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From barter to virtual economy: luxury and fashion markets' opportunities through Metaverse and NFTs. Current and expected "economic environment".

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PREFACE

"*Some things never change*". This is true for the few elements that are still needed to keep us alive: water, food, oxygen, sleep. Instead, what has been changing one invention at a time is the economic environment representing the frame of people lives. As a matter of fact, remarkable changes occurred after these inventions came to life: the club, the arrows, the wheel, boats, canals, agriculture, castles, geography, villages, swords, towers, shields, money, carriage, trains, medicines, undergrounds, elevators, refrigerators, airplanes, televisions, vaccines, smartphones, drones, internet, satellites, cruises.

Therefore, the first part of the reasoning that will follow travels through again previous economic environments made of barter, then object used to trade, then coins, banknotes, finance, to introduce the arrival of digital platforms (Metaverse) and financial instruments (NFTs and cryptocurrencies). It could have been easier to describe these recent phenomena and only try to forecast some future developments, but the idea behind this thesis is completely different: an historical and behavioral perspective is adopted to better understand what the combination of modern economy and technology is really offering, highlighting that over time humans had invented and accepted different means to exchange value that defined their economic environment.

This leads to the second part of the document: once that these inventions had been presented, the focus moves to a stratregic framework which may be adopted by companies operating in luxury and fashion brands to try to overcome two main tradeoffs: *exclusivity-accessibility* and *consistency-innovation*. That model is derived from an empirical analysis of the main reports of the reference markets combined with personal proposals related to each specific topic.

To conclude the document, I decided to conduct an investigative survey that reached 208 respondents to try to assess the interest in different Metaverse and NFTs proposals that could help luxury and fashion companies to overcome the two main tradeoffs above descripted and to forecast future possible developments regarding this new economic environment.

The aim of this thesis is to study the digital environment that the modern economic system is currently offering, highlighting the opportunities that could be exploited from a company perspective, yet considering the danger of a technology which needs regulation, as always happens with powerful instruments.

There is one main theme behind each of the following pages: I believe that economy is a social science, whose main interest should always be human's welfare. This means that numbers, graphs, and tables can give a perfect description of the portrait, but economy becomes useless if it does not study the painter behind the canvas.

INTRODUCTION

Our modern life is so deeply influenced by these inventions that in the monotony of our days we take a lot of them for granted. Most of the readers of these pages will be Europeans and rich (by rich is meant that they earn a salary that gives them the possibility to satisfy all their primary needs, to spend some money for something they like such as holidays or a book or a ticket for the upcoming theatrical representation and still save some money for the future). Therefore, it is possible that their typical day is something close to the day of an invented character whose name is going to be Tom: at 6:30 am the alarm or the iPhone kept in charge on his night table wakes him up, then he has 15/30/45 minutes to get ready to go out for work.

For breakfast he makes an egg toast using his electric toaster and a fresh orange juice with his orange juicer, then uses his electric toothbrush, has a shower, wears a suit, sets the alarm on his house and goes out, decides to take the car instead of the underground since outside is raining, pushes a button on the remote controller to open the automatized gate, activates the windscreen wiper and the headlights, connects his iPhone with his car's Bluetooth system and starts the engine of his hybrid car.

After twenty minutes of driving, he arrives at the building of the bank he has been working for the last 6 years, an elevator lifts him up until the 3rd floor where at 9:00 am the Monday meeting usually takes place. He takes his seat and opens his backpack, takes out the computer and put it in charge under the giant desk made of glass that occupies the meeting room. When everyone else is set, the higher ranked senior for b2b loans turns the interactive whiteboard on and shows the participants the graphs about last month trends. Once the meeting is over, everyone checks on his smartphones the until that moment muted notifications and spends some time on the social media or other websites. Since it is still raining, Tom decides to have lunch at the company canteens on the first floor, where he gets served a full meal including some bread, meat, salad, water, an apple and a cup of coffee, and the total amount is scaled from an electronic card just tapping it on the credit card reader.

At 19:30 he comes back to his house, and before having dinner he buys a new lamp for the living room on Amazon, which will be delivered on time the following day in the afternoon, together with its grocery shopping. He turns on the microwave and one minute later his steak is defrosted and ready to be cooked on his induction cooktop.

During his last meal of the day a recurring sense of anxiety presses his stomach: he feels that this job, due to its lack of fixed hours, has always prevented him from his biggest dream: building a family. After too many postponements, at last he decides to call its psychologists: he needs the help of a scientist expert in the field of human emotions to start a new chapter. After his dinner he sits on his comfortable red sofa, asks Alexa to open Netflix and continues his tv series, while at the same time scrolls his Instagram page. At midnight he set his alarm on at 6:30 and goes to sleep. "Tomorrow will be another day", he thinks.

Another example could be useful for the purpose of this introduction, taken again from another invented character this time living in a small village in the year 783 a.C. whose name is Guth. He lives with his three sisters and four brothers in a hovel build of wood and rocks on the land of Lord Wilgum, where the day (from the first lights to the sunset) is dedicated to plantation and wood cutting. Sometimes, when the village is attacked by enemies' raids, Guth is also obliged to abandon his spade and to embrace a battered sword and an uncertain shield. In the evening, he typically helps his family to cook some eggs and vegetables on a domestic fire, and the table where they all sit is lighted up by candles. Before going to sleep, he looks up at the sky dominating the forest, full of thousands of small luminescent small dots, and praises God to cause more rain for their plot of land, otherwise, once the Lord harvest is gathered, there would not remain enough for him and his family members. He whispers to God how deeply he would love to barter his sword for a cart and bring all its family away, change his life and become a shopkeeper or a hostel owner. While these thoughts absorb his mind, the tiredness of a long day under the sun accompanies him to sleep. Tomorrow is going to be another difficult day, he thinks.

In a typical day, Tom takes benefits from more than 14 different inventions, while Guth only three (the spade for the ground, the fire to cook and to enlighten the room, the sword to fight). Many of these inventions are the results of mistakes and pure accidents, but some of them are also the consequences of ideas and dreams of their owners.

Some of them, for their incredible diffusion worldwide, and deeply inside our daily life, are the ones that more than other must be studied, protected, and regulated.

There is one, that has always been there, way before humans could even start to resonate about it, and for sure much before it started to be studied as a science and then a social science: economy.

When Tom taps his badge to get his meal, he has exchanged value for other value, coherently with his time and space. This means that everyone in 2022 is going to accept a badge or a credit card, since this system is so diffused that the seven euros transferred from that bank account to the other will be perfectly feasible for a new purchase tomorrow. How confused would be the expression of an Arab species merchant in the year 1478 a.C. if, during is typical day of negotiation in his emporium, someone proposes him to get one kilogram of white pepper simply tapping a thin colored plastic object whose dimensions are 86 x 54 millimeters, or even worst, just tapping his smartwatch. He would have refused, of course, since that exchange would have had no value for him (in the case represented above what is missing is the right technology to extract that value and use it in the following days, anyhow the exchange would have not taken place). The same could be said in Guth's case, since he dreams of bartering his sword and start a new life somewhere else, which is again a way of exchanging a value (a sword to fight) for another one (a cart to bring his family in another region).

This examples deliberately does not consider some elements, such as the level of education, health system and beliefs (Tom believes in a social science such as psychology, and believe that this science could help him, while Guth asks to God to help him making his family living) but focuses on the way humans make exchanges. When it comes to economy, the biggest "bias" that everyone could make, both who is interested in the topic and who merely purchase the newspaper from a kiosk or flowers from a florist, is not remembering that it is our most developed, spread, convincing and binding invention.

By economy here I mean not the theories behind the expansionary monetary policy implemented by a central bank, or the relationship between the inflation and the interest rate, but rather trade, the money, the artificial system that humans have created to regulate their changes of goods and services. What happens when a customer goes to the supermarket to buy food for its family and the 2x1 discount convinces him to buy a brand of shampoo rather than another one? It is difficult to imagine how many different stimuli had oriented him toward such a choice. It could be that during his day at work his boss has been so strict with him about the upload of the final document for the newspaper company he works for, for which he is not confident at all, and the fear of an uncertain future pushes him to save even those extra units of that specific currency for another use in the future.

Human irrationality in his purchasing choices is one of the examples that will be used in these pages to answer one fundamental question mark: ***since the economy is a human invention, what led to the modern systems of exchange, NFTs, cryptocurrencies, metaverses? In other words, how value to be exchanged has developed and where is it going to be found in ten, twenty or one hundred years? What is really offering the economic environment we are living in?***

CHAPTER I - FROM VALUE TO ECONOMY AND MARKETS

1.1 Economy, a social science

Today we may have purchased something (a table, an online film, a derivative), which means that we had (and hopefully still have) a quantity of money that allowed us to make that purchase. This would have not happened if we were born in a poor country. We would have spent most of our money to buy some food, while buying one of these three things would have not been one of our first thoughts in the morning.

According to “Our World in Data”[1], in Burkina Faso, a poor country in western Africa, less than half of the population can read, and between those, only one third are girls. For these children it is very likely to spend their day bringing water buckets to their families houses rather than studying history or math in a school (where, as a matter of fact, students can have a bottle of water just inserting some coins in an automatic refrigerator which offers also other beverages and snacks if they are hungry).

Economy can stidy how differently developed economies use their own resources: the ground, the oil, people, and machines to realize goods such as fine clothes and pizza, perfumes and baguettes, hamburgers, and luxury cars. Even if everyone in Burkina Faso were currently employed, the economic system itself is not so developed in terms of production. The question that comes inevitably is: why does England has skyscrapers, libraries, and teachers where their young citizens receive a proper education? There is no easy answer, what is sure is that economy is not an arid word representing statistics and graphs, for someone it could be a matter of life or death. A kid born in a rich country has a minimal probability to die before celebrating five years, and, in any case, it would be a tragic event; in the poorest countries around 10% of children do not survive the first five years due to the lack of food and medicines, therefore they are lucky for being survived. This means that there are the resources, and that, unfortunately, they are still not properly distributed for everyone’s needs.

Economy is everything related to people. It tries to explain what can make a population health or educated.

It tries to understand why someone has everything that is needed to live a satisfying and happy life, and why someone else instead cannot do the same.

Today economists have a peculiar way to talk about resources, which could mean medicines for hospitals such as writing desks for schools. When they define these resources, they call them: scarce (already in 1930 Lionel Robbins defined economy as the “study of scarcity”). What should be cleared is that by scarcity it is not meant the limited number of pieces, such as for diamonds and the flowers of Kadupul (a very particular flower which blooms only one time per year and withers with the first lights of the morning).

By scarcity we mean that there is a limited amount buyable compared to human desires, which are unlimited.

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[1] https://ourworldindata.org/

What prevent humans to buy everything is that everything has a price that impose to make choices between different alternatives. The idea of price is not intuitive, since it does not only refer to the amount of euros that the butcher requires for one kilogram of chicken's chest, even if these prices are important (even if Smith's theory of its self-interest of making money is considered). Thinking about the owner of a restaurant that must decide the right place for his new restaurant, which is the price of his choice? It is what he renounces for choosing one of the alternatives: the possibility of opening a restaurant with a vast garden area in the countryside or a smaller one in the city center? The same could be said for the price of building the new Chelsea's stadium in London: its cost could be estimated summing the price of reinforced concrete, steel, and bricks, but if we think about what the city is renouncing, then its price should also consider the benefits of the hospital that could have been built in its place.

Economists define these as "opportunity costs", and it is a common bias forgetting them when it comes to choose between self-excluding alternatives. This implies that economists are interested in the way we use scarce resources to satisfy our needs, but they also try to answer the following question: how different are the choices that people must make? In poor Countries these decisions are often decisive: a meal for a group of children or the purchase of a batch of mosquito's nets. In rich countries like Switzerland or United States, it means choosing between Apple or Samsung for the latest smartphone or between a cruise or renting a house at seaside for the holidays. Relevant economic issues affect also advanced Countries: companies can fail, people can lose its position and struggle to maintain their families (to maintain their level of quality of life better), but rarely they must face life or death decisions depending on their money. What is important for economists then is understanding how societies deal with the worst effects of scarcity and why some of them are not able to do it with the same speed of others.

To try to elaborate an adequate answer, knowing the definition of opportunity cost is not enough (being perfectly informed on every detail that can help in the decision between the new Chelsea's stadium or a new Hospital could make it, but we don't live in a world of perfect information), while the answer should be based on every kind of economic theories and a deep knowledge about each economic works in the real world. Within economy resources are employed, new objects are produced and who owns what is decided and regulated.

For instance, a willing university student that needs some more money may decide to rent an ice-cream cart from Algida to sell ice-creams in a famous beach in Sardinia. Avoiding any kind of Hotelling model reasoning regarding ice cream localization on a beach (the result of two ice cream sellers in the middle of the one kilometer linear beach where customers are equally distributed is distant from this analysis), it is easy to imagine that its customers, if they have enough money and desire something fresh and sweet, will buy ice creams, and then "consume" those products made of chocolate, vanilla and preservatives. In this scenario the money spent comes from salaries, since they are employed from a certain number of companies.

What is missing in the equation is the financial system, made of banks, financial markets, financial products, which all together influence the use of the resources through loans.
When money is lent to a packaging factory to develop a new bottle made of micro plastic, the loan allows the owner of the company to build a new plant, buy and process the plastic wastes (resources that are used for this invention and not to build a new shopping center).
To get these loans, companies may decide to sell on the financial market their stocks, which gives to the buyer the ownership on that company proportionally to the amount of value represented by its stocks. This is another extraordinary human invention, which has brought the concept of value way further than what was intuitively possible.
A prove of the difference between value and price (and therefore a prove of the strength of the belief in what is just an invention) could be easily found in the financial market where Tesla (TSLA) has a market capitalization (the price of stock at that moment multiplied by the number of shares outstanding) of 863,615.70 USD B.[2], while General Motors (GM) value is 55,712.05 USD B[3] only.
This is the total value of the revenues the last income statement available released by the two companies: Tesla 58,823.00 USD B., General Motors 127,004.00[4] USD B. How could this difference in the revenues (Tesla's revenues are not even the half of General Motor's ones) not be reflected in the "price" of these companies, in their total market value (Tesla's value is more than ten times General Motor's one)?
The answer, again, is not one, and it will be better explained in another chapter, what is relevant is the incoherence with the present and the future value. Human expectations (and sometimes dreams) influence their purchasing behaviors more than real data about the actual situation of the company. If electric infrastructure will effectively spread inside cities (some cities are already prepared to let its citizens recharge their cars in the public charging columns, but there is still a long way to go), and Tesla will be able to reduce its productive costs to lower its prices (which are still almost double than an equivalent non electric engine car), it is possible that its revenues will raise until a level of coherence with its total market value. Until that moment, investors' expectations are just hopes and time will tell if they are right or wrong.

After these few examples, it is already easy to understand the idea of economy which is trying to be analyzed here: even the idea of economy in XXI century really takes its first steps from the Greek definition of "*oikonomia*", the sum of the world "*oikos*" (family, or house) and "*nomoi*" (rules, laws). This word meant "the administrations of the things of the family, of the house", in other words, again, the administration and the correct use of a limited number of resources for a defined number of people.

[2] https://www.reuters.com/markets/companies/TSLA.OQ/ (1 September 2022, 21:59)

[3] https://www.reuters.com/markets/companies/GM.N/ (1 September 2022, 22:01)

[4] https://www.reuters.com/markets/companies/GM.N/financials/income-annual

Today's economy, as already seen, even if based on factories and populated societies, is still based on families and the members that compose them. Afterall, people buy things and compose the workforce.
Where the failure hides are behind the scientific appearance of economy, which is not as a laboratory experiment made of formulas written on the blackboard where everything can be considered, and result can be predicted. Even if economists have been trying to solve scientifically these issues, the economic rules they proposed have always been simplified model of reality where, assuming several hypotheses, believing that a variable can remain constant, and excluding other variables from the model, then the result could be determined, and a rule can be formalized. This is what is defined as "positive economy", where economic rules are neither bad nor good, but simply describe scenarios.
Fortunately, economy is not finished here, there is another branch of it which is called "normative economy", that tries to judge situations as: the food waste in tourist resorts is unacceptable, since it allows a very small population to consume more than what is needed and remove those resources to a bigger population that still has less than what it needs.
As once the British economist Alfred Marshal said, economists should have cold minds and hot hearts, which means that the sum of normative and positive economy can become a wind of change to build richer and fairer societies, or, said in another way, describing this world is not enough.

Modern economy, the same one that is studied at universities, is a recent subject that is the child of capitalism, the dominant economic system where resources are bought through money and these transactions create the so called "market" (which was there before capitalism itself, but in a premature form where economic agents where not as distinguishable as now happens) . This is a system made up by two groups: the capitalists who owns the capital (which means money, machineries, factories) and the employees (who exchange their service with an amount of money called salary). It is difficult to imagine a different system today, but before capitalism people used to produce the food they needed instead of going to market, supermarket, department stores and so on.

1.2 First economic thinkers

Scarcity has always interested humans, cave men and women included.
Before stores, industrial districts and factories, the issue of scarcity meant first and foremost shortage of food: these communities survived by hunting, picking fruits up, eating mostly vegetables and meat of small, medium, and very big size animals, and that was everyone's life.
Everything changed when, around ten thousand years ago, groups of humans learnt how to cultivate different selections of plants and domesticate animals, in particular horses, mules, and dogs. This is how agriculture is

born, and it’s easily considered the very first one industrial revolution, since it changed forever both the idea of scarcity and the role of individuals inside groups.

This led to the building of wider groups organized in villages around a piece of cultivated land and from there, in Mesopotamia, corresponding to the modern Iraq’s territory, the first complex economy was born, meaning that for the first-time people did not produce food for self-consumption, so someone in the village started to do something different from milk a cow or trace and seed the land. For the first time in our history, surviving was not everyone’s issue.

The agricultural revolution led to what is called “surplus”, that amount of the production that exceeds the need of the society and is therefore saved for royal family members and clergymen. Inevitably, surplus brought to a complete change in the organization of resources and to new inventions: exceeding corn had to be stored, surveilled, moved to temples to be used as an offer, and such an organization brought to the invention of handwriting (some of the very first pieces of papers written by hands were bundles of shipments documents and harvest’s tables with quantities and periods).

Contextually taxation was invented: functionaries, through written documents, could collect a percentage of quantities to be shipped and use those resources to dig canals (infrastructural investments) and build royal monumental graves. This is how organization of resources, tables, new people’s roles, and investments for the future started to become relevant theme for those ancient form of society.

Hundreds of years before the born of Christ, other forms of civilizations have already been assembling also in the modern Egypt, India, and China for thousands of years, and the ingredients of what happened in Greece and then Rome were ready to be properly blended.

These were among the first societies where prosperity allowed the development of some early economic thinking, in particular the Greek philosophers are still considered the fathers of the broader western mindset, due to their thoughts about the meaning of life on earth, human condition, and how individuals should behave in broader organizations.

Hesiod, one of the first Greek poet could be considered also as one of the first economist, since in one of its works he wrote that since Gods steal our wheat but then bread never falls from the sky, humans will have to work for their entire life and create the conditions to manage the resources not offered to divinities.

Plato later described an ideal society built around a solid city where the governors could closely surveil and manage the organization, a small city with limited space for buying and selling resources and workforce. Workforce, in particular, today is the result of an itinerary that starts from our backgrounds, it develops through studies, university’s faculty choice and at the end it results in a final choice between different job proposals where the variables for the final decision are the city where the job takes place, the level of responsibilities, the amount of time that will be dedicated to work, the salary and the career evolution opportunities. Likely the son of a dentist who decides to enroll to odontology for university will become a dentist too, and the same could be presumed for the smart tech computer science student who repairs broken hardware components in

its free time and dreams about building its own factory one day. In modern times (and rich countries again) future employment could be the result of personal choices and the right exploitation of opportunities.
In Plato's ideal society everyone's role would have been decided at its birth: "bronze soul" men would compose the lowest class, the biggest one, and their task would be agriculture. Then the immediately higher class was for "silver soul" soldiers and the top of the pyramid was for "gold soul" rulers, kings, and philosophers.
Plato was convinced that this was the best possible organization and for that reason he built the renowned academy, where the philosophers would have been formed to be able to properly govern the society.
The biggest intuition which must be recognized to the philosopher is the fear of richness at the point that, in its ideal state, to every member of the gold soul class was prohibited any kind of private property in case that gold, jewelries and money could bribe their pure spirits: the idea behind this is that if richness rises and the number of people remains constant, then they will start to compete for it. They should rather have lived together sharing everything (every resource) and the same for their family members, otherwise society would have one day be broken into two groups, rich (governing) and poor, and the second group would have envied the first one, without any likelihood for the State to solve the dichotomy.
Plato was eventually reached at the Academy by the first thinker to organize knowledge into different branches as politics, biology, math: Aristotle.
He criticized Plato's ideal social structure, seeing as perfection is not a human characteristic, nevertheless there were still several subjects where men where well performing: one of those was precisely private property, whose removal would have been unfeasible. Many years before Adam Smith's theories, Aristotle knew that even if men who possess material objects may be enter in a loop of a never reaching feeling of satisfaction, is that self-interest that keeps that man concentrated on keeping the value of those objects, taking care of them.

The consequence of this model is that if everything is self-produced throughout personal resources, how the ones in the society who don't produce clothing could get a new pair of socks?
Of course, they could get new ones from who is producing socks exchanging their goods, but, as Aristotle understood, there are too many obstacles in this system of exchange: the need of constantly bringing your product in case a trade may be necessary and the asymmetry between personal and other's interests.
It may happen, indeed, that no one producing socks are interested in apples or oranges, and these would never trade their products with pineapples or strawberries. This asymmetry brings to this kind of situation:
-those producing apples or oranges would never get socks exchanging their products.
-those producing pineapples and strawberries would never get apples and oranges through exchanging their products.
-apples and oranges producers may firstly trade to get pineapples or strawberries and then propose an exchange for socks, but it's not sure if the socks' producer will accept the exchange since, given these data, it's not known if pineapples and strawberries will be accepted, which makes the exchange a sort of a bet.

What Aristotle understood was the importance of a never undesired good that could make every trade possible, money.

Men agreed on some elements like gold or silver as coins for buying and selling, gave prices to products according to their economic value (mostly resources and time needed for its production) and money did the magic: the unit of measurement of everything was invented.

This is the easiest and, as frequently happens in a biased world, the most convincing way to describe how money was invented and why it gradually expanded among economic agents as a tool for exchange.

The first meanings of money, according to latest most reasonable theories, were slightly different, and these should be found in politics, religious rituals, and symbolisms rather than pure commercial meaning for trades. What is difficult to imagine, for someone born in a world where the Visa payment infrastructure alone can proceed 1.700 transactions per second (which means 6.120.000 transactions per hour and 146.880.000 per day), is the structure of ancient societies characterized by the marginality of trades.

Therefore, the two main frameworks that still contrasts trying to assess how money was invented are embodied in:

-the *Metallist perspective*, claiming that what has become modern money was already from the beginning a medium of exchange commodity when trades among individuals seeking their personal interests encountered.

-the *Chartalist perspective*, promoting the role of archaic money for the definition of the right amount of taxes to be paid to a central public authority (or, to tokenize debts which directly gives value to fiat currency, since such currency is used by the sovereign power to levy taxes). The name "*Chartalism*" has been found for the first time in George Friedrich Knapp's "Theory of Money", where it's explained the link with the Latin Charta, which is, as money, an invention of law and not a commodity.

Before analyzing more precisely the two schools of thinking it must be cleared that, despite the fascinating and fluent description supported from a Metallist standpoint, it fails in holding this thesis up with events, traditions, cultures, or, broadly, to history. Main theorists of this second movement have been: Sitta Von Reden, Randal Wray, Alfred Mitchell-Innes, Abba Lerner, Leslie Kurke, and their principle could easily be found in other works of more known economists such as John Maynard Keynes, Jean Baptiste Say, John Stuart Mill, and Karl Marx

According to Chartalist theories, for instance, the origin of Greek coinage cannot be studied if not contextualized in the political shift from the ancient Homeric society to the modern structure of the polis. In this scenario coinage represented a symbol of the authority of the new institution replacing the old one, which needed a sort of symbol or token, something physical that people could touch, smell, spend and save.

For instance, for Von Reden coinage became necessary for politics to properly recompense citizens, as a means of administering fair distribution of wealth among the entire polis ("redistribution through coinage").

Another interesting interpretation has been given by Bernhard Laum's religious origins of money in Homeric Greece, which recently has been sustained by Charles Seaford: his suggestion is that money was represented

by a specific amount of roasted bull's flesh allocated to everyone participating to a ritual ceremony. Here, the portions of meat where different since represented everyone's social rank, and, more precisely, were defined according to the principle of proportionate or geometrical equality as reflected in Plato and Pythagoras' philosophies.
Laum's theory finds a strong support in the etymology of the word "coin" in the sixth century BC ancient Greece, where the link between the world "obolos" (coins) and "obelos" (spits, by which bull's flesh was served, or better, distributed) is clear.

Economists from both divisions have tried to demonstrate the two thesis and, to develop such a social reasoning on what and how and why had had value for mankind, it's more important to understand their argumentation analyzing them and not giving judges.
Since it is easy to see how everything in our modern time is done for money it becomes harder to imagine the role of ancient coins and primitive money in wider terms for religious and symbolistic issues.
What can be added, to develop the two perspective and find a balance between the two is that the first one explains how money was born thousands of years ago in the sense that it established behind the scenes his role as a tool for exchanges and this is still true today, while the latter perspective tries to contextualize historically the rise of money and the social systems of that time.

1.3 The invention of money

If economy, as previously defined, is the study of the right allocation and use of limited number of resources, today money is the first way to make the entire system working. The same holds if economy is intended as the maximization of value since its changes over time require accountancy and an entire system based on money (nevertheless every place and time will have its degree of allocation and demand curves decided by market negotiations, what is going to be defined as "economic environment").
It is fundamental to begin this section underling that, despite one would logically figure in his mind a system of equations where ancient communities stay at pre metallic money as modern economies stay at metallic money, it is far from being historical events: the logical order, this time, does not follow the chronological one.
As a matter of fact, banking was already a settled system (if for banking it is accepted a simplified definition of the right to make loans) in Babylon before coinage, while Italy banking system followed as more logically it may seem the born and development of regulated coins making[5].

[5] G.Davies, "*History of Money: from ancient times to present day",* University of Wales Press, 2002

Incredibly, at this very moment, there are factories in Europe still producing metallic anklets used daily as money in more than 650 African villages, despite their possibility to use the coinage system (which has been uselessly fostered by national governments for decades).
Again, keeping in mind that primordial money may be recent while banks could be ancient is the key to understand the following reasoning and, as illogical it may seem, also innovation (not merely the technological one that had led to touchscreens or virtual reality but more in general as the constant human development of tools that could make life easier) did not always mean progress (doubts on a wider nuclear diffusion for pollution reduction in highly populated urban areas are still strong after tragic recent events despite the evidences between modern nuclear power plants and the Chernobyl's one).

Above all the objects that humans have used as primordial coins, the most diffused one (geographically and for a greater length of time) has been the cowrie, a brown and whiteish shell of a mollusk which can be easily found in Pacific and Indian Oceans beaches.
Its use started to flag due to the growth of trades and the increase in the number of cowries (soon it depreciated, despite being still officially accepted to pay taxes in Central Africa until twentieth century).
By the first half of that century, indeed, thousands of tons of cowries had already been moved to Africa (mostly from Maldives and other areas where their huge quantity led to a progressive devaluation), this excessive amount reduced their value until their effective disappearance, also for the latest small purchases and in the most isolated villages.

Despite such primordial coins had been used by a small percentage of people in human history compared to more recent currencies, cowrie really knew period of prolonged popularity, so that in some regions it happened that (in the opposite direction of Gresham's law conclusions) it succeeded in overtaking coinage.
A prove of cowries' successful diffusion is that its pictogram in ancient China was later used in substitution of the word "money".

Other two forms of primordial coins that must be reported, even if they had a much more limited geographical diffusion upon the Fijian islands are the sperm whale's tooth, also called "tambua" and the fei stones" of the island of Yap.

The first one had mainly a ceremonial use, since official receptions were (and still are actually) not possible without the gift of that tooth to the just arrived guest, and it is also gifted as bride money, acting the very same way as engagement ring.
It is reported that some Fijian citizens, soon after the archipelago became a British Crown Colony in 1874, were still reluctant to accept and use gold and silver coins coming from the Kingdom, also since those whale teeth shared a holy value on the islands and their owners could show their prestige and authority more easily compared to modern money. It's important in that case to underline that this item was rarely exchanged with other goods, therefore despite not being used for everyday exchanges, it was still unanimously recognized as an object of high value (this should already be kept in mind for future chapters: value does not only mean that it can be used to buy other things, but value may mean others' awareness and desirability).
The latter "currency" was the Yap stone, which until the mid 1960s was still being used as money in the ten small island archipelago in the central Pacific. These "Fei" were stones imported from both close and far islands and then shaped to discs from 15 centimeters diameter to more than 1-meter ones.
The two largest specimens quarried from the Tomil harbor are more than six meters in diameter, dimensions (and weights) that may raise doubts on their denomination of money since are not standardized and easy to carry, but, as just seen for tambua, value is what others confer to objects, not their intrinsic one.

The territories that are now forming what is called "North America" have been trying for decades to establish a monetary system which could be acceptable all over these lands without success: in 1715 authorities in North Carolina declared that more than seventeen commodities where legal currencies (two of them where maize and wheat).
Oddly enough, a more generally accepted currency had been established by indigenous communities: strings of white beads. The official name of this primitive form of money was "wampumpeag", where wampum meant white and peag was the Indian word for defining a string of these beads which were plentiful in northeast of

America and Canada. This specific bead was made of the shell of the clam, which are mostly white with a purple frame (the rarer black or blue-black spot ones were exchanged at double price of the white).

A clearer framework of the wide diffusion of this currency is given by the 1637 Massachusetts declaration of validity of wampum as a currency with an exchange rate wampum pennies equal to six (therefore, as a consequence, blue-black spot beads pennies exchange rate was equal to three) and by the fact that it was still used in different regions of North America for more than two hundred years after its official abolishment in 1661 (although beaver skin was becoming a strong alternative for the Canadians Indians.

Again, what must be understood is its psychic function which more than compensated its weakness in terms of the right features to be defined as a currency, in fact, despite the uncertainties regarding its use as a tender before the arrival of the English colonists, it conquered its shared role as a store of value.

The development that in America brought to a modern economy which was able to embed and conform primordial currencies was surely not unprecedented, it happened in other territories and distinct eras (as the Egyptian and Chinese cases demonstrated). As a matter of fact, in nineteenth century in England were still used Tally sticks, wooden sticks on whose surface were engraved numbers, messages, debts, names and dates.

Another issue that must be analyzed is the long evolution of units of account, and, if cowries played the role of the main character for the evolution of money, cattle was the first and most spread unit of account.

Its history is even antecedent to the use of seeds as currencies since mankind was already domesticating animals 14.000 years ago, therefore about 4.000 years before the invention of agriculture. Linking to the limits and doubts above analyzed for previous cases, cattle as money is surely the most debated one, since buffalos and camels don't appear to be suited to become a medium of exchange due to their weights and impossibility of standardization.
History, once again, teaches that abstraction (and, for the purpose of this analysis, also creativity and beliefs) makes even cattle an effective and easily acceptable currency, firstly logically and then practically. It happens therefore that the problem of currency's heaviness is quickly solved defining how many goats a camel is worth, how many chickens for one goat, how many rabbits for the chickens and so on (as today it's needed 100 pens to have 1£). The same symmetrically happened with cowries due to their small single value which brought to aggregate them in baskets and necklaces.
In conclusion also the issue of cattle's standardization is solved through logic and a pinch of imagination, because if it can be admitted that a rubbing, dirty, wet, some years old 100$ banknote is desired as one printed the day before, then an old and crippled camel could have the same value of a young and sturdy one, since they are conceptually considered as units of accounts.
Cattle is currency as much as euros and yens, and it is forever true and impressed in the etymology of the Latin world "pecunia" (money), which, as easy to understand as it is, comes from "pecus" (cattle).

1.3.1 The road to coinage: use of metals as money

The history of man and metals is one of the longest histories of love ever, made of creativity, art, design, inspiration, precious and cheap, abundant, and scarce metals.
The quick shift of metals adoption is explained by the enthusiasm with which already Stone-Age man forged and modified metals for a wide range of purposes: swords, saucers, goblets, crowns, jewelries. It's not a surprise that in some languages there is one word only meaning both "silver" and "money".
Another element that can be highlighted is again the important role to be attributed to ornamentality, which helped to maintain metal's incredibly wide diffusion and therefore acceptability, opening to the possibility of transforming already existing ornaments used as money into more precious one just replicating or imitating it forging the metals available.
For instance, Chinese craftsmen started to replicate cowries in bronze and copper, an imitation that, since it's a form of money "production", is considered one of the earliest examples of numismatic if its definition is lighten from the need of a central authority regulating the production of this atypical good.

What is relevant is that metals object did not have to imitate cowries to be considered as money, because, as Jevons listed, they already satisfied all the qualities required for being considered a valid currency: recognizability, utility, portability, divisibility, indestructibility, stability of value and homogeneity.

Some of the most successful specimens of metal money could be found in “manillas” commodity money, mainly forged in bronze or copper, and widely used in West Africa. These ornaments had different dimensions, shapes and colors, but they were usually circular (similar to torcs) or horseshoe shaped, with endings that face each other.

There are theories regarding the origin of this name: it could come from Spanish meaning “bracelet”, or from Latin word “manus” (hand), or “monilia” (plural of “monile”, which means necklace), but also from the Portuguese “manhila” (hand ring).

Its use was frequent among merchants for slaves’ trades (from 8 to 10 manillas for one slave), and particularly for trades with Portugal (it is reported that in 1504 and for the following three years just one trading station in Guinea imported almost three hundred thousand manillas from Portugal).

As happens with ancient pre coinage currencies, because primitive tribes need the religious and ornamental gratification to be combined with functions associated with more modern metallic money, manillas was still diffused in Africa in 1902 and they had been withdrawn from circulation only in 1949, after a long work from West African Currency Board after its formation in 1912.

Money and civilization developed together and, sometimes, declined together.

Usually, a development occurred after many smaller occasionally interrupted improvements that shifted communities’ habits into metal for more and more uses, including money, and that led to what is defined as a more advanced economy, where a bigger portion of the total population over extended areas face higher standards of living through a structured and organized monetary and exchange system.

Once it had become accessible, metallic money had always replaced the previous form of money, despite with different pace from place to place.

1.3.2 Money, and banking

As it is almost certain now, the first ever human civilization was born in the middle of two rivers, Tigris, and Euphrates (in a region which according to modern geographical boundaries should include parts of Syria and Iraq), around some seven thousand years ago. What is highly probable, despite this is still disputed, is that over three thousand years ago Babylon was already hosting bankers, or, at least, some very first prototypes of bankers.

These territories (or Mesopotamia to include a wider area) are considered the origin lands of banks since archeologists discovered first specimens of handwritten texts made of agricultural and livestock quantities from the city of Uruk, some 3100 years b.C.

This, as already introduced, is the beginning of handwriting, and, since that led to documents of merchants and banking houses, it is also the first example of economic documents, where scarce number of resources (and money) are catalogued and organized.

Contextually deposits were invented: royal families' palaces and worship areas as temples became the administrative headquarters, that caused royal and religious functionaries to become managers of these deposits, or, in modern words: bankers (if the definition of banks as deposits binders and managers is accepted simplifying modern banks' operations).

Curiously enough, the name used to describe this functionary, once in Roman empire times, became "eoconomus", which is the Latin ancient word for "economist" (a work that really faced an incredible journey from administering seeds, fruits and grain to writing algorithms for tech finance or designing marketing contents for avatars in artificial worlds).

These functionaries wrote the first receipts of history, defining quantities of grain, cattle, agricultural instruments, size, and types of precious metals and so on, receipts that, guaranteeing the possibility to take that specific object in a certain temple or building, can also be considered as the first loans of history.

It is confirmed by the Hammurabi Code itself (the 2,13 m high solid diorite block list of rules that governed the city of Babylon from 1792 to 1750 b.C), which imposed a reduction to the procedure of deposit and loans.

As far as Egyptian money history is concerned, it should be introduced that nowhere else grain achieved such level of monetary use. Not surprisingly Egyptians had themselves such warehouse banking system which had its fortune during the so called "empire of the Ptolemies" (from fourth century b.C to 30 b.C).

That period had been distinguished by inhabitants' reluctance to accept metallic money and internal precious metals were sufficiently enough to finance wars' costs.

These were the preconditions that led to a much more complete development of grain banking system, and created, for the first time in human history, the opportunity to change the beneficiary of the receipts issued, giving birth to the modern giro.

Intuitively enough for who studied ancient languages, since double-entry bookkeeping had not been invented yet at the time, creditors name was just written in genitive (the possessive case) and debit voices in dative case.

The moment in which mankind introduced such document marks the start of a never-ending process of value abstraction through documents (a piece of paper with some signs handwritten, then printed, now digital) where is certified: what should be given to whom, when and in which means) and, as it is going to be explained in the following pages of this text, other tangible, and intangible contracts.

What effectively happened through the introduction of the possibility of changing the subject of the receipts is the transfer of something (grain) to someone that never had it in it possess (the first beneficiary of the document) to another subject which is the new addressee. The innovation that lies down is the approval and trust that the new subject places in what is only a piece of paper, which gives him a right on a defined number of grains, without the real possession of it.

As already stated in the introduction, this is what distinguishes us from other animals living this world: creativity, abstraction.

This is making the journey from grains to multiverses possible.

There is one ancient civilization that had been left apart in this short story of primitive coins which still deserves a mention: China.

Inhabitants of this huge territory, as introduced above, started to cast bronze and copper cowries, and these object, together with miniaturizations of swords and other most common tools, were the main instrument used for exchange.

Since these objects were made with basic metals, their singular value was so small that it became necessary to make holes in them so that they could easily be carried through a twig. There was another reason for the hole, which is that since they were casted, which means intentionally produced with the specific purpose of being used as money, the twig was already used in the production line to make at least fifty pieces every time.

The issue here is not about the relevance of this holes in historical terms, rather it is the possibility of defining these items as the first example of coinage.

Here, from a technical perspective of a numismatist it may be forcing conceding the coinage theory due to the lack of official procedures, standards, weights and authorizations, while, from an economist standpoint, it must be admitted the forward-looking introduction of a system that, once developed, will interest every economy.

1.3.3 Coinage and modern economies

The first step toward coinage, which is already considered by numismatics as the first specimen of coined money, has been reached in Cappadocia around 2250 and 2150 b.C, when the "state" started to guarantee the weight and purity of almost identical metal ingots, which soon started to be reduced in smaller size such as the one of a spit.

The final stage of that process of authentication and authorization took place in Lydia, when, during VII century b.C, its rulers united the area with the Ionian one (part of modern Turkey).

Here, the Ionians and more than them the Lydians, started to mine a light-yellow precious metal from the rivers that silted up once rushed down from mountains and divided into smaller channels.

This has been the metal used for the very first form of hammered coin, that at the beginning were still irregular in dimensions and stamp less. Only years later they started to be stamped on one face and incised on the other one. Nevertheless, the lack of uniformity of these Minoan primitive coins made its circulation harder, at least for the initial years of the first millennium b.C, and, gradually after that, they spread in other Greek islands and east Mediterranean civilizations. The credit that should be recognized to this invention is the new monetary model that from this moment will represent the standard for coinage up to modern coins. What was an innovation, therefore with the initial limitations that novelty causes, knew its development and perfectionated during the VI century b.C when Croesus' successful annexation of Phrygia had been replaced by the Persian occupation in 546 b.C.

Unfortunately, as it will be better analyzed in the next chapter, the "dismal science" is not an exact study, and errors have been made regarding the effective timeframe of this Lydian unheard coinage invention.
At first the attempt of hammering coins had been chronologically anticipated already or soon after 750 b.C by Joseph Grafton Milne in its "Greek Coinage".
Contextually to the publication of its book and therefore of the diffusion of its timing proposals, in what is easily the most relevant region of Ionia in the Greek mainland, Ephesus, and more specifically under Artemis' temple ruins, archeologist found more than three thousand items: both unstamped and one side only stamped primitive Lydian coins, jewelries, decorative objects in precious metals and other historically priceless objects that testify a delay of some two hundred years on the old theory. Therefore, what was 750 b.C became 575-570 b.C since, as a matter of fact, if Greek coins took at least one hundred year to develop after Lydian prototypes and the latter is now date around 680 b.C, the calculation is easily made.

Following the reasoning of the analysis above developed, this is the second crucial step in the evolution of human belief in money (after the shift from shells and other material object to metal ones): certification, authentication of what is money and what from now on cannot be considered as such anymore.
This step is inevitably to be considered, as the other face of the medal or since this is the theme the other face of the coin, also as the beginning of counterfeiting. As it will be seen every time with all the other steps on this journey to NFTs, Cryptocurrencies and Metaverses, inevitably something is abandoned (valuable objects

possibility of being used as money) and a novelty takes its place (shifted belief in another object that must fulfill some specific features, in this case just an official stamp on one or both sides, which is imposed by the government and cannot be refused as money).

1.3.4 Banknotes and finance

The inevitable development of standardized coins had been banknotes, whose name derives from *"bank note",* the printed document that from the fourteenth century allowed its owner to withdraw a prearranged amount of precious metal from an authorized banker (as happens today in every commercial bank, they already used to keep only a percentage of total deposits as reserve while all the remaining metal was used to grant loans).
Despite banknotes had already been printed by the Bank of England from 1695, their compulsoriness in modern European area goes back only to the years that followed the French revolution, when Napoleon's functionaries imposed its use. This is how the economic system of banknote started: as soon as the banknote becomes compulsory every agent in that environment needs that tool to satisfy his needs, because the belief of the consistency of value of that colored printed paper document is guaranteed by the law. The difference between coined money or printed banknotes and every other possible mean of exchange is that the formers never go out of fashion and don't have an expiration date: their value has no boundaries in time or space. Every other object, in a previous system based on barter, faced a natural deterioration of its characteristics and therefore of its value. Minted coins and banknotes represent the two pillars of this system of real economy, the first system with low transaction cost.

Over time, without anyone noticing, trades and exchanges of goods became humans' main activity.
Another common mistake which will be explained and corrected in this section is the belief of a linear shift from one economic environment to another throughout the history of economy. The truth is that, instead, economic systems met each other during their births and continued to be related during their developments (barter, real economy and financial system coexist today). The pillar of the following economic system, the financial one, is the creation of financial contracts. If the description of finance could be reduced to one single sentence, it would be something close to: the agreement made today between at least two different economic agents who obligate themselves for an exchange which will take place in the future. Derivatives, Options and Swap contracts are based on the same criteria of a debt. Someone today gives an amount of money to second agent who in the future will give to the lender an amount of money higher than the once received, in a certain percentage or a variable one. In this perspective, the economic system of real economy and the other one of financial economy started to cross themselves. Usually, the monetary value (or quantity of money) of exchange

of one single good in one place and in each period is determined by the number of transactions referred to that good (sometimes of related goods also) realized in independent geographical areas and similar periods. Therefore, when an economic environment is competitive, the monetary value is determined by the quantity offered in the market. The growing extension of markets and the birth of fairs (where agents doing the part of buyers and sellers coming from different places used to meet) after XII century, combined with the trade of wholesale quantities of goods, determined new organizational, productive, transportation and, most importantly, payment procedures. For these agents arose the need to adopt a payment system not only based on the exchange of real banknote or coins (personal or debt), but also on third parties credit reputation, who could have been considered solvent due to the possess of huge financial resources certified through a signature on a check which started to be accepted as a payment.

Easily as it seems, humans had already been accepting value in the form of some objects, metal or wood jewels, coins, banknotes, checks, financial agreements.

After this introduction to previous economic environment, space should be left to modern times, to the arrival of a new economic environment which, once again, will not replace the others, but will change, as had always happened, the way human exchange value.

This is the era of virtual economy, which pillars are: metaverse, NFTs and cryptocurrencies.

CHAPTER II – METAVERSE AND NFTS ECONOMIC ENVIRONMENT

2.1 A Metaverse taxonomy

Metaverse, Meta politics and Metacommunity are all words that are becoming more and more used, on the web, on the news, schools, streets, by experts and non-experts. These are the words that everyone is searching on Google, that are attracting investments from all over the world and in every market: gaming, pharmaceutical, hospitality, banking, sports, and as it will better analyzed later also fashion and luxury. Everyone is looking at this innovation with extreme curiosity, because, if it is going to be as it seems, we are expecting a revolution. As it happened with the arrival of the internet, people are scared since the technology is still unclear to many and its future development were unpredictable. In 1980 nobody would have believed that some years later it would have been possible to buy a book from a website and receive it the following day, to have a videocall with a friend who lives on the other part of the world, to have access to news from the entire world, books and other documents just sitting on your sofa. Internet had been a revolution because it changed the way people live. The refrigerator and the elevator are considered the two inventions that had the most positive impact on human life[6] because solved the problem of food rotting and allowed a vertical rather than horizontal development of buildings. Internet, and presumably metaverse, changed and will continue to change human life in a way that is still impossible to predict. What it is easy to imagine is that these two inventions bring together a lot of pros and cons: the opportunities offered by Amazon, Google and Facebook are worldwide recognized, but it should never be forgotten that Amazon made millions of small stores to fail and on the social media platforms are presented models of beauty and success that created what is probably the saddest and most depressed generation ever. And what about the reduced ability to socialize, the hate diffused in every post's comment, the damages to spiral columns, brain, and eyes of those that spend their days sitting in front of a screen? These are also consequences of the internet and the Metaverse may make things even worst. Nevertheless, as always happens, every coin has two sides, and investors are interested in the opportunities behind this new trend, so let us start from the beginning.

The Metaverse is the convergence of augmented physical reality and virtual reality inside an online and shared space. It is a mirror world, a space of virtual reality where users can interact with other users in a place generated by a computer. It is going to be accessible through all our different platform as Virtual Reality (VR), Augmented Reality (AR), PC, mobile devices, and gaming consoles. The ecosystem of a Metaverse needs elements created around the user, such as the avatar, contents, a virtual economy, social activities, privacy, and safety regulation. In such multiuser online space avatars can socialize, build a new net of relationships, and create a new level of exchange. What makes it different from a classical multiplayer videogame is that

[6] Christensen C.M., 1997, *"The Innovator's Dilemma",* Harvard Business Review Press

"players", or avatars, will have the ability to create and share contents to shape the world that will surround them, and in a persistent way.

The Metaverse will offer enormous opportunities for artists, creatives, and brands. One day it could help people that dream of working and living far from urban cities and will spread study opportunities in places where education systems are still undeveloped. To organize all of this "*Metanomics*" has been invented, which is the study of economic regulation and business models inside the Metaverse, while it also regulates the use of virtual worlds within the business strategy of real companies. This is needed because, as it happens in real life, people will buy things, even in a virtual world, for the same reasons they buy inside a physical store: to obtain a particular status, to feel part of a group of community, to make a gift, to speculate and make money. Virtual clothing, avatars' skins, virtual buildings, cars and houses, plot of lands will have a value inside Metaverse. Virtual careers will be needed to develop all of this: avatar designers, Metaverse housing consultant, Metaverse real estate. Thus, companies must learn how to bring their marketing strategy from online consulting to a virtual and shared economy (a t-shirt sold as concert merchandising is going to become an NFT or a gaming skin).

To access the Metaverse the user needs a device: it could be modern viewers with video camera, but in not so many years from now just normal eyeglasses which will already be equipped with the possibility to see and interact with the elements inside the Metaverse, visualize the virtual reality, the objects, the spaces, and other users. The Covid-19 pandemic forced millions of workers to reinvent their daily routine, and a lot of them started their day sitting and turning on their computer, and what was a kitchen soon became a real office for that day, a flexible place for the use of every videoconferences platform (the background could be deleted by the platform itself so there is no worry in showing the fridge or the oven even in the most important conference call). Through Metaverse this is not unlucky to become a typical office routine: in the morning the alarm clock start, you wake up, have a shower and dress casually with a pair of jeans and a t-shirt, have a coffee and wear your meta-eyeglass. You will be in a few second inside your corporate building in the Metaverse, in front of your desk with other colleagues, all connected from their homes.

Analyzing the metaverse more technically, it should be noticed that modern metaverses (Meta, Zepeto, Animal Crossing, Roblox and so on) is already very advanced compared to the first generation represented by Second Life, which started to be used since 2006. The novel versions differ from the earlier in at least three ways[7]:

- The development of deep learning dramatically improved the accuracy both in terms of vision and language recognition, while the development of generative models enables a more immersive environment accompanied by a natural movement.

[7] Sang M. P. and Young G. K., *"A Metaverse: Taxonomy, Components, Applications, and Open Challenges"*, 4th of January 2022, IEEE Access Journal

- The reduced processing time and complexity had been reduced using multimodal models as end-to-end solutions with a multimodal pre-trained model. In addition to that, there is no longer the limitation of entering into a Metaverse through a personal computer (which anyway had low consistency due to time and space constraints), since modern smartphone and other mobile devices have enough processing power.
- The program coding can be done in the Metaverse world, and it had been made more like real life thanks to the introduction of virtual currency and cryptocurrencies. Therefore, the social meaning became crucial, and this features had been added regarding fashion and events where users can take as much time is needed to interact.

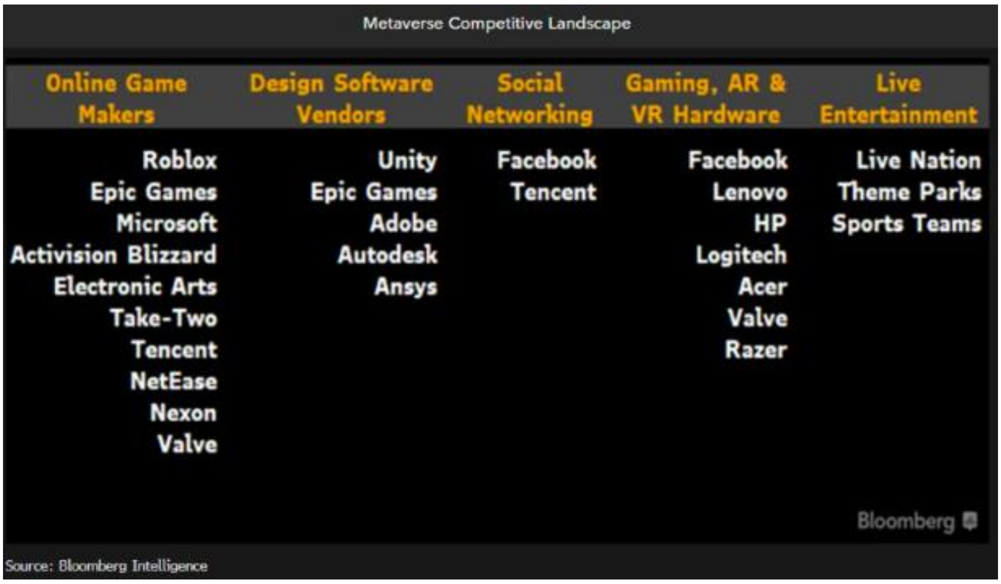
To conclude on the definition of what is a Metaverse, it is necessary to differentiate it from what a Metaverse is not, so augmented reality (AR) and virtual reality (VR).

- As just highlighted, the Metaverse is much more focused on developing a service that can offer a content that is sustainable and suitable to have a social meaning, while VR technologies focus more on a physical approach and rendering.
- VR and AR are not necessary to create a Metaverse, so, even without them, a platform could still be considered a Metaverse.
- A Metaverse must have a scalable environment that can welcome many people, an environment made of hardware improvements, a recognition and expression model that leverages the parallelism of the hardware and the accessibility to the content that people immerse in.

2.1.1 Main Metaverses

Back in 2021 Bloomberg, in an analysis[8] conducted by its Intelligence Senior Industry Analyst Matthew Kanterman and its Intelligence Industry Analyst Nathan Naidu, claimed the Metaverse to be “the next big technology platform”, stating that this market could represent a 783.3$ billion opportunity in 2024, with a compound annual growth rate of 13.1%. The Bloomberg table above reports the competitive landscape of the main companies investing in the Metaverse by market category:

[8] https://www.bloomberg.com/professional/blog/metaverse-may-be-800-billion-market-next-tech-platform/



Metaverse Competitive Landscape

Online Game Makers	Design Software Vendors	Social Networking	Gaming, AR & VR Hardware	Live Entertainment
Roblox	Unity	Facebook	Facebook	Live Nation
Epic Games	Epic Games	Tencent	Lenovo	Theme Parks
Microsoft	Adobe		HP	Sports Teams
Activision Blizzard	Autodesk		Logitech	
Electronic Arts	Ansys		Acer	
Take-Two			Valve	
Tencent			Razer	
NetEase				
Nexon				
Valve				

Bloomberg

Source: Bloomberg Intelligence

Some of the main platforms that already established their names in the race towards the almost 800$ billion prize money are:

- *Decentraland*. This is probably the most famous platform right now, and even if it had been released only in February 2020 (it had been founded in 2015 by Ari Meilich and Esteban Ordano) it hosted more than 300.000 monthly active users (MAU) at the end of 2021[9]. The platform is a single layered metaverse divided into equal grids, where every single coordinate is called LAND. The land supply is limited: only the community has the mandate and is based on the Ethereum blockchain: it is a *"free to play"* (a digital platform where the user can log in and play even without paying), but to get access to all its features it is required to register a digital wallet. The platform offers to avatars the possibility to interacts and play games with other users, but over time it is considered a more and more attractive

[9] https://analyticsindiamag.com/top-three-metaverse-platforms-in-2022-and-no-it-doesnt-include-facebook/

spot for digital real estate investments. Inside the platform avatars can buy and sell a variety of items through the official Decentraland cryptocurrency named MANA (currently number 38 in the CoinGecko market capitalization cryptocurrency ranking[10]).

The MANA is used in the platform as a token to buy the collectibles and the virtual real estate properties. These are sold in parcel, which is the unit of digital land and is itself an NFT (the cheapest parcel could be bought for some 5000 MANAs, around 13.000$). Company, and very famous one, are investing in Decentraland: JPMorgan opened its lounge named after its Ethereum-based blockchain service Onyx where visitors are greeted by a dynamic roaring tiger[11], Samsung recreated its flagship store from Manhattan[12], Sotheby's owns a virtual gallery[13] in Decentraland *"Voltaire Art District"* which is a replica of the auction house's iconic New Bond Street Galleries in London, and Coca Cola held a rooftop party to celebrate International Friendship Day in a building that actually is a giant red branded can, where a packet of NFTs had been sold in an auction with proceeds donated to Special Olympics[14].

- *Zepeto*. It is probably the most important Asian-born metaverse right now: launched in 2018 by Naver (the South Korean internet giant), it registered a monthly active user base of 20 million in 2021. Official data published by the platform itself revealed that 90% of its users are foreign customers and 80% of them are teenagers. The power of Zepeto relies in the freedom of the avatar that can choose among regularly updated hair styles, facial expressions, and clothes. The trend is to

[10] https://www.coingecko.com/it/monete/decentraland

[11] https://hypebeast.com/2022/2/jp-morgan-virtual-lounge-decentraland-first-bank-enter-metaverse

[12] https://chainbulletin.com/samsung-opens-virtual-store-in-decentraland

[13] https://decentraland.org/blog/announcements/sotheby-s-opens-a-virtual-gallery-in-decentraland/

[14] https://events.decentraland.org/event/?id=14cf077d-9c19-4576-8df5-b3134a434dac

shoot TikTok-like short form videos, interact with other avatars, playing different kind of games and exploring virtual world with different themes. The platform is still not built on a blockchain nor allows crypto of NFTs, but it announced that such technology will be soon integrated through Line Tech Plus, the subsidiary blockchain of LINE Corporation (an affiliate of Naver). Meanwhile, the company had established two subsidiaries in the U.S and Hong Kong and decided to strengthen the gaming opportunities within the different worlds of the platform.

- *Roblox*. It is a videogame where players can imagine and then entirely develop 3D immersive world (the company defines itself as an "imagination platform"): from the graphics to the activities everything is built through a virtual toolbox (the "Roblox Studio"). Later, players can sell their creations and collect the virtual currency of the platform named Robux (which can be even purchased in the game store and used to buy items for the avatar and new abilities to be used in one of the million worlds available).

- The *Sandbox*. The platform (over 40 million download and 1 million MAU) was born in 2012 as a game and had been acquired in 2018 by Hong Kong-based game developer Animoca Brands that introduced 3D models and blockchain: the Metaverse shift happened in November 2021. The aim of the platform, as reported in their published official statement[15] is to create a virtual Mega City working with multiple partners in entertainment (The Smurfs and Ani Cube Entertainment to build together a new music Metaverse), finance (SoftBank), gaming (Japanese video game company Square Enix, owner of the Final Fantasy franchise), real estate and Hongkong film industry.

[15] https://installers.sandbox.game/The_Sandbox_Whitepaper_2020.pdf

It is another single layer metaverse divided into a grid: all the land has the same size and users can generate bigger places just combining their plots, but the supply of land is limited. Land can be bought through auctions using SAND cryptocurrency available on Binance (the biggest platform of crypto exchange). Once the NFT LAND is bought, the owner receives a say in the DAO (decentralized autonomous organization) that will take all the decisions regarding the future of the platform. To speed the game development had been created the Sandbox Game Maker Alpha, a free game design software that stimulate creators to build models from scratch and templates.

- *Somnium Space*. It opened its virtual doors in 2018 and is mainly offering a virtual reality experience that necessarily requires a VR headset even if it is available through PCs and smartphones (for this reason the company announced that it is going to produce and commercialize its own branded headset, to give users full control over their Metaverse experience while avoiding the dependency on third parties' hardware components). The platform currency is CUBE, used by players to rent the land, make payments inside the game store, and participate to many events. Huge growth is expected for this platform after the announcement of Tyler and Cameron Winklevoss as official advisors (the brothers co-founded the crypto exchange platform Gemini), who are going to add the Solana blockchain to the already well performing platform. The idea behind this project is deeply linked to the dream of decentralized finance as reported in the official statement of the company: *"we believe in technology, which will allow humanity to communicate, cooperate and socialize in its native manner. Future will let billions of people to become part of the global decentralized financial system and for the first time ever to contribute to the global economy in a meaningful way"*

- *Cryptovoxels and Spatial*. If Somnium Space is the Metaverse of finance, Cryptovexels and Spatial are the Metaverses of art. Cryptovoxel is based on Ethereum blockchain and, similarly to Sandbox metaverse, users can purchase land parcels and build stores and art galleries on top of them (hundreds of digital art galleries had already been built, one of them fully dedicated to the most famous NFT artist

Beeple). The other metaverse platform, Spatial, aims to create the largest metaverse gallery in the world, and change forever the way art is presented to the viewers.

- *Meta (Horizon Worlds).* Despite being the most discussed one (mainly because of the association of Facebook's new name with "meta-verse"), Horizon World is still a VR platform only, even if the founder Mark Zuckerberg continues to promote the platform as the core of Meta's metaverse vision. As just highlighted, it is required a VR headset to play (in particular the Oculus Rift S and Oculus Quest 2) and two hand-held motion controllers needed to interact with objects in the game. The world (called Plaza) presents portals to enter in user generated worlds used by players using an integrated game creation system.

- New ones currently being developed. Almost every month a new Metaverse project is launched. This means that new worlds are constantly being developed by graphic and digital designers, new activities and opportunities are created every day for future users. Microsoft announced its intention to buy the game developer Activision Blizzard[16], crypto Japanese companies would like to create a metaverse association to promote the new technology[17], South Korea's internet and gaming companies (SK Telecom, Com2uS, Netmarble) are investing in new Metaverse venture projects[18]. As already said before, there is a huge difference between the current version of Metaverse and the previous ones, therefore it can be assumed that in a few years from now, companies could have developed spaces much different from today in terms of image quality, sensorial experiences, physical implications, new

[16] https://news.microsoft.com/2022/01/18/microsoft-to-acquire-activision-blizzard-to-bring-the-joy-and-community-of-gaming-to-everyone-across-every-device/

[17] https://forkast.news/headlines/japanese-crypto-firms-metaverse-association/

[18] https://www.totaltele.com/513264/SKT-leans-further-into-metaverse-with-games-company-investment

opportunities for social relationships. Scenarios regarding Metaverse development will be presented at the end of this analysis.

2.2 NFTs

Before analyzing more in detail what is an NFT (unique digital collectible token protected through the blockchain), it seems necessary to justify its existence. Why should someone wake up one day and decide to spend a certain amount of a new cryptocurrency to buy the property over a digital image? There are two main reasons for that: one is the common thread of all this document, namely the value given to everything that other people consider valuable (as it happened with shells and necklaces, now NFT are widely appreciated and can be considered a trade good), and the second one is because people love to collect things (from shoes to cinema's tickets, from journals to digital images). While the second reason is a mere justification, the first reason is an explanation and is the most important one for the purpose of this analysis, since regardless the economic environment (barter, money, digital, crypto, virtual and new ones that will arise), people can create and share value only through others' beliefs and behaviors. Even if it may seem evident, the more an item becomes accepted and desired, the less it will be denied and undesired, therefore it reinforces its value among the entire community (nobody can be excluded from the reinforcing process of value, in the form of necklaces, metals, coins, cryptocurrencies or stock options). As a matter of fact, the belief of the future acceptance of banknotes gives to every banknote owner the proper nudge to collect these colored printed pieces of paper as more as possible: the same process happened yesterday with shells and works today with NFTs and cryptocurrencies.

Once that NFTs existence (or its social value) had been explained, a proper definition of the word is needed:

- *Non*-fungible. Speaking the language of the economists, every good is fungible when its nature allows an exchange, fully or in part, with another good of the same nature, meaning that can satisfy the same needs almost entirely in the same way. Euros and dollars are perfectly fungible goods (20 coins of 1€ each are perfectly exchanged with a 20€ banknote, so even if such coins will weigh much more inside pockets, their value is the same of a much lighter banknote). According to the previous definition, also oil, wheat and gas are fungible goods. Inverting the definition, non-fungible goods cannot be freely replaced by similar objects. The typical example had always been diamonds (since every diamond is unique by color, shape, cut and brilliance), but from now on also NFTs can be used too. Even if every image could be easily downloaded online, every NFT is unique. It is exactly what happens with real canvas' artwork: there is only one original piece of art and thousands of replicas. To guarantee that it is a unique piece, every NFT is "coined" (as real money and cryptocurrencies), meaning that it is associated to its owner profile inside the specific blockchain.

- *Token*. Token always means something that is based on a blockchain. To avoid mistakes, emphasis should be given between the distinction of currency and token: in the crypto world the two words are used indiscriminately, but there is a difference: *currencies* as Bitcoin, Litecoin and Ethereum always use their own blockchain, whereas tokens always rely on other currencies' blockchain. To clarify this point, almost every NFT is based on Ethereum blockchain, others are being created on Binance Smart Chain and other minor ones.

There are different kinds of NFTs. All of them contributes to build the wider world of digital art, which is the sum of all the artistic creations which are digitally made and enjoyed (even if it is always possible to print digital art, its digital nature is itself an artistic feature). NFT is a smaller set inside the digital art one. Usually, the NFT set is itself divided into images, video, gif, audio, 3d models and books.

2.3 Regulation

When it comes to the analysis of the laws that are trying to create some legal boundaries to the worlds of Metaverse and NFTs it becomes necessary a distinction between the two most important areas that need a specific regulation: data protection and intellectual property rights.

To begin with, by data protection is meant the collection, elaboration, examination, communication, conservation, cancellation, and transfer to third parties of data, which regarding the Metaverse could be divided into two macro groups:

- Corporeal data, which means the sum of information that the user produces through his body movements collected by the different devices used: movements of the arms, body, head, and eyes, but also heart frequency and brain waves.
- Psychological data, such as emotional conditions, and general behavior of the user: propensity to risk, attitudes towards money, patience, and mood.

As far as the risks of an inaccurate management of data are concerned, there are at least four that have been considered by the European regulator as the worst ones: risk of losing control of personal data, discrimination, usurpation of the digital identity and financial losses.
These are the risks that the GDPR (General Data Protection Regulation) officially known as European Regulation n. 2016/679 has been trying to avoid already from its earliest operativity, the 25th of May 2018.
This regulatory approach is defined as *"technology neutral",* meaning that it is already applied to the modern platforms of Metaverse, since it regulates data protection per se, but it cannot be excluded that, due to the impact that this new technology can have on users' life (and as just now highlighted due to the quality of the

data that may cluster its user into behavioral categories) it may be needed an ad hoc regulation in the next years.
Therefore, the law is currently imposing to every digital provider of such services the following general rules to safeguard data protection.

- A documented self-produced regulatory act that respects the principles of

accountability[19], necessity[20], minimization[21], lawfulness, fairness, purpose limitation[22], accuracy[23], storage limitation[24], integrity and confidentiality[25].

- Adoption of Data Protection Engineering measures such as Privacy Enhancing Technologies (PETs). ENISA (European Union Agency for Cybersecurity) has been active in PETs collaborating with industrial and academic experts developing platforms like the Internet Privacy Engineering Network (IPEN) and to organize relevant conference about this theme.

  The most prominent event is the Annual Privacy Forum, where industries, researchers and policy makers can meet and discuss about privacy in modern technologies.

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[19] Adequate documentation on what personal data is processed; How, to what purpose and how long data will be processed for; documented processes and procedures aiming at tackling data protection issues at any early state when building information systems or responding to data breach; the creation of a Data Protection Officer (when required) who is integrated in the organization planning and operations.

[20] Necessity is justified based on objective evidence and is the first step before assessing the proportionality of the limitation.

[21] Processing of personal data must be adequate, relevant, and limited to what is necessary in relation to the purposes for which they are processed. Personal data should be processed only if the purpose of the processing could not reasonably be fulfilled by other means.

[22] Personal data should only be collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes- This means that the specific purposes for which personal data are processed should be explicit and legitimate and determined at the time of the collection of the personal data. This does not mean that, further processing for public interest, scientific or historical research or statistical purposes (according to Art.89.1 GDPR) is not considered to be incompatible with the initial purposes.

[23] Who controls the platform where data are collected from should ensure that personal data are accurate and when necessary, kept up to date, taking every reasonable step to ensure that personal data are accurate, having regard to the purposes for which they are processed, are erased, or rectified without delay. Controllers should accurately record information they collect or receive and the source of that information.

[24] Personal data should only be kept for as much as it is necessary for the purposes for which the personal data are processed. To ensure that the personal data are not kept longer than necessary, time limits should be established by the controller for erasure or for a periodic review.

[25] Protecting data against unintentional, unlawful, or unauthorized access, disclosure, or theft. This includes the necessity of authorizations to view, share and use such information.

The aim behind the adoption of such measures is the implementation of two fundamental principles in data protection, which are privacy "by design"[26] and "by default"[27] defined by GDPR Art. 25.

- Artificial Intelligence systems' evaluation in terms of ethics and social equity.
- Adoption of management techniques adequate to those risks connected to this new reality according to the risk-based approach[28].

More recently some new laws have been considered necessary by the regulator particularly because metaverse platforms had finally started to be recognized as a market, since market's double definition is fully realized in such virtual spaces:

- (virtual) *space where it is physically possible to exchange goods,* and this can happen between two avatars, as the tokens MANA and LAND on Decentraland.
- *Abstracted space whereby demand and offer meet*

This new perspective, which represent a step forward in the legal treatment of this subject, is mainly embodied into:

- Regulation 2019/1150 about equity and transparency for online brokering services users. Similarly to financial markets regulations, here the aim of the law is to ensure that all the market participants can have access to the same quantity and quality of information, specifically for those platforms where rankings between users are created by the algorithm (which code may remain secret according to trade secret legal system, while criteria for scaling positions must be known to everyone inside the platform)
- European Directive 2019/770 regarding digital contents supply and other digital services contracts. This law tries to develop what is already stated in the GDPR, adding some other rules of thumb such as the principle of *consent* (which means that in any moment user's data collection consent may be withdrawn without any negative consequence for the data subject) and legitimate interest (which tries to imagine the problematic situation where data controller's legitimate interest prevails over the rights and freedom of the data subject and declare that the legitimate interest will be generally only economic, but, in any case of conflict between Directive 2019/770 and the GDPR, the former will prevail). As far as the Italian national law system is concerned, this directive has been implemented through the modification of art 135 *octies* of Italian "Codice di Consumo" through D.lgs n 173/2021.

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[26] By privacy "by design" is meant that the platform providers must protect users from a substantial standpoint rather than from a formal one (therefore it is not conforming to the law the platform that, despite being developed according to precedent rules, does not allow its users to be protected in their daily use of the platform).

[27] By privacy "by default" is meant that data collection should never exceed what is strictly necessary for the purposes of the collection itself (as the purpose limitation principle defines) even if users don't activate to limit the collection of data.

[28] The *"risk based approach"* or "*risk based thinking"* implies the adoption of a systematic, structured and proactive approach for risk management regarding the safeguard of the rights and freedom of natural persons regarding data protection.

As always, the law tries to create imaginary boundaries between what is permitted and what is forbidden, but, most importantly, it always has a limited geographical space of application.

The normative approach here discussed is the European one, which had been analyzed through its main principles and aims since Europe is the area where Luxury and Fashion brands, which will be the topic of the next chapter, are mostly settled. Nevertheless, since it is necessary to give a more complete data protection regulatory framework that includes also United States law, it may be useful to report the following chart taken from Bloomberg Law official website[29] that offers a clear and defined comparison of the two regulatory systems and allows the speech to move to next topics without following paths that may deviate from this reasoning.

[30]

	GDPR	CCPA	CPRA	VCDPA	CPA
Q3. What types of data are protected?					
Statutory term	Personal data	Personal information	Personal information	Personal data	Personal data
Defined as	Any information relating to an identified or identifiable natural person	Information that identifies, relates to, describes, is reasonably capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular consumer or household	Information that identifies, relates to, describes, is reasonably capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular consumer or household	Any information that is linked or reasonably linkable to an identified or identifiable natural person	Information that is linked or reasonably linkable to an identified or identifiable individual
Definition excludes de-identified data	GDPR uses the term "pseudonymized," rather than "de-identified." According to Recital 26, personal data that has undergone pseudonymization-which could be attributed to a natural person by the use of additional information-should be considered personal data	Yes, but see provisions regarding reidentification of deidentified information. Cal. Civ. Code §1798.148	Yes, but see provisions regarding reidentification of deidentified information. Cal. Civ. Code §1798.148. Moreover, the CPRA authorizes the attorney general to update the definition of "deidentifed." Cal. Civ. Code §1798.185(a)	Yes, but special requirements apply to de-identified data. See Va. Code§ 59.1-581	Yes, but special requirements apply to de-identified data. See Colo. Rev. Stat.§ 6-1-1307
Definition excludes publicly available info	No	Yes	Yes	Yes	Yes
Definition excludes aggregate info	Not specified, but Recital 162 indicates that the GDPR applies to the processing of personal data for statistical purposes	Yes	Yes	Not specified	Not specified

[29] https://pro.bloomberglaw.com/reports/privacy-law-faqs/?trackingcode-cta=BLAW21107058

[30] GDPR is the *General Data Protection Regulation*, CCPA is the *California Consumer Privacy Act*, CPRA is the *California Privacy Rights Act*, VCDPA is the *Virginia Consumer Data Protection Act* and CPA is the *Colorado Privacy Act*.

	GDPR	CCPA	CPRA	VCDPA	CPA
Q5. What types of data are exempt?					
B2B-related data	No	Yes (until 1/1/2023)	No	Yes	Yes
Common rule-covered info	n/a	Yes	Yes	Yes	Yes
COPPA-related info	n/a	No	No	No	Yes
DPPA-covered info	n/a	Yes	Yes	Yes	Yes
Employment-related data	No	Yes (until 1/1/2023)	No	Yes	Yes
FCRA-covered info	n/a	Yes	Yes	Yes	Yes
FERPA-covered info	n/a	No	No	Yes	Yes
GLBA-covered data	n/a	Yes	Yes	Yes	Yes
HIPAA de-identified info	n/a	Yes	Yes	Yes	Yes
HIPAA protected health info	n/a	Yes	Yes	Yes	Yes
Q6. Who must comply?					
Jurisdictional threshold	Processes personal data in the context of activities of an "establishment" in the EU, or processes personal data of individuals in the EU related to the offering of goods and services to them or monitoring their behavior	"Does business" in California	"Does business" in California	"Conduct business" in Virginia or produce products or services "targeted" to Virginia residents	"Conducts business" in Colorado or produces or delivers commercial products or services "intentionally targeted" to Colorado residents
Revenue threshold	None	Annual gross revenues greater than $25 million	Annual gross revenues greater than $25 million in preceding calendar year	None	None
Processing threshold	None	Data of 50,000 or more consumers	Data of 100,000 or more consumers	Data of 100,000 or more consumers	Data of 100,000 or more consumers
Broker threshold	None	At least 50% of revenue from selling of data	At least 50% of revenue from selling or sharing data	Data of 25,000 or more consumers + at least 50% of revenue from sale of data	Data of 25,000 or more consumers + derives revenue or receives discount from sale of data

Once the data protection regulatory framework has been analyzed, the next step is represented by the equally crucial issue of intellectual property rights (IPRs), in particularly focusing on the industrial property rights such as logos (brands logo representation and utilization) and other distinctive signs (main patterns, colors, designs and typical motifs of a brand), paints and models (buildings and squares, avatars, landscapes designed by developers) inventions (features and activities for Metaverse's users), utility models (a specific set of utilities for a new device that allows the user a better tactile experience to feel object shapes and temperature and materials of different objects), topographies of semiconductors products and trade secrets (integrated circuit for a specific electronical use).

Evidently as it may seems, Metaverse is deeply affected in terms of IPRs law both as the virtual place itself both because the content of that place and the possibility of buying products and services in the space makes the framework even more complicated.

To have a better idea of the huge amount of documentation that such new technology brings to the market (and therefore of the huge amount of complexity), on 14th July 2022 there are 530 patent pending requests regarding Metaverse only one EPO (European Patent Office) according to its official platform for patent consultation Espacenet[31] .

Since it is not so immediate to imagine the practical implications in terms of IPRs to something different from the typical situation of avatars relating into a virtual space, it becomes necessary an example reported by the Guardian regarding US rapper Travis Scott virtual performance inside Fortnite's videogame platform. It has been defined as "*the live music event of the year*"[32], a statement that, despite being a strong one, it has been sustained by data: over twelve million players were connected on the platform during the virtual concert (the second biggest concert was another Fortnite virtual event by the music artist Marshmallow which reached more than ten million visitors) and many more are estimated to have watched via streaming platforms as Twitch and YouTube, while revenues through merchandise amounted to more than 20 millions of USD according to Forbes [33].

The performance saw a digitally rendered representation of the famous rapper that was one thousand time taller than the players in the game falling from the sky and interrupting all players' battle royale performance. During the event a new song had been introduced ("The Scotts", a new single with Kid Cudi) while Cactus Jack x Nike shoes model was promoted being worn by the giant avatar. As it is now easier to understand, this world is related to IPRs everywhere: name and rights of rapper's registered logo and connected brands, texts and sounds of songs sang during the event, rights on the design of scenography and merchandising.

Once this framework about Metaverse's relationship with intellectual property rights had been introduced, the analysis stops to the biggest problem in terms of international jurisdiction represented by the "non-place" feature of every digital space. This means that, while international law and treaties may solve a lot of real-life situations, Metaverse disputes may arise without a normative to be used as a reference, since IPRs are protected only on those territories recognized by the authority that acknowledge the right and, furthermore, for a limited time.

To conclude and to sum up all this normative analysis it can be stated that a Metaverse is a real market. Therefore:

- Both data collection and treatment may require constant adaptation during the development and diffusion of all the platforms above descripted, since data are massive, highly elaborate, and predictive, and, more important, because data are price sensitive and platform owner may exploit an unjustified surplus from the collected informations. The purpose of this system of laws is to give transparency to

[31] https://worldwide.espacenet.com/patent/search?q=metaverse

[32] https://www.theguardian.com/games/2020/apr/24/travis-scott-concert-fortnite-more-than-12m-players-watch

[33] https://www.forbes.com/sites/abrambrown/2020/11/30/how-hip-hop-superstar-travis-scott-has-become-corporate-americas-brand-whisperer/?sh=6a47861f74e7

the entire market. This issue gives Meta a very substantial push forward in that battle for platform credibility and trust, since it could be seen as a development of an already existing and worldwide spread platform as Facebook (which, despite many processes, and some of them more known as the Cambridge Analytica scandal, it is still there making huge profits and already treating huge amounts of data regarding users' interests, political, religious, or sexual preferences).

- IPRs will have to be reformulated in the language of algorithms and Metaverse which are extra national and cannot be limited by geographical boundaries or by a specified number of years of validity as it happens in the real world. Further integration between different legislations may become a necessity one day.
- Anti-money laundering is expected to become more and more relevant for Metaverse's regulators since it is already possible to exchange and convert crypto assets, offering wallet management services, collecting investments and other financial products developed by decentralized finance. Therefore, also issues of national tax duty will need a more specific normative framework to prevent big corporations to demonstrate profits online where the fiscal policy is more relaxed and evading real profits from real world business operations.
- Agreement clauses should become clearer and more transparent for every future user of such virtual platform providers, and not, as it happens, more hermetic.

CHAPTER III – METAVERSE AND NFTS AS OPPORTUNITIES FOR LUXURY AND FASHION MARKETS: OVERCOMING THE TRADEOFFS EXCLUSIVITY-ACCESSIBILITY AND CONSISTENCY-INNOVATION

3.1 The fashion market

"Fashion is not something that exists in dresses only; fashion is something in the air. It's the wind that blows into new fashion; You feel it coming, you smell it in the sky, in the street; fashion has to do with ideas, the way we live, what is happening".

This very famous quote by Coco Chanel herself should be enough to start the development of this new chapter. Fashion and Luxury are two huge markets that combined generate more than 3.000 USD billion (only the luxury market at the end of 2021 reached a record of 1140 USD billion in total value and this number is expected to grow at the end of this year and for the next ones)[34]. As it has been tried to be explained in the first chapter of this reasoning and in the following pages, as humans we have always given value to what was valuable for others, to feel more attractive, appreciated, loved. This is the power of fashion brands; therefore, a Brioni t-shirt can costs up to 300€ while the very same cotton t-shirt is sold for some 10-15 € by the mass market fashion brand UNIQLO.

As a social science, economy has concluded that humankind is irrational and therefore its main principle of microeconomics represented by the maximization of profit through "price for value" becomes an utopistic attempt to define a priori how people will behave economically speaking.

What can be said, considering the previous discussion about the shift from barter to exchange of metals as money to coinage, banknotes, finance and so on, can be entirely applied to fashion and luxury again: it is something in the air". It is the nothing more than the sum of shared beliefs that created this reality, as fashion and luxury brands are striving to story tell their heritage to convince that behind a t-shirt, there is quality, which means attention, therefore beauty, and appreciation, by others and yourself.

According to the "The State of Fashion 2022"[35] published every year by McKinsey the fashion market total value is more than 2.600 USD billion. The main categories that build the market and their estimated value expressed in dollars are:

- Womenswear (620-630 B)
- Menswear (400-410 B)
- Childrenswear (180-190 B)

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[34] Bain Altagamma "Luxury Goods Worldwide Market Study", 2021 XX EDITION

[35] https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2022/the-state-of-fashion-2022.pdf

- Sportwear (90-100 B)
- Bridalwear (50-60 B)

Even if the size of fashion market does not allow a precise definition of its main features, since brands can be extremely different in terms of products, target, strategies and so on, some general rules could still be identified. For instance, the product design or style changes frequently and drastically depending on the current popular trend.

The same product category may have a very broad price range (only one or two small different components and the application of a famous brands labels on the same product could be reflected in 10 times increase in the price, even if the cost of production is almost the same). The typical example to describe this situation are luxury fashion brands' bags and other unbranded ones, which have a medium cost of 50-100€ and are sold for a price range between 900-5000 € (Louis Vuitton "*Neverfull*" is sold online for 1500€ and Dior *"Book Tote 20'"* is priced 4200€, but similar models are sold by Furla, such as the "*Opportunity L Tote*", for 249€ and even unbranded similar model for 53€).

As far as endorsement is concerned, it is becoming a trend in the fashion market to look for talents, and of course sport is becoming the best strategy. As intuitively as it may be, fashion brands must highlight the feeling of happiness and self-esteem that wearing a t-shirt or using a perfume can cause, and icons from the world of sport are perfect to convey that feeling of victory and others' admiration. Examples could be Lacoste with currently number one tennis player in ATP circuit Novak Djokovic, Gucci with Manchester City football players Jack Grealish, Louis Vuitton with the tennis champion Naomi Osaka, Dior with ex-football player Xavi.

Unfortunately for all the brands operating in the fashion industry, coolness is temporary and properly monitoring trends is crucial to keep the pace of the never stop changing tastes of the market. This is way the year of a fashion brand is divided into two main calendars: the spring summer collection and the fall winter one, which must respect a precise schedule where every step is 6 months from the previous and the next one. Here it is reported a scheme for the year 2022:

- *Spring-Summer collection 2022 (SS22):* Everything begins in December 2020 with design initiation, in June is presented to the buyers the spring collection and in July the Summer one, then in December 2021 orders are delivered in stores and from January starts the sale of the collection, which will be discounted in June 2022.
- *Fall Winter collection 2022 (FW22):* The reasoning is the same, since the process begins in July 2021 with design initiation, in December is presented the Fall collection and in January the Winter one, then

in July 2022 orders are delivered in stores and from August the sale starts, then in January 2023 it will start to be discounted.

The difficulty for the brands stands in the ability to predict the trend development and catch the opportunity to build a collection that will sell almost the entire production so to have small quantities to discount at the end of the process.

3.2 The luxury market

According to Bain-Altagamma foundation, the most influential voice in the world of luxury market research, there are at least 9 different categories which combined create what is generically defined as luxury, here are reported with the overall value for the fiscal year 2021 expressed in USD[36]

- Personal luxury goods (218 B)
- Luxury cars (503 B)
- Luxury hospitality (85 B)
- Fine wines and spirits (68 B)
- Gourmet food and fine dining (45 B)
- High quality design furniture and homeware (38 B)
- Fine art (23 B)
- Private jets and yatches (22 B)
- Luxury cruises (1 B)

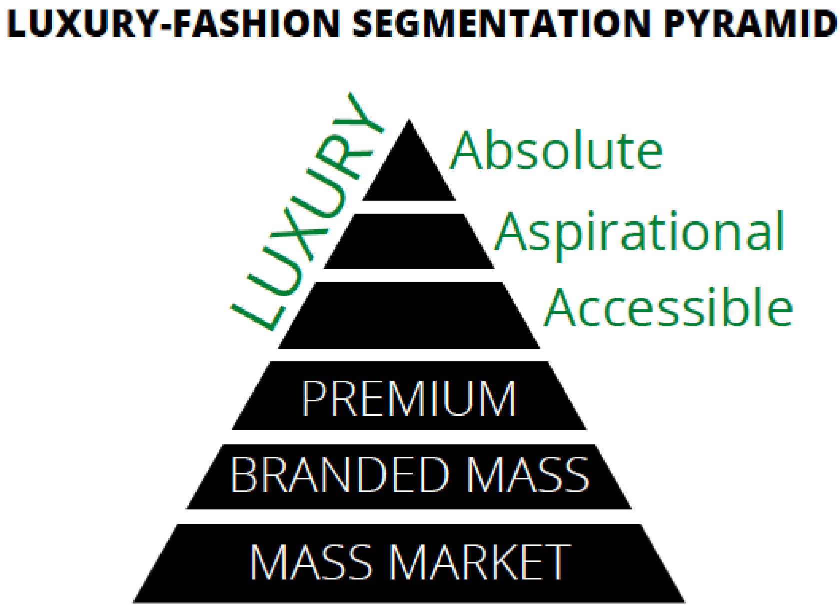
All this distinction said, it is now difficult to define luxury brands and products, because these brands always have affordable product lines in their portfolio (Hermes perfume "*Eau d'Orange Verte*" in the 100 ml bottle is sold online for less than 70 €), because the definition of luxury may change by country and region (luxury perception is different in Russia and in Italy, mainly due to cultural reasons), and, again, because the border between Luxury and Fashion is still uncertain.

An easy way to distinguish the two markets, despite not being an official rule, could be the following: when the brand constantly runs new collection to keep the pace of consumer, is always ready to newness and refreshes itself constantly, this is a fashion brand.

On the other hand, when the brand is focused on the development of its heritage, on being perceived as timeless and iconic and when its prices are very high compared to other brands, this should be luxury.

[36] Bain Altagamma, *"Luxury Goods Worldwide Market Study*", 2021 XX EDITION

To better define luxury, a market segmentation pyramid may be useful.



True luxury is composed by the top three levels of this pyramid: this is where the customer of luxury decides to spend their money, even though with evident differences within the three layers:

- Absolute luxury is for billionaires and millionaires and is the most difficult place to be for a luxury brand, since at this level purchases are done for an absolute distinction desire and the brand recognizability is not crucial in the customer decision journey. The frequency of purchases could be daily, and the amount spent per year could be even more than 80.000€. These products are exclusive (very often tailor made and unique pieces) or rarely very limited in series.
  Absolute luxury customers are the most difficult ones to target since they know how to recognize real quality, are always seeking exclusivity and are more interested in the conservation of their privileged status but are the most relevant ones since they set the standards and increase others' desires.
- Aspirational luxury is the intermediate level for rich and affluent people or even for those millionaires who quickly made their fortune. Consumption in this case is motivated by the need of associating with luxury brands values such as prestige, elegance and importance, and the frequency of purchases is weekly or monthly. Products of this segment are produced in limited or regular series.
- Accessible luxury is for the so called "aspiring class", those can buy luxury brands' products occasionally but would buy more frequently if they had the possibility. The declared aim of such purchases is to reach a higher status.

Here are reported the criteria adopted to build the pyramid above descripted.

LUXURY FASHION SEGMENTATION CRITERIA

	PRICE POSITIONING	DISTRIBUTION	MEDIA PLAN
LUXURY	Very high price level justified by the perceived value of the brand	First tier luxury locations and exclusive retail environment	Selective luxury press, events and shows
PREMIUM	Premium price recognized by consumers	Multy local proximity presence and premium retail environment	Billboarding, fashion press, events and shows
BRANDED MASS	Competitive pricing from low to medium levels	Capillary presence through retail and franchising with very high traffic in commercial locations	Mass magazines and newspapers, tv, massime billboarding
MASS MARKET	Very low price levels as the main driver of sales of the segment	Unorganized distribution through large mass retailers	No media plan

To conclude the description of the luxury world, once the different categories of luxury products have been reported and the three main segments discussed, it seems necessary to describe the main principles behind every luxury brand strategy, which, as could easily be noticed, would never work for any other kind of company in any other market. Here is the list of its main features:

- Luxury products are not comparative, therefore performance comparison and value for money principle are meaningless.
- Luxury product may not be perfect or best performer. It happens with the most expensive watches in the world (the Patek Philippe Grandmaster Chime Ref.6300A-010 had been sold for 31.19 USD million in 2019 by Christie's auction house[37]) that would never be as precise as an Apple Watch which could be bought for less than 400€ and for sure will never have enough features (or "complications") compared to it.
- Luxury product may not follow customer needs.
- Having too many customers in not the objective of a luxury product. The so called "Snob effect" in luxury is a real issue, it affects only the top segment of the luxury pyramid (absolute luxury) and is represented by the decrease in the demand curve caused by an increase in sales of a particular product, which becomes "too seen around".

[37] https://swisswatches-magazine.com/blog/most-expensive-patek-philippe-wristwatches-of-all-time/

- Satisfy all the product demand could be dangerous, and often the “sold out” strategy increase future demand.
- Purchasing or accessing the product should not be too easy. It happens for luxury watches and cars, that cannot be purchased in less than 3-6-9 months and usually only if selected among a list of applicants.
- Protecting big and loyal customers from small and occasional ones. Flagships in the most iconic street can organize private sales for some selected customers and close the doors for the entire time of such shopping session.
- Role of advertising is not selling but make it dream. As happens in the very rare spot of luxury product, it is more about the lifestyle than the product itself.
- Never talk about pricing in luxury communication, it is preferred to talk about “value” instead.
- Price increase may result in a demand increase. This is the other main effect of luxury product, the “Veblen effect”.
- Always try to increase the average price of the product portfolio.
- Never try to sell at any cost.
- The role of the testimonial is to be brand ambassadors and not advertisers.
- Keep the production locally
- Maintain full control of distribution through DOS (directly owned or operated stores) to control the customer experience).

3.3 Opportunities in Metaverse and NFTs: a model to solve the tradeoff exclusivity-accessibility

This section is going to be dedicated to the proposal of a model that, taking into the equation all the main features above descripted regarding the luxury and fashion world, could be able to transform Metaverse and NFTs from a threat to an opportunity according to an hypothetical SWOT analysis scheme.
Companies approaching these innovations may find themselves wondering about the right strategy to adopt in such digital environment, but as frequently happens in real practice, there may be more than one solution.
Firstly, because once a strategy has been implemented by a company it should never be proposed by another one, especially if these companies share the same target or the average price on the same product category, otherwise customers would perceive the second company as a cheater.
Secondly and most important, every company should have at least one feature in its DNA (name, colours, recurring themes, values, heritage, mission, and vision) that could really persuade the customers about the company authenticity and reliability, and this, presumably, will remain crucial even with avatars since, behind

them, there will be a student, a mother, a lawyer, a grandfather, or someone else, who is governed by emotions and not by algorithms.

Metaverse, and NFTs, may help these companies to solve the greatest trade-off that they have always been facing: the inverse relationship between exclusivity and accessibility.

It means that every luxury or fashion brand strives to be perceived as the most exclusive one, sometimes even the most unattainable, while at the same time it has to face the reality of being a company that, by definition, needs a profit, which, simplifying for the purpose of this reasoning, is made by the number of units sold multiplied by the average price less the sum of the expenses.

In a world where prices are already very high compared to unbranded products that satisfy the same need without a logo and expenses rise too due to inflation and production costs it is easy to understand that the solution relies on the number of units sold, or, in other world, accessibility.

The tradeoff is unsolved since the increase of sales would cause, again, the Snob effect and, in wider terms, it would bring to brand dilution, which can be defined as the weakening of the brand power in terms of positioning, which itself is the set of ideas, beliefs and hopes that customers have when they think about a brand.

There is a recent case from the Swatch group, the third watchmakers in terms of units sold according to Morgan Stanley's "*Swiss Watches Company Ranking* 2021"[38], that can be used as a successful example of a strategy that was designed and implemented to overcome the arduous tradeoff. The group, despite only few people knows it, is one of the main actors in the luxury market since it includes brands as: Breguet, Harry Winston, Blancpain, Omega, Longines and Jaquet Droz.

[38] https://professionalwatches.com/morgan-stanleys-top-20-swiss-watch-company-ranking-for-2022/

On the last 26th March 2022 the group launched a collaboration between its two iconic brands Swatch and Omega called "*Bioceramic Moonswatch Collection*", where the two partnered to develop eleven unique models inspired by eleven missions on the planets that compose the solar system, the sun itself and the moon.

The hype that the company had been able to create led to an unprecedent demand for the brand Swatch, which is the main brand in the partnership since these watches can be bought for 250-350€ in some selected Swatch stores and not in Omega boutiques nor online.

Soon after the collaboration had been announced, Swatch fans from all over the world started crowding outside the stores to be the first one in the morning and have the possibility to buy the watch.

After the first day of sale the collection was already sold out in almost every store in the world, due to an unprecedent demand combined with a deliberately reduced production.

Associating two brands of its portfolio who serve two different demands , the group had been able to combine the exclusivity of the brand Omega (its models are sold for thousands of euros) with the accessibility of Swatch (which models can easily be bought online for less than 100 €), increasing the interest in the cheapest plastic watches without diluting the heritage of the brand that developed the "*Speedmaster*", the iconic model that during 1969 measured time on board of the "Apollo 11", landed to the moon and came back on planet Earth.

At July 2022 the collection is still unavailable, but the group has announced on its official website that it was not a limited edition and that it will come back soon in stock.

The striking idea was to create this huge hype behind the product for the first months since the collection cannot be found, which perfectly fits the principles of a luxury brand as Omega, and to regularly produce it and sell huge amount of it in the next year at affordable prices which is aligned with the mass market Swatch brand strategy

Despite being an incredible strategy, which likely will have a positive impact for the group, it cannot be replicated many times and, as already stated before, if another group, for instance LVMH, decides to replicate a similar partnership between its brand Dom Perignon and Veuve Clicquot it may now appear to be too commercial and risks to be refused by the market.

3.3.1 Customer Proximity

"*Welcome to our exclusive world*", this could be the motto of every luxury and fashion company that decides to implement a structured strategy into metaverse and NFTs.

"Welcome" because, for the first time ever, especially for luxury brands, everyone can enter this world, while "*exclusive"* because the brand is still striving in the real world to keep its high level of exclusivity to maintain the right positioning in consumers' minds.

I decided to start from the "customer proximity" opportunity, which is going to be better analyzed and explained in conceptual terms very soon, since this could represent a real revolution for all those companies which, due to their heritage, prices, and once again, exclusivity, have never been reached by a mass market, but, for definition, by a niche one.

The perfect example that easily explains why this virtual space could help these brands in getting closer to billions of potential customers (Facebook, the first social media platform, has 2.91 B monthly active users[39], and even if just the 50% of this population will move to Meta, it would be a market of 1.455 B people) is the following scenario. A young French couple formed by the imaginary Pier and Heloise is walking in Paris, in Place Vendome and more specifically in Rue del la Paix. While walking hand in hand the two lovers pass by some of the most famous jewelries of the city as Boucheron, Cartier, Chaumet and Breguet.

The two lovers are astonished by the magnificence of the stores and particularly impressed by the luminesce of some colored diamonds exposed behind the armored glass showcases.

Despite their interest and curiosity for the precious gems, and most important despite their desire to enter inside the stores and just have a look around to dream together about the possibility of buying one of these diamond rings one day, they just walk by and don't ring the bell of the locked doors. They had not organized any appointment with the sales assistants of the brands and are not properly dressed: they feel it is not the place for them in that moment, and the two muscular security men at the entrance wearing a black suit don't make that feeling drop.

This is what happens with all luxury brands, and it is defined as the typical law "traffic", which is the number of people that enter inside the store in one day. Usually, this market is characterized by another key variable: the conversion rate, which instead express the percentage of those that, once entered in the store, had made at least one purchase.

Therefore, it seems necessary for those brands to be less exclusive and more "inclusive" at least in such virtual world, and here are reported some proposals which may help both customers and companies in a "win-win" relationship:

- BRAND META-LOUNGES. The idea is to graphically develop branded spaces such as lounges or cafes where avatars can meet and spend their time in the Metaverse. The atmosphere would be the one of some friends sitting on a sofa in front of a table with their virtual coffees talking about next week report's deadline or about last night football match result. Inside an hypothetical Fendi meta-lounge the walls would be painted in the brand iconic "roman yellow", and the same would be for the coffee

[39] https://www.websiterating.com/it/research/facebook-statistics/#chapter-1

mugs or other decorations of such space. Avatars could meet there and decide to have a private room inside the meta-lounge or have their table in a bigger room where other "customers" are sipping their virtual frappuccinos. These places could be used also by a single avatar who may be interested in knowing something more about the brand, therefore, just looking at one of the various painting on the walls a description on the history of the dress there reproduced could be red or, even more interesting, a video could be used to story tell the work behind an advertising campaign, the launch of a new collection, the production phases and so on.

Another possibility, since this is the trend now, is focusing also on gamifications. As it will be better explained later, young customers are becoming the first customers for luxury fashion brands, and, as intuitively as it may seem, young people today love videogames. Knowing this, short and easy games could be developed where the avatar itself is the main character and all the plot story of the videogame is based on the brand story itself, so that the brand can directly convey its values without intermediaries and the user itself, once into the game, will have to explore and immerse into the brand world.

- REWARDS THROUGH COLLECTIBLES. To be as much inclusive as possible, companies may reflect about the opportunity to make some virtual gifts, both to ease the access to new customers into their virtual spaces and, more important, to retain them once they are inside. Rewards, instead, could be given for those avatars which have made a certain purchase online or in store, or for those that have completed the videogames or a set of videos about the brand.

  Succeeding in such activities would unlock some brand virtual objects such as clothes to be used online and wore by the avatar itself.

  A company that already last November 2021 had understood the opportunities related to the development of collections for virtual characters is Moncler. The Italian giant developed with the designer Matthew Williams the "6 Moncler 1017 Alyx 9SM" capsule which celebrated the conflict between light and darkness and had been released on the day of the longest lunar eclipse of the century. As the designer admitted "*digital clothes, not following the same rules of real world, allowed us to* *develop a series of jackets and trousers that changed their colors depending on the videogame character altitude during the time play"*[40].

The avatars that will wear these jackets during the game impact the Moncler brand in two ways: to begin with there is the increased recognizability of the brand in the younger generation (the iconic Italian logo will be reached by 350 millions of young players[41] who may become possible future customers since they have already "wore", even if online, one of the brand product) and the diffusion of the idea that Moncler is a brand careful about the environment (both because an online collection does not imply the use of water and fibers and because this particular collection is related to moonphases).

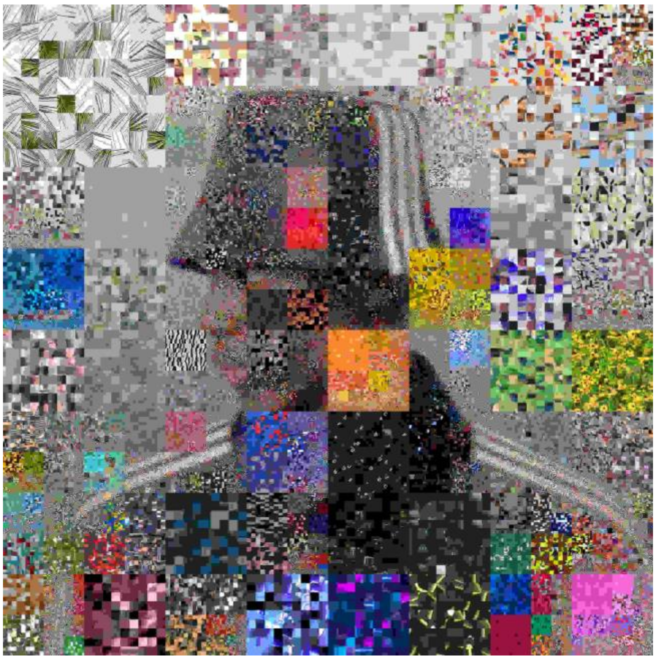
This is a successful strategy from the brand whose aim was evidently to maintain its positioning of high performance in heat control, historic quality of plumages and constant improvement of technologies.

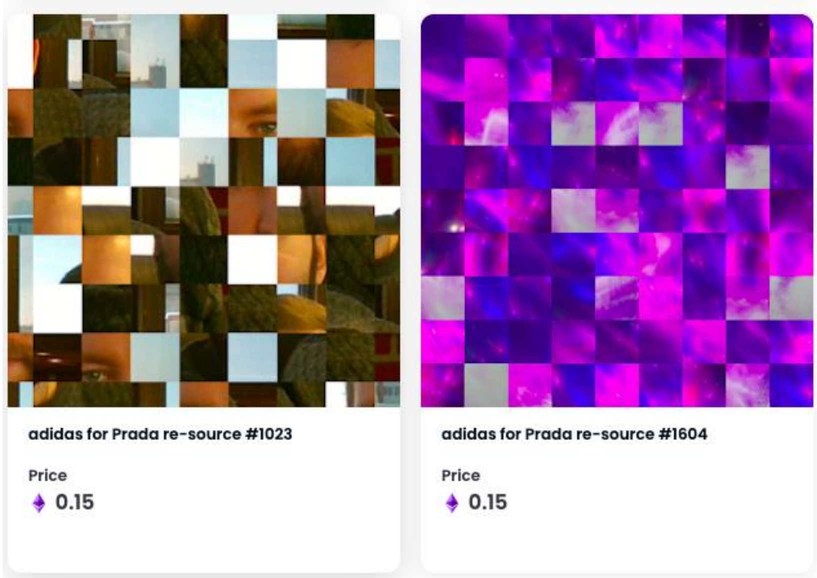
- CO- CREATION. Another huge opportunity could be the co-creation (brand and customers together) of a collection of NFTS or other collectibles since that could ease the until now cold relationship between the two parts and help both to better know each other. The brand would get precious information regarding the tastes of its audience in the NFTs world, while customers would learn more about the brand DNA, already defined as the sum of logo, main color, typical motifs, and values. This was the idea behind the *"Adidas x Prada Re-Source project"*. For this project the two brands invited their collective audience to contribute unique anonymized photographs: more than 3.000 community sourced artworks had been minted as NFTs and compiled as tiles in a single mass-patchwork NFT by the well-known creative coder and digital artist Zach Lieberman. The strength behind this project is that the contributors maintained full ownership rights over their individual NFT tiles and the final NFT had been brought to auction and all proceeds had been divided as following: creators 15%, Zach

[40] https://www.pambianconews.com/2021/11/22/un-lusso-sempre-piu-da-videogame-anche-moncler-si-allea-con-fortnite-332221/

[41] https://www.everyeye.it/notizie/giocatori-fortnite-2022-battle-royale-famoso-594311.html

Lieberman 5%, Slow Factory (a nonprofit organization working to create education driving meaningful solutions and inclusive communities) 80%.





"As an interactive, dynamic platform, the project enables the community to contribute to a large-scale artwork through play and discover the transformative benefits of web3, co-creation, digital ownership and NFTs. The project facilitates the education of new communities from art, fashion, and beyond — while rewarding participants for their creation with a share of the final artwork auction sale". This is the project's description that can be found on the official website created for the collaboration.

- META-FACTORIES. The idea is the following: replicating in the virtual space of the Metaverse the industrial district where the most famous brand in the world creates their unique products. Some of these places are visited every year by thousands of fans who admire the passion, the history, the knowhow which build the brand equity. Two examples may better explain this proposal. The first one is the Ferrari industrial district of Maranello, already organized in different buildings that could easily be replicated to offer the same experience but virtually: the famous "Ferrari Museum" where are exposed helmets, race suits and old models that won one or more Formula 1 Grand Prixes, the famous "Cavallino" restaurant where the founder Enzo Ferrari used to eat almost every day, the "Wind Gallery" designed by Renzo Piano where new models are tested before being released in the market, the "Fiorano Circuit" where competitions and other pace tests are regularly made. The second place that could not be exempted from this revolution due to its uniqueness and worldwide fame is the "Solomeo Village of Cashmere and

Armony". This is the place where the Italian most famous Cashmere brand Brunello Cucinelli originates its masterpieces. What would be amazing is, through an accurate reproduction of the beauty, the calm, and the passion of this lands in the virtual space, to give to avatars the possibility to walk around and make experiences. The village is divided into three main areas which are the "Harmony Village", the "Forest of Spirituality", and the "Park of Beauty". These places protect the history of the Caste, the Church, the Theatre, the Philosophers Garden, the Academy, the Canteen. An incredible experience would be virtually walking in these lands accompanied by Brunello's avatar itself, who may explain to all the online users his world made of high-quality fabrics directly imported from Himalayan sheeps, delicately worked, and classically designed. The opportunity in this case relies in the possibility to show how the brand works even to someone who is living in Shanghai or Philadelphia, directly transmitting the values behind brand products.

3.3.1.1 BVLGARI: the futuristic Rome and Zepeto

The brand Bulgari, from 2012 part of the group LVMH, is worldwide known and perceived as one of the most exclusive, expensive, and inaccessible fine jewelry companies. According to last ALTIANT report[42], indeed, the brand is third in the top-of-mind ranking (after Cartier and Tiffany's dominance). Such a positioning implies that, together with being synonym of fine jewelry, the brand is synonym of exclusivity and high quality, therefore there is no surprise that, as the report explains, the 68% of the purchases are made in brand's DSO (directly operated store). The act of purchasing, in these cases, is itself part of the luxury experience that every customer who spend these amounts requires. Once inside the store one or more sale assistant always welcome and help the customer, trying to amaze him or her through the colored reflections of their sometimes-unique pieces. This is an experience to never forget for the elitist and lucky group formed by BVLGARI customers. For the others, there could be something close to it, represented by the brand Metaverse experience. The company is operating in that direction through two different strategies: developing and managing its own platform and strategically entering Zepeto's one.

- The BVLGARI'S owned platform had been presented during last June VivaTech 2022. It has been developed by the Experiency studio, specialized in experiential design and part of the giant Spencer & Lewis, together with 101games team using Epic Games' Unreal Engine 5 (a technology which allows an increased realism of the experience in the Metaverse through new features of lighting of spaces). The atmosphere is the one of a glorious and futuristic Rome (since roman monument patterns still represent the main source of inspiration for jewels' shapes).

[42] https://altiant.com/fine-jewellery

Bulgari Group CEO Jean-Christophe Babin, in one recent interview about the owned Metaverse platform, has admitted: *"Continuously expanding the vision of our creative universe is part of our nature. This is the beginning of a new path that pushes our customers and our possible customers to share, through the Metaverse, a completely new luxury experience, inspired by our original value of Italian excellence"*

- Entering ON ZEPETO is probably the most recent decision by the brand, that announced it only the last 1st September 2022. Since the biggest Asian Metaverse platform had already been presented in the previous chapter, what is relevant to underline in this section is that this is clearly a strategical move by the brand, which aim seems easy to define: attracting young, digital, and Asian customers into their world of classical ancient beauty.

The partnership between the LVMH brand and Zepeto is centered on the BVLGARI "Resort 2022" collection, inspired by the rose gold shades of summer skies during sunset. To test the platform the brand opened last August a pop-up store in South Korean city Jejum, inside Parnas Hotel, which had been replicated inside the platform together with the Cafè, since the goal is to offer an experience as much similar as possible compared to the physical one. A virtual experience that had been amplified by some entertainment features, such as the possibility for the users to unlock digital accessories from the Resort 22 collection or other iconic models as B. zero1, Divas' Dream and Serpenti to wear their avatars. Moreover, events will be organized to get the customers together: the first one had been a live concert organized with the global ambassador of the brand Lisa (the Black pink singer), that offered many interactive experiences such as the possibility of taking selfies with her.

3.3.2 Targeting Gen Z through digital experiences and videogames

The second opportunity that luxury and fashion brands should not miss to catch is to target the digital native generation (Gen Z of course) trying to talk to them speaking the language of the videogame, and way better, to make them immerse in future videogame development into the Metaverse.

Gaming is already a massive industry, and it is growing more and more every year (its global value is estimated to be more than 250 B of USD in 2021[43] and it has a double-digit growth rate in every region of the world). It is becoming the most popular pastime for younger generations and modern consumers are engaging with games in ways that few years ago were not even imaginable.

The results obtained by the "*Newzoo's Videogame Generations Report 2021"* all bring to one main conclusion: there are other reasons behind the game itself that capture young players, such as socialization, competition, and creation of something together. In that sense the future looks bright and transformative thanks to emerging technologies and Metaverse itself, that will reinvent the gaming market into an enormous virtual space that empowers entertainment and social interaction. The research behind the report had been conducted between January and April 2021 on a sample of 72.068 participants, which were mainly from Gen Z and Millennials (Gen Z 22.652, Millennials 26.123, Gen X 16.854, Baby Boomers 6.439) and from 33 different markets from North America, EMEA, APAC and Latin America.

[43] https://financecue.it/valore-gaming-numeri-mercato-crescita-fatturato-abbonamenti/33261/

The first analysis that the report offers is the one related to the engagement of players with videogames, finding recurring patterns in each generation. There are at least four main conclusions in that sense:

1. Gaming takes a larger share of leisure time with younger generations. The incredible result is the following: 25% of leisure time of Gen Z (and surprisingly 21% for Millennials) is spent on playing videogames, and, if this percentage includes also the time spent on social network and streaming of movies and tv series it rises to 60% for Gen Z and 58% for Millennials.

2. The younger the generation, the more diverse their gaming engagement. As it is reported, older generations tend to play videogames more casually and typically on mobile to fill time. In contrast younger generations tend to engage with videogames in many ways, such as watching game related content on YouTube, discussing about latest news in community spaces, listening to dedicated podcast and discussing video games with friends.

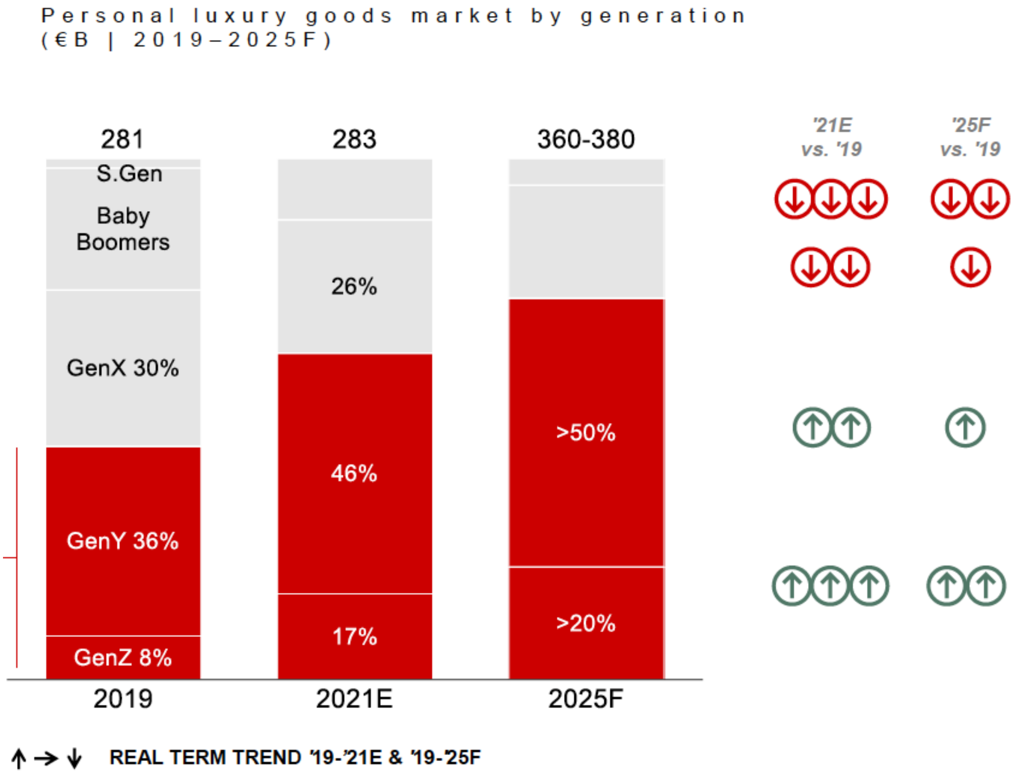
3. Most people play to unwind, but younger generations have many motivations. Even if across generations the main aim of playing is surely unwinding, the rising of multiplayer games create the possibility of meeting with friends online, defend a medieval castle together and achieve a shared result.

4. The older the generation, as intuitively it may be, the less time is dedicated to playing game every week. On average gen Z spends 7 hours and 20 minutes playing games, half an hour more than the Millennial average, meanwhile Gen X plays 4 hours and 25 minutes per week and Baby Boomers only for just 2 hours and 30 minutes.

As far as these conclusions are concerned, it can be said that gaming has evolved over the last decade to become more than ever an experience, encompassing playing, viewing, and socializing. The next stage, both for gaming and for internet itself, is the Metaverse. The desire of these virtual places can be already seen behind the lines of the recent trend to unlock creative spaces and identities for social experiences inside videogames. What Metaverse will be able to add is the non-gaming experience, such as the virtual concerts above descripted and the fashion shows into the game itself.

This last report had been analyzed to sustain the proposal of videogames as a mean to reach the Gen Z audience (in other words it answered the question "*how* to get to them?") while it is still unspecified *why* this generation is going to be fundamental for luxury and fashion brands, and this task is going to be assigned, again, to the "Altagamma Bain, "*Luxury Market Monitor*", 2021".

The chart reported below immediately explains the main reason: this is the generation that, combined with Gen Y[44] is expected to represent more than 70% of the market and will contribute more than 180% to the total growth of the luxury market within 2025.



This social media scenario had been recently enriched by the lates news coming from research conducted by Pew Research Center[45], that surveyed 1316 U.S teens through Ipsos from April 13 to May 4, 2022.

Here are reported some of the main findings of the analysis:

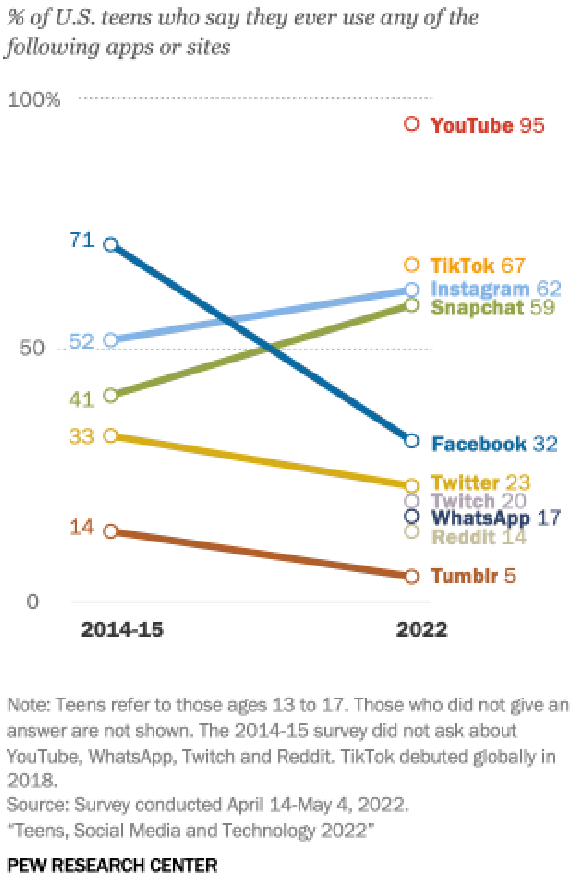
- The social media landscape had seriously changed since 2015, when Facebook dominated the market. TikTok raised and the same happened for Instagram and Snapchat, while Twitter and Tumblr saw declining shares of teens who report using the platform.

- The difference in teens' social media choices is notable: teen girls are using TikTok, Instagram and Snapchat while teen boys are spending much of their time on YouTube, Twitch and Reddit.

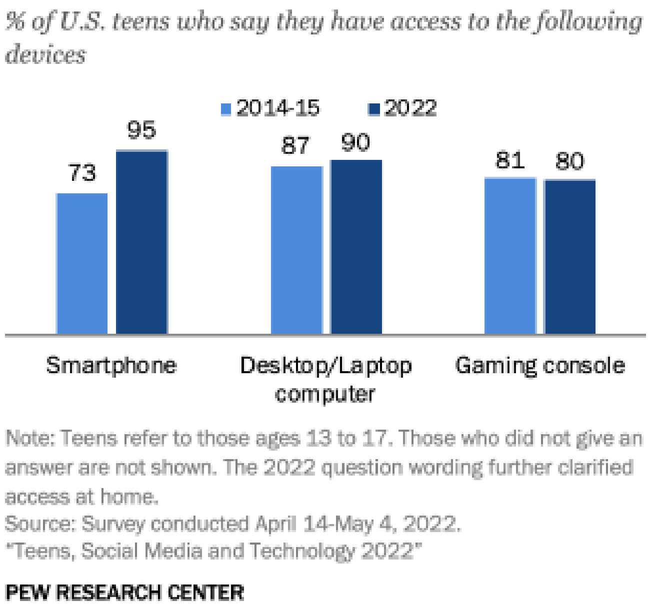
[44] Gen Y and Millennials are used without distinction, since they both refer to the ones who born between 1972 and 2012, and the same reasoning applies for Gen Z and Zoomers, since both refer to the ones who born between 2010 and mid 2020s

[45] https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/

- The frequency with which teens are online on these platforms is becoming alarming: 35% of the interviewed admitted that they are using at least one of the above listed platforms "almost constantly". This is the so called "FOMO", an acronym used by modern psychology to define the fear of missing out, meaning the fear of missing something that had just been uploaded on social media. It should be noticed, in advance, that the 46% admitted being almost always online (so not being active refreshing any page or chatting with friends, just leaving the page open on the device), a percentage that almost doubled from the 24% of the previous research in 2014-2015. This implies that a lot of them are online while doing something else meaning that their attention is split into two different activities almost all the time (watching a movie, listening to music, or walking are activities that are now done while being online by this 46% of teenagers). It seems useless to highlights the damage in terms of concentration and ability to focus that this will cause.



- The percentage of teens that have access to a smartphone or a device is around 95%, another huge growth from the 73% registered in 2014-2015. What statistically almost remained unchanged is the access to desktop or laptop computer and gaming console.



This is the scenario that company should study to better target this generation, which is, as just evidenced, an "always on" generation, who need to unlock the smartphone, open the social media app and spend time there. If companies will understand the reasoning of a teenager that via some clicks can purchase an item just seen on Instagram or on a TikTok video, it can have an advantage when it will have to build its Metaverse infrastructure, made of different pages, links, activities, promotions, models and so on.

3.3.2.2 Burberry's NFTs: Blankos Block Party

The English brand that became legendary for its "Tartan" motif decided to enter the world of NFTS and videogames last 4th August 2021, when it announced its partnership with Mythical Games to launch a NFTs collection in their main title (Blankos Block Party). In other words, they announced the first case of ownership in gaming. This game is s a multiplayer party where the characters are the "Blankos", digital vinyl toys on the blockchain, therefore providing proof of verified ownership and authenticity. The first character released had

been" Sharky B", an NFT that can be purchases, upgraded, and sold inside the platform marketplace, that represent a shark adorned with Burberry 2021 summer collection "TB Summer Monogram" inspired by the brand's Animal Kingdome

When interviewed about the project, Burberry CMO (Chief Marketing Officer), said*: "Gaming is a unique space for us to test and learn and trial digital innovations that embody our values and celebrate creativity amongst our communities. Partnering with Mythical Games feels like a natural next step, going beyond our in-house games by bringing the Burberry universe into an established environment. It has been fantastic to work so closely with Mythical Games to bring this new customer experience to life."*

One year later, in June 2022, due to the success of the previous collection, the two companies agreed to release the second drop of "Burberry x Blankos Block Party", this time, adding new bespoke social space for its community where players can come together and enjoy a tailor-made experience. The second drop includes Burberry branded in-game accessories, as boomboxes, TB sliders, horseshoe necklaces, and the so called "Shellphone", a seashell-inspired smartphone that can be added to the online accessories' portfolio. Moreover, to reward those loyal customers who already got the Sharky B first edition, companies decided to gift them with a free Monogram bucket hat accessory that must still be released. What is changed, of course, is the character: to replace Sharky B there is now Minny B, a kind, gentle and cheeky unicorn, who models art and creativity to evoke a sense of limitless possibility. He can explore new places by flight through his white wings and has magical qualities. The bespoke social space inside the game is called "The Oasis", where players can discover a futuristic haven inspired by natural world, in particular beaches equipped with branded sailboats and sun loungers inspired by the latest Burberry destination takeovers in Saint Tropez, Korea, Singapore and Ibiza.

3.3.3 DSE – "Digital Shopping Experience"

Brand from luxury or fashion markets may find in the Metaverse the opportunity to replicate their physical store in a digital dimension. Words such as flagship store, city store, concept store, corner, shop in shop, temporary store, seasonal store, could become relevant also in the digital world of the Metaverse, where the same logic behind any of these categories may still work. It seems unnecessary to highlight the following detail: a real store opens in the morning and closes in the evening, some days of the year remains closed (due to restructuring, holidays and other issues that may affect every real store in a real street), and except from mall stores, when it rains traffic drops. A store in the Metaverse is a revolution in that sense: it could be always open, 24h every day (for sure some maintenance will be needed but it is always a matter of hours, as it may be needed an update). Here is needed a clarification: while for fashion store the shopping moment is important, for luxury brands it is a real experience, and this should not change inside Metaverse. Here are reported two different shopping scenarios: the former in fashion store such as Zara, the latter in a luxury one as Bottega Veneta

Entering a Zara store means being dazzled by literally hundreds of different models exhibited accurately on so many shelves and clothes display cabinets and there is often some crowd that makes it even more noisy and confused. Once the customer finds a pair of blue jeans that believe could be perfectly matched with a forest green jacket bought some days before, he checks in the entire pile to discover that his size is missing, so he looks around to find a store employee that may help him. He finds a young lady in the crowd who is putting a pile of sweater back in order and ask her for the size. "*Despite it is not my duty, I will check, wait me here, don't move, please"* she answers and takes the stairs. After a few minutes she comes back with the right size, so the next phase is the try on in the dressing room. After queueing for other five minutes the customer enters in the little room where he watches itself portraited in the mirror and a pair of t-shirts from someone before him left on the stool. Fortunately, the blue jeans look good on him and decides to make the purchase, which is the final step. Each floor of the store has an entire area for cash machines only (more than 5 per floor plus one dedicated to changes of size, colors or even models). After the payment of 39.99 € the customers find the exit doors and is back in the street, with a light brown paper recycled bag in his right hand and the confusion of the crowd behind him.

In this case everything worked: despite the chaos created by a crowd that moves every item exhibited he had been able to find the desired product, the dressing room was bare but had enough space and the mirror was big enough to watch its entire figure standing in front of it, the lady at the cash machine unhooked properly the alarm system on the label of its new pair of blue jeans. It was not perfect, but it worked.

Entering a Bottega Veneta store means being welcomed by a dedicated shopping assistant who waits you smiling at the entrance after someone outside the store had opened you a very big and heavy door. The SA presents itself and guarantees she will help you as much as possible and she will be there for any needs, information, or clarification. She will leave you alone and free to explore the store, but, if asked, she is also ready to guide you to a complete tour inside the store that follows a fixed itinerary. This happens because luxury products are more frequently bought as a present for someone else (usually as anniversary, graduation, birthday gifts) and when these customers enter in the store, they don't know already what they want to buy but will decide during the shopping experience later. She will guide you to the shelves where the iconic Bottega Veneta's "*Intrecciato*" bags are perfectly exposed by size and colors, to the sunglasses made through licensing with Luxottica, to the night dresses wore by brand green mannequins without head. Everything you want to try will be carried to your dressing room, which is double size compared to non-luxury stores, and usually is equipped with a stool, a small but very comfortable armchair and sometimes a regular size sofa. For specific customers, the so called "top spending customers", the level of the service is even higher, as one or more SAs will bring you to a private area of the store where Champagne will be served together with a small buffet, or, in very rare cases, they will close the store for a private shopping experience where nobody else can enter and all the store is at your disposal. Going back to the example of a customer needing a present, once the right item has been found among many models that the assistant took from the shelves so that you can hold in your hand, touch and smell, since prices are often not exposed near products (and even if it's illegal they are frequently missing also inside shop window under the false explanation of "windows still in fitting"), the fateful question is asked: "how much does it cost". If the customer has good taste and the question was referring to a blue "Mini Handle Intrecciato", the kind lady without checking prices anywhere but knowing all of them by heart will answer: *"the value of this wonderful model is 3900 €".* The bag is beautiful, and it must be an important gift, therefore the customer decides to buy it. The shopping assistant congratulates with him for such an incredible gift, guarantees that such a bag will be immediately loved by the lucky owner but, in any case, it can be changed in every Bottega Veneta store just showing the courtesy ticket. She also leaves the customer a personal business card with her phone number in case of any further help. Once the bag is wrapped in another soft cotton branded protective bag, it is put inside a green hard paper case and then inside a very big lucid green shopping bag, which everyone outside the street will immediately recognize. While holding the bag the customer is accompanied to the door, which again will be open from the outside and the customer is greeted by the smiling assistant.

It has been a structured and well-organized experience where every sense had been activated: brand fragrances are vaporized through air conditioning system in the store, music is softly reproduced in every room by many different speakers properly localized, colors and store design capture the sight of those who pass through the entrance door, different materials are presented to the customer to be touched and, as already said, food and drinks are sometimes offered to stimulate also the taste.

Here the huge opportunity both for luxury and for fashion brands is represented by the possibility of designing a tailor made "digital shopping experience" inside every store opened into the Metaverse that could be perfect in every detail, reinforcing the retail experience of luxury brands and deeply improving the typical shopping session of a fashion one. A prototype of the structure in which this digital experience could take place is the following.

1) INTRODUCTIVE PHASE. This is when and where the customer (avatar of course) is welcomed inside the digital store. It could happen inside a virtual room where walls are animated with brand colors and main motifs with the motto above introduced: "welcome to your exclusive world". This is where, if the avatar had not authorized the data sharing with third parties in the metaverse introductive setting, the brand would ask him some information in order to guarantee a better experience according to its age, nationality, needs, previous purchase with the brand in real life or not and so on.

- Now if the virtual store in this example is a “meta-flagship store” (such as it could be the Bulgari building inside one of the main streets in Decentraland or in one of the main squares of Meta) the customer would be asked if he wants to virtually enter inside into one of the flagships real stores from a list of cities which had been scanned to be reproduced inside Metaverse. This may be important for those customers, again the top spending ones, that could not make it to go in their favorite store in their street and still would like to feel at home also in their digital shopping sessions.

- Otherwise, the experience would be inside a digital store, which could be designed to surprise and amaze the customers also through architectural opportunities that could not be possible in a real-life store. Just as food for thought, every store could become a game itself, a maze, or a prison from which to escape, a castle or an ancient ship full of gold and diamonds to conquer. Here the only limitation is represented by imagination. This could be an incredible way to entertain Gen Z population which is not interested in the history or the heritage of the brand as much as desires to have fun and collect new experiences. For adult customers the scenario proposed could rather be a path in Umbrian countryside for the digital store of Brunello Cucinelli where every animated three, from the highness of its centennial wisdom, could guide the customer to a short journey towards its inner peace, and that would be offered by a brand that made values its main asset. Another and last scenario that could sediment in the reader mind the prospective of such revolution would be entering into Breguet meta seasonal store near a lake inside Fortnite. Here the avatar would be immersed into an ancient watchmakers shop where an old avatar representing Abraham Louis Breguet itself, tired and seated on a wood stool near a fireplace and surrounded by hundreds of small screws, gears and hands would explain, as a grandfather would do with its grandchildren, how he invented the “tourbillon”, the rotating mechanism that is currently catalogued as one of the ”grand complications” and reproduced in some of the most expensive Swiss made watches in the world.

- In any of the previous case there is another setting that the customer could decide for its shopping experience: it could be private or shared. Coming back to the example of the customer that enters a luxury store to buy a special gift, it may happen that a group of friends decides to buy a Montblanc pen for one course mate that is going to graduate next week from a very prestigious university in Boston. Unfortunately, for the upcoming days it is impossible to match everyone’s needs and go together to the city store, therefore they decide to meet online on a rainy Wednesday night and have a shared digital shopping experience.

2) BRAND ON STAGE PHASE. For all the time spent inside a store in the Metaverse the brand must be the main character. Portraits of iconic models that made the history of the brand ("*Kelly bag*" for Hermes, "*Serpenti"* bracelet for Bulgari, *911* for Porsche and so on) should be displayed on the animated walls, fashion's show videos reproduced everywhere with all the celebrities that embodied the brand during their careers. A new role inside brand sales team could be created: the Metaverse sale assistant (MSA), which is part of the team employed inside the Metaverse division and has the hard task to replicate inside the virtual store the same level of kindness and service that a customer finds in retail stores. Since an avatar could not be used to try on clothes for real life, it could be possible to create a digital fitting room where the technology of the Metaverse and the one of augmented reality could be matched. In this room the customer could see reflected on the mirror his real features and through augmented reality clothes could be tried without having them physically. After the fitting the customer could decide to buy every item tried for its avatar or in real life, to pay in that moment or directly in store, where real shopping assistant would be previously advised about the order and the pick-up date.

3) AFTER PURCHASE PARTY. Once a purchase had been made in the digital store, especially if the customer buys a collectible for its avatar, a little party will be offered by the brand. Dance music will start to animate the entire store and for as much as the customer want there will be the possibility to dance, alone or with its friends in that dedicated space. The entire digital shopping session and the party itself will be already recorded and an after movie will be sent to the customer with all the links to share it on the main social media platform. The idea behind the *"after purchase party"* is to create a moment after the purchase itself that could not exist in a real store where, once the payment is approved by the card circuit, the shopping assistant could only thank the customer for its visit, smile as happily as possible and accompany him to the door to say a final goodbye which most of the time is, actually, a farewell. This is a new touchpoint in the purchasing experience that could help both the brand and the customer to escape from the formality of the purchase and the goodbye and transform it in a moment to celebrate together.

3.3.3.1 Givenchy Beauty House on Roblox

Givenchy, the French company founded in 1952 by Hubert de Givenchy, is one of the most renowned French brands both in the clothing industry and the beauty and cosmetics one. It's from Givenchy the iconic black sheath dress that in 1961 Audrey Hepburn wore in "Breakfast at Tiffany's", as the same could be said for the iconic fragrance "*l'interdit*".

The brand went live on Roblox Metaverse the last June 2022, securing a place in the history of books as the first immersive beauty experience of the platform, and compared to current possible projects from other brands, it seems to be a very solid one. The “Beauty House” is a digital kingdom developed by Swedish developer studio “The Gang”, with its castle (a digital replica of the brand’s late founder one) and fields, where players cannot merely buy cosmetics at the vending machine at “*L’interdit station*”, but explore the flowery gardens, make up the avatars with the best products of the house and participate to beauty contests, dance on the “*Irresistible dancefloor*”, go on a quest for the hidden 4Gs inside the property.

I believe that in September 2022, from a financial standpoint., Givenchy Beauty House is the best project implemented by a fashion or luxury brand into the Metaverse. It represents the first attempt ever to create a virtual place where customers can buy products in an uncommon way which does not give the perception of being created to make money out of users. It is organized as an ecosystem made of heritage, innovation, shopping opportunities, experiences, entertainment, socialization. The opportunity of selling items in an environment fully designed by the brand, where also the sky, the light, every color, and event is studied by the company, should be exploited by all those companies who find themselves struggling to offer innovation in the real world. Such a place would give to the user the perception of being in a magical place where time had stopped forever, where everything is possible, accessible, available, beautiful, organized and made for you. Moreover, such places could be reached every day by hundred thousand of avatars, a target that even the most congested physical shopping centers of the world could never reach.

3.3.4 Worldwide Storytelling Consistency

This section is about a fundamental issue for every company that aims at a durable presence in its reference market, an issue that becomes even more relevant for luxury and fashion brands: the need of consistency. It happens that the credibility of every company (which heavily contributes to what in marketing is better defined as "positioning") is made by thousands of situations that build and sediment a particular image in consumers' mind, and in some rare case a real dream, a deep desire, an unconscious ambition of owning one of the brand's products. *"Give to a child a white paper, some colored pencils and ask him to paint a car. He will make it red."* This well-known quote by Enzo Ferrari helps to demonstrate the power that some brands (and their main feature, and surely color is one main link when thinking about brands as Valentino, Chanel, Fendi) have both on customers and those that dreams to become customers. Once the brand succeeded in creating a particular idea about its main characteristic, the easiest way to maintain that portrait pure is being consistent. This is maybe the hardest part, because there are so many occasions where credibility can be lost that a constant surveillance becomes a necessity. Still in the car market, an example that may clarify this situation is the "*Lancia*" brand, which back in the 70s was one of the first car manufacturing companies in Italy in terms of units of cars sold and it was commonly considered the prototype of the "fast car". Today, after years of failures, the brand is known only for its "*fashion city car*" (as its CEO Luca Napolitano loves to say) Lancia *Ypsilon*, which price starts from something around 13.000 €. The brand was unable to predict that the perception of customers is deeply influenced by the strategy of the company itself, and, especially for luxury, it is necessary to constantly increase the average price of product, surely not the opposite.

The issue of being consistent becomes even more relevant for the brands that are analyzed in this short discourse, since these are mostly multinational companies. This implies that, working in every main city of the world, brands as Gucci, Dior, HM, Zara, Nike, Adidas and many others, face the hard task of being "*glocal*", which means that they have to be able to carry on their activities in every part of the world without interrupting their constant adaptation to the needs of different cultures, tastes, holidays, expectations, and even interpretation of the brand. The difficulty here is represented by the need of being global in terms of reputation, sales, markets, competition, marketing, production and at the same time being local in terms of tastes, traditions, opinions, beliefs, values, in one word: culture.

Therefore, the opportunity in the Metaverse is represented by the possibility of standardizing the storytelling, both before the building of the positioning (so the creation of the idea) and later in the constant sedimentation of that idea (which is, again, being consistent). Particularly for luxury brands, it is crucial to maintain a specific tone of voice that could assemble company's strategy and heritage. Here are reported three situations where companies could benefit from Metaverse features in that sense:

- WORLDWIDE META PRESENTATIONS OF NEW COLLECTIONS. If new collections presentations are already organized in very huge parties in unique places in the world (Dior alone had located more than one time: the Louvre Museum. the Tour Eiffel and the Versailles Palace), it becomes easy to imagine the possibilities in the Metaverse for what represent the two main events for fashion brands (the schedule for spring summer and fall winter collection had already been analyzed and from that previous scheme it can be understood that these moments represent at the same time the final step of the internal production part and the first step that brings the production itself to the market since buyers will define their OTB, the orders to buy for the upcoming season). That relevance is not diminished for luxury brands who are not in the clothing industry (Rolex, Cartier, Ferrari, Baume e Mercier), rather it becomes even more crucial to demonstrate that the company is still producing iconic pieces which value goes over the price itself. The perfect example to clarify this is the Patek Philippe motto *"a Patek Philippe is never fully owned, it is simply guarded and handed down from one generation to another".* When a new model of Patek Philippe is announced, there are already buyers who are ready to pay it more than its starting price since they know that it will be produced in very few pieces and delivery time could be higher than two years. In Metaverse such events could be enormous and could have a resonance that even renting out the Eiffel Tower could not achieve, since literally millions of people cold participate, and not just watch the after movie once the presentation is finished but being there in the avatars' crowd. During the days of presentations, entire roads in the map of every metaverse platform could be rented and "overcame", which means that everything in the road will be talking about the last news, with mannequin's avatars crossing the streets wearing the digital version of the new collection and giving to some few random passers-by the gold ticket to a complete access to the wardrobe of the new collection to be wore by the lucky avatars. Through these events company can share with their customer something that until now had been reserved to a selected group of people who influence the world of fashion and luxury, outlining it as something too far from the market and exclusively reserved to a selected elite.

- TAKING SIDES ON RELEVANT EVENTS THROUGH META CAMPAIGNS. Recently brands have known a process of humanization, which means that over the years every company had started to have what is technically defined as brand soul, tone of voice, DNA, and humor. This had not been an easy choice since, as happens with real people, we, as humans, cannot be loved or even appreciated by everyone, while a brand should do as much as possible to enlarge its audience. Well, recently brand showed that sometimes consolidating the target they already reached may work well and taking sides on social themes or political debates can have a resonance that goes extremely over the campaign itself. The brand that recently made the marketing pillars shaking and almost falling had been Nike. The brand decided to take side on the racism theme during Donald Trump presidency in 2017-2018 after

the Colin Kaepernick case. He was the quarterback of the San Francisco 49ers and, during one of its matches, he decided not to stand tall during the national anthem that was being played in the stadium before the beginning of the match, but he preferred to kneel to protest the racist history of its country. It had been expelled by the NFL (National Football League) and is still a free agent (which means that it still had not signed any contract with any other team). Nike launched this campaign exactly while the protest on this case and the theme behind it were at their peak in the USA and is still considered one of the most successful campaigns of the brand, for sure it will forever be catalogued as one of the riskiest one. Soon after this success the brand decided to extend the protest and collaborate with other worldwide known black athletes as Le Bron James and the sisters Venus and Serena Williams, to celebrate their "crazy" adolescent dream to become leaders in sport where young black players were not even expected to succeed.

Metaverse offers an even wider platform for these kind of campaign (which are more *"official statement of the brand about social and political issues"* than merely advertising for marketing purposes), and the perception of authenticity of the brand that take sides about these themes should be enlarged by this uniquely powerful tool. The space that companies could dedicate to this in the Metaverse is almost unlimited, because once avatars enter in the store or find a billboard walking (or flying) on the streets, there could be the opportunity to enter in a second virtual space completely dedicated to one selected story, such as the Venus and Serena Williams one, where the customer can be immersed in a tennis court and see the two young players winning their first trophies in a Nike virtual dress. Through this, brands as Nike, Adidas, Puma and other sportswear brand could push young customers to follow their dreams, to believe in something that is important for them, and let these "players" to growth with the brand in their journey inside sports.

- WORLWIDE CELEBRATION OF CULTURES ON METAVERSE. As already stated before, most of the brands analyzed in these pages are multinational brands, which have stores, licenses, factories, warehouses all over the world. Again, this implies that cultures must be taken into the equation when it comes to deal with local customers. For instance, tables with local holidays are constantly monitored by the brands to show to its customer that everyone inside the company is respectful of what is important for them, or, in other words, to show that "*I care to what you care*". It happens then that fashion and luxury brands develop:

  - Holiday's capsules, such as the Louis Vuitton x Lunar New Year 2022 (the year of the Tiger), which is an entire capsule made of clothes, jewelries and other products deliberately produced for gifts since this is the tradition in China, as the Wireless Earbuds which were sold for 1010,00 €. Even it is easy to understand that from such capsules the brand will make huge profits, over the years customers have been demonstrating huge interests in these projects and the capsules goes sold out soon every time.

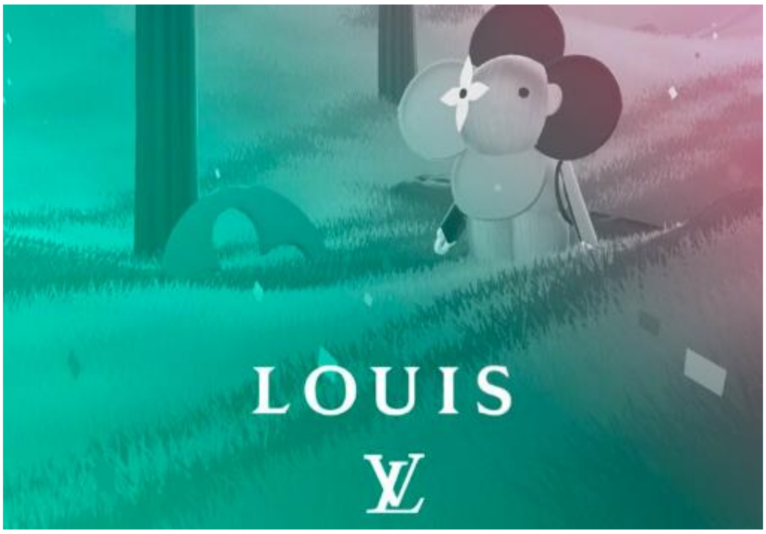
  - Holiday's experiences in stores, where the brand organize small events to celebrate days. It may happen inside a Cartier or Bulgari store to be gifted a rose if it is the Mother's Day, or a letter written by children to their mothers to thank them for their unconditional love.

On Metaverse brands can organize events where the only limit is always imagination. For instance, in the case of Cartier's mother day, the entire street on the Metaverse could be overtaken with billboards that celebrates the love of every mother, or thousands of letters could fall from the sky and could be red by the avatars while they are walking. These are the kind of events which are recorded and shared on social media generating a return in terms of visibility that always more than compensate the investment behind the project.

3.3.4.1 Louis The Game

Last 4 August 2021 the iconic french brand at the heart of LVMH group, Louis Vuitton, decided to story tell its main theme (travelling) through a digital channel: a videogame. Released last 4th August 2021 on Play Store and App Store, the game explicitly wants to celebrate the 200 years from the birth of its founder (4th August 1821 in Lavans-sur-Valouse). In Vivienne shoes, a little "fearless explorer and fashion lover" wearing a funny hat shaped like a flower and a fashion tiny backpack, the player crosses six magical, colorful, and artistic worlds (vaguely inspired by real cities: Paris, London, Beijin, Tokyo and New York) where more than 200 little candles should be collected to successfully complete the game. Each candle grants access to a postcard containing information about the brand and Louis Vuitton main life moments, from its juvenile suffering to the company success.

Furthermore, throughout this long journey Vivienne can collect fashion accessories that can be used to personalize its look.



Compared to Blankos Block Party collaboration with Burberry, Louis the game should not be considered as a "window game" where it is sufficient to press some buttons and read the instructions to reach the next chapter of the plot, it is a "3d platform game", where Vivienne moves in a tridimensional space looking for the collectibles (candles and fashion accessories). What is tremendously interesting, is that it is not an "enemy game", meaning that there are no other players to fight to move to the next step, neither a "loosing game", which means that there are any possibilities of failing and starting the game or the mission from the beginning. The brand is trying to offer to the player an enchanted environment made of beauty, where travelling becomes the tool to discover and always learn something new. Moreover, all the 30 collectible NFTs designed by the most famous NFT artist Beeple, are not for the purpose of selling, because, as the CEO Michael Burke said: "This is not a commercial experience, but a pedagogical and educational one, which wants to be funny, emotional, and dynamic". The power of this game relies in its ease to convey the brand DNA to the players, who reinforce their interest in Louis Vuitton heritage one candle at a time. Recently in April 2022, the company announced an update which includes 10 more NFTs to be found, designed, once again, by Beeple.

3.3.5 Digital, Mass, and more Sustainable Market

How can a brand be more accessible without losing its exclusivity and how to experiment new creative solutions without diluting its heritage: these had been the main dilemmas up to this point. Proposals had already been given but the following one demonstrates that this step into virtual economy really represent an opportunity to solve practical problems. To begin with, a company had never been at the same time in the virtual and the physical world (today company already sell via internet through their "online shops", and despite this had been the most growing channel lately, it still represents a niche market for these companies, since they still sell mainly in-store[46]). For the first time ever, Metaverse is introducing the possibility to enter in a virtual store and walk inside it, see the mannequins, the shelves full of clothes and still be inside your room. It is expected to be a very powerful channel because it can recreate most of the stimuli that a customer experience inside a real store, and, as already proposed before, experiences that could not take place in real life could find space in a virtual store. It could become, therefore, a real digital mass market where everyday hundreds of thousands of avatars can enter inside the store (it seems feasible because some of the most used platform can already welcome millions of players at the same time and still offer a perfect experience for everyone in terms of quality of the graphics and time processing).

It seems necessary to add an element to the picture: sustainability. A term often abused, but that is probably going to be one of the key factors to determine metaverse success for luxury and fashion brands in the next future. As Bernard Omondi wrote in its article for EcoJungle[47]. the top five polluting industries in the world are: Energy, Transport, Agricolture, Fashion Industry and Food Retail. According to WWF, a man cotton t-shirt alone requires 2700 Liters of water, and the production phase has an environmental cost of 5 Kg of CO_{2e}[48]. This happens because the fashion industry relies heavily on petrochemical products that come from many of the same oil and gas companies driving greenhouse gas emissions.

Initiatives in the Metaverse could be taken to have an impact on this topic, producing benefits both for fast fashion companies (the most indicted ones in the environmental cause) and for luxury brands that could highlight once more the importance of buying more expensive products that can guarantee an overall lower environmental damage.

[49]As Rachel Dottle and Jackie Gu pointed out in their article for Bloomberg.com "*The global glut of clothing is an environmental crisis*", the frenetic pace of churning through styles from retailers and customers led to a quantity of garments produced each year which is already doubled since 2000. This means that the industry will need more and more plastic, and, as the IEA pointed out in the technology report "*The future of Petrochemicals"*[50] plastic will become the largest driver of net growth in the demand for oil within the next two

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46 Altagamma Bain, "*Luxury Market Monitor*", 2021

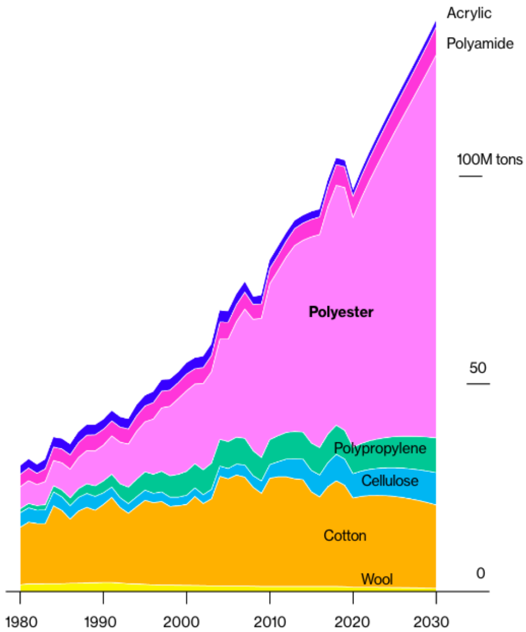
47 https://ecojungle.net/post/the-most-polluting-industries-in-2021/

48 https://www.wwf.it/cosa-puoi-fare-tu/ecotips/piccole-azioni-grande-impatto/

49 Source: Tecnon OrbiChem analysis

50 https://www.iea.org/reports/the-future-of-petrochemicals

decades. It happens because most clothing all around the world comes from polyester, a synthetic fiber primary derived from petroleum that had overtaken cotton as the main textile fiber of the century, after cotton's dominance for hundreds of years (the expected market for polyester yarn should be around 174.7 billion by 2032, while for 2022 it is expected to valye 106 billion). There are opportunities to make polyester from natural polymers different from petroleum as bioplastics, but up to now this alternative represents only a small fraction of polyester in the fashion industry. The issue is that, of course, not only natural fibers require lower quantity of resources (energy, water, gas) for clothing production, but they are also easier to recycle.



To make the portrait even more dramatic is the industry rate of recycled production: it is lower than 13%, meaning that 87% of the total fiber input employed for clothing is ultimately incinerated or dispatched to a landfill.

Again, Metaverse could help. Saying that Metaverse could be the solution would be an exaggeration, but it could represent an opportunity to create a platform where customers, designers, companies, textile producers could meet and together set new rule for the entire industry. Here will be presented an idea, whose name could be "*MetaVersus Waste*". Brand could dedicate a small area of their physical and digital store to this project, no more than a 20 square meter room, entirely devoted to recycling. Here, sale assistant could pick up old clothes that customers don't use anymore, weight them in front of the customer and give them a ticket containing the name of the fiber, the weight of the specific article of clothing, the color, the production method, the environmental impact, the place of making. In addition to that, a funny element that could be added is the date of birth of that garment, and the exact date it came back to the store, which is, instead, the date of rebirth. This means that, from that moment on, the customer can enter in the Metaverse store with its ticket, which represent a say to have a new sweater or t-shirt produced by 3D printers using the very same recycled fibers from the old clothes.

3.3.5.1 The Fabricant "Always Digital, Never Physical"

THE FABRICANT is a digital fashion house who defines itself in this way: "*we waste nothing but data and exploit nothing but our imagination. Operating at the intersection of fashion and technology fabricating digital couture and fashion experiences. Our mission has always been to build the future of fashion, and this is happening now".* It is a startup born in Amsterdam in 2018 which is now a company made up by creative technologists that dreams a time where fashion will transcend the physical body and digital identities will permeate daily life to become the new reality. It had already partnered with huge companies in the world of fashion and sportswear such as Puma, Adidas, Napapijri, Under Armour, Ermenegildo Zegna and Tommy Hilfiger.

The founders, Kerry Murphy, Amber Jae Slooten and Adriana Hoppenbrouwer-Pereira declared many times that they will never ever produce and commercialize a physical product that would represent only another item in a world full of useless clothes that could never be all wore. Their genuinely revolutionary dream pushed them to the proposal of abandoning the "haute couture" and replace it with the more sustainable "thought couture", a new handcrafting that could be soft not like silk but like thoughts.

By now THE FABRICANT had sold only 4000-5000 digital clothes, numbers that would make this one of the smallest niche markets ever, but, as the founders dreams, "*one day we will live both the real and the virtual life, and in both these words the same reasoning behind dressing choices could work"* (will avatars need something different to wear almost every day?) Moreover, there is still a huge room for improvements in terms of modern avatar's basic graphical quality, therefore the company could benefit from the investments made today to create a digital studio where every detail could be designed according to personal creativity.

CHAPTER IV – EMPIRICAL ANALYSIS OF THE CURRENT SCENARIO AND FUTURE EXPECTED DEVELOPMENTS.

This final chapter is divided into two sections: the first one will summarize the main findings of a research conducted through a survey on more than 200 participants, whereas the second one will conclude the reasoning developed in the previous pages and introduce relevant questions that will find their answer only throughout the modern economic environment (Metaverse, crypto and NFTs') overtake on the previous one, which, as it can already be anticipated, will last for few more years.

Even if it would have been easier to merely propose initiatives and guarantee their success, it is necessary to really understand the feasibility and the timing of Metaverse's consolidation, since, as it had been frequently stated in these pages, human behavior is the key variable to consider, a variable that alone can determine the success or the failure of this economic environment. This is the reason why the first chapter started from the dawn of the first economic environments that created a system to regulate the exchanges of value among humans (or better economic agents as the system consolidated over time) and continued to analyze its evolution until the modern scenario.

This last chapter will not solve any of the threats that every company that will invest in Metaverse will face, rather it will introduce new issues to leave for future analysis.

This last chapter represent a final attempt to understand where we are and what could reasonably be expected. Fortunately, or unfortunately, even the most reasonable prediction seems solid until the wind changes the premises and the outcome is redefined.

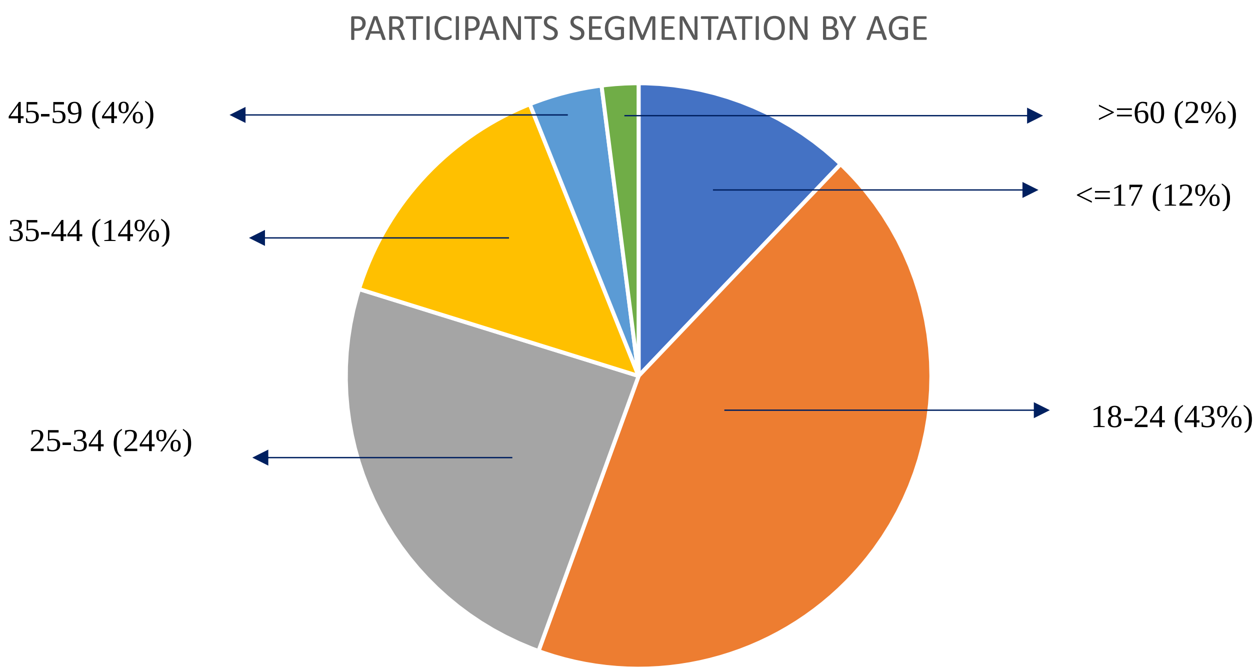
As always happens, only time will tell.

4.1 An investigative survey to assess the current environment and its future possible developments

The survey that will be presented in the following pages collected useful answers from 208 participants on 13 simple questions that investigated the level of knowledge about the world of Metaverse and NFTs and, more importantly, the interest in possible future developments for luxury and fashion brands in this environment. Participants had been segmented by age in 6 main groups composed as follows:

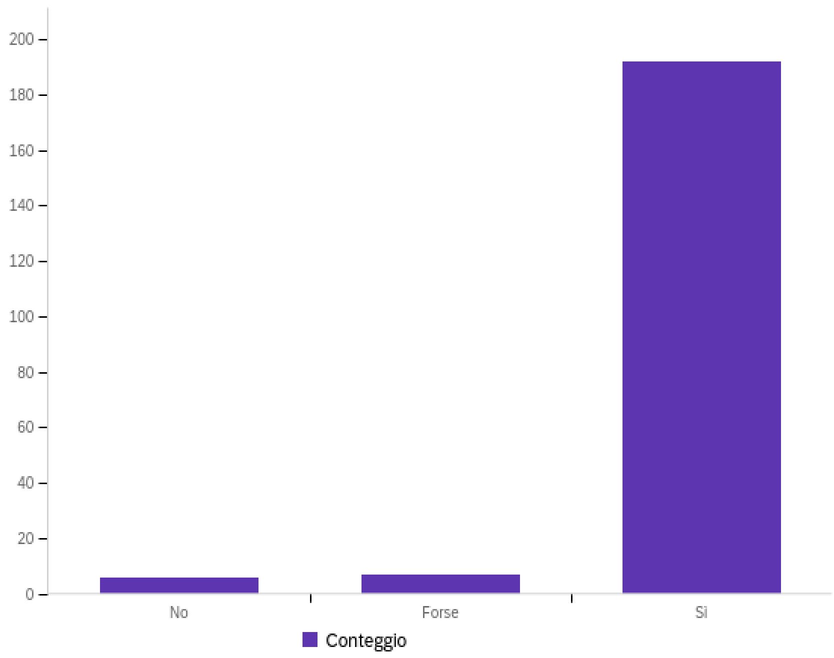
- *12% - Less or equal to 17 years old*

- *43% - Between 18 and 24 years old*
- *24% - Between 25 and 34 years old*
- *14% - Between 35 and 44 years old*
- *4% Between 45 and 59 years old*
- *2% More or equal to 60 years old*



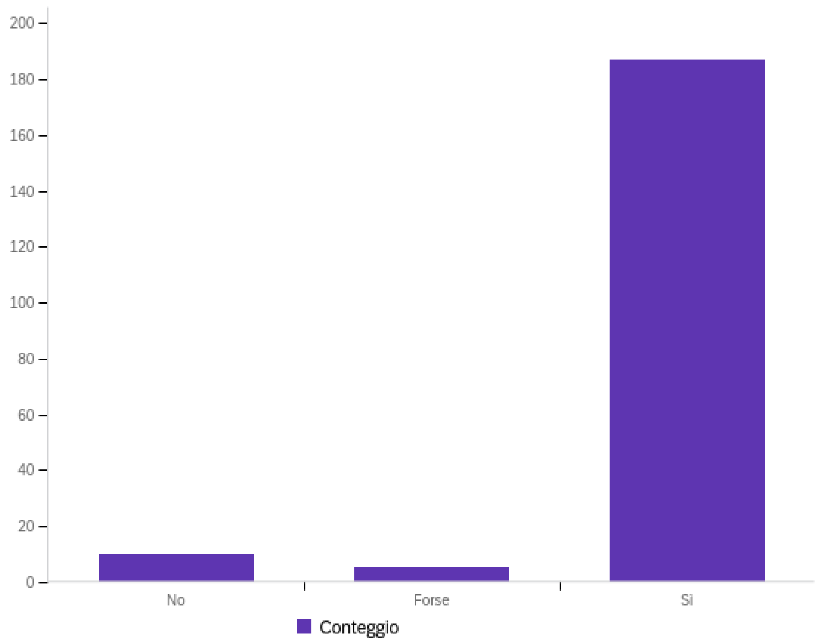
The first two questions were the easiest ones but necessary to demonstrate that Metaverse and NFTs really represent a trend topic.

Q1) *Have you ever heard about the word "Metaverse"? (a word coined by Neal Stephenson in the 1992 cyberpunk novel Snow Crash to define a three-dimensional space where people can move, share items and money, and relate through personalized avatars"?*



The results are the following: 93.66% confirmed to know the word and its meaning, while only the 3.41% answered “maybe” and 2.93% admitted having never heard about it before. Almost identical results have been obtained from the second question.

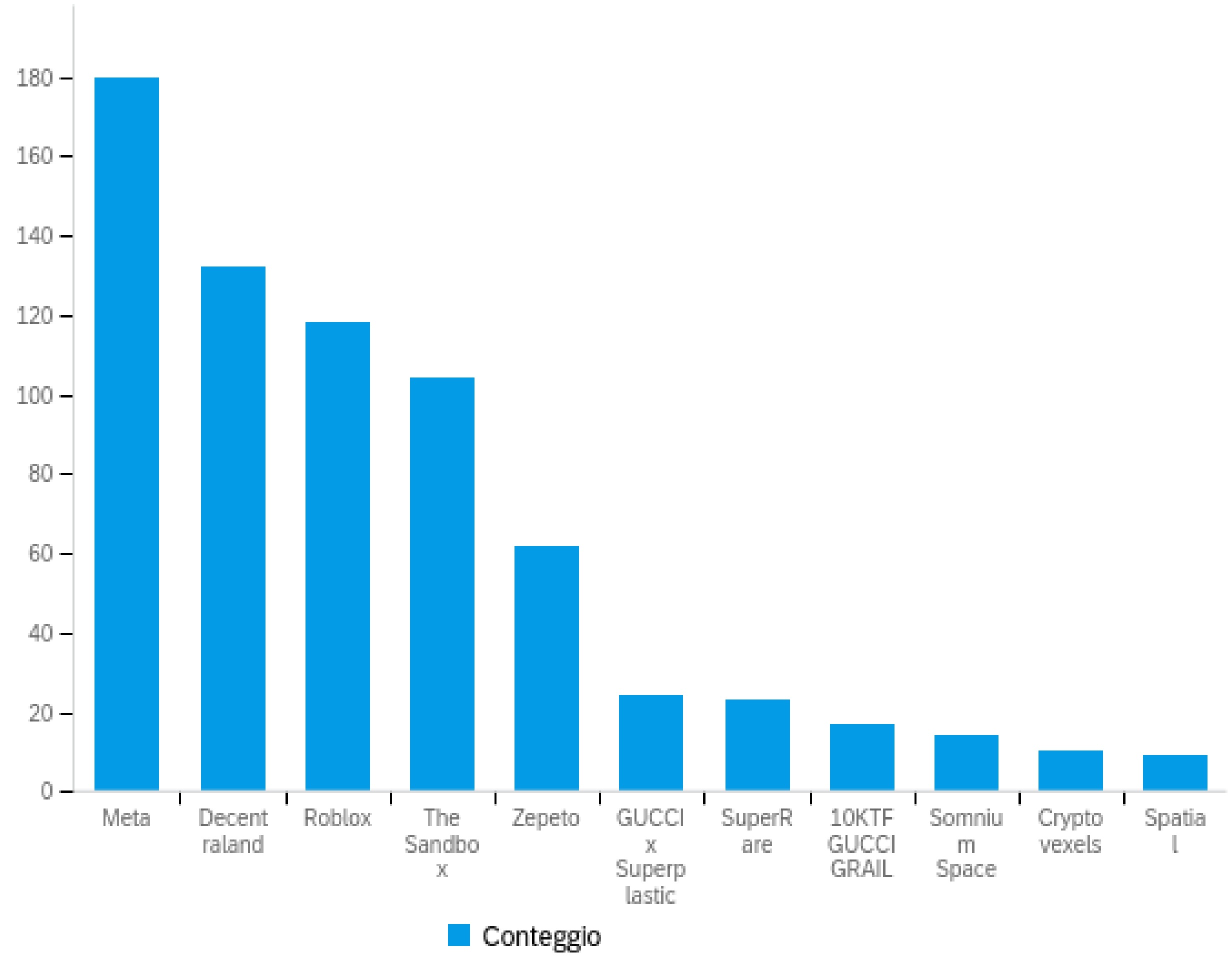
Q2) *“Have you ever heard about the word NFTs (Non-Fungible Tokens based on blockchain technology to identify in univocal, irreplaceable and non-replicable way property over digital items)?”*



This time the percentage of those ignoring the meaning of the word slightly increased to 4.95%, the one of the uncertain ones decreased to 2.48% while 92.57% confirmed to know what an NFT is.

Both these two represents important results that confirm how almost everyone among the participants knows the subject of the survey. The third question tried to verify their knowledge offering some examples among which the participants could choose one or more alternatives:

Q3) "*Which one do you know, or have you ever heard about among these platforms or NFT collections*"?



Question 3 adds many elements to the picture:

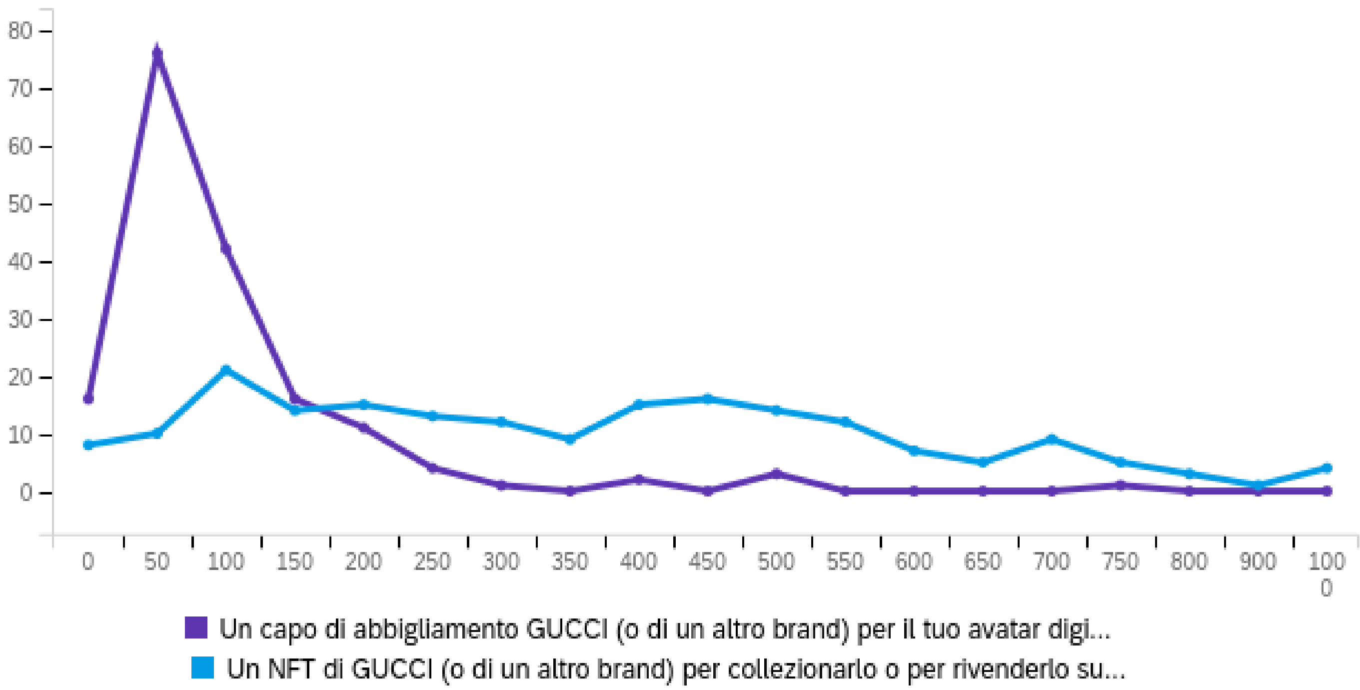
- As easily as imaginable, Meta is currently the most known Metaverse platform despite it is not a Metaverse platform. Meta is, indeed, the new name of Facebook company, while its Metaverse is going to be called "Horizon". In any case, it must be admitted that its current offer is well behind the already active "big four" providers as Decentraland, Roblox, Sandbox and Zepeto. This may be justified by the emphasis given by media to last October 2021 announcement from Facebook CEO and founder Mark Zuckerberg to change the company name to Meta since it will represent the core business in the following decade (last 9 June 2022 also the stock option name switched to META at NASDAQ stock market).

- This graph shows that all the most important western platform are known at least by half of the participants since even Sandbox received more than 100 votes. Huge result also for Zepeto which, despite being the platform for young Chinese and Asian gen Z, is known by more than 60 participants.

- Two of the latest NFTs by the GUCCI brand are scarcely known and this again find its justification in the relevance given by speculators to some selected NFT artists which are concentrating the market around them, as: Bored Ape Yacht Club, Beeple, Mutant Ape Yacht Club, and CryptoPunks. Some of their pieces have been sold by the most important auction houses (Christies on top of them) at prices close to or even higher than those paid for fine art (The Merge NFT sold for 92 million USD[51], "The first 5000 days" by Beeple sold for 69 million USD[52]).

The shared perception of NFTs as a form of investment is confirmed also by question number four.

Q4) *"Without knowing their traded prices, how much would you consider fair spending for: a digital garment developed by GUCCI (or similar brand that comes to your mind) and an NFT developed by GUCCI (or another similar brand that comes to your mind) to collect or resell it?"*



[51] https://www.barrons.com/articles/paks-nft-artwork-the-merge-sells-for-91-8-million-01638918205

[52] https://cryptonomist.ch/2022/03/12/nft-69-milioni-beeple-un-anno-dopo/

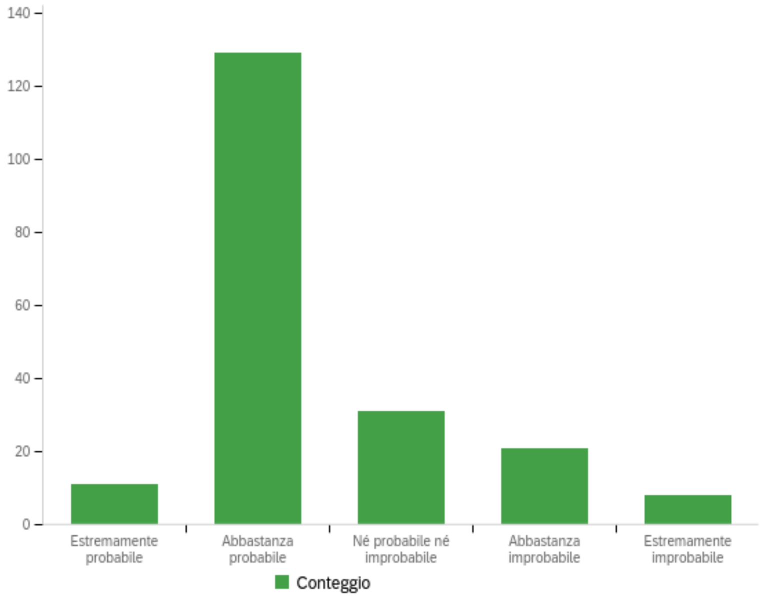
The distribution of the answers tells that:

- Almost nobody among the participants is willing to pay more than 300€ to buy a digital pair of shoes or sweater for its avatar. If 300 is the maximum price, the option that received more votes (76) is 50€, but, since it was the lowest price possible to choose from, it seems reasonable that effective willingness to pay could be even lower.

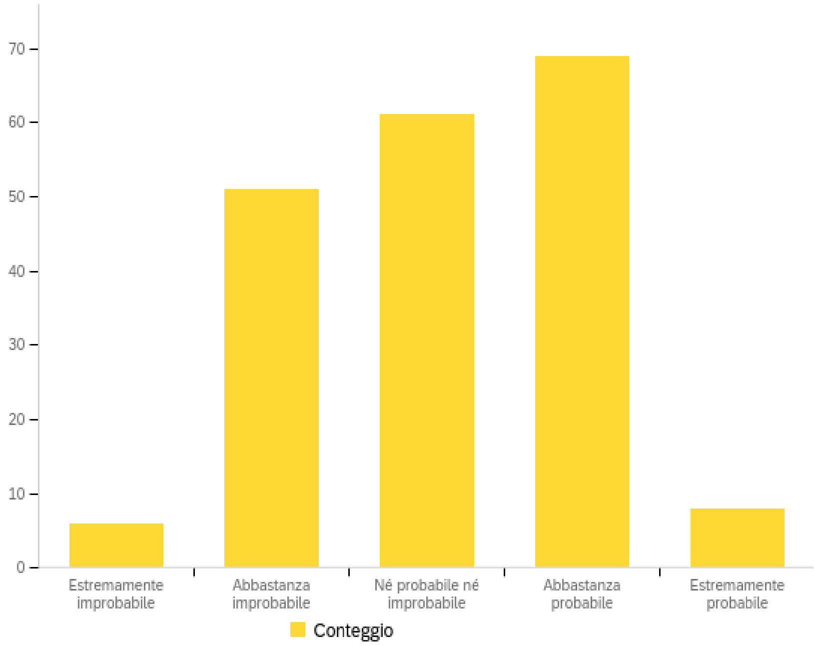
- Quite the opposite, participants have completely different opinions regarding the fair price to pay for NFTs, since each price options (curiously even the highest ones) received an almost similar share of votes, meaning that there is not one right price to pay. It confirms again that there is a shared knowledge about the opportunities behind NFTs in term of resell profitability which pushes people to consider it as a form of investment rather than some mere collectible objects.

The following two question (Q5-Q6) will be presented in bundle since together they wanted to understand if participants consider to be more realistic to enter in a virtual store rather than a physical one respectively within 2/3 years and 2/3 months.

Q5) *"Within 2/3 years, how likely do you consider that you can enter in a virtual store of GUCCI or a similar brand from the luxury and fashion world (Cartier, Loro Pana, Bulgari, Valentino) just through an optical viewer?*



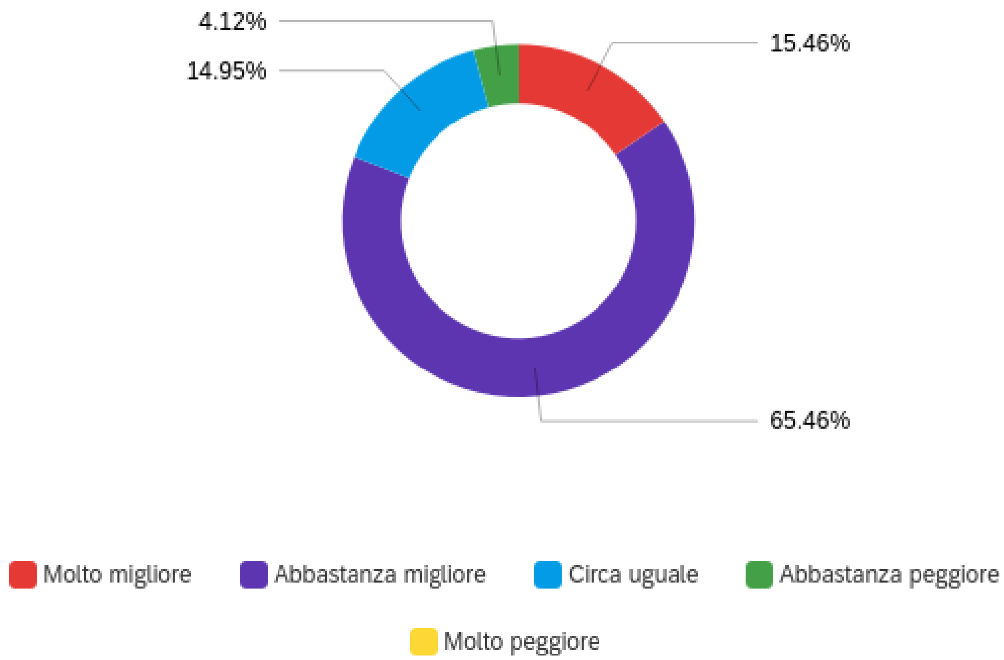
Q6) *"Within 2/3 months, how likely do you consider that you can enter in a physical flagship store of GUCCI or a similar brand from the luxury and fashion world (Bottega Veneta, Brioni, Patek Philippe, Rolex) for instance in "Via de Condotti" in Rome or "Via Monte Napoleone" in Milan?*



This is the most important result of the survey that confirm how the excessively exclusive approach adopted by luxury and fashion brands over the years really created a distance between those who are not customers and the brand itself. These two questions, indeed, confirms that the tradeoff exclusivity-accessibility could effectively be overcome by inclusive digital spaces offered by Metaverse. Indeed, as it is easily visible from these two graphs, 126 participants considered "likely enough" to enter in a virtual store within 2/3 years, compared to 69 votes for the physical store entrance in 2/3 months. In advance, regarding Q6, similar share of answers had been obtained also for the "nor likely or unlikely" and "unlikely enough". This is the pillar that can sustain the model for luxury and fashion brands proposed in Chapter 3: there are millions of possible customers out there who would like to enter in these worlds if it were just more accessible and less exclusive.

Question number 7 tried to understand if the experience of being inside the digital environment of a Metaverse could be already considered better or not compared to the one offered by video conference platform that, unfortunately, had spread worldwide in the last two years.

Q7) *"Covid 19 Pandemic (SARS-CoV-2) forced us to reorganize our work and studies on virtual meeting platforms. How do you imagine it could be the experience of meeting inside the Metaverse in terms of realism, dynamism of the avatars, efficacy, immediate communication compared to conference platforms as Zoom, Webex, Teams?*



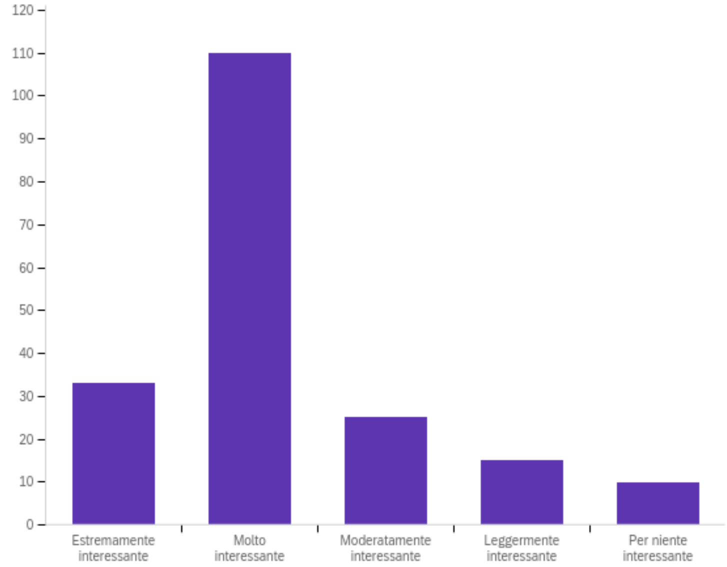
The pie chart above reported highlights at least two main evidences:

- To begin with, the last two years had been so frustrating in terms of social relationship in academic and work environments that only 4.12% of the participants expect Metaverse to be "worse enough" (and nobody chose the "much worse" option).

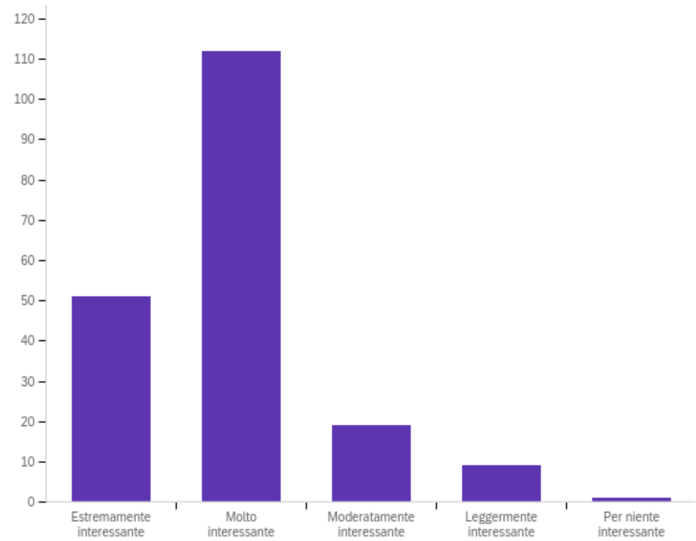
- Expectations are high and the companies that are building these platforms are increasing them even more through frequent announcements about some new areas developed inside their Metaverse, new hardware that through sight and touch are going to make the experience really close to reality. If it is pure marketing strategy or real disclosures from people inside these company is too early to tell. Surely people expectations are huge, and this is something to consider not to fail once these platforms will welcome them.

The following question, Q8, is linked to the previous one but even more to question number nine, therefore, again, they will be presented together. These two questions shifted the analysis to the social relevance given by the participants to Metaverse and tried to investigate the level of interest regarding two proposals from Chapter 3.

Q8) *Independently from the previous question, knowing that some luxury and fashion brands are opening physical cafes and restaurants (The Ralph Lauren Bar, The Blue Box Cafè Tiffany, Gucci Osteria by Massimo Bottura), how interesting would it be for you to enter in a virtual replica of the physical store to meet your friends or colleagues to "have a coffee", for instance, in the hypothetical "FENDI META LOUNGE BAR"?*



Q9) "*How do you evaluate the opportunity to virtually access the factories of these brands and meet, despite wearing an optical viewer and directly from your house, those who are behind iconic worldwide known products? For instance: The Solomeo District by Brunello Cucinelli, Rolex Genevan headquarters, Benetti shipyard in Livorno, Ferrari district in Maranello…"*

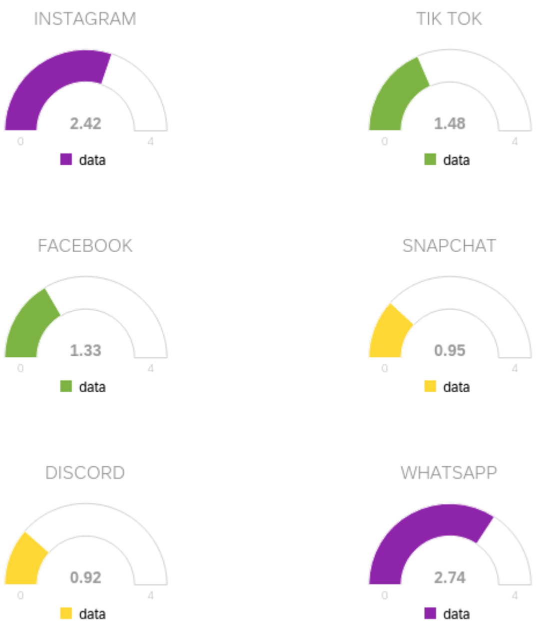


The last two graphs report almost identical results, and this should be interpreted as a confirmation of participants shared interests and curiosity in such initiatives. The first proposal, as already said, is linked to Q7 since it refers to virtual areas entirely dedicated to avatars socialization, where the brand can create a tailor-made virtual hotel, café, cocktail bar, or restaurant to host the avatars that need a place to meet. Survey's participants, visualizing themselves inside these branded areas immediately compared them with the static and cold screens of their laptop that during Covid 19 pandemic became the only window to see friends and colleagues during endless days. The comparison immediately led them to prefer the virtual experience offered by Metaverse (even if only few people had already had the opportunity to "walk" inside Cryptovexels or Decentraland) since they know that the feeling of sharing a dedicated and quite space which had been built with the specific purpose of facilitating human socialization will surely guarantee more proximity and less apathy.

Question nine, instead, pushed the participants to visualize their avatars inside digital reproductions of factories, places where people work behind the scenes to create all those worldwide desired products. What should be noticed once again, is the interest that people demonstrated in brand, which is confirmed by an increase in the percentage of the answer "*extremely interesting*" that from Q8 to Q9 shifted from 17.10% (33 votes) to 26.56% (51 votes).

Question number ten focused on social media, with the specific and single purpose of analyzing six of the most downloaded apps by the number of hours spent per day on average by survey's participants.

Q10) "*How many hours do you spend on average on these apps per day*?"



The first evidence is that is possible to define three different categories:

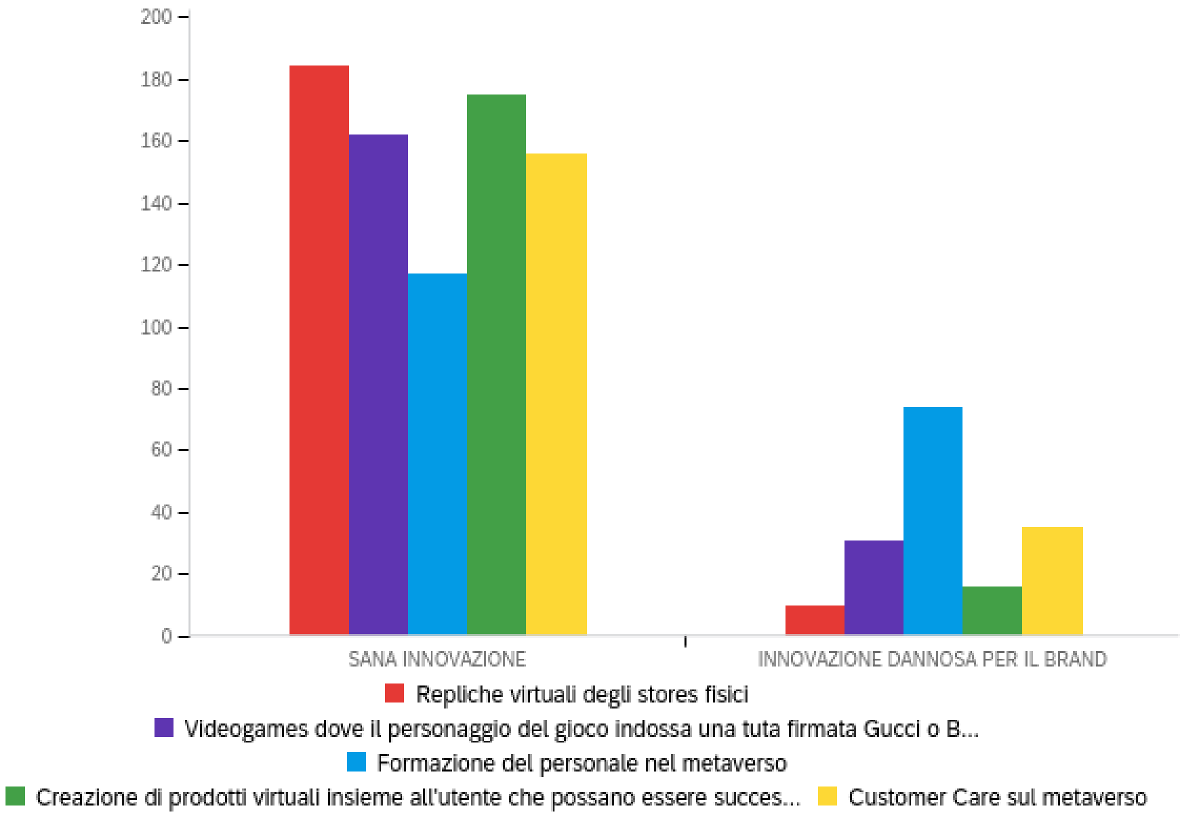
- Between two and three hours per day on average: WhatsApp (2,74) and Instagram (2,42).
- Between one and two hours per day on average: TikTok (1,48) and Facebook (1,33).
- Less than one hour per day on average: Snapchat (0,95) and Discord (0,92).

These answers tell that everyday people dedicate many hours to its digital presence on social media apps. Once again, since these are network platforms, their real offer is to get everyone closer to its friends (better acquaintances), giving everyone the opportunity to share different kind of contents that others will see, comment, share and so on, Their success consist in two main elements: these apps could be downloaded for free from the App Store or the Google Play store and are perfectly connected network platform, meaning that the algorithms running them perfectly link together as much people as possible, since the more the acquaintances regularly use the platform, the more it becomes reasonable for someone who is still unregistered to create its profile. In this digital society, it is becoming more and more difficult to find someone who is not registered in at least one of these apps and almost impossible to find someone unregistered in any of them. This means that Metaverse platforms will find an already paved way where to build their offer.

The following question, Q11, represents the second pillar that can sustain Chapter 3 proposals. As a matter of fact, if Q6 was the pillar to sustain the proposals that could overcome the exclusivity-accessibility tradeoff, these answers could help to solve the other fundamental conflict in luxury and fashion market: consistency-innovation.

Q11– "*How would you define each one of the following proposals between "good innovation" and "detrimental innovation"?*

- *Virtual replica of physical stores*
- *Videogames where players wear a Gucci or Balenciaga tracksuit*
- *Employee's formation on Metaverse*
- *Co-Creation of virtual products that could successively be commercialized*
- *Customer Care on Metaverse*



Exception made for the still too hazardous proposal of employees' formation on Metaverse, all the others received approval as "good innovations" by more than 75% of voters. This is a tremendous result for such companies because it means that a strategy of serious innovation could be pursued, at least in Metaverse (that becomes mainly a new channel for the brand). This shared approval may have occurred because Metaverse is perceived as an innovation which is not going to turn a luxury and fashion company upside down, rather it is going to support it and enlarge its opportunities and connections with customers. For instance:

- Co-Creation of products could help brands to add new patterns and motifs to their iconic lines. For such brands this would represents a significant innovation that would still be accepted and welcomed since the brand is still perceived as consistent, what is innovative is the channel and the process through which products would be designed and delivered to customers.

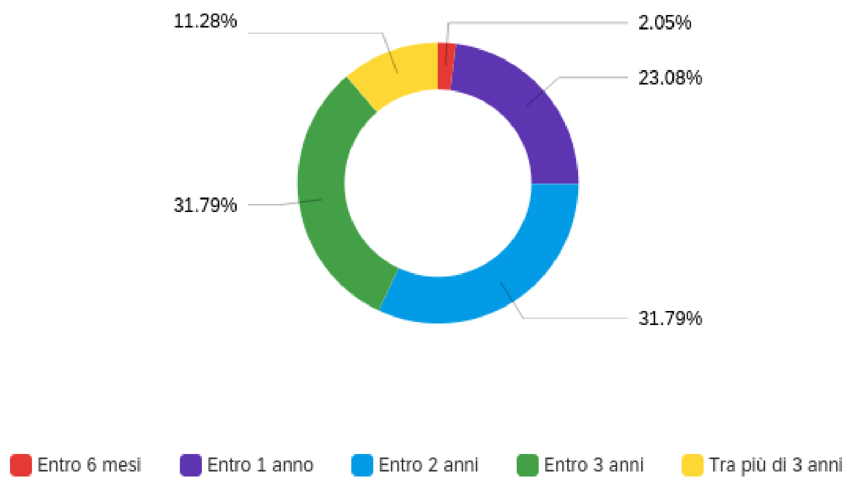
- Virtual replica of stores was another proposal designed to get people closer to the brand. This incredible result (184 considered it "good innovation") highlights once more that potential customers are already close to these brands and are waiting them to make the first move towards proximity and accessibility.

- Videogames too seems not to be diluting the brand image. Videogames players, indeed, would appreciate to personalize their character with digital clothes from these brands, above all in the so many "battle royale" games where hundreds of players compete everyone against everyone and there is one single final winner who will take the entire stage on every player screen.

- A Meta-Customer care too, as it could have been easily imagined from the start, received extended consensus. Unfortunately, everyone had experienced at least once in its lifetime the difficulty to be listened and supported by one brand when there had been an issue difficult to solve, particularly when the customer asks a refund. Still having in mind the classical music jingles played by automatic company's switchboard every time speaking with an operator had been necessary, participants visualized the easier scenario of a "meta-customer care office" where operators (avatars) are, at least virtually, in front of the customer.

The final question asks participants to predict the time required for Metaverse complete realization.

Q13 – *"Assuming that sooner or later Metaverse will surely become a place of socialization for millions of users, within what time do you believe it will happen?"*



This last pie chart clearly shows that:

- Metaverse is not expected to be completed in less than six months (2.05% on total votes) nor in more than three years (11.28% on total votes). Six months is probably considered to be a too small-time window due to the time required for a life changing behavior to be adopted and three years is too much time for technology fast developments.

- There is uncertainty between the other three options, and this is no surprise. All of them could be reasonably enough if properly motivated, but the truth is that, as it happens with every attempt of prediction, every number is not the right one until it is confirmed by facts.

This question had been intentionally left for last. Timing is a relevant issue which had been left apart of all the previous reasoning since the focus had always been on the innovation itself and its opportunities itself rather than on its schedule for the next years. Now that the reasoning is getting to an end, the timing theme is going to be exploited in the second section of this Chapter.

4.2 Conclusions and open questions for further analysis

To properly conclude this reasoning is necessary to go back to the very beginning, since every piece of this mosaic had been slowly added following a precise scheme. Every chapter and paragraph had been designed to conclude the previous one and anticipate what was going to be introduced in the following, allowing the reader to linearly move from one theme to another.

From the first pages of Chapter 1 the goal had been to reflect about economy as a social science, created by humans and impacting their life in depth even if sometimes it is difficult to see the entire picture (and more frequently to accept it). How hard it is to explain ourselves the coexistence of the "all you can eat" restaurants, the islands made of garbage in the oceans, the trillionaire investments to colonize new planets with children still dying without sufficient food or medicines, men and women fighting wars or escaping from dictatorships. This are not examples of improper allocation of scarce resources, this are pure economic failures, situations where economy failed to guarantee dignity to human beings.

As always, there is also something good that must be saved and all those who will dedicate their life to this social science should never forget: the evolution, despite there are still failures, had been extraordinary in terms of worldwide average richness, access to education, health systems, number of people involved in wars, percentage of children (and mothers) dying during birth or within the first five years, higher average age of death and percentage of natural death. These are some of the achievements that should be carefully inherited and improved over time, dreaming that one day peace, health and prosperity will be the pillars of every future society.

Once that this necessary premise had been explained, the first chapter shifted to a short description of the "economic environments" defined by the different means of exchange adopted by economic agents to transfer value. Different examples had been reported: cowries, sperm whale's tooth (also called "*tambua*"), the "*fei*" stones of the Island of Yap, the "*wampumpeag*", Tally sticks, bronze and copper imitations of cowries, bracelets, and necklaces, more and less precious metals, pre coinage coins and then coined ones, banknotes, financial instruments as checks and derivatives.

The second chapter introduced the modern environment, made of Metaverse, cryptocurrencies and NFTs. The aim of this section was to analyze each platform's offer to justify the huge hype that had been created around the topic, as the more than 500 patent pending requests only at European Patent Office demonstrate. Relevance had been given also to the role of NFTs in the transition towards the new economic environment and, more specifically, in the digital art market. To offer a more complete framework, the last part of the chapter had been dedicated to regulation, which tries to keep the pace of these fast-changing innovations and their implications in terms of data protection (corporeal and psychological data) and intellectual property rights.

The third chapter is the most significant one, built around a strategic model that companies competing in the luxury and fashion worlds could experiment to overcome the two main tradeoffs of these markets: *exclusivity-accessibility* and *consistency-innovation*. The model is made up by 5 pillar strategies where creative proposals had been suggested and sustained by data extrapolated by Bain-Altagamma Foundation and McKinsey's most recent outlooks of the refence markets and by practical cases that succeeded in the last years.

The five pillars are:

1) CUSTOMER PROXIMITY – Enlarging the customer base welcoming potential customers inside the once exclusive world of luxury and fashion through "*brand meta lounges*", collectible rewards, co-creation of products and "*meta factories*". For this strategy the best example seemed to be the BVLGARI presence on Zepeto's Metaverse and the development of its own proprietary platform set in a futuristic Rome.

2) TARGETING GEN Z THROGH DIGITAL EXPERIENCES AND VIDEOGAMES – According to the outlooks' data it is evident that: generation Z is becoming the fastest growing customer base for luxury and fashion, and it loves to play videogames; therefore, brands should take advantage of this opportunity to reach them. The case described to sustain the proposal was the Burberry NFTs in Blankos Block Party videogame, which due to the astonishing success of the previous year, had been dropped again this last summer 2022 with a new character that celebrated the summer collection of the brand.

3) DSE – “DIGITAL SHOPPING EXPERIENCE” – This is the hardest proposal to realize since it requires to virtually re-create physical stores where to offer a tailor-made digital shopping experience, organized in 3 main moments (introductive phase, brand on stage, after purchase party). This could be a perfect solution to connect physical and digital products, allowing customers to choose between both the two versions of the desired sneakers or blue jeans. “The Beauty House” by Givenchy became the perfect example to describe the almost unlimited opportunities that Metaverse could offer to those brands that want to convey their DNA through virtual tailormade stores.

4) WORLDWIDE STORYTELLING CONSISTENCY – For multinational companies as the luxury and fashion ones are, it becomes increasingly difficult to maintain the same tone of voice in the thousand touchpoints that connect them with customers in different countries and, more importantly, in different cultures. Metaverse could guarantee much more control as advanced through worldwide meta presentation of new collections, taking sides on relevant events through meta campaign and worldwide celebration of cultures on Metaverse. The successful example that had been presented was “Louis The Game”, whose character had been created by the most famous NFTs developer Beeple.

5) DIGITAL, MASS AND MORE SUTAINABLE MARKET – The Metaverse could really help these brands to mitigate their fame as two of the most polluting industries in the world, developing virtual collections and create the “MetaVersus Waste” campaign, allowing customer to recycle old clothes and obtain a ticket for the Metaverse store where, helped by designer, they can create a new item to be 3D printed using the old clothes’ fibers. This would give new life to no more used fashion items. A company that could partnership with luxury and fashion brands is the Fabricant, a “digital only fashion house” which believes that sooner or later fashion will be mostly digital.

The last Chapter had been dedicated to the analysis of the survey’s results. Through 13 questions I tried to investigate some of these proposals’ feasibility and assess how Metaverse is perceived over 208 respondents. The results had confirmed two fundamental conclusions:

- *there are new potential customers who would be interested in knowing more about luxury and fashion, but exclusivity had always represented a barrier*.

- *Metaverse is considered as an innovative channel that would not dilute the brand image*

Therefore, it seems reasonable to expect a more inclusive and innovative approach from these brands in the following years.

The survey's last question was about time and, unfortunately, it is impossible to predict when these innovations will ever take place, leaving the question open for further analysis. What is sure is that technology may start with a particular goal and end over time be solving problems that were not even in the mind of the inventor. This is the case of Metaverse too, since it represents the last declination of a previous invention that changed the world forever without being expected to do so: the internet. As Matthew Ball brilliantly highlights in his article *"The coming worlds: the Metaverse is still under construction, but it is sure to change our lives"* published in the 8-15th August TIME magazine edition, the internet had been invented to let one static file to be copied and send from one device to another, so that it could have been independently and asynchronously reviewed or modified. It was surely not built for "Metaverse Fashion Weeks" or Digital Shopping Experiences (live and interactive experiences involving 3d images and many participants). The internet of today is indeed made up by "*more than 40.000 networks, millions of applications, over a hundred million servers, almost a billion websites and tens of billions of devices*", and it let people to generate a constant stream of content to be shared. From that evolutionary standpoint Metaverse should not represent another window on our life, but a persistent, virtual, and living world.

It had been quite a long journey from barter to virtual economy, passing through all the other means invented by humans to exchange value. So many economic environments followed one another and now that every few decades a platform shift occurs the next successions could be even faster (such as that from mainframes to PCs and the internet, or the subsequent evolution to mobile and cloud computing). These successions teach that every human invention is temporary, with a clear beginning and an uncertain end.

The economic environment analyzed in these pages could drastically change in the following years, before it will be replaced by another phase in human history, because our creativity will never stop to find new ways and instruments to make our existence evolve.

There is a famous graffiti in the center of Rome that says: "*Kepler was wrong: the world turns around money*".

I agree, but I would modify the sentence: "*Kepler was wrong: the world turns around human creativity*".

ABSTRACT

CHAPTER ONE – FROM VALUE TO ECONOMY AND MARKETS

Economy, a social science

Today we may have purchased something (a table, an online film, a derivative), which means that we had (and hopefully still have) a quantity of money that allowed us to make that purchase. This would have not happened if we were born in a poor country. We would have spent most of our money to buy some food, while buying one of these three things would have not been one of our first thoughts in the morning.

According to "Our World in Data", in Burkina Faso, a poor country in western Africa, less than half of the population can read, and between those, only one third are girls. For these children it is very likely to spend their day bringing water buckets to their families houses rather than studying history or math in a school (where, as a matter of fact, students can have a bottle of water just inserting some coins in an automatic refrigerator which offers also other beverages and snacks if they are hungry).

Economists defines resources as "scarce", therefore by scarcity we mean that there is a limited amount buyable compared to human desires, which are unlimited.

What prevents humans to buy everything is that everything has a price that impose to make choices between different alternatives. The idea of price is not intuitive, since it does not only refer to the amount of euros that the butcher requires for one kilogram of chicken's chest, even if these prices are important (even if Smith's theory of its self-interest of making money is considered). For instance, take the price of building the new Chelsea's stadium in London: its cost could be estimated summing the price of reinforced concrete, steel, and bricks, but if we think about what the city is renouncing, then its price should also consider the benefits of the hospital that could have been built in its place.

This is the idea of economy which is trying to be analyzed here: even the idea of economy in XXI century really takes its first steps from the Greek definition of "*oikonomia*", the sum of the world "*oikos*" (family, or house) and "*nomoi*" (rules, laws). This word meant "the administrations of the things of the family, of the house", in other words, again, the administration and the correct use of a limited number of resources for a defined number of people.

Today's economic environment, as already seen, even if based on factories and populated societies, is still based on families and the members that compose them. Afterall, people buy things and compose the workforce. Where the failure hides are behind the scientific appearance of economy, which is not as a laboratory experiment made of formulas written on the blackboard where everything can be considered, and result can be predicted.

The invention of money

If economy, as previously defined, is the study of the right allocation and use of limited number of resources, today money is the first way to make the entire system working. The same holds if economy is intended as the maximization of value since its changes over time required accountancy and an entire system based on money (nevertheless every place and time will have its degree of allocation and demand curves decided by market negotiations, what is going to be defined as "economic environment").

It is fundamental to begin this section underling that, despite one would logically figure in his mind a system of equations where ancient communities stay at pre metallic money as modern economies stay at metallic money, it is far from being historical events: the logical order, this time, does not follow the chronological one.

As a matter of fact, banking was already a settled system (if for banking it is accepted a simplified definition of the right to make loans) in Babylon before coinage, while Italy banking system followed as more logically it may seem the born and development of regulated coins making.

Incredibly, at this very moment, there are factories in Europe still producing metallic anklets used daily as money in more than 650 African villages, despite their possibility to use the coinage system (which has been uselessly fostered by national governments for decades).

Above all the objects that humans have used as primordial coins, the most diffused one (geographically and for a greater length of time) has been the cowrie, a brown and whiteish shell of a mollusk which can be easily found in Pacific and Indian Oceans beaches.

Its use started to flag due to the growth of trades and the increase in the number of cowries (soon it depreciated, despite being still officially accepted to pay taxes in Central Africa until twentieth century).

By the first half of that century, indeed, thousands of tons of cowries had already been moved to Africa (mostly from Maldives and other areas where their huge quantity led to a progressive devaluation), this excessive amount reduced their value until their effective disappearance, also for the latest small purchases and in the most isolated villages.

Despite such primordial coins had been used by a small percentage of people in human history compared to more recent currencies, cowrie really knew period of prolonged popularity, so that in some regions it happened that (in the opposite direction of Gresham's law conclusions) it succeeded in overtaking coinage.

A prove of cowries' successful diffusion is that its pictogram in ancient China was later used in substitution of the word "money".

Other two forms of primordial coins that must be reported, even if they had a much more limited geographical diffusion upon the Fijian islands are the sperm whale's tooth, also called "*tambua*" and the "*fei stones*" of the Island of Yap.

The territories that are now forming what is called "North America" have been trying for decades to establish a monetary system which could be acceptable all over these lands without success: in 1715 authorities in North Carolina declared that more than seventeen commodities where legal currencies (two of them where maize and wheat).

Oddly enough, a more generally accepted currency had been established by indigenous communities: strings of white beads. The official name of this primitive form of money was "wampumpeag", where wampum meant white and peag was the Indian word for defining a string of these beads which were plentiful in northeast of America and Canada. This specific bead was made of the shell of the clam, which are mostly white with a purple frame (the rarer black or blue-black spot ones were exchanged at double price of the white).

Another issue that must be analyzed is the long evolution of units of account, and, if cowries played the role of the main character for the evolution of money, cattle was the first and most spread unit of account.

Its history is even antecedent to the use of seeds as currencies since mankind was already domesticating animals 14.000 years b.C, therefore about 4.000 years before the invention of agriculture. Linking to the limits and doubts above analyzed for previous cases, cattle as money is surely the most debated one, since buffalos and camels don't appear to be suited to become a medium of exchange due to their weights and impossibility of standardization.

History, once again, teaches that abstraction (and, for the purpose of this analysis, also creativity and beliefs) makes even cattle an effective and easily acceptable currency, firstly logically and then practically. It happens therefore that the problem of currency's heaviness is quickly solved defining how many goats a camel is worth, how many chickens for one goat, how many rabbits for the chickens and so on (as today it's needed 100 pens to have 1£). The same symmetrically happened with cowries due to their small single value which brought to aggregate them in baskets and necklaces.

In conclusion, also the issue of cattle's standardization is solved through logic and a pinch of imagination, because if it can be admitted that a rubbing, dirty, wet, some years old 100$ banknote is desired as one printed the day before, then an old and crippled camel could have the same value of a young and sturdy one, since they are conceptually considered as units of accounts.

Cattle is currency as much as euros and yens, and it is forever true and impressed in the etymology of the Latin world "pecunia" (money), which, as easy to understand as it is, comes from "pecus" (cattle).

The road to coinage: the use of metals as money

Asian craftsmen started to replicate cowries in bronze and copper, an imitation that, since it's a form of money "production", is considered as one of the earliest examples of numismatic, if its definition is lightened from the need of a central authority regulating the production of this atypical good.

What is relevant is that metals object did not have to imitate cowries to be considered money, because, as Jevons listed, they already satisfied all the qualities required for being considered a valid currency: recognizability, utility, portability, divisibility, indestructibility, stability of value and homogeneity.

Some of the most successful specimens of metal money could be found in “manillas” commodity money, mainly forged in bronze or copper, and widely used in West Africa. These ornaments had different dimensions, shapes and colors, but they were usually circular (similar to torcs) or horseshoe shaped, with ending that face each other.

There are theories regarding the origin of this name: it could come from Spanish meaning “bracelet”, or from Latin word “manus” (hand), or “monilia” (plural of “monile”, which means necklace), but also from the Portuguese “manhila” (hand ring).

There is one ancient civilization that had been left apart in this short story of primitive coins which still deserves a mention: China.

Inhabitants of this huge territory, as introduced above, started to cast bronze and copper cowries, and these object, together with miniaturizations of swords and other most common tools, were the main instrument used for exchange.

Since these objects were made with basic metals, their singular value was so small that it became necessary to make holes in them so that they could easily be carried through a twig. There was another reason for the hole, which is that since they were casted, which means intentionally produced with the specific purpose of being used as money, the twig was already used in the production line to make at least fifty pieces every time. The issue here is not about the relevance of this holes in historical terms, rather it is the possibility of defining these items as the first example of coinage. Here, from a technical perspective of a numismatist it may be forcing conceding the coinage theory due to the lack of official procedures, standards, weights and authorizations, while, from an economist standpoint, it must be admitted the forward-looking introduction of a system that, once developed, will interest every economy.

Banknotes and finance

The inevitable development of standardized coins had been banknotes, whose name derives from *“bank note”,* the standard document that from the fourteenth century allowed its owner to withdraw a prearranged amount of precious metal from an authorized banker (as happens today in every commercial bank, they already used to keep only a percentage of total deposits as reserve while all the remaining metal was used to grant loans).

Despite banknotes had already been printed by the Bank of England from 1695, their compulsoriness in modern European area goes back only to the years that followed the French revolution, when Napoleon’s functionaries imposed its use. This is how the economic system of banknote started: as soon as the banknote becomes compulsory every agent in that environment needs that tool to satisfy his needs, because the belief of the consistency of value of that colored printed paper document is guaranteed by the law. The difference between coined money or printed banknotes and every other possible mean of exchange is that the formers never go out of fashion and don't have an expiration date: their value has no boundaries in time or space. Every other object, in a previous system based on barter, faced a natural deterioration of its characteristics and therefore of its value. Minted coins and banknotes represent the two pillars of this system of real economy, the first system with low transaction cost.

CHAPTER TWO – METAVERSE AND NFTS ECONOMIC ENVIRONMENT

Metaverse taxonomy

Metaverse, Meta politics and Metacommunity are all words that are becoming more and more used, on the web, on the news, in schools, streets, by experts and non-experts. These are the words that everyone is searching on Google, that are attracting investments from all over the world and in every market: gaming, pharmaceutical, hospitality, banking, sports, and as it will be better analyzed later, also fashion and luxury. Everyone is looking at this innovation with extreme curiosity, because, as it seems, a revolution is expected. As it happened with the arrival of the internet, people are scared since the technology is still unclear to many and its future development are unpredictable. In 1980 nobody would have believed that some years later it would have been possible to buy a book from a website and receive it the following day, to have a videocall with a friend who lives on the other part of the world, to have access to news from the entire world, books and other documents just sitting on your sofa. Internet had been a revolution because it changed the way people live.

The Metaverse is the convergence of augmented physical reality and virtual reality inside an online and shared space. It is a mirror world, a space of virtual reality where users can interact with other users in a place generated by a computer. It is going to be accessible through all our different platform as Virtual Reality (VR), Augmented Reality (AR), PC, mobile devices, and gaming consoles. The ecosystem of a Metaverse needs elements created around the user, such as the avatar, contents, a virtual economy, social activities, privacy, and safety regulation. In such multiuser online space avatars can socialize, build a new net of relationships, and create a new level of exchange. What makes it different from a classical multiplayer videogame is that "players", or avatars, will have the ability to create and share contents to shape the world that will surround them, and in a persistent way.

To access the Metaverse the user needs a device: it could be modern viewers with video camera, but in not so many years from now just normal eyeglasses which will already be equipped with the possibility to see and interact with the elements inside the Metaverse, visualize the virtual reality, the objects, the spaces, and other users. The Covid-19 pandemic forced millions of workers to reinvent their daily routine, and a lot of them started their day sitting and turning on their computer: what was a kitchen soon became a real office for that day, a flexible place for the use of every videoconferences platform (the background could be deleted by the platform itself so there is no worry in showing the fridge or the oven even in the most important conference call). Through Metaverse this is not unlucky to become a typical office routine: in the morning the alarm clock start, you wake up, have a shower and dress casually with a pair of jeans and a t-shirt, have a coffee and wear your meta-eyeglass. You will be in a few second inside your corporate building in the Metaverse, in front of your desk with other colleagues, all connected from their homes.

To conclude on the definition of what is a Metaverse, it is necessary to differentiate it from what a Metaverse is not, so augmented reality (AR) and virtual reality (VR).

- As just highlighted, the Metaverse is much more focused on developing a service that can offer a content that is sustainable and suitable to have a social meaning, while VR technologies focus more on a physical approach and rendering.
- VR and AR are not necessary to create a Metaverse, so, even without them, a platform could still be considered as such.
- A Metaverse must have a scalable environment that can welcome many people, an environment made of hardware improvements, a recognition and expression model that leverages the parallelism of the hardware and the accessibility to the content that people immerse in.

NFTs

Why should someone wake up one day and decide to spend a certain amount of a new cryptocurrency to buy the property over a digital image? There are two main reasons for that: one is the common thread of all this document, namely the value given to everything that other people consider valuable (as it happened with shells and necklaces, now NFTs are widely appreciated and can be considered a trade good), and the second one is because people love to collect things (from shoes to cinema's tickets, from journals to digital images). While the second reason is a mere justification, the first reason is an explanation and is the most important one for the purpose of this analysis, since regardless the economic environment (barter, money, digital, crypto, virtual, and new ones that will arise), people can create and share value only through others' beliefs and behaviors. Even if it may seem evident, the more an item becomes accepted and desired, the less it will be denied and undesired, therefore it reinforces its value among the entire community (nobody can be excluded from the reinforcing process of value, in the form of necklaces, metals, coins, cryptocurrencies or stock options). As a matter of fact, the belief of the future acceptance of banknotes gives to every banknote owner the proper nudge to collect these colored printed pieces of paper as more as possible: the same process happened yesterday with shells and works today with NFTs and cryptocurrencies.

Once that NFTs existence (or its social value) had been explained, a proper definition of the word is needed:

- *Non*-fungible. Speaking the language of the economists, every good is fungible when its nature allows an exchange, fully or in part, with another good of the same nature, meaning that can satisfy the same needs almost entirely in the same way. Euros and dollars are perfectly fungible goods (20 coins of 1€ each are perfectly exchanged with a 20€ banknote, so even if such coins will weigh much more inside pockets, their value is the same of a much lighter banknote). According to the previous definition, also oil, wheat and gas are fungible goods. Inverting the definition, non-fungible goods cannot be freely replaced by similar objects. The typical example had always been diamonds (since every diamond is unique by color, shape, cut and brilliance), but from now on also NFTs can be used too. Even if every image could be easily downloaded online, every NFT is unique. It is exactly what happens with real canvas' artwork: there is only one original piece of art and thousands of replicas. To guarantee that it is a unique piece, every NFT is "coined" (as real money and cryptocurrencies), meaning that it is associated to its owner profile inside the specific blockchain.
- *Token*. Token always means something that is based on a blockchain. To avoid mistakes, emphasis should be given between the distinction of currency and token: in the crypto world the two words are used indiscriminately, but there is a difference: *currencies* as Bitcoin, Litecoin and Ethereum always use their own blockchain, whereas tokens always rely on other currencies' blockchain. To clarify this point, almost every NFT is based on Ethereum blockchain, others are being created on Binance Smart Chain and other minor ones.

There are different kinds of NFTs. All of them contributes to build the wider world of digital art, which is the sum of all the artistic creations which are digitally made and enjoyed (even if it is always possible to print digital art, its digital nature is itself an artistic feature). NFT is a smaller set inside the digital art one. Usually, the NFT set is itself divided into images, video, gif, audio, 3d models and books.

CHAPTER THREE – METAVERSE AND NFTS AS OPPORTUNITIES FOR LUXURY ANF FASHION MARKETS: OVERCOMING THE TRADEOFFS EXCLUSIVITY-ACCESSIBILITY AND CONSISTENCY-INNOVATION

This section is going to be dedicated to the proposal of a model that, taking into the equation all the main features above descripted regarding the luxury and fashion world, could be able to transform Metaverse and NFTs from a threat to an opportunity according to an hypothetical SWOT analysis scheme.

Companies approaching these innovations may find themselves wondering about the right strategy to adopt in such digital environment, but as frequently happens in real practice, there may be more than one solution.

Firstly because once a strategy has been implemented by a company it should never be proposed by another one, especially if these companies share the same target or the average price on the same product category, otherwise customers would perceive the second company as a cheater.
Secondly and most important, every company should have at least one feature in its DNA (name, colours, recurring themes, values, heritage, mission, and vision) that could really persuade the customers about the company authenticity and reliability, and this, presumably, will remain crucial even with avatars since, behind them, there will be a student, a mother, a lawyer, a grandfather, or someone else, who is governed by emotions and not by algorithms.

Metaverse, and NFTs, may help these companies to solve the greatest trade-offs that they have always been facing: the inverse relationship between exclusivity and accessibility.
It means that every luxury or fashion brand strives to be perceived as the most exclusive one, sometimes even the most unattainable, while at the same time it has to face the reality of being a company that, by definition, needs a profit, which, simplifying for the purpose of this reasoning, is made by the number of units sold multiplied by the average price less the sum of the expenses.
In a world where prices are already very high compared to unbranded products that satisfy the same need without a logo and expenses rise too due to inflation and production costs it is easy to understand that the solution relies on the number of units sold, or, in other world, accessibility.
The tradeoff is unsolved since the increase of sales would cause, again, the Snob effect and, in wider terms, it would bring to brand dilution, which can be defined as the weakening of the brand power in terms of positioning, which itself is the set of ideas, beliefs and hopes that customers have when they think about a brand.

The strategic model

The model proposed is built upon 5 main pillars:

1. Customer Proximity

"*Welcome to our exclusive world*", this could be the motto of every luxury and fashion company that decides to implement a structured strategy into Metaverse and NFTs.
"Welcome" because, for the first time ever, especially for luxury brands, everyone can enter this world, while "*exclusive"* because the brand is still striving in the real world to keep its high level of exclusivity to maintain the right positioning in consumers' minds.
I decided to start from the "customer proximity" opportunity, since this could represent a real revolution for all those companies which, due to their heritage, prices, and once again, exclusivity, have never been reached by a mass market, but, for definition, by a niche one. Therefore, it seems necessary for those brands to be less

exclusive and more "inclusive" at least in such virtual world, and here are reported some proposals which may help both customers and companies in a "win-win" relationship:

- BRAND META-LOUNGES. The idea is to graphically develop branded spaces such as lounges or cafes where avatars can meet and spend their time together. The atmosphere would be the one of some friends sitting on a sofa in front of a table with their virtual coffees talking about next week report deadline or about last night football match result. Inside a hypothetical Fendi meta-lounge the walls would be painted in the brand iconic "roman yellow", and the same would be for the coffee mugs or other decorations of such space. Avatars could meet there and decide to have a private room inside the meta-lounge or have their table in a bigger room where other "customers" are sipping their virtual Frappuccino's. These places could be used also by a single avatar who may be interested in knowing something more about the brand, therefore, just looking at one of the various painting on the walls a description on the history of the dress there reproduced could be red or, even more interesting, a video could be used to story tell the work behind an advertising campaign, the launch of a new collection, the production phases and so on.
- REWARDS THROUGH COLLECTIBLES. To be as much inclusive as possible, companies may reflect about the opportunity to make some virtual gifts, both to ease the access to new customers into their virtual spaces and, more important, to retain them once they are inside. Rewards, instead, could be given for those avatars which have made a certain purchase online or in store, or for those that have completed the videogame or a set of videos about the brand.

  Succeeding in these activities would unlock some brand virtual objects such as clothes to be used online and wore by the avatar itself.
- CO- CREATION. Another huge opportunity could be the co-creation (brand and customers together) of a collection of NFTS or other collectibles since that could ease the until now cold relationship between the two parts and help both to better know each other. The brand would get precious information regarding the tastes of its audience in the NFTs world, while customers would learn more about the brand DNA, already defined as the sum of logo, main color, typical motifs, and values.
- META-FACTORIES. The idea is the following: replicating in the virtual space of the Metaverse the industrial district where the most famous brand in the world creates their unique products. Some of these places are visited every year by thousands of fans who admire the passion, the history, the knowhow which build the brand equity.

2. Targeting Gen Z through digital experiences and videogames

The second opportunity that luxury and fashion brands should not miss to catch is to target the digital native generation (Gen Z of course) trying to talk to them speaking the language of the videogame, and way better, to make them immerse in future videogame developments into the Metaverse. Gaming is already a massive industry, and it is growing more and more every year (its global value is estimated to be more than 250 B of

USD in 2021 and it has a double-digit growth rate in every region of the world). It is becoming the most popular pastime for younger generations and modern consumers are engaging with games in ways that few years ago were not even imaginable.

The results obtained by the "*Newzoo's Videogame Generations Report 2021"* all bring to one main conclusion: there are other reasons behind the game itself that capture young players, such as socialization, competition, and creation of something together. In that sense the future looks bright and transformative thanks to emerging technologies and Metaverse itself, that will reinvent the gaming market into an enormous virtual space that empowers entertainment and social interaction. The research behind the report had been conducted between January and April 2021 on a sample of 72.068 participants, which were mainly from Gen Z and Millennials (Gen Z 22.652, Millennials 26.123, Gen X 16.854, Baby Boomers 6.439) and from 33 different markets from North America, EMEA, APAC and Latin America. The first analysis that the report offers is the one related to the engagement of players with videogames, finding recurring patterns in each generation. There are at least four main conclusions in that sense:

- Gaming takes a larger share of leisure time with younger generations. The incredible result is the following: 25% of leisure time of Gen Z (and surprisingly 21% for Millennials) is spent on playing videogames, and, if this percentage includes also the time spent on social network and streaming of movies and tv series it rises to 60% for Gen Z and 58% for Millennials.

- The younger the generation, the more diverse their gaming engagement. As it is reported, older generations tend to play videogames more casually and typically on mobile to fill their free time. In contrast younger generations tend to engage with videogames in many ways, such as watching game related content on YouTube, discussing about latest news in community spaces, listening to dedicated podcast and discussing video games with friends.

- Most people play to unwind, but younger generations have many motivations. Even if across generations the main aim of playing is surely unwinding, the rising of multiplayer games create the possibility of meeting with friends online, defend a medieval castle together and achieve a shared result.

- The older the generation, as intuitively it may be, the less time is dedicated to playing game every week. On average gen Z spends 7 hours and 20 minutes playing games, half an hour more than the Millennial average, meanwhile Gen X plays 4 hours and 25 minutes per week and Baby Boomers only for just 2 hours and 30 minutes.

3. DSE – "Digital Shopping Experience"

Brand from luxury or fashion markets may find in the Metaverse the opportunity to replicate their physical store in a digital dimension. Words such as flagship store, city store, concept store, corner, shop in shop, temporary store, seasonal store, could become relevant also in the digital world of the Metaverse, where the same logic behind any of these categories may still work. It seems unnecessary to highlight the following detail: a real store opens in the morning and closes in the evening, some days of the year remains closed (due to restructuring, holidays and other issues that may affect every real store in a real street), and except from mall stores, when it rains traffic drops. A store in the Metaverse is a revolution in that sense: it could be always open, 24h every day (for sure some maintenance will be needed but it is always a matter of hours, as it may be needed an update). Here is needed a clarification: while for fashion store the shopping moment is important, for luxury brands it is a real experience, and this should not change inside Metaverse. Here are reported two different shopping scenarios: the former in fashion store such as Zara, the latter in a luxury one as Bottega Veneta. The scheme proposed for the DSE is the following:

4) INTRODUCTIVE PHASE. This is when and where the customer (avatar of course) is welcomed inside the digital store. It could happen inside a virtual room where walls are animated with brand colors and main motifs with the motto above introduced: "welcome to your exclusive world". This is where, if the avatar had not authorized the data sharing with third parties in the metaverse introductive setting, the brand would ask him some information to guarantee a better experience according to its age, nationality, needs, previous purchases with the brand in physical stores and so on.

5) BRAND ON STAGE PHASE. For all the time spent inside a store in the Metaverse the brand must be the main character. Portraits of iconic models that made the history of the brand ("*Kelly bag*" for Hermes, "*Serpenti"* bracelet for Bulgari, *911* for Porsche and so on) should be displayed on the animated walls, fashion's show videos reproduced everywhere with all the celebrities that embodied the brand during their careers. A new role inside brand sales team could be created: the Metaverse sale assistant (MSA), which is part of the team employed inside the metaverse division and has the hard task to replicate inside the virtual store the same level of kindness and service that a customer finds in retail stores.

6) AFTER PURCHASE PARTY. Once a purchase had been made in the digital store, especially if the customer buys a collectible for its avatar, a little party will be offered by the brand. Dance music will start to animate the entire store and for as much as the customer want there will be the possibility to dance, alone or with its friends in that dedicated space. The entire digital shopping session and the party itself will be already recorded and an after movie will be sent to the customer with all the links to share it on the main social media platform.

4. Worldwide Storytelling Consistency

It happens that the credibility of every company (which heavily contributes to what in marketing is better defined as "*positioning*") is made by thousands of situations that build and sediment a particular image in consumers' mind, and in some rare case a real dream, a deep desire, an unconscious ambition of owning one of the brand's products. *"Give to a child a white paper, some colored pencils and ask him to paint a car. He will make it red."* This well-known quote by Enzo Ferrari helps to demonstrate the power that some brands (and their main features, and surely color is one main link when thinking about brands as Valentino, Chanel, Fendi) have both on customers and those that dreams to become customers. Once the brand succeeded in creating a particular idea about its main characteristic, the easiest way to maintain that portrait pure is being consistent. This may be the hardest part, because there are so many occasions where credibility can be lost that a constant surveillance becomes a necessity. Initiative could be implemented in this direction too:

- WORLDWIDE META PRESENTATIONS OF NEW COLLECTIONS. If new collections presentations are already organized in very huge parties in unique places in the world (Dior alone had located more than one time: the Louvre Museum. the Tour Eiffel and the Versailles Palace), it becomes easy to imagine the possibilities in the Metaverse for what represent the two main events for fashion brands (the SS and the FW collections' presentations). That relevance is not diminished for luxury brands who are not in the clothing industry (Rolex, Cartier, Ferrari, Baume e Mercier), rather it becomes even more crucial to demonstrate that the company is still producing iconic pieces which value goes over the price itself.

- TAKING SIDES ON RELEVANT EVENTS THROUGH META CAMPAIGNS. Recently brands have known a process of humanization, which means that over the years every company had started to have what is technically defined as brand soul, tone of voice, DNA, and humor. This had not been an easy choice since, as happens with real people, we, as humans, cannot be loved or even appreciated by everyone, while a brand should do as much as possible to enlarge its audience. Well, recently brand showed that sometimes consolidating the target they already reached may work well and taking sides on social themes or political debates can have a resonance that goes extremely over the campaign itself.

- WORLWIDE CELEBRATION OF CULTURES ON METAVERSE. As already stated before, most of the brands analyzed in these pages are multinational brands, which have stores, licenses, factories, warehouses all over the world. Again, it implies that cultures must be taken into the equation when it comes to deal with local customers. For instance, tables with local holidays are constantly monitored by the brands to show to its customer that everyone inside the company is respectful of what is important for them, or, in other words, to show that "*I care to what you care*".

5. Digital, Mass, and more Sustainable Market

For the first time ever, Metaverse is introducing the possibility to enter in a virtual store and walk inside it, see the mannequins, the shelves full of clothes and still be inside your room. It is expected to be a very powerful channel because it can recreate most of the stimuli that a customer experience inside a real store, and, as already proposed before, experiences that could not take place in real life could find space in a virtual store. It could become, therefore, a real digital mass market where everyday hundreds of thousands of avatars can enter inside the store (it seems feasible because some of the most used platform can already welcome millions of players at the same time and still offer a perfect experience for everyone in terms of quality of the graphics and time processing).

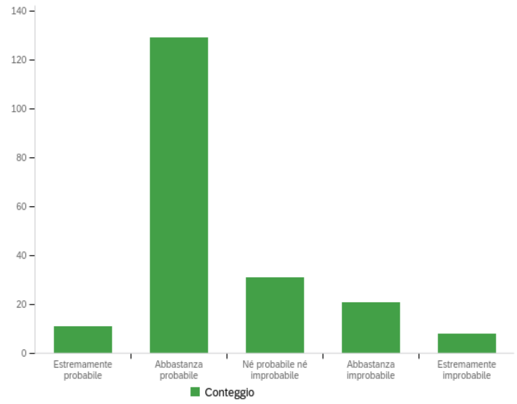
CHAPTER FOUR – EMPIRICAL ANALYSIS OF THE CURRENT SCENARIO AND FUTURE EXPECTED DEVELOPMENTS

The survey that had been conducted collected useful answers from 208 participants on 13 simple questions that investigated the level of knowledge about the world of Metaverse and NFTs and, more importantly, the interest in possible future developments for luxury and fashion brands. Participants had been segmented by age in 6 main groups composed as follows:

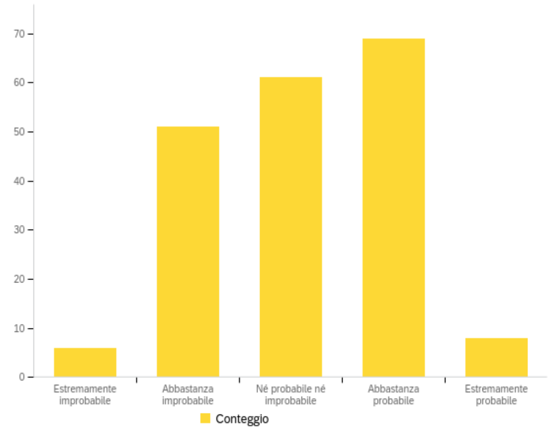
- *12% - Less or equal to 17 years old*
- *43% - Between 18 and 24 years old*
- *24% - Between 25 and 34 years old*
- *14% - Between 35 and 44 years old*
- *4% Between 45 and 59 years old*
- *2% More or equal to 60 years old*

All the questions tried to investigate respondents' interest on the proposals developed in Chapter three and to obtain a clear picture of current perception of Metaverse and NFTs economic environment, while understanding what could happen next. The two main findings are those obtained by Q5-Q6 and Q11, that are going to be here explained.

Q5) *"Within 2/3 years, how likely do you consider that you can enter in a virtual store of GUCCI or a similar brand from the luxury and fashion world (Cartier, Loro Pana, Bulgari, Valentino) just through an optical viewer?*



Q6) *"Within 2/3 months, how likely do you consider that you can enter in a physical flagship store of GUCCI or a similar brand from the luxury and fashion world (Bottega Veneta, Brioni, Patek Philippe, Rolex) for instance in "Via de Condotti" in Rome or "Via Monte Napoleone" in Milan?*



This is the most important result of the survey that confirm how the excessively exclusive approach adopted by luxury and fashion brands over the years really created a distance between those who are not customers and the brand itself. These two questions, indeed, confirm that the tradeoff exclusivity-accessibility could effectively be overcome by inclusive digital spaces offered by Metaverse. Indeed, as it is easily visible from these two graphs, 126 participants considered "likely enough" to enter in a virtual store within 2/3 years, compared to 69 votes for the physical store entrance in 2/3 months. In advance, regarding Q6, similar share of answers had been obtained also for the "nor likely or unlikely" and "unlikely enough". This is the pillar that can sustain the model for luxury and fashion brands proposed in Chapter 3: there are millions of possible customers out there who would like to enter in these worlds if it were just more accessible and less exclusive.

Q11– "*How would you define each one of the following proposals between "good innovation" and "detrimental innovation"?*

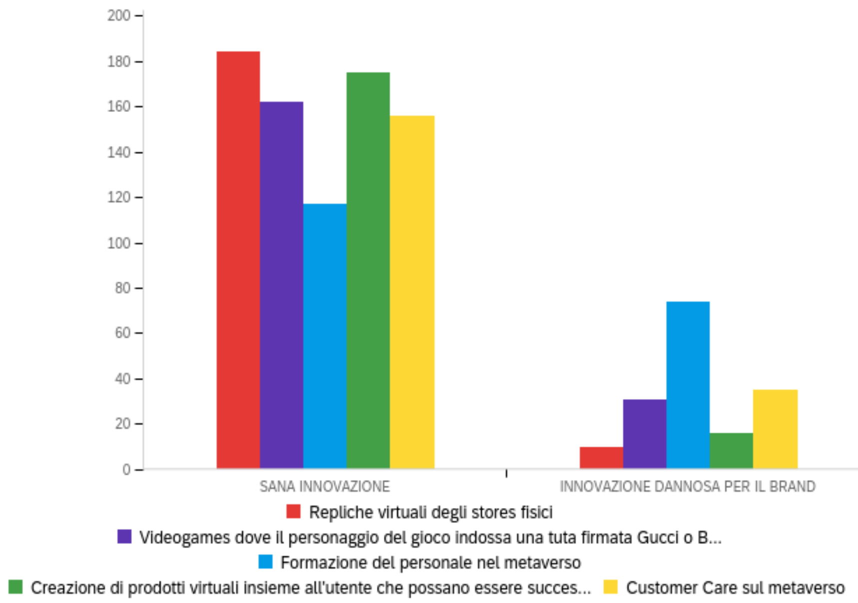
- *Virtual replica of physical stores*

- *Videogames where players wear a Gucci or Balenciaga tracksuit*

- *Employee's formation on Metaverse*

- *Co-Creation of virtual products that could successively be commercialized*

- *Customer Care on Metaverse*



Exception made for the still too hazardous proposal of employees' formation on Metaverse, all the others received approval as "good innovations" by more than 75% of voters. This is a tremendous result for such companies because it means that a strategy of serious innovation could be pursued, at least in Metaverse (that becomes mainly a new channel for the brand). This shared approval may have occurred because Metaverse is perceived as an innovation which is not going to turn a luxury and fashion company upside down, rather it is going to support it and enlarge its opportunities and connections with customers. For instance:

- Co-Creation of products could help brands to add new patterns and motifs to their iconic lines. For such brands this would represents a significant innovation that would still be accepted and welcomed since the brand is still perceived as consistent, what is innovative is the channel and the process through which products would be designed and delivered to customers.

- Virtual replica of stores was another proposal designed to get people closer to the brand. This incredible result (184 considered it "good innovation") highlights once more that potential customers are already close to these brands and are waiting them to make the first move towards proximity and accessibility.

- Videogames too seems not to be diluting the brand image. Videogames players, indeed, would appreciate to personalize their character with digital clothes from these brands, above all in the so many “battle royale” games where hundreds of players compete everyone against everyone and there is one single final winner which will take the entire stage on every player screen.

- A Meta-Customer care too, as it could have been easily imagined from the start, received extended consensus. Unfortunately, everyone had experienced at least once in its lifetime the difficulty to be listened and supported by one brand when there had been an issue difficult to solve, particularly when the customer asks a refund. Still having in mind the classical music jingles played by automatic company’s switchboard every time speaking with an operator had been necessary, participants visualized the easier scenario of a “meta-customer care office” where operators (avatars) are, at least virtually, in front of the customer.

Conclusions

Luxury and fashion companies embracing Metaverse and NFTs opportunities could reasonably be perceived as more inclusive and innovative in the following years, overcoming the two main tradeoffs that had always affected their reference markets. Nevertheless, according to the entire evolutionary approach adopted in this reasoning from first economic environments (based on shells, necklaces, bracelets, wood sticks, spits, cigarettes, metals, coins, banknotes, checks, derivatives) to modern ones (made of cryptocurrencies, Metaverse and NFTs), this system should not be considered as the most disruptive innovation ever, but as another phase in human history which one day will be replaced by another invention.

BIBLIOGRAPHY

REPORTS and PAPERS

Altagamma Bain "*Luxury Goods Worldwide Market Study*" 2021 XX Edition

Altagamma Bain, "*Luxury Market Monitor*", 2021

Altagamma-BCG, "*True Luxury Global Consumer Insight*", 2021

Altagamma-Bernstein, "*Luxury Retail Evolution and the Digital Revolution*", 2021

McKinsey & Company, "*The State of Fashion*", 2022

McKinsey & Company, "*The State of Fashion Technology",* 2022

Newzoo,*"Videogame Generations Report", 2021*

Silesian University Working Papers in Interdisciplinary Economics and Business Research, "*The Opportunities of Using the Metaverse from a Busines Perspective",* 2022

Tecnon OrbiChem, "The Global Polyester & Intermediates Industry: Trends and Challenges", 2019

The Economist, "*The World in Data - 2022*", 2022

PUBLISHED ARTICLES

Armitage J., "*Rethinking haute couture: Julien Fournié in the virtual worlds of the Metaverse*", 6th July 2022, SAGE Journals

Arya V., Bousba Y., *"Let's connect in Metaverse, brand's new destination to increase consumers' affective brand engagement and their satisfaction and advocacy*", 8th June 2022, Journal of Content, Community & Communication

Balasyan I., Casais B., "*Keeping Exclusivity in an E-commerce Environment: The case of Farfetch.com and the market of luxury clothes"*, 2018, International Journal of Marketing, Communication and New Media

Ball M., "*The coming worlds: the metaverse is still under construction, but it is sure to change our lives*", August 2022, TIME Magazine

Belk R., Humayun M., Brouard M., "*Money, possessions, and ownership in the Metaverse: NFTs, cryptocurrencies, Web3 and Wild Markets"*, December 2021, Journal of Business Research, ELSEVIER

Berg A., "*How current global trends are disrupting the fashion industry*", 23rd June 2022, McKinsey Blog

Cabigiosu A., "*An Overview of the Luxury Fashion Industry*", 14th July 2020, part of the Palgrave Advances in Luxury book series (PAAL).

Duma F., "*Luxury is dead, long live luxury! Resonance as an alternative lens to advance our understanding of an eternal desire and a global business*", 13th September 2022, Asia Pacific Journal of Marketing and Logistics

Green G.A., Ishida K., Hampshire B.V., Butcher K., Pollard A.M., Hiller A.D., "*Understanding Roman Gold Coinage Inside Out*", 2021, Journal of Archeological Science, ELSEVIER

Hogendorn J., Johnson M., "*The Shell Money of the Slave Trade"*, 1986, Cambridge University Press

Joy A., Zhu Y., Pena C., Brouard M., "*Digital future of luxury brands: Metaverse, digital fashion, and non-fungible tokens*", 5th May 2022, Wiley Online Library

Kshetri N., "*Web 3.0 and the Metaverse Shaping Organizations' Brand and Product Strategies*", 2022, IEE Computer Society Digital Library

Iqbal M.Z., Campbell A.G., "*Metaverse as Tech for Good: Current Progress and Emerging Opportunities*", 30th June 2022, SSRN

Lee J., Ki Han K., *"Novel pathway regarding Good Cosmetic Brands by NFT in the Metaverse World*", 27th July 2022, Journal of Cosmetic Dermatology, Wiley Online Library

Marr. B., "*How Luxury Brands Are Making Money in The Metaverse*", 19th January 2022, Forbes Magazine

Marr B., "*The Effects of The Metaverse on Society*", 4th April 2022, Forbes Magazine

Moon S.H., "*The Impact of Metaverse Development and Application on Industry and Society*", 2022, KoreaScience, The Journal of the Convergence on Culture Technology

Pu Q., Xiang W., "*The Metaverse and its influence and transformation on human society"*, 2022, Asia Pacific Academy of Science Open Journal Systems

Radon A., "*Luxury Brand Exclusivity Strategies – An Illustration of a Cultural Collaboration"*, 2012, Journal of Business Administration Research

Rehm S.V., Goel L., Crespi M., "*The Metaverse as Mediator between Technology, Trends and the Digital Transformation of Society and Business*", 2015, Journal of Virtual Worlds Research

Saengchote K., "*Cryptocurrency bubbles, the wealth effect, and non-fungible token prices: Evidence from metaverse LAND*", 9th September 2022, Cornell University Press

Sang M. P. and Young G. K., *"A Metaverse: Taxonomy, Components, Applications, and Open Challenges"*, 4th of January 2022, IEEE Access Journal

Sumeet S.L., Reena M., "*Into the Metaverse: Marketing to Gen Z Consumers*", 2022, IGI Global Publisher of Timely Knowledge

Wray R.L., "*An Irreverent Overview of the History of Money from the Beginning of the Beginning through the Present*", 1999, Journal of Post Keynesian Economics Vol 21 n.4, Taylor & Francis Online

Zhang Z.J., "*Cryptopricing: whence comes the value for cryptocurrencies and NFTs?*", 5 September 2022, International Journal of Research in Marketing, ELSEVIER

Zhu H., "*MetaAID: A Flexible Framework for Developing Metaverse Applications via AI Technology and Human Editing*", 2022, Cornell University Press

BOOKS

Angeles L., "*Money Matters: How Money and Banks evolved, and Why We Have Financial Crises*", 2022, Palgrave Macmillan

Ball. M., *"Metaverse: what does it means, who will control it and why it is revolutionizing our life*", Garzanti Editore, 2022

Christensen C.M., *"The Innovator's Dilemma",* 1997, Harvard Business Review Press

Chown J.F., "*A History of Money: from AD to 800"*, 1994, Routledge

Corbellini E., Saviolo S., "*Managing Fashion and Luxury Companies"*, 2009, Rizzoli Etas

Cox C., *"Luxury Fashion: A Global History of Heritage Brands"*, 2013, Bloomsbury Visual Arts

Del Mar A., "*A History of Money in Ancient Countries from the Earliest Times to the Present",* 1885, Elibron Classics

Davies G., "*History of Money: from ancient times to present day",* 2002, University of Wales Press

Harari Y. N., "*Homo Deus: a brief history of future*", 2018, Bompiani

Lannoye V., "*The History of Money for Understanding Economics*, 2021, Createspace Independent Publishing Platform

Kapferer J.N.,"*The Luxury Strategy: Break the Rules of Marketing to Build Luxury Brands*", 2nd edition 2021, Kogan Page Publisher

Juroda A., "*A Global History of Money*", 2020, Routledge

Okonkwo U., *"Luxury Fashion Branding: Trends, Tactics, Techniques*" 2007, Palgrave Macmillan

Ozuem W., "*The Art of Digital Marketing for Fashion and Luxury Brands: Market Spaces and Marketplaces*", 2021, Palgrave Macmillan

Serdari T., "*Rethinking Luxury Fashion, The Role of Cultural Intelligence in Creative Strategy*", 2020, Palgrave Macmillan

Singh S., "*Luxury and Fashion Marketing, the Global Perspective*", 2021, Routledge

Yang B., "*Cowrie Shells and Cowrie Money: A Global History.",* 2019, Routledge

SITOGRAPHY

https://about.meta.com/what-is-the-metaverse/

https://altiant.com/fine-jewellery

https://analyticsindiamag.com/top-three-metaverse-platforms-in-2022-and-no-it-doesnt-include-facebook/

https://www.bloomberg.com/news/articles/2021-12-09/luxury-fashion-brands-are-already-making-millions-in-the-metaverse

https://chainbulletin.com/samsung-opens-virtual-store-in-decentraland

https://cryptonomist.ch/2022/03/12/nft-69-milioni-beeple-un-anno-dopo/

https://decentraland.org/

https://decentraland.org/blog/announcements/sotheby-s-opens-a-virtual-gallery-in-decentraland/

https://ecojungle.net/post/the-most-polluting-industries-in-2021/

https://events.decentraland.org/event/?id=14cf077d-9c19-4576-8df5-b3134a434dac

https://financecue.it/valore-gaming-numeri-mercato-crescita-fatturato-abbonamenti/33261/

https://forbes.it/2022/09/02/economia-creazione-iniziando-arena-metaverso/

https://forbes.it/2022/01/05/hm-metaverso-apre-primo-negozio-virtuale/

https://forbes.it/2022/02/24/microsoft-lindustria-dei-videogiochi-e-la-corsa-al-metaverso/

https://forbes.it/2022/04/12/tag-heuer-frederic-arnault-racconta-rivoluzione-metaverso-nft/

https://forkast.news/headlines/japanese-crypto-firms-metaverse-association/

https://hypebeast.com/2022/2/jp-morgan-virtual-lounge-decentraland-first-bank-enter-metaverse

https://installers.sandbox.game/The_Sandbox_Whitepaper_2020.pdf

https://metaversefashionweek.com/

https://news.microsoft.com/2022/01/18/microsoft-to-acquire-activision-blizzard-to-bring-the-joy-and-community-of-gaming-to-everyone-across-every-device/

https://pro.bloomberglaw.com/reports/privacy-law-faqs/?trackingcode-cta=BLAW21107058

https://professionalwatches.com/morgan-stanleys-top-20-swiss-watch-company-ranking-for-2022/

https://spatial.io/

https://vault.gucci.com/it-IT/story/metaverse

https://swisswatches-magazine.com/blog/most-expensive-patek-philippe-wristwatches-of-all-time/

https://worldwide.espacenet.com/patent/search?q=metaverse

https://zepeto.me/

https://www.adnkronos.com/bulgari-entra-nel-metaverso-con-una-roma-virtuale-ricreata-in-unreal-engine-5_3fJ0KCdWAg3jPVzkLoGdlz

https://www.artribune.com/progettazione/new-media/2022/07/bvlgari-prima-collezione-gioielli-nft/

https://www.barrons.com/articles/paks-nft-artwork-the-merge-sells-for-91-8-million-01638918205

https://www.bloomberg.com/professional/blog/metaverse-may-be-800-billion-market-next-tech-platform/

https://www.burberryplc.com/en/news/brand/2022/burberry-x-blankos-block-party--new-nft-collection-and-social-sp.html

https://www.businessoffashion.com/articles/technology/state-of-fashion-technology-report-metaverse-digital-goods/

https://www.coingecko.com/it/monete/decentraland

https://www.everyeye.it/notizie/giocatori-fortnite-2022-battle-royale-famoso-594311.html

https://www.forbes.com/sites/abrambrown/2020/11/30/how-hip-hop-superstar-travis-scott-has-become-corporate-americas-brand-whisperer/?sh=6a47861f74e7 https://www.gucci.com/it/it/st/stories/inspirations-and-codes/article/zepeto-x-gucci

https://www.gucci.com/it/it/st/stories/inspirations-and-codes/article/gucci-gaming-roblox

https://www.ilsole24ore.com/art/brand-azione-conquistare-nuovi-mondi-metaverso-AEano2rB

https://www.ilsole24ore.com/art/la-fashion-week-debutta-metaverso-e-fa-pieno-brand-AEMwGFMB

https://www.ilsole24ore.com/art/metaverso-e-web3-tutte-mosse-e-sfide-aziende-moda-e-lusso-AE4YwipB

https://www.mckinsey.com/industries/retail/our-insights/forward-thinking-on-the-sustainability-revolution-in-textiles-and-the-fashion-industry-with-edwin-keh

https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2022/the-state-of-fashion-2022.pdf

https://www.milanofinanza.it/news/fendi-nasconde-le-sneakers-faster-nel-metaverso-con-meta-202209131742262058

https://www.milanofinanza.it/news/bulgari-continua-l-espansione-nel-metaverso-con-zepeto-202208311813404310

https://www.pambianconews.com/2022/05/30/gucci-inaugura-un-intero-quartiere-virtuale-nel-metaverso-347798/

https://www.pambianconews.com/2021/11/22/un-lusso-sempre-piu-da-videogame-anche-moncler-si-allea-con-fortnite-332221/

https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/

https://www.reuters.com/markets/companies/TSLA.OQ/ (1 September 2022, 21:59)

https://www.reuters.com/markets/companies/GM.N/ (1 September 2022, 22:01)

https://www.reuters.com/markets/companies/GM.N/financials/income-annual

https://www.roblox.com/

https://www.roblox.com/games/9249776514/Givenchy-Beauty-House

https://www.theguardian.com/games/2020/apr/24/travis-scott-concert-fortnite-more-than-12m-players-watch https://www.totaltele.com/513264/SKT-leans-further-into-metaverse-with-games-company-investment

https://www.websiterating.com/it/research/facebook-statistics/#chapter-1

https://www.wwf.it/cosa-puoi-fare-tu/ecotips/piccole-azioni-grande-impatto/