 2014-2019.

FILE SHARING IN NORTH AMERICA



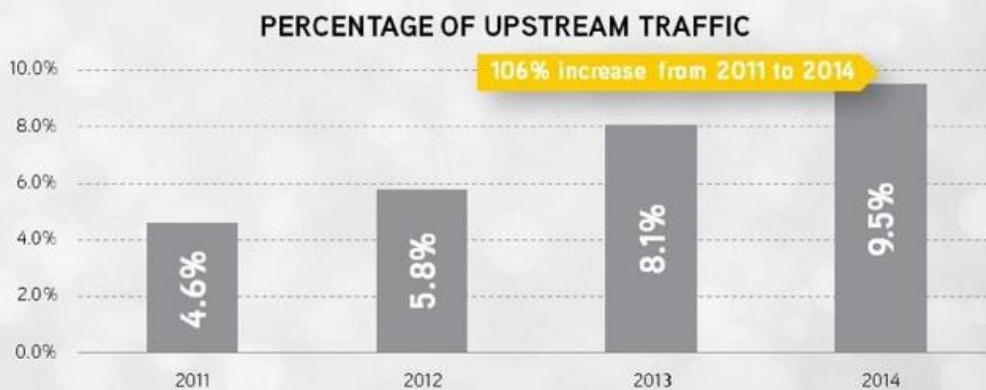
1 petabyte (PB) = 1 million gigabytes (GB) = 1.6 million CDs
1,124 PBs = 1.8 BILLION CDS / MONTH

Source: Cisco Visual Networking Index: Forecast and Methodology, 2008–2013
Cisco Visual Networking Index: Forecast and Methodology, 2013–2018
Cisco VNI: Forecast and Methodology, 2014 – 2019

Graph 5.1 Statistics on File Sharing in North America

Source: Cisco Visual Networking Index: Forecast and Methodology from 2008 to 2019, year 2014

VPN USE IN NORTH AMERICA

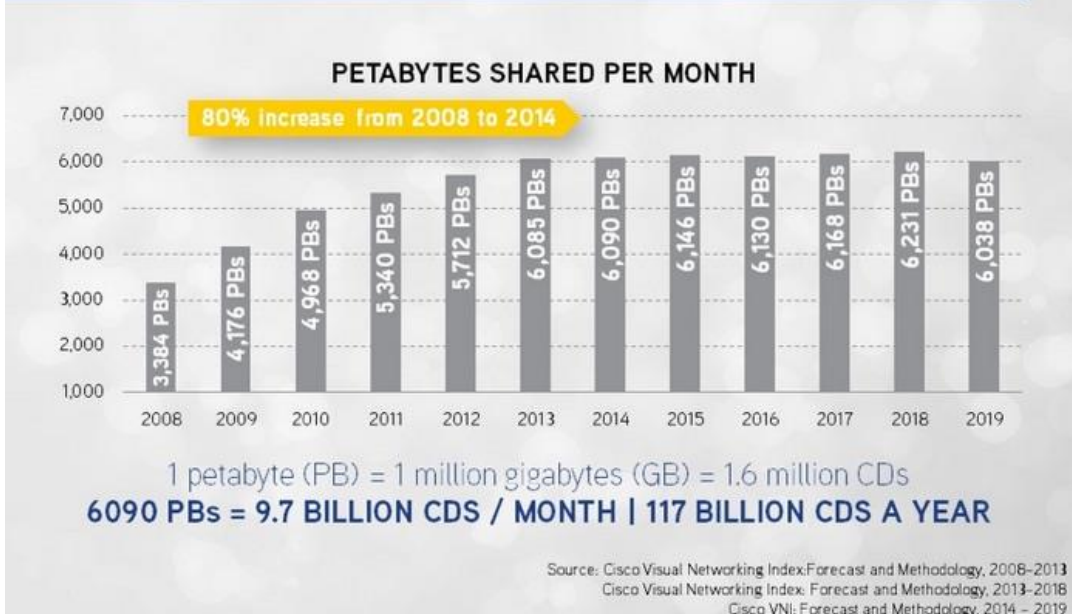


Source: Sandvine Global Internet Phenomena Report 2011 - 2014

Graph 5.2 Statistics on VPN use in North America from 2011 to 2014

Source: Sandvine Global Internet Phenomena, 2014.

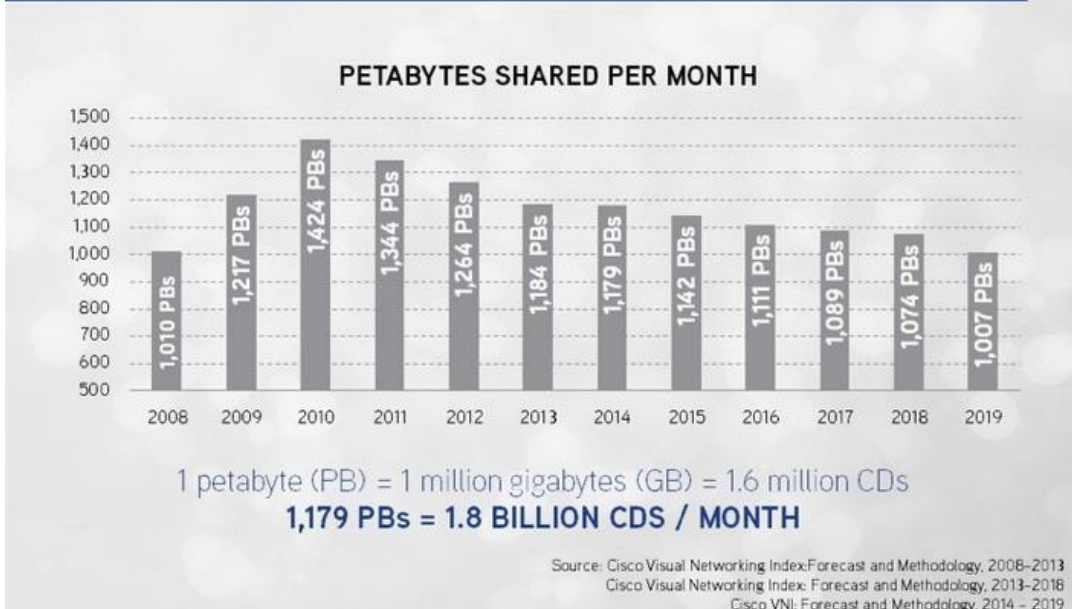
FILE SHARING GLOBAL (18% OF TOTAL)



Graph 5.3 Statistics on the global amount of File Sharing

Source: Cisco Visual Networking Index: Forecast and Methodology from 2008 to 2019, year 2014

FILE SHARING IN WESTERN EUROPE



Graph 5.4 Statistics on File Sharing in Western Europe

Source: Cisco Visual Networking Index: Forecast and Methodology from 2008 to 2019, year 2014.

What this interesting and detailed research shows us is that the phenomenon of online digital piracy, especially in the form of the file sharing, is far from globally declining.

In North America, specifically in Canada and the United States, file sharing has increased by 44% between 2008 and 2014 and is expected to further grow 51% over the next five years. Globally this tendency is even more dramatic, with a registered increase of 80% between 2008 and 2014.

So why does the belief exist that this problem is going to be of less impact?

The answer is given by the other two graphs provided by the same researchers: first of all, in Western Europe, which has the strongest regulations, file sharing has gone down slightly. Studies have granted too much emphasis to this data without considering the overall rate of global incidence—that is, not just in North America but also in Asia and in the emerging economies where more and more people have access to an Internet connection.

Secondly, the majority of studies consider a switch to the VPN system, such the huge change currently happening in the United States, as a signal of piracy's defeat. Cisco researchers did not consider these numbers as positive because although the VPN system seems to be more secure, there is still no possibility to keep it entirely under control.

5.2) Consequences

The first consequence of digital piracy, as well as the most tangible, is the economic one.

It is extremely difficult to provide an exact estimate of the economic damages caused by piracy, because we would have to add both the losses suffered by the industries victim to piracy and the social implications for workers laid off by bankrupt companies.

To provide some sample data: according to estimates by the Business Software Alliance, in 2010, because of digital piracy, the music industry suffered damages of \$12.5 billion and the software one lost \$59 billion.

The second consequence, frequently underestimated, is the total absence of security for customers on products illegally downloaded.

Often, a user downloading a free product also downloads all sorts of malwares, from normal viruses to more complex programs, which can undermine the security of his personal data.

Moreover, there is another strong cost related to piracy which affects companies and is more difficult to conceive of: if a person is aware that a certain product (a book, a movie, a song, and so on) is subject to intense file sharing and therefore is easily available everywhere, although he can maybe not be personally a pirate, he will tend to attribute less value to it and to become more responsive to the price and its variations.

Given all these premises, it seems at first glance that piracy is a terrible cancer to be eradicated as soon as possible, as well as apparently one of the most negative consequences of the advent of the Internet.

Thus it is no matter of surprise, that, throughout history and even in the present, there have been worldwide attempts to react, with varying degrees of success.

Before speaking about what has been done by national and local governments, a topic that I will discuss in detail in the next chapter, I would like to spend some time on an interesting private network of companies who recently tried to put this phenomenon under attack and can be considered as a business model innovation: Rightscorp.

Rightscorp is a company founded in September 2009 that fights copyright infringements.

It has the right to protect 1.5 million copyrights, including those of some major such as Warner Bros.

The insight on which the company relies is very acute: for a firm that has been violated, getting an immediate compensation even of a minimum amount is preferable to the long wait times and of the ordinary justice system, even if the regular system could potentially provide a higher gain.

By using its software research in the typical peer-to-peer environments where this type of felonies is common, such as Bit torrent, Rightscorp seeks to identify the greatest number of users who are guilty of these minor computer crimes and gives them the choice of paying a modest cash fee compensation (no more than \$50, to be divided equally between Rightscorp firm and damaged parties) or to be subject to an official legal complaint with potentially much more serious consequences, at least in terms of time.

It is no wonder that most of the indicted choose to pay the fine, avoiding hassles and potential higher costs.

This system obviously did not damage in any significant way the rate of incidence of digital piracy, but it led some companies involved to obtain a constant compensation, even if minimal and not through the ordinary channels.

Chapter 6: National regulatory systems and people's opinion: the case of the Pirate Party

6.1) The United States of America: before and after the Digital Millennium Piracy Act (DMPA)

Based on the previous chapter, it is easy to understand why, as soon as it was clear that the world was evolving from normal piracy to a digital and globalized one, major nations have reacted.

In particular, it is important to analyse the choices in this field made by the United States, a country where the protection of copyright, especially software, has always been a fundamental necessity.

The first trial regulating this issue has been was the adoption of the treaties issued by the World Intellectual Property Organisation in 1996.

This organization, which is actually one of the 17 specialised agencies of the United Nations, has operated since 1968. In 1996 it ratified a series of treaties with the aim of curbing piracy.

The results have not been outstanding. However, on the other hand, this is one of the first attempts from a super partes organisation to regulate the phenomenon. The treaties have been adopted by some major states.

The turn in the US happened in 1998 when the Senate unanimously ratified the Digital Millennium Copyright Act, the first federal official law on this issue.

The principal and most surprising innovation of this law is the exemption from direct and indirect liability for Internet service providers and other intermediaries.

Two years later, in 2000, the European Union, while issuing the Electronic Commerce Directive, decided to follow the same principles.

These laws represented an intensification of controls and safety but also an admission of the difficulties of downsizing the phenomenon: the problem is in fact so extended and deeply rooted that all the responsibility for it is placed upon users' misbehaviour and not on service providers, who, until that moment, were required impossibly tight supervision.

Despite a few minor regulations that have changed some of its parts, the DMCA remains the basis of the US regulatory system against piracy.

However, it is worth mentioning a proposal made in 2011, the Stop Online Piracy Act (SOPA), which never became law due to the huge number of protests and the dissent it generated.

If it had been approved, the SOPA would have radically changed the United States' normative conception of piracy. The reactions, both from the part of Internet users and by famous websites, help us to better understand the position by which the people approach this issue.

The bill would have authorized the US Department of Justice to request the issuance of court orders against websites, even outside the jurisdiction of the United States, that were accused of violating copyrights, enabling or facilitating activities of copyright infringement.

Upon notification of the court order, the US attorney general could prohibit ISPs (Internet service providers), to put advertisements even on channels such as Google or providers of payment services like PayPal or Visa.

Everyone resident in America would, in any case, fall under that jurisdiction, simply by doing business with sites that violated the federal criminal law of intellectual property, or by not adopting the "*technically feasible and reasonable measures*" to prevent access to the site accused of violation. The quickest way to do so would be to apply the so-called filtering DNS in major search engines. The attorney general could even prevent search engines from display links to certain web sites.

Moreover, there would have been incredibly detailed and severe penalties for illegal users and sites accused of these violations, penalties which would have ranged from huge fines to long imprisonment.

These proposals caused a lot of controversy and dissent, especially among people who believed that the new rules were so stringent as to restrict the websites' freedom of expression, one of the fundamental cornerstones of the Internet.

In particular, on the 18th of January 2012, the British Wikipedia, Google and 7000 other smaller sites coordinated a blackout service as a mean of protest. The continuing dissent convinced the US Parliament not to ratify the law.

6.2) Sweden, Pirate Bay and the Pirate Party

As we are beginning to see, popular opinion is very important in this case because more or less everyone could be involved.

And, very often, piracy is made even more dangerous by the widespread belief that it not only is not a crime but is actually a good thing, a mean that man has to finally being able to avoid paying high and unjustified costs with the use of modern technologies.

Sweden, in the early twenty-first century, particularly distinguished itself as a country in which this conviction was accompanied by deliberately weak legislation on the subject.

It was Sweden that saw the light of what for years has been one of the reference points of world file sharing: The Pirate Bay.

Founded in 2003 by three Swedish computer programmers, the Pirate Bay is a website whose aim was to create a file sharing network, a protected island in which everyone could find another person wishing to share protected contents by using peer to peer technology.

The site found in the appeasement of the Swedish legislation a perfect habitat for its undisturbed proliferation and, although the founders were fined and arrested for a year in 2009, it is hard to think of another developed Western country in which such a situation would have stayed deliberately so uncontrolled.

Sweden, however, is especially famous for being the first country in the world with an officially formed political party whose aim was to represent those wished to review and simplify the patent and copyright system, both domestically and globally, hoping for the triumph of file sharing and free diffusion.

Born in 2006 from the ideas of political activist Rick Falkvinge, the Pirate Party of Sweden gained a huge success in the following years, especially from the media.

Its peak was in 2009 when it reached the considerable number of 50,000 members. In the elections for the European Parliament, Falkvinge gained an unprecedented 7.1% of the Swedish votes, achieving the right to occupy one seat (enhanced to two seats with the reforms of the Lisbon Treaty).

The presence of this party was of little or no consequence; however, the fact that an institution that pursued formally illegal purposes gained so much consensus as to be officially represented in the European Parliament is cause for us to reflect on the scope of the piracy phenomenon.

Moreover, the Swedish example led numerous other aggregations of people to join in similar parties and associations, firstly all over Europe, then in other parts of the world.

This culminated in 2010 with the creation of the Pirate Parties International (PPI), a not-for-profit international organisation headquartered in Brussels.

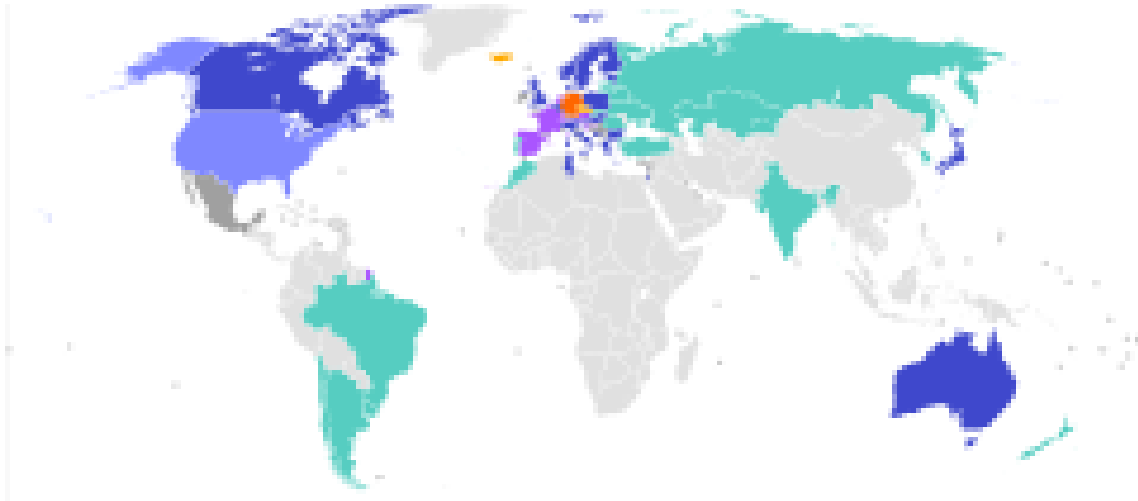
The organisation follows the principles of the Uppsala Declaration, a statement made by the Swedish Pirate Party in 2009 and implemented by the Prague Declaration in 2012. Its aim is to coordinate all the Pirate Parties in the world in order to obtain an international reform in patent and copyrights laws and gives more rights and freedom to Internet users.

However, the PPI never gained tangible results such that, in 2015, considering it totally ineffective, many Pirate Parties abandoned the project.

However, PPI still counts 42 member countries among its number and is even more concrete evidence of the popular sentiment supporting the cause, and of the government's inability to provide effective regulation against the phenomenon.

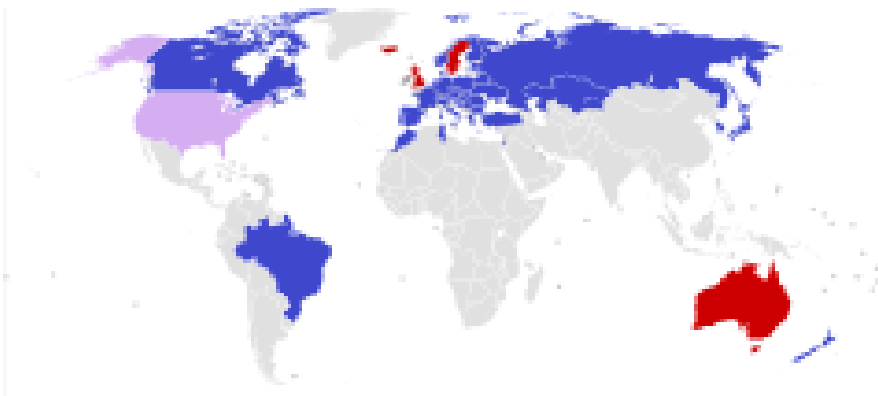
Governments have always underestimated popular support the lack of condemnation of these crimes.

It results difficult to think of a way to eradicate or downsize this issue without first setting shared values and determining what is licit and what is illicit in the digital world.



- Elected in EU Parliament
- Elected nationally
- Elected locally
- Registered for elections
- Registered in some states
- Unregistered but active
- Status unknown

Graph 6.1) Map of world Pirates parties in 2015; Source: Wikipedia, 2015.



- Ordinary members
- Observer members in some states
- Resigned
- Removed due to dissolution or disbanding

Graph 6.2) Composition of the PPI in 2016; Source: Wikipedia 2016

Chapter 7: Piracy should not be illegal?

7.1) A different point of view: University of Oslo research

We saw in previous sections that leading companies in a specified field, against an innovative business model that risks becoming disruptive to the market, such as Airbnb, may declare the innovation illegal in order to defend themselves.

The central point of my thesis is to try to understand whether it is even feasible to do the opposite.

If, on the other hand, we are facing something that is illegal, such as digital piracy, could the illegal act be used as an incentive to adopt a business model innovation or could it be a business model innovation itself?

I analysed a PhD research made by Cecile Victoria Myhra at the University of Oslo titled: “Illegal streaming as disruptive innovation: How the established companies within the television industry deal with potential disruptive innovations.”

Her research analysed the situation currently affecting the most important television channels of Norway in 2013. There is a comparison between different types of reactions in order to evaluate which may be the most appropriate.

The fundamental point from which that thesis, and also my research, is starting from is acknowledging that digital piracy is impossible to concretely face in a legal way.

As explained in chapters 5 and 6, due to the lack of strong national regulations, the physical difficulty of planning controls in each website or streaming platform, and popular support that does not consider piracy as a serious crime, currently it is impossible to downsize the phenomenon, either with the police or with private initiatives such as Righthscorp.

Old businesses, which are losing millions because of file sharing, can choose either to accept the situation and close or seek ways to implement innovation starting from this issue.

Particularly in the field of television, the possibilities of innovation for the first-comers are many.

It is possible to find innovations which allow the business to keep prices very low so that consumers may prefer to pay a small fee to get a quality product, instead of obtaining free, bad-quality streaming; or the business can try to improve the varieties and the differentiation of their offerings.

Moreover, you can innovate your position in the Internet by restyling your website and creating a hybrid where a part is sacrificed as free in order to attract customers while some other contents stay in pay-per-view.

The Norwegian research analysed some of this reactions truly implemented by local TV channels and found that those who were more willing to risk and innovate were successful and did not consistently suffer economic losses while, on the other hand, those who were not able to change and preferred to fight piracy with controls and lawsuits did not succeed in destroying the phenomenon and were the first to close.

7.2) The innovative power of piracy

Taking into account the many forms of innovation which can be implemented due to defence against the effects of piracy, we may also ask ourselves whether there is some innovation that can instead derive from piracy itself.

The answer is, surprisingly, yes: despite the few firms have taken these risks, piracy is not only a harbinger of damage but also a source on innovation.

First of all, as also stated by the study “Online piracy and the emergence of new business models” by David Choi, 2014, piracy is an unimaginable source of market insight.

For example, in the 1960s, in the United Kingdom they were plenty of illegal pirate radio stations that used to play the latest pop music.

These stations were outstandingly successful and clearly showed that British people were not satisfied with the music that was normally played by the BBC, the official radio broadcasting network.

The musical offerings of BBC were in stark contrast with the tastes of listeners of the time: only a few hours each day were dedicated to music programs, and often only played old-fashioned classical music.

Pirate radio stations, on the other hand, played the latest hits of the era.

The only way to hear them was to connecting with the piracy network.

Without piracy, it would have taken the BBC much more time to understand that what it offered to consumers was very inadequate. Piracy proved to be a source for market insight and a way to understand the changes in consumers’ desires.

Secondly, piracy helps in creating new markets. Such as in the case of pirate radio stations, sometimes people rely on piracy not only because it is free but also because they have preferences which are not possible to satisfy in the normal market.

By understanding this, regular firms can fill the gap.

BBC, for example, created the country’s first national pop radio station “Radio One” in 1967, which led the way in creating an incredibly successful pop music market.

Finally yet equally importantly, piracy is often an inducement for legal and innovative business models which are able to use its main characteristics, its global reach and communicative potential, as if piracy was a new ally in companies' marketing plans.

These new considerations may cause us to re-evaluate but does not erase what has been said before.

Piracy remains without any doubt a source of lower profits and several other problems.

However, by recognizing the ineffectiveness of any action taken so far against it, an approach that exploits the positive qualities of piracy and makes it a source of development and innovation may be the only choice.

In the next section, I will analyse in detail the case of Microsoft, one of the few companies which believed in this new approach and succeeded not only in containing income losses but also in obtaining surprisingly tangible positive effects from piracy.

But first I will talk about the case of another company which, even if did not ultimately obtain the expected success, recently tried to innovate from piracy: Wolfe Video.

7.3 WolfeOnDemand

Founded in 1985, Wolfe Video is the oldest distributor of LGBT movies in North America.

Due to the fact that it serves a niche market, it is easy to understand why the effects of piracy on this firm have been even more serious.

The earnings of Wolfe Video have always been modest and the company did not have the resources needed to fight piracy in the best way.

In 2012, the company spent a considerable amount of its revenues, approximately \$30,000, in completely ineffective legal procedures and it was clear to the managers that the situation was no longer sustainable.

This, however, has not been a source of discouragement. Rather than insisting on unnecessary juridical battles, Wolfe Video worked to try to fight the phenomenon through research and innovation.

Realizing that the main cause of its failures was the absolute lack of interest from customers regarding piracy, in 2013 Wolfe Video launched the project WolfeOnDemand.

This was basically a pay-per-view service that allowed customers to become distribution partners and earn a part of the revenues.

The brilliance of the idea consisted in outsourcing part of the efforts of the control of piracy to the customers by letting them be, in a certain sense, part of the firm and directly affected by piracy too.

Despite the courage in embarking on such an innovative project, the initiative, unluckily, did not achieve the hoped success and Wolfe Video continued to suffer heavy damages.

However, this is a clear example of the importance of seizing the innovation available in or inspired by piracy, rather than using simply a traditional approach.

SECTION 4: A REVOLUTIONARY POINT OF VIEW: THE CASE OF MICROSOFT

In the previous section, we analysed the phenomenon of piracy in detail.

Starting from the traditional theories, we explored the damages and the problems that this crime is causing to the copyright industry. We also saw that, when taking into account the inefficient legal regulations and the many technical difficulties, the war against this issue has been ineffectual.

Then we introduced the idea of fighting the negative aspects of piracy by exploiting its innovative power: piracy actually encourages the development of innovations in the companies involved or, revolutionarily, can be considered itself as an innovation from which we may benefit.

This path has not been completely followed by any big firm since, in 2015, one of the hugest companies in the field of software production, Microsoft, apparently changed its point of view on the issue for the launch of new product, Windows 10.

In this section of my research I will underline how, considering the fact that Microsoft has actively tried eradicate piracy for decades, their new actions and propaganda, not always clear and full of denials and changes, have to be considered. Then we will see if this move has been successful or if, on the other hand, it has been a confirmation that nothing good can actually come from piracy.

Chapter 8: The company's previous approach regarding piracy

8.1) From the open letter to hobbyists to the start of the new millennium

Contrary to what we will see in the next chapter, Microsoft's position against the problem of copyright infringement has generally been resolute and strong.

As mentioned in Chapter 5, Microsoft has been one of the first firms to address this crime as an important and major threat for the software industries.

This happened when, in 1976, the founder Bill Gates wrote the famous “Open letter to hobbyists,” denouncing a loss of 90% of revenues for his first product and asking for severe regulations against piracy, a call completely ignored at that time by the government.

Despite the anger of Bill Gates, the company headquartered in Redmond did not seriously defend itself against piracy in its first decades.

This behaviour can be attributed to the fact that piracy was thought to be caused only by extremely competent people in that field or by practitioners of the primitive analogue version. It was thought to be a difficult for a normal person to commit this type of crime.

So, between 1976 and 1995, there was no copy protection at all in the first operating systems (MS-DOS and Windows 2.x/3.x).

At the time, Microsoft tried to monopolise the market by adopting in 1988 the usage of per-processor licensing agreement, a practice obliging computer producers to include a Microsoft software in their products. This increased the willingness of consumers to start exploring the so-called open source market and led the company to legal troubles in the famous trial of 1994.

In the systems that went out between 1995 and 2000 (Windows 95, Windows 98, Windows Millennium and Windows 2000), there were the first prototypes of serialization.

During installation, users were required to put a serial number of 10 digits found together with the installation CD.

The number was not unique. It only had to match with an algorithm, and this made the protection very primitive and weak: it was possible to avoid the system with casual attempts or by sharing numbers with family and friends.

8.2) The real battle, from 2001 to Windows 8

In 2001, Windows was ready for an extremely important step in its history: the launch of Windows XP, a completely new operating system with different versions adaptable to any type of user.

XP turned out to be one of the greatest successes of the Redmond company and sold more than a billion copies worldwide in a decade.

When Bill Gates was planning the advent of this new product, the situation was very different from the past.

In fact, at the beginning of the twentieth-first century, Internet, developed in 1994 in the way we know it, spread world wide, leading to a change in piracy.

Contrary to the past, everyone now had access to a network in which everything, included software protected by copyright, could be illegally downloaded and shared.

Digital piracy was in the flourishing years and Microsoft could not permit the huge revenues expected with Windows XP to be destroyed by those activities.

This brought a radical intensification in the protection measures the firm adopted.

In 2001, the first Windows XP was supported by a complete and innovative process of serialization. The user was required to activate the system with a unique alphanumeric code of 25 characters. This solved the majority of the problems related to the previous version of the serialization mechanism.



Graph 8.1 The activation process for a 2001 Windows XP operating system,
Source: Microsoft

The new protection was very good but still had some problems. It was soon clear to informatics engineers that if a hacker found a way to steal a product key or avoid the activation, he would be able to use the product without any other trouble.

Therefore, in 2004, during the peak year of Windows XP's success, Microsoft announced the launch of a revolutionary protection program, an investment which cost lot of time and money to develop: Windows Genuine Advantage (WGA).

By using of this program, it become possible for the firm to scan the authenticity of the software copies even after activation.

If, for example, a hacker succeeded in obtaining a false key code, if the computer was connected to Internet (and particularly if he was trying to download and install a Microsoft product on the illegal system), it was possible for Microsoft to find him and block the unwanted software.

WGA has been a concrete change in the field of protection against piracy because for the first time in history the control was not related only to the moment of the activation, to the first minutes of the software's life, but was a constant threat for hackers during the entire life time of the product, as long as it was connected to the World Wide Web.

In the following years, the WGA faced dozens of enhancements and reconfigurations and the innovations achieved in this field have been extraordinary.

In 2007, only three years after the official launch, the program was so complex and efficient that it could discover not only whether the software run on a target computer was illegal, but also whether other Windows products contained in it, such as the Microsoft Office package, were connected to a real key code.

Microsoft's attention regarding this issue grew year by year. The operating systems released after the incredible success of XP (Windows Vista, Windows 7, Windows 8) were fully equipped with the latest versions of the WGA.

All the innovations in the field of protection highlight Microsoft's attention to the problem of piracy and the potential damages present and future deriving from it. Moreover, considering the future revolutionary approach of this company, it is important to understand that until last year the only strategy implemented by the company in Redmond was fighting piracy through technological innovation.

Unfortunately, even if the efforts made have been notable and the programs created all encompassing, software digital piracy was affected only minimally. In some markets, such as in China, piracy continued to proliferate without any obstacle, as discussed in the next chapter.

Chapter 9: The 2015 turning point: The case of Windows 10

9.1) An incredible reaction to the difficulties faced in the Chinese market

The end of the year 2014 was incredibly frenetic for Microsoft.

For summer 2015, the company was planning the launch of one of the most important products ever made in terms of investments: the new operating system Windows 10.

The ambitious plan regarding it was to emulate the success of the one billion of copies sold by Windows XP, but with one important difference: while its predecessor celebrated that milestone within a decade, the producer's plan for Windows 10 was doing the same in little more than three years, reaching the goal by Christmas 2018.

This project, if achieved, would have brought a huge amount of revenue, considering the price of a Windows 10 normal home licence was \$119 and a professional license was \$199.

While discussing the goal, it was soon extremely clear to the company's managers that the biggest threat for this plan would have been, as always, the unpredictable impact of digital piracy and illegal downloads.

One market Microsoft never had an control over, due to cultural differences, official regulations and the extremisms of its government, is the Chinese one.

As specified in a 2008 article in the *Financial Times* concerning the happiness for an obligation to refund Microsoft of \$318,000 inflicted to a Chinese insurance company (for the first time in history), instead of being happy Microsoft had better think about the \$ 6.68 billion that the Asian giant had caused the software industry to lose.

Considering the secure difficulties that Microsoft would meet at the launch scheduled for the 29th of July 2015, after an intense and chaotic period of rumours and denied news, the company decided to change strategy and gave notice of to the world in March 2015.

Microsoft decided to pursue, first of all, moving as many copies of the new operating system as possible. To do so, it made two choices.

The first one was to give all Windows 7 and Windows 8 licensed users a year to update the system for free. This was a strong a decision but not revolutionary.

The second and more incredible point was Microsoft's intention of extending this possibility of free update to the official Windows 10 also to the owners of a pirated copy of the previous systems. The new Windows 10 obtained in that way would be signed as coming from a pirated computer but would be exactly the same as that of licensed users who had updated regularly.

This type of decision, unprecedented in the history of software, had a worldwide impact and created a huge debate. This was because Microsoft remained deliberately vague for a few months on the scope of the change: at the beginning it seemed related only to the Chinese market, then to that of the United States, then to the whole world.

9.2) Why such an incredible move?

Microsoft's strategy was completely unexpected when it first came out and, at a first glance, it may be difficult to understand the real motivations behind it.

First of all, Microsoft understood that digital piracy is nowadays too powerful and that all the measures taken in order to fight it have been a failure.

Secondly, the innovation made by the company in the field of protection were very good but still not enough, as demonstrated by the millions of Windows 8 illegal copies available worldwide. A crucial product like Windows 10 could not rely only on a mechanism such as the key code or the WGA for its success.

What Microsoft understood was that if times have changed, the company's strategy also had to change according to the situation.

The new vision of the company has been radically modified: from selling the highest number possible of copies (and so earning the greatest number of revenues), the goal became maximizing the spread of Windows 10 worldwide.

In this new business model, revenue no longer comes from selling the licenses but from selling a series of complementary products, extremely useful for people who study, work and play with the computer, and which would not be possible to download illegally because, if pirated, they are not going to work on Windows 10.

People would be so excited by the possibility of upgrading their pirated copy of Windows 8 to a real Windows 10 licence that they would not mind paying a small extra fee for added tools.

This strategy was a revolutionary turning point in the consideration that markets should have regarding piracy.

In a world in which piracy is dominating, and with no expectation of downsizing in the short term, Microsoft's approach makes us see things under a completely different light.

For this company, after years of legal and technological fights, digital piracy is no longer a problem to defeat as soon as possible.

Piracy has become paradoxically the main factor of success of a completely new business model based on viral diffusion of the product.

Considering that this experiment took place within one year, it is hard to give an estimate of the results so far. But it is still surprising to see and compare the completely different reactions of the market when some companies or an entire sector are facing the risk of being extinguished.

The first-comers analysed in the first section, having to cope with an innovative business model that threatened to wipe them out, tried to declare the innovations of the newcomers illegal in order to survive.

On the other hand, Microsoft, fighting against something that was without any doubt illegal, such as digital piracy, has come out with a brilliant business model because of it.

We do not have to make the mistake of thinking that Microsoft surrendered to digital piracy. The company still considers piracy as one of the greatest problems created by the diffusion of the World Wide Web. Though the company wants to take advantage from the positive aspects of piracy such as viral diffusion, it does not want to appear "pirate friendly".

But acknowledging that much more has to be done in order to defeat digital piracy does not mean that the innovative power relying in it should not be exploited. Microsoft is an excellent example of this.

Microsoft, after these first months, appears motivated to pursue this path and has announced that the revolutionary free upgrade to everyone will probably be extended to the market of mobile operating systems, a field in which Microsoft is trying to put itself as a leader despite the fierce competition of Apple's IOS and Samsung's Android.

Chapter 10: Did Microsoft make the right choice?

10.1) Results and considerations

With last year's decision, Microsoft decided to follow people who thought that piracy could be also an important source of innovation and could be used in some way for enhancing the value of a company.

This raises some questions: have these ideas been successful so far? Are there some concrete points from which we can agree with Redmond's headquarters and start to rethink our conception of the illegal phenomenon?

Or, on the other hand, has this strategy proved to be unsuccessful, giving reason to those convinced that piracy has to be treated in the classical way, even if so far ineffective?

As stated in the previous chapter, because the launch of the program was made only few months ago, it is difficult to provide a single answer to these issues.

But of course, it is possible to understand something from the first marketing data and the future guidelines of the company.

At the end of January 2016, exactly six months after the official launch of Windows 10, Microsoft published official data from its selling departments.

The numbers shown there are very important and are, first of all, completely in line with the expectations of the company.

At that time, more than 200 million of Windows 10 have been installed all over the world. This makes the goal of 1 billion licenses distributed by December 2018 very possible.

Moreover, the most important data is that, out of this incredible amount of copies, more than the 80% of them have not been paid for.

In fact, 45% of people who own a copy obtained it by the free upgrade from a previous operating system. Another 37% obtained it through the program Windows Insider, another method to get Windows 10 completely free.

Despite the lack of official exact data, the company said that a significant part of the number of free upgrades was from a pirated Windows 7 or Windows 8 system.

Moreover, this decision gave provided change in people's perceptions of the firm.

As we saw in the second section, a significant portion of Internet users agree with piracy or at least do not think that is a serious issue.

Microsoft's report was accompanied by the results of a survey provided to the new Windows 10 owners. 60% of them stated that they have been very impressed with Microsoft's decision and their opinion about the firm had changed considerably positively, and that they will take account of this for the future.

These statistics show that the idea of the company of using piracy as a way of widespread distribution is successful. This method can surely be implemented by other firms in order to create a viral marketing network based on the potential powers of piracy.

On the other hand, we should avoid jumping to hasty conclusions.

Distributing the product through the channels of piracy was just the first part of Microsoft's strategy. It is still too early to give feedback about the second and most important one.

Until now, Microsoft has played with the market and has given the majority of the licences for free, earning only a minimum part of the expected revenues.

Only the future will tell if the revenue plan of selling for a minimum amount of money a huge quantity of complementary products will be successful, or whether it will be a complete and unexpected failure. This will be the real measure of judgment for Microsoft's policy.

In any case, the power of diffusion through digital piracy should not be underestimated and, even if Microsoft's strategy turns out to be ineffective for a long time, these considerations can still open up new business model ideas for companies severely affected by piracy, as well as in other sectors such as those of music or movie industry.

10.2) Some unexpected consequences: piracy versus open-source

The decision taken by Microsoft was revolutionary but did not come out of nowhere.

In recent years, some professors and researchers studied the phenomenon of piracy and thought of its hidden positive effects.

After the launch of Windows 10, this research intensified and showed some unexpected consequences of piracy, apart from the one of the viral diffusion that we already know well.

From the *mare magnum* of studies and contributions, I found extremely relevant the ideas of Arne Rodge Gramstad, a professor at the University of Oslo.

On the 23rd of February 2016, he published an interesting paper called "Software Piracy and Linux Adoption."

He started with the idea that Microsoft does not have as an historical opponent only digital piracy but also an even more dangerous one: open-source software.

An open-source software is a product that has a main distinction from all the rest of the market. The holder of its copyright licence gave the permission to everybody to download it, change it and make from it the expected use in a completely free way.

Open-source, whose most famous example is the software Linux, is completely legal and because of this is potentially disruptive.

Despite that, in the last several decades, Linux has not achieved its expected success.

It is hard to explain why a good and free substitute product for the Windows and Macintosh oligopoly nowadays can only be found in the computers worldwide with a share under 2%.

According to Gramstad, if Windows did not suffer damage from Linux, which would be even more difficult to fight than piracy, the reason is because of the high rate of Windows' pirated copies.

As the researcher says: *“With a piracy rate estimated at 42% globally and close to 90% in some developing economies (Business Software Alliance, 2012), the market structure is necessarily affected by this illicit economy. Piracy may deter adoption of Linux for at least four reasons: (i) illegal copies of Windows are cheap and almost perfect substitutes to the original, which effectively reduces the price of Linux substitutes; (ii) competition from piracy is likely to cause lower prices of legal copies of Windows; (iii) more pirated applications are available on Windows and OS-X platforms relative to Linux, which also increases demand for legal substitutes of Linux; (iv) adoption of operating systems are associated with network externalities, and piracy may therefore cause increasing differences in the benefit of using Windows/OS-X compared to Linux.”* (Gramstad 2016, pp 1-2).

The conclusions of the work are a concrete estimate: for each increase of the piracy rate of 1% in a certain region, the share of Linux or other software's adoption decreases proportionally between 0.5%-0.65%, so the two phenomenon are in complete antithesis to each other.

What we can understand from Microsoft's experience and from these academic contributions is that piracy is a crime that considered for all these years under a complete different light.

We do not know if these changes in mentality and these new approaches will be successful or a different type of failure.

What can we say is that, in a globalized and over-connected world like ours, paradigms can change rapidly quite every day. A world in which piracy, impossible to eradicate, is forced to become one of the basis of a new business model based on diffusion is not an utopia.

SECTION 5: CONCLUSION

This thesis explores the field of business model innovations.

In particular, the first aim of this project was to analyse the illegal dimension of those issues, understanding why a successful firm, which brings a new idea to the market in a disruptive way, is usually declared illegal after its first period of success.

I then brought my attention to the topic of digital piracy, a phenomenon that is in constant evolution and is a major threat to the copyright industry.

Piracy, in opposition to the cases analysed in the previous sections, is something illegal. However, new researchers came out with a new theory regarding piracy which I wanted to research in more detail.

According to these professors, piracy is not only a cancer to fight but can also be an incubator for further business model innovations, particularly due to its potential in viral diffusion.

Considering that legal and private initiatives taken in the past in order to fight this crime have been completely ineffective, as shown by experience, these recent studies suggest all the biggest firms should avoid a losing war and try to exploit the positive effects of digital piracy.

A huge debate came out when, in 2015, surprisingly, the software company Microsoft followed this path and decided to completely shift its strategy, changing from a revenue-based model to one which penetrated the market with the help of digital piracy.

All this work permitted me to try to find the answers to some important questions.

Some of the most major ones are: what is the difference between a successful business idea and an unfair competition?

Do governments make the right choice by legally protecting the previous leaders in a given sector?

Is it possible to stop a late-comer only because its innovation idea is too successful?

Is it economically efficient, both in the short and the long term, to save businesses which, even if they employ a considerable part of the population, have been declared inefficient by the market?

How is piracy, an illegal act, related to this issue?

Are the theories that describe piracy as a powerful source of unexpected innovation valid?

I decided to dedicate my final thesis to this topic because I was interested in the academic and journalistic debate that has been produced in the recent years.

I spoke about extremely new issues and discovered that, despite the research done in previous months, the questions are still very open. We are living through daily changes in the situation and I felt able to give a concrete contribution.

As a research method, I gave priority to the analysis of some concrete case studies, which I considered relevant regarding these topics.

I tried to see the similarities and the differences in each case, which could come out between what has been shown by the reality, my personal position and the research studies.

The issues I dealt with are very intricate and so it was not possible to provide a single unchallengeable answer to each of the proposed questions.

Despite this, we made considerable progress in understanding the analysed phenomena.

Regarding the question of the interference of governments with legal measures in order to contain too successful and potentially disruptive business model innovations, we understood that not all the cases taken into account were the same. An evaluation can only be provided on a case-by-case basis.

For providing two different examples, in some situations, as in the case of the Tesla Motor Company, the government put a regulation in place only to protect the interests of lobbyists who will not increase the health of the American economy.

In that case, the choice was political rather than economic and should be condemned.

On the other hand, the situation is very different when what is threatened is not a particular lobby but the entire economic system as we have known it until now.

Some business model innovations, such as Uber and the consequent phenomenon of Uberification, put in the market a revolution that, if not fought, risks rewriting the paradigms under which we live. For example, if it becomes possible to avoid using professionals for the services we need just by creating an online network of “gentlemen agreements,” the consequences are potentially very different. In this situation, governments’ decisions were not political intrusions but strong economic choices.

In these issues, it was extremely challenging to see the place occupied by piracy.

In contrast to my previous analysis of successful businesses being declared illegal, the thesis that something illegal and impossible to fight like piracy could be used as a successful business is surprising.

The cases analysed, from the past to the near present, demonstrate that this field is potentially a disruptive business idea and needs to be examined more in depth in the future.

We still do not know if the project of Microsoft, the only company that launched a core product based on this idea, will be a success or a failure in the long term. What is clear is that the first results are incredibly encouraging and some studies taken after Microsoft’s decision showed that piracy has already yielded positive results in the past that were hidden and difficult to detect, such as the defeat of the open-source model.

Though there is a long way to go, the impression is that we are on the right path to solving piracy and even transforming it into a source of competitive advantage.

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