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Characteristics and Classification of Free Business Models: The Spotify and Skype cases

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1 Introduction

1.1 Research purposes

“Free”. Every time a person hears those letters his soul, heart and mind are filled with a blend of sensations composed by relief, suspicion and delight that makes him ignore all the surrounding aspects concerning something. This word, whose origins come from the Latin *gratis*, has been proven to grab the attention of the readers and, economically speaking, buyers more easily than any other means, thanks to the perception of the concept of Free that has spread over the years. In English this word recalls something that individuals have sought for a long time, freedom, which in such economic context can be interpreted as the freedom of the individual from the slavery of the burden of cost or, in a more simplistic way, of being forced to pay with money or sweat for something that is wanted or needed. The phenomenon of Free has disrupted the modern society and the way consumers are approached by companies through the adoption of new business models whose birth has been fostered by the diffusion of digital technologies.

Even if people don’t notice it, the modern digital society is surrounded by the principle of free! Nowadays, in fact, it is not uncommon to download a program or software for free, getting an extra gadget as a “gift “or simply purchasing an item with a “free shipping”. Given these developments, It would be interesting understanding the mechanisms behind this in order to unravel the methods through which companies can profit from free. However, even if there have been a few successful attempts regarding the identification and differentiation of these models based on free, there seems to be something missing concerning the description and recognition of the negative and positive traits characterizing each strategy adopted. In particular the first question that this thesis is meant to answer is:” What are the advantages and disadvantages of the different free business models adopted by a company which wants to profit on them?”. Moreover, another thing that seems to be missing in the current literature concerning free models is that of a clear and suitable classification of the freemium models and an application of such to two of the most relevant companies involved in the digital environment, Spotify and Skype, aimed at better understanding the type of strategies they are currently adopting in their pricing methods. The second question that this thesis proposes to answer then is:” What typology of freemium business model is adopted by Spotify and Skype?”.

In order to fill this gap it will be necessary to start from the basic concept of free and then restrict the focus to the strategies based on it. As this dissertation will be developed the reader will realize that, looking at the roots of the idea of giving something for free, companies always aim to get something in return: customers’ attention, opinion, building a positive brand reputation, creating new customer’s needs, or simply pushing the buyer to purchase a complementary product of the one which, apparently, is a “gift”. Starting from the first examples of the application of free in business practices or processes, it will be immediately clear that nothing can be truly considered free and if the customer is not paying with money, he/she pays for it with time and attention, remembering that in most cases: “If you don’t pay for the product, then you are the product” (The Social Dilemma, Jeff Orlowski, 2020). Subsequently it will be fascinating taking a glance at the history of free and in particular at when the first phenomenon of “Free lunch” appeared in the American saloons and taverns in order to incentive people to pass by and grab a drink, and how this practice changed over the years and evolved into one of the most common and successful basis for creating the most profitable digital business models that nowadays are turning the traditional economics upside down. The first section will be closed with an investigation on the psychology behind the concept of Free and what it triggers in consumers’ minds and subconscious whenever they encounter something they are not obliged to payback.

The second section will be centered on free models and will start from a general definition of business model and then narrow it to strategies which exclusively exploit free as pricing tactic. It will be shown how companies can give away their products without the need of getting a direct compensation from the customer and how they earn from this shifting money around from product to product and individual to individual by forecasting future cash flows. Then it will be crucial to understand how this not recent phenomenon of Free has exploded in the era of digitization and digitalization with the advancement of technologies which affected the production processes through the leveraging of customers data. Afterwards, by following the guidelines of Chris Anderson (2009) and Rita Gunther McGrath (2010), these models will be classified, analyzed and contextualized into four main types: Direct Cross-Subsidies models, Ad-supported models, Non-monetary economies, and finally the Freemium business model.

As will be deepened later, the Direct Cross-Subsidies models’ mechanism will consist in a company/brand giving for free a product that entices the customer to buy another one. The Ad-supported model will represent the case in which a service or product is provided for free to consumers and the company profits from showing insertions and ads paid by advertisers. Non-monetary markets will exemplify those situations where people give away their knowledge/services without any expectation to get something economically valuable in return, but with the aim of getting something socially valuable such as reputation and attention.

In the last section, the Freemium business models will be explored and classified in different typologies. It will be seen how companies provide a basic version of a service for free and a premium version for a monthly, weekly, or unique fee, in order to gain revenues and sustain the whole user base. After uncovering how the freemium model works and having gathered the notions to classify and scrutinize them, it will be interesting to see how some of the smartest businesses, as Spotify and LinkedIn, gain profit by providing free services and exploiting a mix of different kinds of freemium and ad-supported models.

1.2 Literature review and positioning

The main aim of this dissertation will be that of building a conceptual structure around the concept of free models, filling a gap in an already well-developed literature by providing an overview of the benefits and downsides related to each one of these models.

Many recent studies have focused on the problem of identifying and differentiating the strategies based on free. In particular Chris Anderson (2009), "Free: How Today's smartest businesses profit by giving something for nothing", is the first one addressing the problem and solving it by providing a framework for the classification of free models which divides them into four main categories including: Direct cross-subsidization models, Ad-supported models, Non-monetary economies and Freemium models. By following the same path in her paper "Business Models: A Discovery Driven Approach" Rita Gunther McGrath (2010) proposes a solution to the same problem by supplementing other two typologies of free models called Gift models and Barter models. Nevertheless, the solution presented appears to be too much general since it doesn't directly explain how businesses could adopt a sustainable revenue strategy from these.

While there has been much research on the categorization of such strategies concerning free, few researchers have taken into consideration a clear identification of the negative and positive aspects surrounding them when considering the effective adoption of these in a business strategy or workplace where a company has to decide what features are more in line with its needs and value creation; This is the first gap in the literature this dissertation proposes to fill.

The second focus of this dissertation will be that of finding an appropriate classification of the different kinds of freemium and create a theoretical toolkit that will be needed later to analyze the current freemium models of Spotify and Skype. Even if the two companies have been analyzed from different perspectives, involving for many respects also similar studies, as that of Seufert (2013) which provides a good pragmatic study of the freemium strategies of these subjects of study, and even though the previous analyses on freemium provide a lot of useful insights, tools and notions to understand this reality, they lack of that specific distinction on the typologies of freemium mechanisms adopted by the companies that will be object of study in the final part of this dissertation. Reime (2011)," Exploring the Freemium Business Model", presents Freemium as a model leveraging the user's role as co-creator of value highlighting the importance of network effects and providing some important hints and information about the history and the mechanisms behind the strategies of the two businesses, however, even in this case there is a lack of technicality in the definition and analysis of such models which will be filled by this study. Menin (2019), in his work "L'ULTIMA STRATEGIA DI MARKETING DEI VIDEOGIOCHI: "FREE-TO-PLAY" E IL CASO FORTNITE", identifies the potential advantages and disadvantages concerning Freemium focusing only on these and completely ignoring the different shades and typologies of Freemium. In his paper "Freemium: Attributes of an Emerging Business Model", Pujol (2010) provides the necessary foundations to understand the model and describes 13 monetization strategies used in 3 types of freemium: quantity (volume, time), feature, and distribution. This last study appears to be a good starting point to address the research question related to the classification of Freemium models, but, even in this case, there is no information related to the typologies of freemium models that have been employed by Spotify and Skype and, additionally, the concept of limitation of distribution of the service seems to be quite obsolete and not anymore applicable to the current digital business models.

1.3 Methodology

Given the objectives of the study, the approach for conducting the research was mixed, both empirical and conceptual, and the logic of the research was completely deductive. In order to identify the pros and cons of free models and build a conceptual framework regarding the kinds of freemium, data and information were collected from papers found through the Google Scholar search engines, online websites and personal academic knowledge. The data collected for the analysis of the two companies are qualitative and quantitative secondary data taken from books, personal sources, journals, newspapers, websites, while the choice of employing secondary data was due to timing, instrumental and economic limitations. The last part of the research is predictive. In fact, the framework and notions gathered and developed in the core of the dissertation was then used to describe more specifically the business models of the companies under analysis, following an observational and predictive method to make inferences on the typologies of models of the two companies.

It's fundamental to underline the fact that, in order to retrieve Spotify's quantitative data, a survey was conducted to the Spotify's press and other information were retrieved on the Spotify's webpage, while in the case of Skype, given the impossibility to reach the company's press department, data were mainly collected through its webpage, online articles and previous papers and this is the reason why the data collected for the second case might be a little bit more general and less specific than that of the first one.

The most relevant obstacle found in the construction of the categorization of the different free models was that of identifying the positive and negative aspects related to each one of them but in the end the problem was solved by collecting the needed information from the observation of concrete cases, that are described in the detail, which were complemented by other information found on reliable and verified online websites. Another relevant issue was that related to the literature concerning data suppliers business models, those business who offer free services and profit from selling users 'data to third parties, that seems to be completely absent and, given the lack of proper instruments, didn't enable the collection of reliable data that could be used in this study.

1.4 A brief history of Free

This section will provide a useful overview on the initial forms of Free, the way it related to business, and how it changed with the evolution of means and the digitization of things and products. It will bring back to the 1875's taverns of New Orleans to the birth of Google and Linux and let understand how technologies fostered the application of business practices related to Free.

1.4.1 19th and 20th century Free

In order to identify the first example of Free it is necessary to return to 1875 when "Free lunches" appeared as a common practice in many of New Orleans' Saloons and taverns. As described by *New York Times*[1] in 1875, "Free lunch" consisted in offering a free meal for the purchase of a single drink. These meals, composed mostly by potatoes, butter bread and tomatoes, were worth more than a single drink and the owners' strategy aimed at creating meeting places where people could hang out and spend money on multiple drinks without even realizing it. However, this was only the first case of application of a free Business model related to 19th century and many others followed (Chris Anderson ,2009).

It was 1902 when Frank Woodward started giving cookbooks away for solving one of the biggest critical issues that, still now, is affecting many businesses, that of overfilled storages. Woodward had just purchased a completely new company that had just registered the trademark of its new product, Jell-O. The problem with Jell-O was related to the fact that it was an innovative and weird ingredient from the point of view of consistence and taste with respect to the common and known ingredients. In that period jelly was something new, and customers didn't understand it or what they could do with it. Sales became slow and disheartening and Woodward and his marketing chief, Will Humelbaugh, struggled to find a solution to this issue until one day Humelbaugh came up with an idea that changed the history and made Jell-O one of the essential products among sweets purchased by American families. Humelbaugh created, in fact, a way to produce a need to customers by offering for free recipe books that contained many recipes including Jell-O among the ingredients. Instead of giving out free samples of the product, that were expensive to produce, he only gave out free information about it, thus creating curiosity and the urgent need to get it as soon as possible to reproduce the recipes following an approach that in the next sections will be identified as direct-cross subsidization. By 1904 the campaign had turned into a runaway success, and Jell-O hit a million dollars in sales, and, as it is widely known, its sales are still among those of top suppliers of food and sweets in the industry.

[1] FREE LUNCH IN THE SOUTH.; A CUSTOM PECULIAR TO THE CRESCENT CITY. HUNDREDS OF MEN WHO LIVE ON FREE DINNERS--WHAT THESE ENTERTAINMENTS COST AND WHO SUPPLIES THEM--SCENES AT A FREE-LUNCH COUNTER--THE BILL OF FARE. A SPECIMEN LUNCH-COUNTER.
https://www.nytimes.com/1875/02/20/archives/free-lunch-in-the-south-a-custom-peculiar-to-the-crescent-city.html

However, the most famous example of the use of free in marketing was that of King Gillette.[2] In that period, the Bostonian salesman of cork-lined bottle caps, was trying to come up with something that could make him abandon his job and become a successful entrepreneur. One day, while shaving with a razor that was completely ruined, he had the brilliant idea of creating blades that could be substituted after many uses with similar new ones when they were worn out. After a few years and tests he realized this new brilliant invention but, even in this case, sales were quite disappointing during the first year, in fact he sold only 51 razors and 168 blades. In the following years he tried every method for selling them by selling a million of pieces to the army for a discount price with the hope that the soldiers would get used to it and continue buying them, but even this didn't give him the numbers and earnings he was looking for. Eventually King Gillette found a way to skyrocket the sales of the razors thanks to an agreement reached with many sellers where he started selling massive amounts of razors to banks, coffee and gums' sellers and other typologies of businesses which gave them away to new clients for free in bundles.

In general, what appears clear from these first cases is that Free is something that is not that compatible with direct marketing approaches and goes beyond the mere and direct sale of a product- it is something that points to deceive the customer and get into his/her psychology to succeed. Starting from these experiments of the 19th and 20th century, Free led to a revolution in the ways of doing marketing and in organizing the business processes at the different stages of the customer journey. That revolution was only the first spark of what has become a huge fire that has impacted businesses at the roots of their ideology and way of thinking, especially with the birth of new means and technologies that led to the digital transformation of companies.

1.4.2 21st century Free

This new century was marked by huge advancements in technology: the switch from analogical to digital, the explosion of the exploitation of the Internet in new fields as the invention of virtual marketplaces and the IoT, but, on top of all, the birth of new channels of communication as social media and forums/blogs that brought an enormous novelty facilitating the exchange of information between the society, individuals and companies at three levels. The creation of social media, indeed, impacted the way businesses relate with environment and the society at large (Macro level), the way businesses relate with each other and individuals (Meso level), and the peer-to-peer interactions (Micro level), which provide a useful source of feedbacks to companies thanks to user generated content (Padua ,2021).

The change that stemmed from these new inventions and ways of interacting allowed Free to assume a completely new form. While at its beginning Free consisted mostly in giving away something for making

[2] Gillette's Strange History with the Razor and Blade Strategy
https://hbr.org/2010/09/gillettes-strange-history-with

customers purchase more of that or something else (Direct-cross subsidization)[3], the new era Free is based on immateriality; it is based on bits and chunks of code, not on atoms (Chris Anderson).This new form of Free is not affected by inflation as the fiat currency and as physical products, it goes in the opposite direction, it is deflationary, and is enabling for completely new strategies of pricing. As the world keeps switching from material to virtual, things get less and less expensive and this is boosting the new uses of Free since producing and distributing software costs much less as computational resources and means improve; the net annual deflation of the online environment is, indeed, of more or less 50 percent.

Today the most interesting business models consist in finding methods to make money around Free and sooner or later every business will have to cope with this, by using or competing with Free. Let’s just think about how Google disrupted the SaaS (Software as a service), PaaS (Platform as a service) and IaaS (Infrastructure as a service) markets by creating and granting free services (Search engines, GPS systems, Analytics methods, Spreadsheets, Video content sharing platforms) to the customers[4]. Another crucial example is that of Linux that disrupted the operating systems market in two ways, firstly providing a free open-source OS (Ubuntu) ,constantly updated and debugged by the participants of the Linux community, that is still one of the biggest challengers of the paid Microsoft and IOS ,and secondly providing a system based on a new centralized blockchain technology through Hyperledger and Hyperledger Fabric that was created with the aim of boosting the integration of the blockchain technology at an enterprise-grade level (Massimo Bernaschi, 2021).

Free didn’t only stop at software and operating systems but also touched something that was relevant even hundreds of years ago: thanks to the digitization of music, many musicians, from Radiohead to Nine Inch Nails, are allowing for a free download of their albums with the expectation of reaching more people and gaining more fans who should attend to their concerts[5].It might be possible to provide hundreds of thousands of examples but there is no room for this and it’s important to not lose the focus on the main topic of this thesis.

What is fundamental to grasp by looking at all these cases is that the society has been disrupted by a new form of “Freeconomics “, where most of the services or their basic versions are given away for free, and this has impacted many aspects and sectors of the modern economy, but in order to understand this, it is crucial to understand how all of these organizations are actually making revenues from such practices.

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[3] Trends in Communications: Telecommunications Economics , https://pt.slideshare.net/DanieleAntonioli/trends-in-comm-daniele-antonioli-606082

[4] Google Cloud , https://cloud.google.com/learn/what-is-iaas

[5] Radiohead, Nine Inch Nails, and other digital pioneers sour on 'pay what you want' music https://www.theverge.com/2013/3/4/4054634/musics-pay-what-you-want-pioneers-sour-on-giving-away-songs

1.5 The psychology behind Free

The word Free is undoubtedly the trigger that pushes people to go out of their way to carry home useless keychains and pens from conferences; it makes them buy products they don't really like, just so they can get a second one at no cost. People are usually not so careful about what they are taking, about its quality and its possible uses; they are only interested in the fact that it is Free, the rest is irrelevant. The question, then, is: why don't individuals think like this when they have to open their wallet and spend money? The answers that will be provided in the next section will show, at a high level, what is behind the practices involving free and how companies exploit these aspects of the human mind and subconscious by making it clear that people are as controllable as a flock of sheep guarded by a German shepherd.

1.5.1 The Penny Gap

Before answering this question, it is important to remind that everyone's feelings about Free are not absolute, but relative, and the psychology of Free is, indeed, shaded in many aspects. What will be described in the following lines is a behavior that is assumed by most of the customers in the game and, therefore, it can be taken for granted since it is the fruit of many studies and observations made by Dan Ariely (2008), a professor of psychology and behavioral economics, and Josh Kopelman (2007), a famous American entrepreneur.

One of the reasons why Free prevails over minimum expenses is that every time an individual has to open his/her wallet to spend even just a penny, he has to think about it; the neurons in his mind interact creating small sparkles that lead him/her to ask himself whether it is worth to spend that penny or not. These sparkles don't show up when a product or an item is free because he doesn't actually have to give anything away. This process of deciding to spend that penny or not is called *mental transaction cost*[6] and is, simply, a toll of thinking. Since people are all a bit lazy and would prefer having a drink on the beach rather than deciding whether to spend and lose money, they tend to choose things that require the least efforts in thinking. Many companies take advantage of this laziness and initially give away a product for free making the customer feel like there is no commitment in accepting it. But here comes the flaw in the customer's mind: once he accepts it, he'll start to feel indebted for having taken something without giving back nothing and he will become more enticed to buy. Let's just think about those stands in the hypermarkets that offer consumers a taste of cheese for free and then, once they have finished chewing it and swallowing it, ask them if they want to buy some, well… it is not guaranteed that they'll buy it, but they'll feel guilty for having accepted it without paying it back.

Charging any price raise a barrier that most people won't bother overcoming and they will automatically decide to not open their wallet, this is called the Penny Gap (Josh Kopelman, 2007). Would

[6] Mental transaction costs Clay Shirky, https://wiki.p2pfoundation.net/Mental_Transaction_Costs

someone really take those pencils at the furniture shop if they costed 0.10$ each, or would someone really use that Google spreadsheets if it costed 0.10$ per day? When considering a good, a cheap one, it is necessary to consider it into two different markets: A zero market, where it is sold for Free and another market, where it is cheap and priced and the competition is way higher and at the last blood (Shampanier, 2006). The demand a business has at a price of zero is many times higher than the demand a business has at a low price. Tying this aspect with that of feeling indebted will allow to comprehend the rationale that encourages many businesses to give products and services out without a compensation.

1.5.2 The Zero Price Effect

In 300 B.C. Babylonians defined the number, then symbol, zero as something that should represent the nothingness, the void. It is hard to say that something has changed from then but in some fields, such as that of marketing, zero represents a source of irrational excitement. When a person reads the number or the word "Zero" in a label with a dollar sign, his pupils dilatate and he feels a tiny sensation of heat in his chest that makes him forget about the downsides of a product because he starts considering a good more valuable than how it actually is.

Why do people think like this? According to Ariely (2008), this stems from the fact that humans are frightened of losing something; it could be a lover, a relative, a valuable object or, as in this case, simply money. Ariely underlies also that another factor that empowers Free resides in freeing people from the fear of losing their money for something that could not be worth the sacrifices and the time it took to earn them. If people don't pay for a product, they don't really feel committed to it and as a result they don't think if they really need it or if that item is useful.

An example of this might be that of Zappos[7], an online retailer of shoes founded in 1999, that represents one of the first attempts of selling shoes on virtual marketplaces and consisted in one of the earliest businesses that succeeded in what nowadays is called digital transformation of the customer experience. Zappos started offering free shipping to customers granting the possibility to the customer to send the shoes back "gratis" to the company whenever they don't fit. The aim of the company here is that of eliminating the psychological barriers of buying shoes online, purchasing shoes that don't fit. Zappos isn't charging the lowest costs for shoes obviously, but, through this strategy, it was able to also obtain those customers who hate to risk their money buying a pair of shoes and paying the shipment to send the shoes back to the company. After its first year of operativity its revenues amounted to 1.6 billion and this proved

[7] How Zappos Went from an Unpopular Idea to $1.2 Billion in Just 10 Years
https://www.iwdagency.com/blogs/news/zappos-success-story

the effectivity of Free as pricing strategy and pushed many other online retailers such as Zalando[8] to adopt the same strategy.

1.5.3 The Tradeoff between Time and Money and the Metcalfe Network Effects' law

Another important factor of the psychology behind Free is that of the tradeoff between time and money[9], one of the pillars that support the Freemium business model.

Every human being owns both sources, except for very rare cases where someone might hold just one of them, and many entrepreneurs exploit this feature, targeting specific niches or groups of customers. Depending on the age or financial condition every time an individual has to decide whether saving his time buying something from an "expert" or, whenever it is possible, producing it by himself, saving money and spending time. Most of the times his choice will be affected by the amount of availability of one or the other and, once an individual becomes older, he won't care about spending 0.90$ here and there to avoid wasting his/her time, while a younger individual, for example a 12-year-old boy, will probably prefer to use his time rather than his money. Let's consider the case of a Free-to-Play video game called Dragon Ball Legends[10]. The game can be downloaded for free and is based on purchasing casual summons of characters by paying with virtual in-game currencies that can be obtained by playing the game and completing missions. However, it takes a lot of time accumulating those currencies and here comes the power of Free: many players, in fact, decide to take a shortcut and buy game currencies by spending their own actual money in order to speed-up the process of getting stronger characters in order to fight with other players online. Free has a key role in a situation like this: it allows for increasing the diffusion of the game and its value thanks to Network effects. The organization behind the game will not aim to make profits from children who are plenty of free time and time to waste earning gems, it simply designed it to manipulate the psychology of those players with much less free time by pushing them to spend their money to be competitive with those who have much more time to waste.

The company profits a lot more from adopting such strategy than a simple pay-to-play strategy by following a law that is called the Metcalfe's law (Hendler and Golbeck, 2008). This law states that as the number of participants in a network increases, the value of the network increases proportionally. In this particular case, as the game keeps spreading among new users and communities, its value will increase, more users will download it and an enhanced number of players will consist in more purchases and higher profits.

[8] Revenge Of The Ripoff: How Zalando Became A $5 Billion Retailing Sensation, https://www.forbes.com/sites/ryanmac/2014/07/30/zalando-europe-zappos-fashion/?sh=5b7e7f4c2fa6
[9] How Different Age Groups View the Trade-Off Between Time and Money, https://www.visualcapitalist.com/age-groups-time-and-money/
[10] Dragon Ball Legends , https://dble.bn-ent.net/en/

Summarizing the section in a few lines it can be noticed that, while Free allows for the increase of the reach of products by illuding consumers and making them think that they are released from the commitment of thinking about making a purchase or lose something (transaction costs), at the same time it allows for complementary support strategies that take advantage of the time-value tradeoff ‘s psychology and the network effects to create profit by targeting specific customers.

2 Free Business Models

2.1 What is a business model?

A business is defined as an organization engaged in commercial, industrial, or professional activities or the complex of assets and resources that allow one or more entrepreneurs to perform an economic activity whose purpose is creating wealth and address the product to a third party in market. Businesses can be either for-profit entities with the aim of realizing an economic profit, or non-profit organizations that operate to fulfill a charitable mission or further social causes (De Nicola and Carone, 2008). The term business model refers to the plans for making a profit, or more generally capturing value, set by a company[11]. A good business model should identify the products or services the business will sell, the market it will target, the key resources needed and the expenses it will face.

All organizations have the aim of pursuing an objective which is basically creating value. Value is what a firm or organization contributes to the context in which it is embedded and doesn’t necessarily consist in monetary value; there might be also other typologies of organizations such as the voluntary, public sector and common-based ones, whose aim is not that of making a profit (Kallinikos et al., 2020). While traditionally value was regarded as something that consisted in the merely worth of goods and services produced by the firm, where raw materials were transformed after a series of interdependent processes and activities (vertical value chain) and was produced upstream and consumed downstream, nowadays the value conception has changed a lot. Value, in fact, is not something linear and created only by the firm, but is something which is multidirectional, built and enhanced by the participation of the customer in the production and designing of the product (Padua ,2021). This aspect must be kept in mind since it is one of the milestones on which many business models, including the free ones, are based on. The clearest and most obvious example of this new method for value creation is that of platforms which create value by bringing participants and businesses together and enabling them to exchange information and create value (Alaimo, Kallinikos et al., 2019).

Looking at this example, it is possible to pinpoint the driving forces that led to this change and had a huge impact also on business models whose evolution allowed them to become more dynamic. Key drivers

[11] What Is a Business Model?, https://www.investopedia.com/terms/b/businessmodel.asp

for this have been the emergence of the commercial Internet, enabling ubiquitous communications and increasingly cheap ways to convey vastly more rich amounts of information, the birth of new techs, devices and social media which are getting everyday cheaper and cheaper and are making it feasible for businesses to do things they simply never could before such as providing services and software for free. This digital revolution that began more or less twenty years ago has been crucial for the adoption and invention of new models to profit and to understand how free became one of the keys to the success of many firms.

2.2 "If you don't pay for the product, then you are the product"

Why don't many audiovisual and content sharing platforms ask users to pay for the services? A simple answer to this is efficiently addressed by a quotation taken from the movie "The Social Dilemma" (Jeff Orlowski, 2021) << "If you don't pay for the product, then you are the product" >> ; these online service providers don't ask customers to pay for the service because they are harnessing them without them even noticing it. Many corporations tend to offer valuable services without looking for a monetary compensation but for other typologies of remunerations that, however, are still a basis on which they plan to get higher profits in the future.

The passive role of the consumer has changed a lot with the birth of digital environments and all the tools related to them as Big Data, analytics and AI and he is not anymore a mere recipient of the service as it was traditionally. In today's economy the customer cooperates by providing data and feedbacks in the value generation of the service (Alaimo, Kallinikos et al. ,2019) and firms have started designing their business plans on this. They try to gain as much more visibility and traffic on their digital property as possible in order to sell that visibility to advertisement companies by implementing an Advertising-supported model that will be described in the detail later. Let's consider as an example, that of search engines, that will be recurrent since it perfectly embodies how free is exploited in such models; for search engines those people who use them are the product, in particular the data users provide, such as their online behaviors and shopping patterns, is the payment; and this is immensely more valuable than a monthly fee. Online and offline merchants alike are riding the wave and have started collecting and reselling data every day as intermediaries in a process that is perfectly legal and will continue to evolve as more vendors build systems to leverage the exponential growth and confluence of AI, Big Data and software, at least as long as users will give their consent. The value of consumers' data, "the product", continues to grow in market value as converging technology platforms allow marketers to exploit those data in new ways and people's data have started driving the modern economy, pushing retailers to pay lots of money for that. Through the monitoring of behaviors and actions of their customers, marketers can produce insights on the habits, age and features of targets that enable them to forecast what kind of purchases buyers will be more inclined to make in the future.

As stated before a crucial aspect that is important to highlight about this is that, according to many regulatory frameworks concerning data protection such as the GDPR enacted by the European union in 2016 (Goddard, 2017), in order to get and process those data companies must have the consent of the possessor and getting the consent of the customer is not something easy, so the "trick "of providing a free service becomes crucial in incentivizing consumers to give their approval for the usage of their personal information.

Another important factor to consider is the fact that the value of users' data is constantly increasing and, according to estimates made by HowMuch.net[12], the annual value of a single user is worth 182$ for Google, 158$ for Facebook and 69$ for LinkedIn. This proves the fact that sometimes companies earn more from the sale and processing of consumers' data than from selling a standard monthly or annual fee that, in addition, would lower the dissemination of the service across a lower number of consumers. However, there are also other strategies that grant companies the possibility to increase the consumer base and get huge revenues that now will be explored.

2.3 Classification

It was 1996 when Larry Page and Sergey Brin created a free search engine, called Backrub, that used links to establish the importance of individual pages on the World Wide Web. As the years passed that search engine changed its name into Google[13] and became the most used in the world which is currently dominating the market with approximately 92% of market shares. In the digital era Google has become one of the big five tech companies of the G.A.F.A.M. and has widely expanded its business across different markets such as those of spreadsheets, video content sharing, maps and many others, without ever offering paid products except for a few exclusive services. But the question is: How did Google gain so much without selling almost anything to the consumers? Well, it exploited mainly two typologies of free business models that will be described in the details later, but before doing this, it is fundamental to define what a Free business model actually is.

A Free business model is a plan or strategy for generating profit without directly selling a product or service which exploits the two main powers of Free that are: increasing the accessibility and diffusion of a product/service allowing for a massive adoption and capturing the attention of the consumers. Free business models are becoming increasingly popular and are replacing the classic traditional business models in many sectors, with a special attention to those related to the provision of digital services and products. A factor that provoked the creation of new approaches for generating revenues has been the development of new technologies and procedures needed for producing physical objects and components with minimal costs by

[12] You Are Worth $182 To Google, $158 To Facebook And $733 To Amazon!, https://arkenea.com/blog/big-tech-companies-user-worth/
[13] Da un garage al Googleplex , https://about.google/our-story/

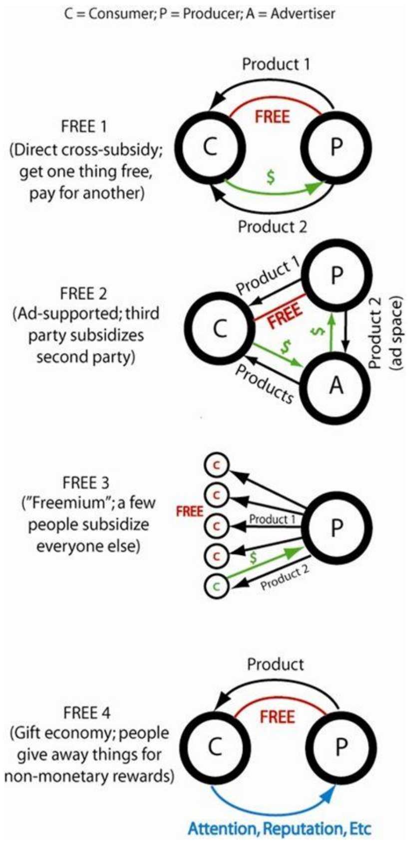
exploiting economies of scale and learning[14]. By combining this with another crucial factor, the birth of the internet, social media and the creation of instantaneous and constant communication among people and brands, the digitalization has given rise to what companies needed for conceiving new ways to realize profit with new ideas and pricing schemes that previously would have been regarded as insane. The fact that some of these new models are mostly employed by suppliers of digital services is not a coincidence. It, indeed, stems from the fact that their products are more compatible with such models, compared to those of other companies, thanks to the low costs of production that give these brands the opportunity to produce in abundance in contrast to businesses involved in different sectors as for example the automotive industry where the costs of production are high, and abundance and waste might badly harm the interests of the organization.

Now that it is clear what were the grounds for which there has been this huge shift in pricing, It is necessary to identify and classify what are these innovative business models based on Free and how they work, but before doing this, a preliminary remark must be made: Everything that is sold or offered to for free is never truly going to be free and, as will be clear in the next pages, consumers pay for it in one way or another. What will differ between the multiple methods will essentially be how they pay for it.

Starting from these premises, there may be hundreds of thousands of strategies for generating a profit from Free models, but, in general, three main macro-categories of Free models followed by an extra one, not employable from organizations which aim to generate monetary value, can be distinguished (Anderson, 2009) (McGrath, 2010):

1. Direct-Cross subsidies models
2. Two-sided or Ad-supported models
3. Freemium models
4. Non-monetary economies

[14] Digital is turning the economies of scale paradigm on its head, https://www.forbesindia.com/blog/no-wires-attached/digital-is-turning-the-economies-of-scale-paradigm-on-its-head-2/



(Figure 1: The four different kinds of Free models. Source: longtail.com)

2.3.1 Direct-Cross subsidies models

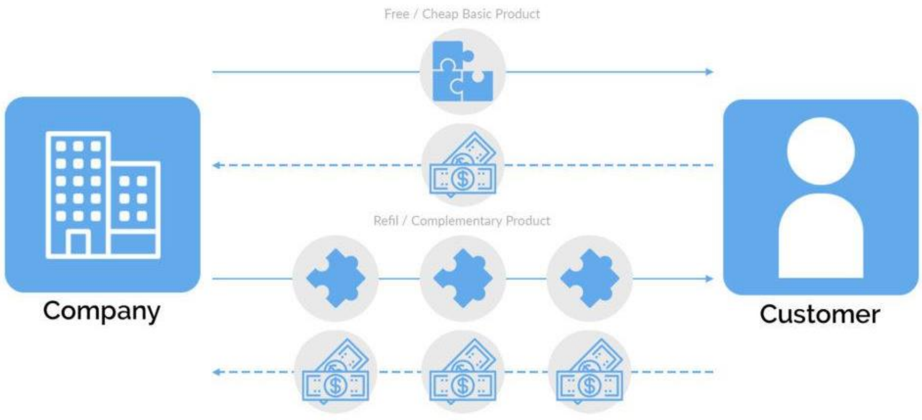
The first business model that will be analyzed is that of Direct-Cross subsidization. Cross-subsidization might consist in two main different strategies: the first consists in selling a product tied in a bundle with one or more products at a lower price with respect to the single sale of each one of them, whereas the second is an evolution of the former one, allowed by the decrease in the production costs, which is pushing companies to offer one or more products "gratis" as a bait that should create a need and encourage the customer in purchasing something else (Beato, 2000). Following this, companies usually give away a product or service letting the customer enjoy completely the experience deriving from it by buying a complementary or additional product or service.

The essential factor in this strategy consists in providing for free a product that on its own should result useless, not completely exploitable, or fast to consume in such a way as to produce the necessity to purchase the other product, or the bundle of products[15]. In general, the objective of this model should be that of gaining a higher revenue from the bundle of products with respect to the revenue it would have been obtained by selling the products separately:

[15] 18 Business Model Example Explained, https://alcorfund.com/insight/18-business-model-example-explained/

$$(P_{a+b}Q_{a+b}) \quad > \quad (P_a+P_b)\,(Q_a+Q_b)$$

The most trivial example that can be found is that of the so-known "Buy one, the second is free" [16] that is mainly adopted by grocery stores and supermarket and usually drives the choice of people between different branded products.



(Figure 2: Direct-Cross subsidies. Source: Businessmodeltoolbox.com)

Going back in history, as seen in the 2nd section, King Gillette was the first one that adopted a Direct-Cross subsidization strategy. Gillette started giving away razors to soldiers and banks for free with the hope of selling more blades in the future and became the world's most famous razor manufacturer[17]. Let's think about another famous example, that of mobile companies. In the last decade mobile companies have started giving cell phones away together with a cell phone talk contract that binds the user of the phone to pay a monthly fee for a certain period without any immediate cash payment. In this case, even if it might seem that they are doomed to lose the cost of the hardware by giving a costly phone away for free, such companies are not operating for bankruptcy; The increased number of users and the monthly payment commitments do the job and allow those businesses adopting such strategy to repay the hardware and gain positive returns on the services they have offered. Phone companies Direct-Cross subsidies are particularly exemplary of how companies can build complex business models by finding compromises between free and paid goods and by harnessing the power of seduction of free.

The main advantage of such strategy is that companies can get higher returns by attracting potential buyers with a bait and then creating that feeling of need that can be satisfied with the purchase of a second or complementary product (Fjell, 2001). However, this model presents also a risky downside which is that of uncommon behaviors from the behalf of the customers. The organization will, in fact, lose the money it invested for the production and distribution of the service if the consumer walks away with the free item and

[16] The Power of Free, https://www.forentrepreneurs.com/power-of-free/
[17] Brand Rankings, https://www.rankingthebrands.com/Brand-detail.aspx?brandID=30

doesn't purchase the bundle or the complementary product. For this reason, such selling strategy can be adopted only in some sectors with low production costs and, in some cases, even if the production costs in an industry might be irrisory thanks to exploitation of economies of scale and new technologies, the accumulation of such losses could badly affect the financial resources of the business. So, it's important to make the due assessments before taking up this model and it is crucial to create a parachute strategy as an insurance for preventing negative situations.

2.3.2 Ad-supported models

Each time a person needs something he goes to the shop, online or physically, and gets his wallet out of the pocket to pay for what he's taking from the supplier. This is what traditionally is defined as a transactional revenue model where the company provides the consumer a service or product and in return gets a remuneration. Other organizations, especially those involved in the digital sector, don't work on this revenue model but adopt another model that originally was only employed by radio and television companies, called Advertising-supported model, which exploits the visibility afforded by the spread of the Internet, websites and online content providers.[18]

In an advertising-supported revenue model, indeed, the provider publishes free content such as videos, articles, pictures or quotes that drive hundreds, thousands or millions of visitors to a webpage on a monthly basis (Vho and Qiu ,2020). Advertisers pay to get in front of these visitors and the money received from advertising fees fully supports the business, covering all its expenses and providing profits. This model is the original revenue model for many platforms and search engines where an organization charges advertisers on the number of click-throughs to the advertiser's website or charges a fixed fee for text or banner ad placement based on the number of site visitors.

In the past the main problem related to this practice was related to the fact that advertisement companies didn't really know the number and types of visitors that actually saw the ad or visited the webpage from the link on the content sharing provider 's page or website. However, thanks to the modern technologies and software many companies have developed software tracking tools, such as Google Analytics[19], that enable online content providers to track not only the number of unique and repeat visitors, but also their referral source, the amount of time they spend on the site and the actual pages they visit.

[18] Advertising Based Revenue Model, https://smallbusiness.chron.com/advertising-based-revenue-model-71672.html

[19] Google Analytics, https://analytics.google.com/analytics/web/#/p153293282/reports/defaulthome

(Figure 3: Ad-supported models. Source: Alcor.com)

One example of the application of such model might be that of the social media platform Instagram[20]. This platform allows users to create and display ads to other users while they are scrolling the social feed on their phone or computer by showing those that are more in line with the interests of that particular user. The most important example and first application of this model on the Internet can be found again in the king of search engines, Google. In 2019 Google (Alphabet) got $161.86 Billion in revenue from advertisement of which 60.79% came from Adword,13.35% from Adsense ,9.39% from YouTube Ads and the rest from other income resources[21].

As can be noticed from the data, Google earned the biggest part of its revenues from pay-per-click advertising. In the case of google Ads, for example, when a user performs a specific search on the Google search engine, a series of results related to his search appear together with some promotions, called sponsored results, which are in high demand and for which advertisers are willing to pay a lot. Moreover, Google provides an instrument for monetizing also to content sharing providers which is called Adsense. Through this instrument the possessors of digital properties as webpages and platforms can generate revenue based on the number of people who view or interact with the ads placed on their pages. The world of advertisement is one of the richest and most profitable ones and this is why Google has been able to provide a lot of valuable services for free to a huge number of people, without directly selling something.

This strategy is probably one of the most successful ones since it can satisfy the interests and the requests of each participant in the process and the complex mechanism behind it provides to every player involved in the game what he/she is looking for: Online visitors will get the information or the service they want for free, Ad-companies or companies willing to increase the visibility of their product or brand will reach more people and the content provider will earn without actually doing anything. Concerning the main

[20] Instagram for business, https://business.instagram.com/advertising/
[21] AdWords vs AdSense: 3 Big Differences That You Should Know, https://tinuiti.com/blog/paid-search/adwords-vs-adsense/

advantages of the model it would be possible to identify among the pros the fact that those organizations which adopt it don't have any particular direct production cost and, once ads are set up on the website, the revenue generated by the property is automatic and continuous[22].The second advantage of this model is that of allowing to get an enormous amount of revenues faster than any other free model and to monitor them in real time[23]. But obviously, people need a reason to visit a webpage and here comes an aspect that can be defined as a con. This model also presents an unstable flow of income since advertisers may also pull their ads if they aren't seeing a good return on their ad spending with a webpage/platform. If on one hand content providers don't have to produce anything, on the other hand they must ensure a good level of traffic on their website or search engine and, in a way or another, they are forced to purchase or upload new content for avoiding leaks of the user base. The constant need for sharing or providing fresh content might represent a huge con for many entrepreneurs.

Given these premises, Ad-supported models can be considered quite a valid strategy for generating earnings from free, nevertheless, it is important to see in the detail another type model representing a valid alternative to them that will be analyzed in the next section, Freemium. However, these two are not mutually exclusive and many businesses, as Skype (Reime, 2011), adopt hybrid strategies are made up of both.

2.3.3 Non-monetary economies

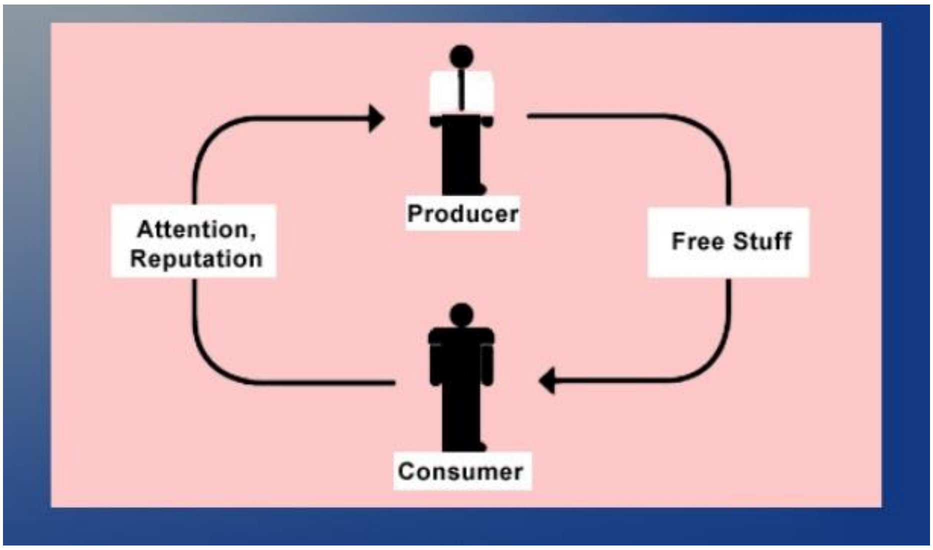
With the words non-monetary economies, it is usual to refer to a type of market where the exchange of value between participants in the market doesn't imply the use of FIAT, economically valuable currency or the old practice of barter.

Two areas of such "models" can be determined: one at a broader level with public services that are guaranteed for free from institutions such as access to cultural sites, free healthcare (only for some countries) and education, and another one at a narrower level with those private services and performances given away from individuals with the purpose of receiving something different than money in return (Schwartz, 2018). This second macro area of application is entirely concentrated among those who enjoy good standards of living and don't struggle to satisfy their primary needs. According to Maslow (1943), in fact, once a person has fulfilled all his/her basic needs - the physiological, safety and belongingness and love needs - he/she starts aiming at the realization of the less essential ones regarding esteem and self-actualization. To do so, the subject is willing to perform actions and provide content, as in the case of audiovisual platform, or

[22] What Does CPM Ad Rate Mean?, https://yourbusiness.azcentral.com/cpm-ad-rate-mean-5176.html

[23] The Pros And Cons Of Advertising Models, https://www.ipl.org/essay/The-Pros-And-Cons-Of-Advertising-Models-PKFWSQ7EACPR

services for free with the sole objective of unleashing his/her creativity and gaining prestige or momentum toward that feeling of self-accomplishment.



(Figure 4: Non-monetary economies. Source: Daniele Antonioli's presentation)

The explosion of the Web has created lots of new tools and spaces for those who want to express their creativity, those who want to have an impact on the society or want to be recognized as experts in something. In some particular cases as crowdsourcing[24], these people decide to participate in processes of an organization and perform tasks set up by this without any direct compensation. An example of this might be that of Threadless[25], where each week people submit t-shirt design ideas giving vent to their creativity and fulfilling that desire to feel realized. Another example is that of many Chinese music artists that, due to the prominent acts of piracy, share their music with the only purpose of enhancing their reputation and obtaining more attention.

This kind of model is not, of course, suited for an organization or group of individuals which must earn revenues from it, despite this, it is important to place it near the profitable models to underline the fact that free is present in every type of interaction or trade relationship between individuals, private organizations and institutions. In the next section the king of the Free business models, the Freemium business model, will be described in all its details and aspects in order to gain an overview of how two huge companies as Spotify and Skype behave in their pricing operations.

[24] [24] Digital economy and innovation , https://learn.luiss.it/course/view.php?id=13194

[25] Threadless, https://www.threadless.com/

3 Freemium

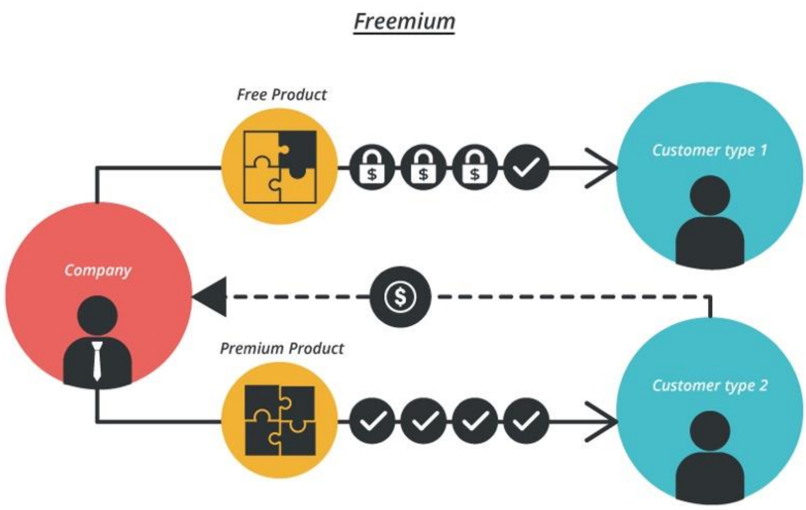
3.1 What is Freemium?

Among the new free models enabled by the advancement in technology one of the most adopted is, undoubtedly, the Freemium business model. This strategy is one of the most used among the digital service providers as online sites and applications, but where does the word “Freemium” come from? The term Freemium was originally coined by the venture capitalist Fred Wilson (2006) who stated:

“Give your service away for free, possibly ad-supported but maybe not, acquire a lot of customers very efficiently through word of mouth, referral networks, organic search marketing, and then offer premium priced value-added services or an enhanced version of your service to your customer base”

As can be deduced from the terms that compose it “Free” and “Premium”, this term is increasingly being used in commerce to designate a business model focused on two products or services, or a combination of these (Holm and Gunzel, 2017). In such combination, one item is provided at no charge while a complementary item is sold at a positive price, but, differently from Cross-subsidization models, the free and commercial items are softly connected: the complement is not indispensable, and the free service/product can be completely used on its own but presents some “limitations” that drive the user to switch to the other service. As stated by Wilson, the service provided for free is just a vehicle that exploits the massive diffusion allowed by free and gives the company the opportunity to reach as many potential buyers as possible, while the element that permits monetization is the paid one, the premium service.

The key features of this method are basically two: the first one is the product differentiation, the delta between the free and premium/pro version, which consists in giving access to a limited free version of the product and an unlimited premium version. The second one entails finding the balance between the pursuit of consumer growth, obtained by offering the free version, and maintaining premium services’ characteristics that must encourage users to convert in order to create profits. This second point is addressed by a common performance indicator called “the five percent rule” (Kumar, 2014): Since many people might not be interested in the premium version ,the pricing policy of the company should be set up in such a way that the revenue coming from the users paying for the differentiated version, at least 5% of the user base, should cover for the expenses stemming from the provision of the free version of the service to the remaining part of the users.



(Figure 5: Freemium Business model. Source: Business model toolbox)

The reason why such methodology is mostly, and almost only, employed by digital providers lies in the fact that the costs for producing and distributing digital content and services are insignificant with respect to other sectors. After having briefly described what Freemium is, how it works and its pillars, it is necessary to underline what are the typologies of Freemium and what differentiate each one of them.

3.2 Kinds of Freemium

In a Freemium model when a company designs the different versions of a product, it has to decide which features and functionalities should be limited and different among these, in order to increase the consumers' conversion rate and push free users to purchase the paid version. In doing so three strategies[26] can be distinguished (Pujol, 2010):

- 1)Usage quotas
- 2)Feature limitation
- 3)Limited support

Usage quotas strategy consists in providing a free version with limitations concerning the usage of the service and is more common in SaaS (Software as a service). These limitations mainly consist in storage, time or computational limitation. The premium version of these services involve: 1) the purchase of storage upgrades by paying a monthly fee, as in the case of Dropbox[27] or Icloud, or buying monthly credits, as in the case of Mailchimp[28] where the customer can buy email credits as needed through the Pay As You Go plan,

[26] Freemium:A two-pronged acquisition structure that classifies users as either premium or free tier based on certain criteria, https://corporatefinanceinstitute.com/resources/knowledge/other/freemium/
[27] Ottieni più spazio e potenti funzioni per la produttività, https://www.dropbox.com/upgrade
[28] About the Pay As You Go Plan, https://mailchimp.com/help/about-the-pay-as-you-go-plan/

2) the removal of time limitation as in the case of video games demos and 3) data processing quotas, as in the case of Google Collaboratory[29] where implementing neural networks on huge datasets is not permitted using the free version which provides only CPUs with low computational power but only with a Premium version where the user is provided with a powerful GPU. The second strategy consists in feature limitation which implies offering extra features, enhanced functionality of available features, or ad hoc paid upgrades only to paying users, as in the case of Canva where some images and features are accessible only to those who purchase Canva Pro[30].The last strategy is that of limited support where priority or real-time technical support is not made available to non-paying users. Comodo, for example, offers all its software products free of charge and Its premium offerings only add various kinds of technical support.

Each business that bases its marketing operations on Freemium exploits at least one of these three strategies but it's important to remember that they cannot be chosen randomly; they should suit the service/product that the company provides, otherwise the strategy will fail.

3.3 Advantages and Disadvantages

As every existing business model, innovative or traditional, Freemium presents pros and cons. Among the advantages it is possible to spot Network externalities and the possibility to earn higher potential revenues compared to traditional models.

Let's start with Network externalities. According to the Metcalfe's law (Hendler and Goldbeck, 2008) and network effects, the phenomenon by which the value or utility a user derives from a good or service depends on the number of users of compatible products, digital products are positively influenced by the number of participants in the network, except for a few particular cases of negative network effects as Tinder[31]. This beneficial relationship stems from three important factors that are: Exchange, Stability and Word of Mouth. Exchange means that each network is based on the exchange of information or items between participants of the network and, as the number of participants increases, the potential number of exchanges increases as well. Stability refers to the fact that digital platforms and software with a high user base are considered of high quality and more stable than those less exploited which are often reputed not worthy since, as the time passes, new users will not be incentivized to use them. Word of mouth implies the fact the free software users might speed up the diffusion of the product/service thanks to verbal and non-verbal divulgation (display effect and social influence). According to a research paper by Jiang (2012), the presence of network externalities improves the perception of value for future users, and also non-paying users represent an important resource for businesses, even if they don't directly pay for the product. They,

[29] Google Colab, https://colab.research.google.com/signup
[30] Canva, https://www.canva.com/pro/
[31] Tinder, https://tinder.com/

indeed, cover an essential role which consists in amplifying the network visibility allowing companies to profit on those who will join the network and become potential purchasers of paid services.

For what concerns the second advantage, earning higher potential revenues then traditional models, as stated by Eric Seufert (2014), Freemium models present a higher possibility to get a revenue since they eliminate the cost barriers and encourage people who are not convinced to buy the item in question by letting them exploit it partially and then deciding whether to purchase the additional functionalities or keeping using the free version. The revenues obtained from such individuals will always be higher in Freemium with respect to others, since in other cases those individuals wouldn't have purchased the product a priori. The second important circumstance analyzed by Seufert consists in the fact that ,while other strategies imply a straight customer journey with a single purchase of the product/item, in Freemium there is a wider range of possible purchases that can be made more than once and make the customer journey sticky[32] allowing the company and the consumers to gain the maximum possible utility out of it; Dragon Ball Legends[33], the mobile game cited in the introduction, offers players different types of in-game purchases to gain more characters and compete with stronger players. This leads some players to spend hundreds of dollars monthly, which are significantly more than those commonly required for the download of similar video games. This proves why Freemium is something that, under certain circumstances, makes companies earn more than many other models.

For what concern the main disadvantages related to such strategy, instead, the ones that can be identified are: Cannibalization of sales (Menin, 2019) and Cost increases without guaranteed revenues. According to Kotler (1980), Cannibalization of sales denotes a phenomenon where a product sold by an organization reduces the share of sales of other products. There might be cases in which, by adopting a Freemium model and providing a free version of a service with too many functionalities, the company might lose some of the potential acquirers of the paid version. Therefore, balancing pricing and functionalities is fundamental in such model and this explains why companies are always reluctant to give away important functionalities of a product.

The second disadvantage is that of Cost increases without guaranteed revenues. As stated before, this model is more suited to contexts where marginal costs of production are close to zero because it will permit the organization to give away its product to a high number of people. However, there are other potential costs the firm must take care of: the support costs, the costs for providing customer assistance and solving issues. Despite some business offer customer support only to paying users, many others provide such support also to Free users and, even considering the 5% rule, this represents an aspect that could bring huge financial losses. Possible solutions such as offering less support to free users, or no support at all, could be counterproductive: if this category of users is ignored, they will not be able to use and completely enjoy the

[32] Customer Experience Journeys: Loyalty Loops Versus Involvement Spirals, https://www.ama.org/2020/06/11/customer-experience-journeys-loyalty-loops-versus-involvement-spirals/
[33] Dragon Ball Legends , https://dble.bn-ent.net/en/

product, thus decreasing the likelihood that they will convert to premium users and speak positively about the product to other potential consumers.

Freemium is a double-sided model: If on one side it allows for a higher diffusion and monetization of the product, on the other side it is risky because the monetization comes at the end of the customer journey and paying becomes an optional for users who could decide to exploit the product/service exclusively in the free version preventing the business to profit from it.

3.4 Future Applications

Currently, Freemium is the most adopted business model by SaaS and apps providers (90%). But the question is: Is Freemium going to become a widely adopted business model in all the existing and possible markets? Well, by observing the current situation it would seem impossible, but thirty years ago humanity would have never conceived the birth of this new digital environment and these innovative tactics for profiting. In the immediate future Freemium is expected to become more and more used in digital markets, but not in other physical markets (Yuscawith, 2019). The reason for this is simple; the costs for producing physical components and delivering non-digital services are still high and are not going to decrease imminently. Maybe one day, as the technologies involved in the production will improve, the costs for producing small components will diminish until they'll become less than irrelevant and companies will start giving away physical goods in free and premium versions. Let's just imagine about a scenario where someone can get a smart device for free, but in order to unlock all the premium functionalities and extra features, he has to buy the premium version. This may seem a utopia, but it doesn't appear to be so distant from the ongoing situation, so making forecasts is hard if not impossible.

4 Study cases

4.1 Spotify

Now that a big picture of freemium in all of its aspect has been gained, it is possible to use it to analyze the specific case of one of the most famous companies which bases its revenue streams on Freemium: Spotify. In order to expand the toolbox required for this analysis, the Spotify's press office was contacted and asked to provide some data and insights about the user retention and the turnover of the company, together with some other interesting information[34]. Before entering into technicalities , let's remember what Spotify is to those who don't know it.

[34] Spotify's press inquiries, https://newsroom.spotify.com/press-inquiries/

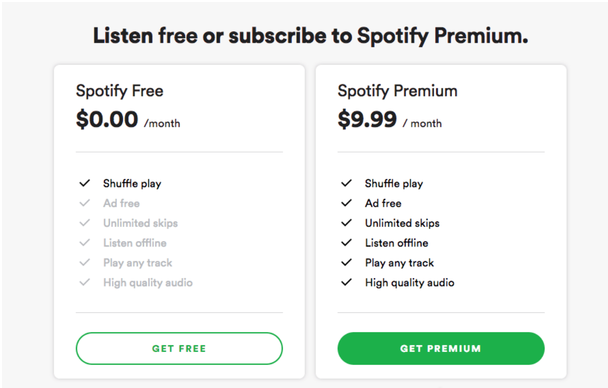
Spotify is the most used music stream application present on the Internet which accounts for more than 345 million monthly active users in 178 markets. Spotify's database contains more than 70 million tracks from all the music genres, more than 2.2 million podcasts and 4 million of playlists created by users. Spotify Ab, the mother company, was founded in Sweden in 2006 by Daniel Ek and Martin Lorentzon who launched the service as a desktop application in late 2008. The application was initially launched with two tiers of functionality: free and premium. The free one, launched as invite-only, imposed time limits on usage, exposed the user to advertising, and was only available as a desktop application; the premium tier offered, instead, complete freedom from ads and unlimited usage across multiple devices. Spotify's parent company had negotiated licensing agreements with a broad range of record labels, both large and small, upon its initial launch, which ensured that all usage of the service complied with copyright restrictions. The growth of Spotify was exponential and in 2009 it accounted to 6.5 million registered users, but one of the factors that allowed it to explode and become the most used music streaming factor on the planet was, doubtlessly, the entry of Sean Parker (the founder of Napster and the first Facebook investor and president) into its board[35]. Parker was able to create collaborations with Warner Music and Universal music and came up with a brilliant idea that was able to make the most out of one of the key characteristics of Spotify: social sharing.

(Figure 6: Spotify's link sharing. Source: businessinsider.com)

Thanks to its contacts, Parker designed a partnership between Spotify and Facebook, that enhanced even more the virality of Spotify allowing it to increase tenfold the conversion rate since in 2012 the number of paying users where 25% of the 20 total users of the platform. Moreover, in October 2009, Spotify offered an "offline mode" for its premium product tier, allowing users to download songs to their devices for non-streaming listening as long as their subscriptions were valid. And in May 2010, Spotify expanded its product portfolio to include an "unlimited" option, which provided the same feature set of the premium option but

[35] The definitive timeline of Spotify's critic-defying journey to rule music, https://www.fastcompany.com/90205527/the-definitive-timeline-of-spotifys-critic-defying-journey-to-rule-music

was limited to desktop clients, and an “open” option, which consisted of a reduced-functionality version of the free tier (with the free tier remaining invite-only). Only in 2011 all these different types of versions were merged into one single Free version where user could only listen to music played in shuffle mode and with ads every 4 songs.



(Figure 7: Spotify’s Freemium model. Source: Hubspot Blog)

This year Spotify accounts for 155 million monthly premium subscribers and has paid 21 billion $ to shareholders but the question is: How did Spotify profit that much from Freemium and what led it to become so profitable by adopting such model? By looking at its past it’s easy to identify the features that made it become one of the most successful premium products. The first feature is that related to the breadth and ingenuity of the product portfolio and the second is the virality it experienced from the partnership with Facebook.

At the beginning, Spotify represented the emblem of the combination of different kinds of freemium, usage quotas and feature limitation. Upon its initial launch, Spotify’s product strategy involved engaging with the user on an unpaid basis, establishing regular use patterns, and then enticing the user to upgrade to a paid account tier. The regularization of customer’s uses was the key driver of the platform’s explosion, since, once something becomes part of the routine, it is difficult to live without it. Spotify was able to exploit this by modifying the key components of its pricing strategies and making it almost mandatory for users to convert to the paid version. The company implemented a brilliant tactic to foster the conversion of users which consisted in removing usage quotas, as it was initially with limited hours of music per month, and in adding extra useful features, as that of offline listening of music. It switched completely from an old freemium business model based on usage quotas based on time limitation to a new model which is, still now, mainly a feature limitation freemium complemented by advertisement. By introducing shuffle reproduction of songs and inserting ads in-between songs, users were pushed to get exhausted of these limitations. They started conceiving the switch from free to paid version not as paying for getting an additional service in return, but paying to unlock the freedom of listening to every track they wanted at each time they wanted, without having to waste their time listening to ads and random songs.

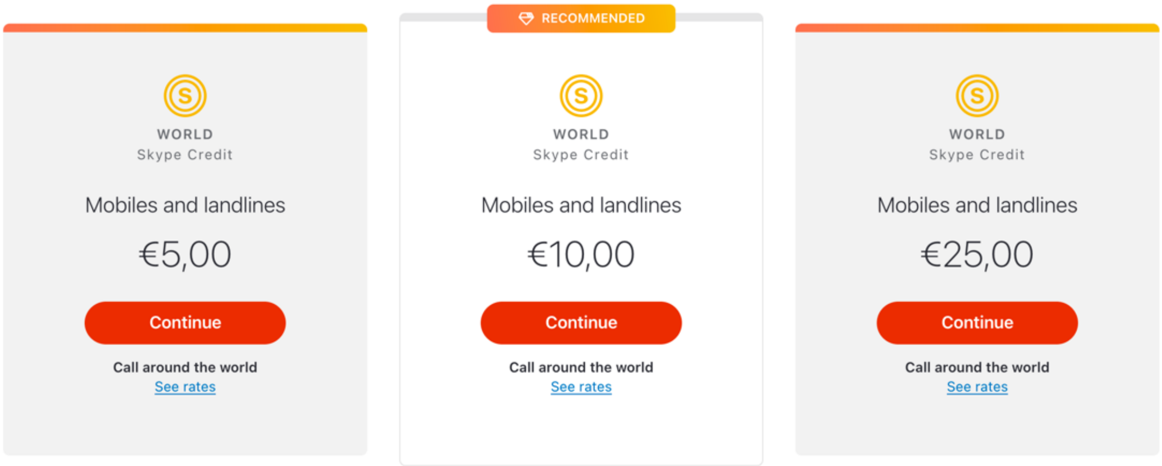
By combining this with the linking sharing functionality of a platform and adding a spray of virality and the massive distribution enabled by the network of Facebook, Spotify became a one of the most successful businesses in the world with a huge turnover and lots of investors willing to get a portion of shares and join the company. Even though many similar paid services were already available, Spotify acted as the first settler in that unknown market of freemium music streaming providers, that currently is populated by other services as YouTube music and Amazon music that have followed its path and copied its strategy for generating profits.

4.2 Skype

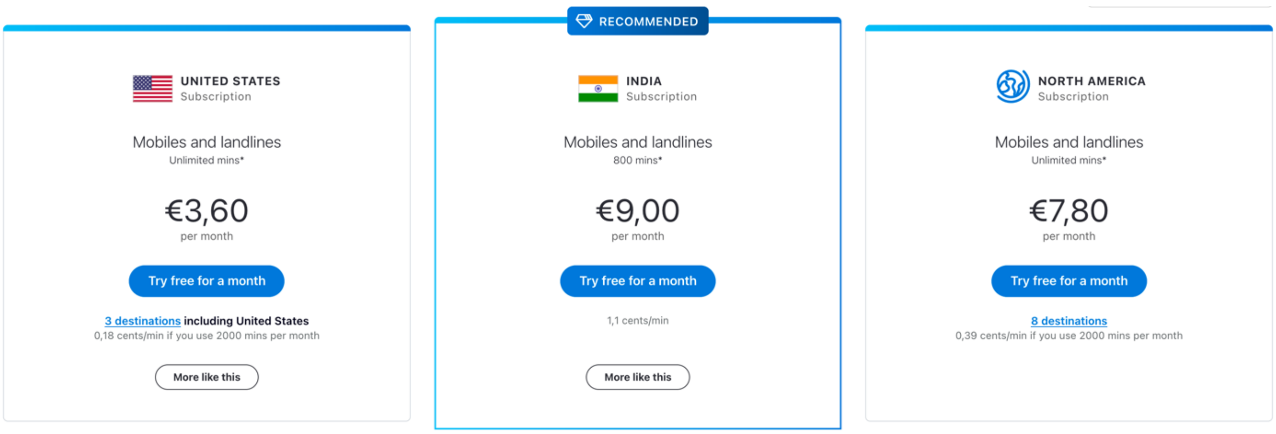
Let's now analyze another business which is a bit different in terms of services provided and in the type of Freemium, Skype. Skype was founded by Niklas Zennström and Janus Friis in 2003 as a telecommunication application software which exploits the VOIP (Voice over Internet protocol) to provide voice and video communications via computers, tablets and mobile phones and was acquired by Microsoft for 8.5 billion $ in 2011.

As can be noticed from the acronym VOIP, Its technology exclusively relies on the use of Internet, which also allows for file-sharing (Menin, 2019). The groundbreaking value proposition of such technology is that it enabled millions of people across the globe to communicate instantaneously for free as long as both users are in possession of the software API. This was something revolutionary in the mid-2000s, where no other technology permitted it, and this is surely one of the main aspects that made Skype become so famous. Giving such value proposition based on giving away a valuable service like this for free, how did Skype generate revenues and justify an 8.5 billionaire acquisition by one of the big five of the G.A.F.A.M.? The answer lies in its business model that, similarly to Spotify, is based on Freemium and advertising revenues. The reason why Skype became so renowned and valuable can be linked surely to the fact that, in the end, it is a communication network and, as all communication networks, it enjoyed positive direct network effects. It is so valuable because it has 600 million users who make calls for free over the internet and only a small percentage of those pay for the only current premium service, which is making calls to landlines. Anyways that percentage of paying users is enough for a billion in revenue, and it would be impossible to make that revenue if it weren't for those million hundreds of free users who convey value to the service.

However, Skype's business model is a bit different from Spotify's; while the latter's revenues are now completely based on feature limitation Freemium and ads, the former present different revenue streams that come from ads inside the app (ad-supported model) and premium versions based on particular usage quotas. The free version of Skype, indeed, doesn't allow users to make phone calls to mobiles and landlines, unless they pay for the monthly subscription to the premium version or they decide to purchase credits, as in the case of MailChimp. Besides this, before 2020 Skype provided a premium version for businesses called Skype for Business, which granted an enhanced quality of the connection and group video additional features able to make up for 35% of Skype's customer base on its own[36], that was deleted and substituted by Microsoft Teams[37].



(Figure 8: Skype credit options. Source: skype.com)



(Figure 9: Skype monthly subscriptions options. Source: skype.com)

The explosion of the pandemic had a huge positive impact on the number of new users that started using it for distance-learning or video calls and probably, if it weren't for WhatsApp, Skype would be the biggest company in the communication sector. Unlike Skype, WhatsApp is not completely Internet-based

[36] Skype: how a Northern European peer-to-peer software has conquered the world thanks to network effects, https://digital.hbs.edu/platform-digit/submission/skype-how-a-northern-european-peer-to-peer-software-has-conquered-the-world-thanks-to-network-effects/
[37] Skypeforbusiness, https://www.skype.com/it/business/

and works through mobile phone number and text messages for free. Even though WhatsApp is much more recent and with a different operating model compared to Skype, both companies share a lot of similarities. WhatsApp was acquired in 2014 by Facebook for a massive 19 billion $ purchase and provides the exact same services of Skype completely for free, but exploiting a different business model where the organization monetizes from leveraging and selling the users' data in an anonymized form.

Considering the context of early 2000s', the birth of a digital telecommunication service granting many users the possibility to make free video or phone calls all over the world was something disruptive. Skype, as Spotify did, played the role of the pioneer in its sector adopting a freemium model and it is thanks to that if now many internet communication services are given out for free. Even though Skype's business model is not purely a Freemium model, it embeds the main key feature of it consisting in the differentiation between the free basic version and a paid premium one with no usage quotas limitations.

5 Conclusions

This analysis was aimed at filling a gap in an already well-developed literature concerning the free business models and Freemium. After briefly describing the history and the psychology behind free, it has been provided an overview of the different pricing strategies based on free. In this general analysis, the main mechanisms behind each model have been identified with an additional focus on the main advantages and disadvantages that come from the adoption of each one of them.

The main advantage highlighted regarding Direct cross-subsidization is that of higher returns granted by exploiting bait products and the seduction power of free, whereas the main disadvantage is that of possible economic losses due to uncommon behaviors of buyers that might accept the free product and refuse to buy the complementary paid one. For what concerns Ad-supported business models, the main advantages identified are: 1) No direct production costs and 2) the possibility to gain revenues faster than other strategies and to check the stream of revenues in real time. Among the downsides of such model, it is important to recall: 1) No stable revenues and income and 2) the need from the behalf of the owner of the content provider to keep refreshing the content of the platform/webpage in order to ensure a good level of traffic. Regarding Freemium the main advantages and disadvantages consist in: Network externalities (Menin, 2019), whose beneficial relationships among users can be defined by three factors (Exchange, Stability and Word of Mouth), and Higher potential revenues compared to traditional models, since the customer journey in such models tend to be straight while in Freemium strategies it is sticky and allows for getting higher profits. On the other side among the disadvantages, the ones identified are: 1) Cannibalization of Sales, when the free service steals the market share of the paid version of a service, and 2) Cost increases (due to the distribution of the free and paid service/product) without guaranteed revenues.

Another key purpose of this dissertation has been that of classifying Freemium into different models based on the discrepancies between the free and premium versions of a service/product, starting from the good but, obsolete, framework of Pujol (2010) and then applying this renewed framework to classify the business models of Spotify and Skype. In the third section of the dissertation, after defining what freemium models are, it has been shown how such models work and the not mutually exclusive categories it can be classified in: usage quotas, feature limitation and limited support. Usage quotas strategy consists in providing a free version with some limitations concerning the usage of the service, like storage, time or computational limitations. Feature limitation implies offering extra features, enhanced functionality of available features, or ad hoc paid upgrades only to paying users. Limited support consists in not making available priority or real-time technical support to free users.

After distinguishing and describing the characteristics related to each one of these categories, it has been possible to exploit all the concepts and notions gathered to identify and classify the successful business strategies undertaken by two incumbents of the digital sector, Spotify and Skype. It has been shown that while Spotify initially has relied on a usage quotas freemium based on time limitation, in the second part of its lifecycle has switched to a hybrid strategy consisting in a feature limitation model complemented with ad-supporting where the user is granted a complete freedom from ads and the possibility to listen music in an offline mode. Skype, on the other hand, has always adopted a different hybrid model based on particular usage quotas, which limit the landlines and mobiles calls, that can be removed with the purchase of credits and subscriptions. Even though this study appears to be quite complete from all the aspects that have been dealt with, there seems to be a missing piece that regards those companies that provide services for free and profit from selling anonymized users data to third parties, the so-called Data suppliers. Unfortunately, due to the lack of relevant academic literature and instruments to investigate the case, it has not been possible to achieve the necessary degree of information needed to include them in the analysis. However, given the growing importance of the data supply market in this period, it is legitimate to expect an academic contribution in the imminent future.

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"Grazie Pa, spero di averti reso orgoglioso di me dopo tutto quello che hai fatto per me in questi anni. Non potrò mai ringraziarti abbastanza per tutte le possibilità che mi hai dato e i bei momenti che mi hai fatto vivere facendo tanti sacrifici. Non avrei potuto chiedere un padre migliore… SEMPRE E SOLO FORZA INTER!"

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Appendix

(Figure A: Spotify's table overview)

Freemium Characteristics	Spotify
Value Proposition of Free Offer:	Free Streaming of Music with Commercial Breaks (New Model limits to 10 hours/month and 5x per song)
Value Proposition of Premium Offer:	Spotify Unlimited • Stream Music Without Commercial Breaks • Larger Selection Spotify Premium: • Same as Unlimited • Access on Multiple Devices
Conversion Rate:	10%, Approx. 1 million paying users[12]
User Base:	10 million[13]
Position in Value System:	Dependent on licensing music rights from record companies
User Acquisition Channels:	Clever Word-of-Mouth launch
Lock-In Effects:	User generated playlists, Contacts
User Community:	Forum page, Integration with Facebook

(Figure B: Skype's table overview)

Freemium Characteristics	Skype
Value Proposition of Free Offer:	Skype-to-Skype: • Voice-over-IP (VOIP) • Instant messaging (IM) • Video Calls
Value Proposition of Premium Offer:	SkypeOut & SkypeIn (Skype to landlines/cellphones) • Voice • Phone number • Voice mail Skype Premium: • Group Video • Free Customer Service
Conversion Rate:	6.5 %, 8.1 million average monthly paying customer
User Base:	560 million, 124 average monthly users
Position in Value System:	Dependent on licensing parts of their technology
User Acquisition Channels:	On the Windows platform they have integration with Facebook
Lock-In Effects:	Contacts
User Community:	Forum page, beta testing