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Avatar capitalism

Policy implications of the metaverse as the future of platforms

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Abstract

This thesis seeks to anticipate legal and ethical challenges induced by the move of established platforms towards becoming metaverses. By identifying key mechanisms for profit and control within existing platforms and immersive online environments (IOEs), I describe specific issues linked to their combination in an analysis of Meta and Roblox. My investigation shows that (1) IOEs provide means for data collection and consumer manipulation which could help Meta maintain and even amplify its business model, as well as the associated harms (2) a metaverse like Roblox provide means and incentives for exploitative labour practices which put children especially at risk (3) virtual currencies within a metaverse constitute a powerful tool for platforms to exert control over users.

Key words

Metaverse, Meta, Roblox, Web 3.0, gig economy, social media

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Why should I read this research?

A teenager making pocket money by running a brothel. A child making serious cash from gambling real money in slot machines, then losing it all as the value of their investments in rare facial expressions plummets. A depressed adult going into debt by spending a fortune on fancy clothes to feel a sense of belonging and meaning they can't seem to find in real life. A game designer who depends on the company that hires them in the same way that a West Virginian coal miner did in the late nineteenth century.

These situations could inspire interesting episodes of Black Mirror, if it wasn't for the fact that most of these are happening today on Roblox, and those that aren't are likely to happen as Meta's vision comes to fruition. While regulators are just beginning to catch up with the harms induced by social media and the gig economy, the next stage in the evolution of platforms is already amplifying these harms and bringing them outside of the reach of the newest regulations. Enabling new opportunities for surveillance and tracking of individuals, fostering communities and identities centred around the purchase of cosmetic virtual items, immersive online environments are unsurprisingly appealing to companies specialised in monetising user data.

Whether Meta's project will eventually appeal to the same number of users as Facebook is far from certain. Still, investigating the policy implications of this project's potential success is an important task, as the early adopters of this dystopian realm are numerous and mostly under 16. They are Roblox's 40 million daily active users, a platform which shares many similarities with Meta's project. It features multiple immersive worlds designed by users, accessible from a phone, a computer, or a tablet, with an economy centred around the purchase of virtual items. As such, the issues described in my research surrounding the manipulation of behaviour, the exploitation of labour, and the dependency which virtual currencies favour should be considered not as future possibilities, but as threats which minors are subjected to today.

As such, the recommendations I submit at the end of this paper are not just urgent in relation to the harms they seek to mitigate. These harms are already occurring, and an appropriate legal framework is thus overdue. These include updates to data regulations and labour regulations to ensure they cover identity and work as they appear in the metaverse, taking measures to protect the most psychologically vulnerable from the specific incentives to consume enabled by IOEs, and regulating virtual currencies in a way that ensures it is not used as a tool to exploit and create dependency among users.

1. Introduction

When Facebook became Meta, opinions were divided regarding the true meaning of this change. On one hand, some emphasised this move as a PR stunt from a company desperate to distract people from the toxic practices associated to its name by a series of recently leaked internal documents known as the 'Facebook Papers'. Other sustained that it was nonetheless a great business move from a company which understood that the success of its main product wouldn't last forever. The timing of the announcement makes it clear that this rebrand was influenced by the revelations of the Facebook papers, yet it is unlikely the company sought to escape the legal repercussions induced by the revelations with a simple change of name and logo. In order to provide a holistic account of this change, we need to identify and consider the incentives of the platform, as well as the opportunities offered by the technologies it is seeking to adapt its business model to. The idea of making a profit from hosting communities in an immersive online environment is not new, MMORPGs and Second Life are already doing it. Nonetheless, the amount of money the platform is investing suggests they actually believe they can adapt this model in ways that will be highly profitable to them. This is what is implicitly meant by the term 'metaverse' as popularised by Meta, in contrast with the way the term was previously used. Whereas a metaverse is defined by Wikipedia as a "network of 3D virtual worlds focused on social connection", the term is now used to describe the specific metaverse which integrates platform-style methods of generating profit. For the sake of disambiguation, I choose to use Facebook's interpretation of the term throughout this thesis and refer to what Wikipedia calls 'metaverses' as immersive online environments (IOEs).

Although they are often referred to as 'disruptive', fundamentally altering how we work, consume, and even threatening the sovereignty of states, platforms didn't appear out of nowhere. At its core, a platform is a corporation which seeks to maximise profit by making use of specific technologies, within a specific legal framework. As such, one could understand the appearance of a given platform by looking at its specific economic goals, the way it uses technology to reach them, and the legal parameters it has to work around. More importantly, analysing each of these parameters could enable us to anticipate how changing one of them could impact the platform's functioning.

In this thesis I attempt to understand and anticipate why and how a platform might integrate technologies from Immersive Online Environments to maximise profit within existing legal parameters. In the interdisciplinary state of knowledge section, I conduct an analysis of the academic literature surrounding platforms and immersive online environments. When looking at platforms, I seek to identify the parameters which enabled the platform to emerge in relation previous forms of corporation in the United States of America. I specifically identify the role of data as a means to derive profit from and control a workforce or a user base, and how this is done in a way that circumvents or exploit regulations which would apply to other forms of corporations. When looking at immersive online environments, I specifically consider the economic opportunities they offer, as this constitutes the core incentive for any corporation's behaviour. I then look at how ways in which they govern their userbase through a mix of autocratic authority and libertarian mentality and the resulting social stratifications and behavioural incentives among the user base.
I then apply these insights within an analysis of Meta and Roblox which seeks to answer the following questions:

- How could Meta transfer its business model to the metaverse in order to save it from regulations which would otherwise mitigate its ability to make a profit?

- Which harms tied to Meta's business model are transferable to the metaverse, and which new ones might appear as a result of the integration of social media mechanisms into an immersive online environment?

- What can a platform like Roblox, which already includes elements which Meta intends to include in its own project, teach us about the policy challenges brought about by the metaverse?

In doing so, I identify unique issues linked to behavioural manipulation, data ownership, and exploitation of labour brought about by the metaverse. An online immersive environment could provide ways for Meta to collect and own data related to avatars which wouldn't necessarily be considered personal data. It also provides an environment where consumption for customisation and social status are deeply intertwined, which Meta could manipulate to optimise its profits. Additionally, Roblox shows how work on the metaverse provides even fewer protections and guarantees to workers than work for real world platforms, which puts minors uniquely at risk. It also raises important question regarding which online transactions should a child have access to if their data isn't collected in the process, and highlights how virtual currencies within a metaverse provide specific means for platforms to control individuals.

2. Interdisciplinary state of knowledge

2.1 Platforms

2.1.1 How online platforms use data for profit and control

In the broad sense, platforms can be defined as digital services which facilitate interactions between two or more distinct but interdependent sets of users, who interact through the service via the internet[1]. More importantly, they should be understood as a type of corporation, in virtue of being for profit and applying mechanisms of governance over a workforce. In the following, I will detail this assertion, highlighting specific aspects of these corporations which will be key to the analysis of Meta and Roblox in section 3 of this thesis.

a) How platforms derive profit from user data

Given the 'broad' characterisation of platforms provided above, it can be tempting to see them as traditional markets which put suppliers of goods and services and demand for these in contact with each other. A key distinction between platforms and traditional markets, however, is that platforms have the capacity to systematically track the location, behaviour, production, choices, transactions or reviews of millions of people[2]. This allows them to classify and store information as big data, resell or use that information in targeted ads, and to feed algorithms which prioritise certain topics, persons or offers over others[3]. They retain the right to fully appropriate the information and digital traces created by participants in the market, and have the ability to generate a surplus from it, effectively taking advantage of the participant's data as free labour[4]. Additionally, this collection of data enables them to provide personalised recommendation services to users, which replace professional workers. In this way, they extract the surplus of value created by a workforce, just like any other corporation does.

b) Why successful platforms tend to become monopolies

Another element specific to online platforms is their tendency to become monopolies, or quasi-monopolies, if they are successful. Although some platforms have become monopolies through the more classic method of aggressively acquiring potential competitors, many have become so through network dominance[5]. This is because platforms become more valuable to each user as more people use them, examples are provided in Table 1, below.

In some cases, users directly increase the value of the platform by creating content for it, or implementing new functionalities. For example, independent developers can develop apps on

[1] (OCDE, 2019)
[2] (van Dijck et al., 2018)
[3] ibid.
[4] (Terranova, 2000)
[5] (Cutolo and Kenney, 2019)

Facebook through its Application Programming Interface (API). Yet the purpose of this API is not to facilitate the connection between the platform to the rest of the internet, but instead to lock both developers and users into a landscape defined and controlled by Facebook[6]. This means content and software published within Facebook can only be accessed through software that uses the same API, like Facebook and Instagram, which are both owned and operated by Meta.
The fact that platforms gain value as their user base grows and that they can be designed to lock users into a proprietary ecosystem, means that it is likely whichever platform gains the most users will eventually own the entire market it operates in, as any new entrant will be difficult to move to for users, and without a strong network it will provide less value to each user than an established platform.

The idea of locking users into an ecosystem also enables platforms to act as infrastructures which govern them[7]. Indeed, the mechanisms through which platforms govern their users is another feature which distinguishes them from traditional corporations.

Table 1. Examples of how network effects make platforms more valuable

Airbnb relies on the provision of accommodation from 'hosts' in order to attract users, and a large user base will in turn incentivise hosts to choose the platform to advertise their accommodation.

The more people use Netflix to watch movies, the better Netflix can provide recommendations to them based on personal information and shows that are often watched after one another. A large user base compels production companies to make deals with the platform to access this viewership, increasing the amount of shows available, which attracts more users.

The more friends I have that use WhatsApp, the more likely I am to choose this messaging service over another where I have less friends to talk to, given that it is more practical to have all my friends and conversations in one place.

c) How platforms use data to govern users

The way platforms govern their users follows from their economic interests. If platforms can allow anyone to enter, it is in their interest to maintain a certain quality level. Although this can be ensured by some codified criteria and a human apparatus of moderators and quality checkers, platforms often prefer to rely on methods which make use of user data in order to be more efficient and cut costs. Tracking users and their data effectively allows platforms to exercise surveillance on them, enabling means to detect and remove content and users based on algorithms, or negative user reviews[8]. Algorithms can be used to automatically detect forbidden content, but

[6] (Plantin et al., 2018, p. 30)
[7] (Grabher and König, 2020)
[8] (Frenken and Fuenfschilling, 2020, p. 106)

also to form an overall "evaluative infrastructure"[9] where content and users are rated based on performance, according to criteria set by the platform. These ratings incentivise users to comply with the rules of the platform without necessary supervision from it, as ratings often determine visibility[10]. All types of users seek visibility, whether it is to receive approval from peers for a Facebook post or to sell a product, for example. In addition, the rules for these ratings are often unstable[11] and opaque[12]. This entrenches the power asymmetry between the platform, which always ensures the rules maintain the platform's economic interests, and the user, who is merely subjected to the rules without any means to ensure they are fair to them. In this context, the competition for visibility is not of a free market that rewards the best content or user, but rather an organised competition that allows platforms to ensure users behave according to the platform's own interests without formally engaging with them[13].

d) Organised competition as human resource management

Despite the lack of an identifiable employment relationship, this organised competition enables platforms to apply different human resource management techniques to their 'workforce' (whether these are actual service providers or mere members of the platform)[14]. This includes moderation of content, reward schemes for high-performing users (by delivering higher visibility or better payment per view) and deactivation of an account, analogous to the termination of an employment contract. While the way this applies is clear for situations where a user requests a service from an independent contractor through an online platform, these principles extend beyond these situations. For instance, social media platforms also police participation, moderate content and reward high performers in different ways[15].

An important distinction between the modes of control of traditional corporations in comparison and that of platforms, is the relationship between temporality, trust and power[16]. Traditional corporations would see value in long-lasting processes as a way to shape trusting relationships, and these relationships as a way to acquire power. Having proven to be reliable over time and being well-perceived by the right people increases an individual's chance of getting a raise, or getting promoted.

Platforms, on the other hand, value the right 'moment' to enter and operate, they swap trust for the reputation measured through ratings, and they value long-term relationships insofar as these suit the companies' interests[17]. This will be illustrated in the analysis of Roblox in section 3.2, where mechanisms ensure users who produce content which generate the most clicks and income are reliably found on the front page of the Roblox website, but content can be removed suddenly with very few ways for any user to appeal the decision.

[9] (Kornberger et al., 2017)
[10] (Stark and Pais, 2020, p. 57)
[11] (Frenken and Fuenfschilling, 2020)
[12] (Curchod et al., 2020)
[13] (Stark and Pais, 2020, ibid.)
[14] (Meijerink and Keegan, 2019)
[15] (van Dijck et al., 2018)
[16] (Stark and Pais, 2020, p. 52)
[17] ibid.

2.1.2 Treating platforms as corporations to anticipate their development

The description of online platforms outlined in the previous section describes multiple ways in which platforms differ from traditional corporations, but nonetheless remain corporations themselves. In the following, I will argue that although the emergence of platforms was made possible by technology and demand for specific services, their mode of functioning as corporations can be explained in relation to legal and cultural parameters. Treating the corporation as an entity which changes shape as it adapts to specific parameters through time in order to maximise profit, I justify how we can anticipate this evolution by conducting an analysis of these parameters as I do in the remainder of this thesis.

a) How American corporations have evolved through time

As Sabeel Rahman and Kathleen Thelen have argued, "platform firms" result from the transformation of the twentieth century "consolidated firm" through specific political forces[18] . In the US, corporations of the mid-twentieth century were bound to important regulations such as antitrust laws and financial regulations which prevented them from growing too big, and had a duty to provide benefits to their workforce such as healthcare and pensions, and a pathway for upwards mobility within the firm[19]. From the late 1960s however, the 'Chicago school' of law and economics pushed for a reform of antitrust regulations, advocating that the primary metric for their success should be consumer interests[20]. This meant that a large firm size and concentrated industry structures were justified, insofar as they were the reflection of efficiency gains, which resulted in better outcomes for consumers. These ideas came to fruition as they were progressively implemented into courts and antitrust bureaucracy, before being embraced by the Reagan administration in 1982[21]. This, in turn, radically changed the shape of corporations, which prioritised increases in efficiency above all else, measured in terms of the value of stock prices. Consequently, the organisational structure changed to become what Rahman and Thelen call "Networks of Contracts"[22], with much of the workforce being aggressively outsourced and streamlined to cut labour costs and please investor groups[23]. As Weil shows, information and communication technology had a key role in enabling this process, by facilitating the supervision and control of a complex network of "outsourced, franchised or contracted labour, production and manufacture."[24]. This tendency towards labour-shedding, as well as the emphasis on shareholder value and attracting financiers through increases in efficiency facilitated the appearance of platform firms such as Uber and Amazon. Nonetheless, these companies combine these elements with new ones to produce a distinct model which pushes the 'network of contracts' model even further.

[18] (Rahman and Thelen, 2019)
[19] Ibid. p.6
[20] Ibid. p.15
[21] (Khan, 2017)
[22] (Rahman and Thelen, 2019, p.9)
[23] ("The Toxic Side Effects of Shareholder Primacy – University of Pennsylvania Law Review," n.d.)
[24] (Weil, 2014, chap 5-7)

b) Platforms replace the law with their own codes

Platforms are similar to traditional corporations in the way they manage their workforce and operate in the interests of their investors, but they emancipate themselves from the formal obligations traditional corporations faced regarding their employees[25]. In the platform model, workers are classified as independent contractors, which theoretically both them and the platform have less power over each other, as workers cannot organise and be defended by labour laws, but they are free to switch platforms at any time[26]. In truth, workers do not enjoy the market freedoms that generally go with the status of 'self-contractor' (or one-person "corporation"), as they are subjected to mechanisms of control by platforms which use their data, as described in 1.1. Additionally, platforms not only circumvent the law when it comes to their duty towards their workforce, they can even replace legal institutions in the context of their economic activities. For example, virtual currency exchange platforms can act as markets but also simultaneously as mints that make data monies, vaults that store money, and banks that lend money, as well as operating as insurance agents, data centres, clearing houses, accounting agencies, and even as courthouses arbitrating cases[27]. More generally, while the legal framework for activity on a given platform might not be that of the society in which it operates, it is nonetheless elaborately specified in the 'terms and conditions' to which each member must subscribe[28]. The implications of this will be further explored in section 3 of this thesis. For the time being, it is necessary to note that platforms such as Uber and Airbnb would not describe their activities as circumventing the law, but rather as demonstrating the inconsistency of the law and regulation with innovation[29]. This claim reflects the specific status of platforms in the cultural context they originated from, which I will explore further in the following.

c) Platforms and consumers united against labour

Reminiscent of the early days of the internet, platforms tend to frame themselves as enabling direct 'peer-to-peer' interactions between users, emancipating them from the control of large corporations[30]. This framing can be convincing, as it reflects a truth in terms of what a platform can be to the user. For example, Youtube enables anyone to start their own show and share it with a large audience without having to enter the traditional TV industry, and making money from hosting on Airbnb is way easier than officially starting a hotel business. Platforms can also feel to the consumer like liberation from tedious activities, in the way Uber liberates the user from having to wave at a taxi under pouring rain, or Amazon frees the user from having to physically go to a shop. Nonetheless, as I have explained earlier, platforms are not mere marketplaces. Yet this framing does correspond to some reality, which is that of the power dynamics between platform, labour, and consumer. Platforms have effectively brought the consumer to their side

[25] (Frenken and Fuenfschilling, 2020, p.100)
[26] ibid.
[27] (Caliskan, 2020)
[28] (Frenken and Fuenfschilling, 2020)
[29] (Elert and Henrekson, 2016)
[30] (Schor, 2016)

when it comes to governing labour, as it is the consumer's data and input that determines the rating given to labour, and thus its visibility. In doing so, the subordination and precarity of producers and workers is justified by the liberation and satisfaction of the modern consumer[31]. This explains why much of the criticism towards these firms is made about how it *should* act, by referring to cultural and political terms[32]. Yet platforms are first and foremost economic actors who act according to the demands of a capitalist society. This means that not only must we cease to let cultural and political issues overshadow structural issues of platforms, but even criticism towards their political standings should consider them in relation to their business model. This is why although I mention cultural and political controversies linked to Meta and Roblox in my analysis of these platforms in section 3, I primarily do so in order to show their connection to the platform's economic activities.

2.2 Immersive Online Environments

2.2.1 Economic opportunities in immersive online environments, and relevant ethical issues

a) Why 'immersive online environments?

The term 'immersive online environment' (IOE) is used in this section to describe services which provide users with a virtual 'place' accessed through the internet, in which they can socialise and perform activities. I choose this term in order to include both Massive Online Multiplayer Role Playing Games such as Activision-Blizzard's World of Warcraft as well as 'life simulators' such as Linden Lab's Second Life, as despite their differences they both include features which can be integrated into the business model of a metaverse, in the way platforms like Meta and Roblox use the term. If a metaverse is to be considered as an online environment which operates as a platform, in that it seeks to 'host' service providers within it rather than provide services itself, then it makes sense to include features from different types of services which could be hosted within it. For example, while World of Warcraft players access this online world primarily in order to play a game, and Second Life users access this online world primarily in order to meet other people and hang out in their favourite places, an early stage metaverse like Roblox already enables users to design environments for either purpose[33]. I describe these online environments as 'immersive' to emphasise that they provide a physically persistent virtual space which feels like a location, a place, as opposed to a mere medium of communication, like an online forum or a messaging service. For example, players of Second Life can own a three-dimensional home which can be entered through their avatar, making it feel like their own "place"[34]. This entails specific relationships between the user, the IOE and other users, which I will explore in the remainder of this section.

b) The reality contained within the virtual

[31] (Rahman and Thelen, 2019, p.9)
[32] (Srnicek, 2017)
[33] This is further explained in section 3.
[34] (Boellstorff, 2015, chap. 4)

Immersive online environments allow immaterial digital goods to have a specific realness to them, in virtue of their physicality. This means that goods within them can be interacted with in a way that is analogous to how one might interact with their real-world equivalent. Within Second Life, a user can sit on a chair or place it in their house for decoration, despite the fact that it consists in nothing but a set of lines of code[35]. The fact that goods can be produced from nothing and that their physicality makes their ownership meaningful allows them to contribute to the player's sense of identity within the virtual world[36]. More broadly, this is reminiscent of the Heideggerian idea that perceiving the world as real leads the individual to attach greater importance to elements of the world in their conception of themselves[37]. A 2018 study on MMORPG players indicated that perceiving people and objects as 'real' was positively correlated with the willingness to play a game and intention to purchase virtual items[38].

In the study, this feeling of realness was associated with the appeal of the game's aesthetics, the level of identification between the player and their avatar, and the propensity to take part in co-creation of elements within the game's world. In fact, players expressed a strong desire to purchase virtual items as it acts as a means to establish their own belonging to the virtual world. This explains some of the success of IOEs built around a 'creationist capitalist' system[39], such as Second Life which allows players to design goods or environments and sell them to other players. This mechanism allows for the environment to be perceived as shaped by those who live in it, and provides ways for players to increase their identification with their avatar and home by acquiring items which please them. Additionally, this incentivises users to provide labour which benefit the IOE owner for free, by designing content for the world which will make it more appealing to them and other players.

c) The many relationships between IOE economies and the real world

Although currency used for transactions in IOEs is virtual, it is often convertible to real world currency. As many IOEs are 'free to play', meaning people can join it without paying a fee upfront, they often depend on these transactions to make a profit. This can take place at different stages of the transaction, whether it is by selling virtual currency to users, offering subscriptions that enable users to take part in these transactions, or directly selling assets to users which are required in order to take part in transactions. In Second Life, the in-game currency Linden dollars can be bought with real currency, and users unlock the right to own land by paying for a subscription in real world currency[40]. Owning land is a requirement in order to build objects with permanence, such as one's own home. Consequently, the structure of this in-game economy has multiple deep connections to that of the real world, beyond the transfer of money from the user to Linden Labs, as detailed in Table 2 below.

[35] Ibid. p. 218
[36] Ibid. p. 207
[37] (Heidegger et al., 2008)
[38] (Wu and Hsu, 2018)
[39] (Boellstorff, 2015, p; 207)
[40] Ibid. p. 215-216

Table 2.1 How wage labour in IOEs involves complex networks of real-world labour

Wage labour is made possible by allowing players to offer services to each other in exchange for Linden Dollars, including sexual ones[41]. Additionally, many services such as sex work rely on specific in-game locations as interacting with furniture can be required to trigger specific avatar animations, meaning money can be made by merely owning and charging access for such locations and hiring bouncers to monitor access to them[42]. Additionally, designing this furniture and these animations creates a demand for scripting developers and product designers, which shows how complex real-world ramifications of in-game labour can be. The amount of money involved at each stage of these transactions could be seen as trivial, however. Sex work is one of the highest paying jobs on second life, but the price for thirty minutes of intercourse averages 1000 Linden Dollars, which is worth about 1 euro and 44 cents[43]. Still, in countries with low per capita income but growing information technology and digital media expertise, activities within IOEs can provide genuine employment opportunities[44]. In 2005, a New York Times article reported that companies had been set up in China whose employees spent more than 12 hours a day playing various online role play games[45].

It is also worth noting that these in-game economies can directly integrate external real-world services, such as SLExchange.com which allows users to buy content for Second Life over the Web, rather than relying on in-game mechanisms[46]. These services do not need to be endorsed by the IOE owner, as they can tactically rely on standard functionalities of the IOE. SLExchange for instance features in-world locations where users can deposit Linden Dollars, choose their item on the website, and retrieve the item at the relevant location.

d) The correlation between wealth and social status in IOEs

The convertibility of real world currency into virtual ones means that wealth from the real world can be transferred to the virtual one. Indeed, money enables ownership, and ownership establishes belonging, thus those who cannot invest money are socially impaired within the IOE[47]. Inversely, being wealthy can allow users to be included in a privileged class of players who are provided with specific links to the owners of the IOE, along with unique powers to sustain their interests within it[48]. This is because in-game wealth is a consequence of investing money and attracting external investment in the IOE, which aligns with the interests of the company who runs it. This can result in an effective social stratification in terms of perceived social status and effective power. In Second Life, the social stratification is as follows: free users cannot own permanent objects, those who invest a bit of money can rent land off landlords to place their objects, those

[41] Ibid.
[42] ibid.
[43] ibid.
[44] (Papagiannidis et al., 2008)
[45] (Barboza, 2005)
[46] (Papagiannidis et al., 2008)
[47] (Boellstorff, 2015, chap. 4)
[48] Ibid. p.227

who pay for a subscription can become landlords, and major landlords are granted special privileges[49]. As such, inequality from the real world is transferred within the IOE as it is in the interest of the company to please those who inject money in it, and the stratification incites users to want to improve their status by investing further funds into the game. It is important to note that the extent to which social status acts as an incentive to purchase virtual goods seems to differ according to age and the specific social parameters of the IOE, as detailed in table 3 below.

Table 2.2 Teenagers are especially vulnerable to coercion within virtual worlds

A study on the motives of users for purchasing items within Second Life, where the average user is 32 years old[50], has shown that while customisation and perceived enjoyment had a significant positive effect on purchase intention, social influence had almost none[51]. On the other hand, gaining status was a frequently mentioned motive for buying a premium membership on Habbo Hotel, a similar IOE featuring 2D graphics with a user base mostly comprising teenagers[52]. A Habbo Hotel premium membership provides the user with status gains in the form of being recognised as 'rich', complimentary virtual items of clothing and decorations for their home, and removes a limitation for adding friends[53]. Additionally, users mentioned that those who did not have a premium membership were discriminated against by other users, purchasing a membership is thus also a means to gain status in order to avoid discrimination[54].

While it is possible that some features unique to Habbo Hotel influenced the results in ways not taken into account in the study, the findings make sense from the point of view of developmental psychology. For teenagers, customisation is especially important as it allows them to experiment with different roles as part of a process of exploring alternative identities to build themselves[55]. Furthermore, the mention of feelings of belonging or exclusion from a group as motives for the purchase suggest virtual possessions provide teenagers with opportunities to experiment with how to be part of a group and establish friendships, as part of a process of learning real world social life practices[56].

e) Avatar identification, user behaviour manipulation, and addiction

Residents of Second Life report that socialising is made easier within the IOE than in real life, as the possibilities for avatar customisation mean that people can 'wear their personality', implying you feel like you could get to know someone based on their appearance alone[57]. As mentioned previously, a user's identification with their avatar is a parameter which can increase their

[49] Ibid. p.228
[50] (Beard et al., 2009)
[51] (Guo and Barnes, 2011)
[52] (Mäntymäki and Salo, 2015)
[53] Ibid. p. 129
[54] Ibid. p. 130
[55] (Kemph, 1969)
[56] (Tarrant et al., 2006)
[57] (Boellstorff, 2015)

enjoyment of the IOE and willingness to take part in it, and the way in which the avatar represents us in relation to others can foster feelings of inclusion or exclusion within the social environment, especially in teenagers. In addition, the way an avatar represents us has been found to influence our behaviour independently of how we are perceived by others[58]. In the 2007 study which identified this phenomenon now known as the 'Proteus effect', Yee and Bailenson found that participants which were assigned attractive avatars in immersive virtual environments were more confident talking about themselves than those with less attractive ones, and taller avatars made participants act more confidently than shorter ones. As such, customising their avatar can enable individuals to feel like their representation in the virtual world constitutes a better version of themselves, through which they have an easier time both socialising with others and asserting themselves than in real life. This can lead people to enjoy their lives in the IOE more than their real life, as well as feel like they depend on the IOE in order to behave like their true selves[59]. A 2015 survey on 163 Korean MMORPG players found that those who self-reported low self-esteem, depression or weak social skills alongside a high level of identification with their avatar were likely to report high levels of game addiction[60]. These elements indicate that the economic model of IOEs which incentivises customisation of avatars can be especially compelling yet harmful to those who are already psychologically fragile in real life.

2.2.2 Abuse and inequality within the autocratic-libertarian societies of IOEs

a) Means and incentives for abuse in IOEs

IOEs enable specific ways in which users can harass each other, the diversity of which is proportional to the amount of creativity and freedom allocated to the player. Basic forms of harassment of IOEs include verbal abuse and repeated messaging, as well as physical abuse of avatars like intentionally standing in someone's way, pushing them, or using a mix of animations and text to simulate rape[61]. Although they deliberately seek to make the game less enjoyable for others, users who engage in such antisocial behaviour feel compelled to do so not despite but because it is understood to be transgressive. The existence of an explicit set of rules from the IOE owner and an implicit code of conduct within a given community is precisely what makes breaching these pleasurable for these users. In-game communities can even be founded around a common interest in such behaviour, with their own code of conduct[62].
The economic systems within IOEs can also both enable and incentivise forms of harassment. For example, in Second Life, a user could harass another user by buying a plot of land next to their home, building an intentionally ugly or obscene structure on it, and requesting a fee in exchange for the removal of the landscape-ruining structure[63]. Alternatively, one could design a script, design misleading ads within the world or disguise themselves as 'entrepreneurs' in order to trick users into providing login details or payment information in order to drain money from their

[58] (Yee and Bailenson, 2007)
[59] (Boellstorff, 2015, p. 176-178)
[60] (You et al., 2017)
[61] (Boellstorff, 2015, p. 187-190)
[62] Ibid. p. 193-194
[63] Ibid. p. 190-191

accounts[64]. IOEs can provide individuals with means to acquire information on a specific individual in order to manipulate and deceive them more effectively, effectively engaging in 'social engineering hacking', as detailed in table 2.3 below.

Table 2.3 Every move you make, every step you take, I'll be watching you

Social engineering hacking is a form of trickery where an individual is made to feel some sense of urgency, fear, or any other information, in order to make them reveal something of value, unwittingly or not[65]. This can be done through specific impersonations, lies and manipulations, designed from specific knowledge acquired on a user. IOEs can provide users within means to acquire this knowledge easily, as you could learn a lot about someone's habits and tendencies by simply following and stalking their avatar, checking the places they like going to, what they choose to buy, the conversations they have and with whom[66]. The utility of such in-game observations could be further optimised by using software to extract data from the IOE and analyse it. For example, the surveillance of individuals could be done by a computer-controlled avatar whose sole purpose would be to stand in the same environment of a victim to enable the tracking of their information. This information could then be aggregated with that of other players and analysed using algorithms backed by machine-learning in order to identify the victim's specific tendencies in behaviours, associate a personality type to them and define the specific type of deception which would constitute the optimal nudge for the desired outcome. Indeed, the analysis of game related data to learn about players is an active research field[67].

b) The nature and limits of the autocratic power of IOE operators

If IOEs provide users with means to acquire information on each other, this data is only a limited subset made available to them. In contrast, IOE operators have the ability to monitor every conversation and action that happens within their realm, meaning that while it is possible for a user to keep their personal information secret, it is impossible for their avatar to enjoy any privacy[68]. Additionally, IOE owners can be the sole authors of the terms and conditions which every user has to consent to in order to integrate the IOE. In Second Life, these terms state among other things that Linden Labs maintains full ownership over the currency and property held by every user, meaning that they have absolute authority over every individual and every item of the world with no accountability or obligation of transparency towards them[69]. As such, nothing stops a company from operating an online virtual dictatorship.
In practice however, once past a certain threshold of users, the amount of content to trace so great that it is practically impossible for IOE owners to be aware of everything that is happening on the

[64] Ibid.
[65] (Krombholz et al., 2015)
[66] (Falchuk et al., 2018)
[67] (El-Nasr et al., 2013)
[68] (Boellstorff, 2015)
[69] Ibid. p. 222-223

platform[70]. The detection of most forms of problematic behaviour thus depends on users using in-game functionalities to report them, and the efficiency of this functionality can be limited. For one, the number of reports can become so great that wrongdoers can enjoy impunity for days or weeks before their behaviour is punished[71]. Moreover, in cases where behaviour is legally reprehensible, such as in the case of hate speech or attempts to acquire a users credit card information, enforcement of the law can be difficult depending on the country in which the user lives[72].

c) How de facto libertarian virtual societies reproduce and entrench real world inequality

As a result of these challenges, the governance of IOEs is in effect often left mostly to its users. This can manifest in multiple forms. Individuals can be incited to resist abuse by themselves, in the way Second Life users are told to 'Sit down' when their avatar is physically harassed, as this limits the physical animations in which other players can involve them[73]. Local forms of governance among players can form, based on looking out for each other and adhering to a formal or informal code of conduct[74]. Interestingly, formal devolutions of power within Second Life resulted in small governments most often based around large landowners who were given specific powers to police those who used their land[75]. This demonstrates how the delegation of power by autocratic structures within de facto liberatarian societies built around mechanisms of consumption can lead to unequal societies which empower those who are already privileged in the real world.

[70] Ibid.
[71] ibid.
[72] ibid.
[73] ("Filing an abuse report," n.d.)
[74] (Boellstorff, 2015, chap. 8)
[75] ibid.

2.3 Methodology, data, and sources

In the following section, I seek to identify specific reasons for the move of platforms towards functioning within an immersive online world, and subsequent potential issues for policymakers to resolve. I chose Meta and Roblox as case studies, because the first informs us as to why this shift might occur as a consequence of new regulations, and the second already includes multiple aspects of the metaverse Meta seeks to build, especially in terms of its economic structure. I chose to structure each case study starting with their most salient aspect, which are controversies as reported in the media. I then go on to explain issues linked to their specific economic model, by relating them to the controversies when relevant, as well as identifying broader issues. I then consider the legality of their activities, and finally how the platform might evolve in relation to the mechanisms of IOEs according to its stated plans, keeping in mind its economic incentives and the laws that they are subject to.

This structure follows from the analysis of academic literature surrounding platforms and IOEs in section 2. Platforms mostly attract criticism when they threaten our cultural and political behaviour, but the reason for these behaviours can be found in the fundamental economic incentives of these platforms. As corporations, platforms employ methods to maximise profit, while staying within relevant legal parameters. Technology provides corporations with new ways to maximise profit given these legal parameters.
The analysis of Meta places great emphasis on the legal section, as the company is currently facing regulatory pressure which influences its project towards building a metaverse. The final section of the case study is also important as it specifically explores how IOEs might allow the company to preserve its core economic mechanisms while circumventing current and upcoming legislation.
The analysis of Roblox, on the other hand, places great emphasis on the economic section, as it provides great insight as to what a metaverse might look like and the existing harms and ethical issues linked to it. The legal section analyses how Roblox uses its IOE to effectively do a range of unethical things which might be considered illegal if they happened in the real world.

When analysing each case study, I kept in mind specific characteristics of platforms and IOEs derived from my analysis of relevant literary source within this section.
In my analysis of the literature surrounding platforms as corporations, I highlighted that a key characteristic of platforms was their use of data to maximise profit and exert control on their user base. Platforms have different ways of monetising user data, but a common theme is that it is used as a means to monitor individuals in order to learn from them and sell this knowledge through advertising, or supervise their performance in an automated fashion in order to reduce labour costs to a minimum. This is done through a narrative that makes users feel like platforms liberate them and puts them in control.
On the other hand, immersive online environments put a specific emphasis on social dynamics related to property and character customisation. This makes players feel engaged and willing to invest time, labour and money into the IOE which feels ‘real’ to them.

As the revelations from the Facebook papers are still recent, and Roblox has received little to no attention from academia to this day, a lot of my analysis is based on journalistic reports, as well as my own first-hand accounts. Given that the topic at hand is the implication of immersive environments, I believe this approach to be especially relevant. In the case of Roblox in particular, exploring the game and the interface myself made some aspects which are overlooked by the press especially salient, such as the emphasis on role play within the platform's most popular experiences or the visual resemblance of virtual job ads aimed at pre-teens with genuine job ads aimed at adult software engineers.

3. Analysis – Findings

3.1 From Facebook to Meta

3.1.1 When 'Facebook' became 'Meta'

a) The evolution of content hierarchisation of Facebook

Meta defines themselves as a company which makes "technologies that bring the world closer together"[76]. Back in 2006, the way it did so was quite simple. On its website 'Facebook', you could connect with your friends and see a personalised list of activity updates related to them, such as a change in profile picture. This content was generated by the platform itself, and users did not 'post' things, although they could write to each other. In 2009, the company started using an algorithm to rank content for each user, ensuring that the type of content Facebook's designers deemed most important was always at the top: relationship news. Over time, both the type of content added by users on the platform and the algorithm sorting it became more complex. The sorting of content according to importance was determined algorithmically by an increasingly large number of signals, which considered information the user had inputted as well as how the user interacted with content on the website and outside of it. According to Jason Hirsch, the company's head of integrity policy, it could take more than 10000 different signals[77] into consideration as of 2021. As such, tracking down how an individual piece of content makes its way to one's feed is a highly complex task. Nonetheless, the developers of the platform have kept an important role in determining what algorithms should predict as important. More specifically, they can determine what data sources the software can draw on in making its predictions, as well as what the overall goal of the prediction, what measurable outcomes to maximise for, and the relative importance of each[78]. From the mid-2010s, the platform sought to optimise the time spent on the site, which led to the interface being mostly populated with clickbait (content with misleading titles which aim to draw attention) and professionally produced videos. This was unsatisfactory for a platform whose mission statement is to 'bring the world closer together'. This is why, from 2018 on, Facebook elevated posts which encouraged interaction. This included content popular with friends and family, memes, but also divisive content.

b) Controversies surrounding Facebook's activities

While this account of Facebook's means of 'bringing the world together' is incomplete, it emphasises how user data collection and deliberate content hierarchisation are at the core of the website's design. This is why, despite not directly interacting with users and content within the website, Meta's management has caught heat in the past over its role in spreading problematic content in a targeted fashion. In 2018, Mark Zuckerberg, founder of Meta, testified before the US

[76] ("Meta Platforms and Technologies | Meta," n.d.)
[77] ("Here's how Facebook's algorithm works - Washington Post," n.d.)
[78] ibid.

congress for the involvement of Facebook in the 'Cambridge Analytica' scandal[79]. The platform was accused of enabling a leak of 87 million users' personal data, which was used by Cambridge Analytica, a data analytics firm, to influence elections in different countries[80]. According to Christopher Wylie, then-head of research of the firm, the joint efforts of Cambridge Analytica and AggregateIQ (another data analytics firm) are what enabled the "Leave" campaign to win the referendum regarding the United Kingdom's EU membership[81], although the truth of this claim is disputed to this day[82]. In his testimony to the Senate, Zuckerberg pledged to take a more active role in ensuring the company's products weren't used for harmful purposes. Three years later, on the 6th of January 2021, Zuckerberg announced the company's decision to block the Facebook and Instagram account of then-President of the United States Donald Trump[83]. This was in retaliation for his attempt to use the platform as a means to incite his supporters to storm the US capitol to overturn a democratic transition of power, which they did the same day. This was claimed to be in line with the company's broader policy to ban hate groups and militarised social movements from the platform in order to "keep people safe"[84]. Nonetheless, less than a year later, the world was made aware of a range of ways in which Facebook was aware its platforms were used for harmful purposes and unwilling to act upon it, in an internal document leakage dubbed the "Facebook papers"[85]. The revelations contained within the documents have led legislators to take aggressive steps towards reining in the company's excesses, in the US and especially in the European Union[86]. Facebook changed its name to "Meta" in the days that followed the leak.

c) Facebook's deliberate neglectfulness

Contrary to its own claims, in the months leading to the attack on the Capitol, the company lifted its safeguards regarding political misinformation and hateful groups, allowing them to enjoy "meteoric" growth[87]. The platform wasn't merely neglectful or unaware, as researchers within the company admitted in an internal report that they "have compelling evidence that our core product mechanisms, such as virality, recommendations and optimizing for engagement, are a significant part of why these types of speech flourish on the platform."[88] In fact, they were reluctant to implement fixes. For instance, while the company knew in 2017 that "angry" reactions occurred more often on "toxic" content and misinformation, it wasn't until 2020 that they reduced their weight on content recommendation to zero, resulting in less misinformation, less "disturbing" content and less graphic violence according to company data scientists[89]. Worse, Zuckerberg personally decided that Facebook would comply with the Vietnamese communist party's demands

[79] (CNET, 2018)
[80] (Cadwalladr et al., 2018)
[81] ("'Sans Cambridge Analytica, il n'y aurait pas eu de Brexit', affirme le lanceur d'alerte Christopher Wylie," 2018)"
[82] (Hern and editor, 2019)
[83] ("Our Response to the Violence in Washington," 2021)
[84] ibid.
[85] ("A whistleblower's power," 2021)
[86] (Scott, n.d.)
[87] ("Inside Facebook, Jan. 6 violence fueled anger, regret over missed warning signs," 2021)
[88] ("Facebook Staff Say Core Products Make Misinformation Worse," 2021)
[89] ("A whistleblower's power," 2021)

and participate in cracking down dissent in the country[90]. It is therefore unsurprising that, in the face of the scandal, Facebook sought to distance itself from it in the mind of the public by re-branding. The move can also be analysed as the beginning of a genuine change in how the company operates, in order to anticipate (and circumvent) future regulations which would threaten its business model and broader economic activities. In order to analyse this further, it is necessary to better define Facebook's economic activities and the legal context surrounding them.

3.1.2 How Facebook monetises user data

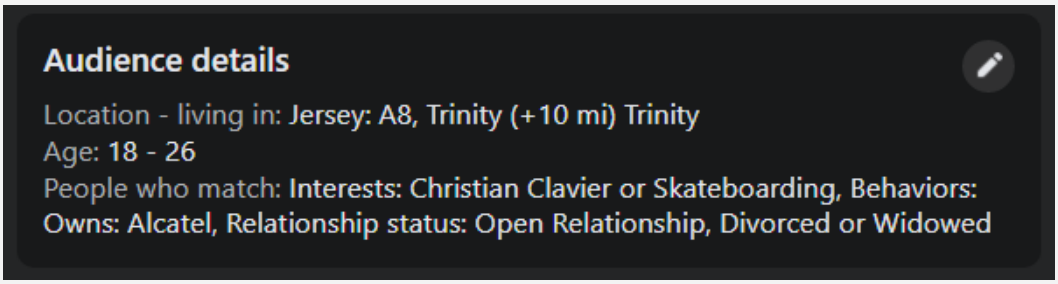
a) Facebook ads: a level of targeting never reached before

At this stage, it is necessary to further define what Facebook 'does'. During his senate hearing in 2018, Zuckerberg explained that Facebook's mission of "connecting the world" entailed ensuring their product should be accessible to everyone, for free. When asked about how they made money with a 'free' product, Zuckerberg replied "Senator, we run ads."[91] Indeed, ads accounted for 98% of Meta's revenue in 2021[92], even as the company began selling millions of virtual reality headsets that year[93]. How, then, does Meta derive so much profit from their ads? Facebook ads' slogan, as presented on their home page, is "Target future customers and fans"[94]. The first word of this slogan is key, as the appeal of Facebook ads lies not only in the 1.6 billion users of the social network but in the way the platform enables businesses to reach them. Facebook ads allows users to choose their audience according to "age, location and other details", as well as choose the "demographics, interests and behaviours that best represent your audience." (see table 3.1 for further details)[95]

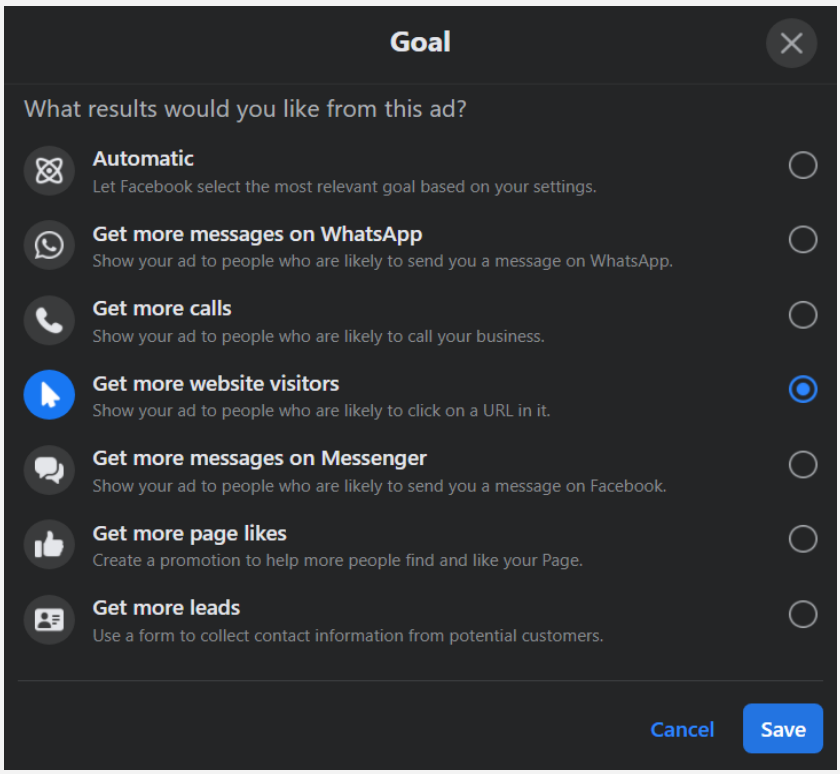
[90] ("The case against Mark Zuckerberg," 2021)
[91] (NBC News, 2018)
[92] ("Facebook," n.d.)
[93] ("Oculus device sales estimated at nearly 7M units in 2021," n.d.)
[94] ("Advertising on Facebook," n.d.)
[95] ibid.

Table 3.1 Example of the level of targeting Facebook ads enables

As the screenshot below shows, as an advertiser on Facebook ads, I can choose to advertise to people living exclusively on the British Isle of Jersey, who are between 18 and 26 years old, who are either in an open relationship, divorced or widowed, who own an "Alcatel" phone, and have an interest in either skateboarding or the French comedian Christian Clavier. The level of precision in audience targeting goes far beyond what contextual advertising in traditional media can allow and is made possible by the amount of knowledge Facebook can have over its users.



Furthermore, Facebook ads provides users with different 'goals' for their ads. If you are promoting an online shop, you can trace directly when the sight of your ad has enabled a sale. If you are promoting a video, you can check how much of it people have watched. Even if you are only trying to promote a random image with silly text, the number of measurable goals to optimise for is impressive, as illustrated in the screenshot below. Again, this is not something ads in traditional media allow you to do quite as easily, if at all.



b) Optimising addictiveness and incentivising engagement by design

Yet the success of Facebook ads doesn't merely come down to the size of Facebook's user base, the precision with which it can target people or the amount of metrics it can offer to assess effectiveness. Rather, it is the way in which all of these come together within the website's interface, and makes it possible to influence the behaviour of users within a framework known as captology, the study of digital technologies as a tool for persuasion[96]. It is easy to see how emotional manipulation can make us lose track of our time spent on the platform, and thus view more ads, which are themselves positioned on the feed in ways that incite us to engage with them. In addition, this process works better the more information Facebook knows about us, as it will be better at determining what we find interesting or not.

[96] (Fogg, 2003)

Table 3.2 How Facebook's design manipulates user behaviour

In 2008, B.J Fogg, behavioural psychologist and captology pioneer, taught a class at Stanford University titled "Create Engaging Web Applications Using Metrics and Learning on Facebook ". Working in teams of three, the 75 students created apps that collectively had 16 million users in just 10 weeks. Yet during the term, the apps, free for users, generated roughly $1 million in advertising revenue[97]. One student became the co-founder of Instagram, an app which was eventually acquired by Facebook[98].

Since then, the website has gone further in incentivising user behaviours which align with its own economic interests through its design. In 2010, Facebook added notifications to the top navigation bar[99]. These embody Fogg's theory that for a behaviour to occur, there needs to be three elements: a trigger, motivation, and ability[100]. The notification itself is a 'trigger', the fact that it informs you that you were tagged in a picture by a friend is a 'motivation', and the fact that you can check it with a single click from the front page is what Fogg dubs 'ability'.

Introduced in 2012, the news feed incorporates additional principles of psychological behaviourism. It can be seen as analogous to a "Skinner Box", a simplified environment to condition users into specific behaviours. This concept is named after the behavioural psychologist B.F. Skinner who used an experimental set-up to show how pigeons reacted to the association of a lever with food. Among other findings, Skinner found that the key to dependency was variability in rewards. To ensure we perform the same action again and again mindlessly, there needs to be uncertainty, unexpectedness, novelty, even disappointment to make you want to come back to it and try again[101]. Likewise, the Facebook news feed deliberately places more or less interesting content in specific positions on the new feed in order to incite us to scroll and spend more time on the website, but also to trigger specific emotions[102]. The news feed also changes every time the page is refreshed, which triggers a range of emotions. On one hand, it creates excitement towards novelty and unexpectedness, and it can trigger disappointment when we see something we like and forget to save it. On the other hand, when we are disappointed or bored from scrolling, refreshing the page provides us with a reason to stay, as we hope the 'new' news feed will provide us with more excitement.

This analysis shows how the success of Facebook's business model relies not only on the size of its user base, but more importantly on its ability to collect user data in order to incite them to stay longer on the platform, and thus view more ads. As such, the manipulation of user behaviour is not an incidental act that "bad people" could use the platform for, as Mark Zuckerberg suggested

[97] (Helft, 2011)
[98] (Kosner, n.d.)
[99] ("Facebook's News Feed is 10 years old. This is how the site has changed," n.d.)
[100] (Fogg, 2003)
[101] (Skinner, 1948)
[102] (Booth, 2014)

to the US Senate in 2018[103]. It is deeply embedded into its very design, and one of the main reasons for its commercial success.

3.1.3 The legal dimension of the shift from Facebook to Meta

a) Why self-regulation isn't enough

During a brief period between the Senate hearings for the Cambridge Analytica scandal, and the Facebook Papers scandal, Zuckerberg had succeeded in convincing US lawmakers that his company was somewhat worthy of trust. On one hand, he had told senator Lindsey Graham that Facebook was open to the "right regulation", and that his company would be willing to help develop it[104]. On the other, he repeatedly acknowledged that he was personally responsible for his own leniency which allowed the data breach to happen, and stated he would do better from that point on[105]. Facebook already had an apparatus of moderators, responsible for upholding safety standards by removing content brought to their attention through algorithmic flagging and user reports. In addition to it, Facebook began the creation of its own "oversight board" in November 2018, a Facebook 'supreme court' responsible for adjudicating high profile cases related to take down content and user accounts, with the power to overrule Facebook's own decisions[106]. Facebook's overall approach to self-regulation consists in policing speech on an ad-hoc basis, without seeking more structural solutions which might threaten its business model. As a result, it has been mostly unsuccessful in mitigating the harms induced by the platform's activities.

To begin with, the Facebook Oversight Board is not quite as impactful as it was made out to be. One could point out the number of times the FOB has overturned a decision made by Facebook to show its efficacy and impartiality; in truth, all decisions issued by the FOB are optional for Facebook to implement. Moreover, the FOB's decisions are subordinate to a set of rules created by the platform owners to which the FOB can merely submit suggestions. For instance, when Facebook decided to ban Donald Trump from the platform, the FOB ruled that indefinite suspension was not allowed by the Community Standards[107]. Facebook's management then unilaterally edited its Community Standards to allow account suspensions for a duration of 2 years. Moreover, the revelations within the Facebook Papers scandal have shown how the company is fundamentally not as committed to upholding strict ethical standards as it claims to be. The overall moderation apparatus was proven to be partial to political pressure[108], protects different countries differently[109], and remains secondary to the politics of the companies' own management[110].

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[103] (CNET, 2018)
[104] (Ward, 2018)
[105] ("Zuckerberg," n.d.)
[106] (DeBré, 2021)
[107] ("Conseil de surveillance | Un avis indépendant. Transparence. Légitimité.," n.d.)
[108] ("Facebook's leaked tier list: how the company decides which countries need protection - The Verge," n.d.)
[109] Ibid.
[110] (Horwitz, 2021)

To be effective, regulation, whether governmental or private, should understand what Facebook *does*. Its influence in the spread of divisive speech and misinformation lies not in its failure to adequately censor or doctor information, but in the deliberate way it delivers information to its users. As McLuhan would put it, "the medium is the message"[111]. As mentioned earlier, even researchers within the company admitted that they "have compelling evidence that our core product mechanisms, such as virality, recommendations and optimizing for engagement, are a significant part of why these types of speech flourish on the platform."[112] Effective policy responses ought to turn their attention to the media's features, rather than its content. Given Meta's unwillingness to do so by itself, this is more likely to come from governments, as well as other private actors Meta relies on in order to access user data.

b) How the EU and US legislators are taking the matter in their own hands

Regulations in development can be divided between 'accountability' regulations and 'competition' regulations[113].

Accountability regulations tackle the environment of legal impunity that platforms such as Facebook have enjoyed in relation to the content they host. In the US, the 230 of the Communications Act of 1934 ensures that online service providers cannot be considered editors or authors of information provided by third parties. In 1997, a federal appeals court adjudicated that section 230 protected platforms even in cases where they could be considered "distributors" of content, meaning they could not be held liable even in cases when they host content they know to be illegal[114]. There are nonetheless a few exceptions to this rule, including in cases where intellectual property was infringed, or when it enables sexual traficking[115]. Nonetheless, the level of immunity granted to platforms by section 230 is credited with enabling them to become as large as they are today, as it allowed them to host massive amounts of content without having to spend any resources monitoring it, yet generate income from the traffic[116]. That being said, Section 230(c)(2) does ensure the right of platforms to moderate content they find objectionable as they see fit, echoing the principle of free speech protected by the First Amendment of the US Constitution[117]. Suggestions to reform section 230 include "Conditioning immunity from liability on reasonable efforts to address unlawful activity"[118], or considering platforms "editors" if they make money from the content they host[119], both of which would render Facebook accountable for the content it hosts. Criticisms towards this approach include the fact that it could incentivise an

[111] ("Marshall McLuhan's 'The Medium is the Message' : History of Information," n.d.)
[112] ("Facebook Staff Say Core Products Make Misinformation Worse," 2021)
[113] (G'sell, 2021, p. 21)
[114] Zeran v. America On Line Inc., 129 F.3d 327 (4th Cir. 1997)
[115] Stop Enabling Sex Traffickers Act (SESTA) et Allow States and Victims to Fight Online Sex Trafficking Act (FOSTA)
[116] (G'sell, 2021, p.22-23)
[117] Ibid. p.24
[118] ("Cyber Civil Rights in the Time of COVID-19 (Harvard Law Review) | The fight for civil rights in the United States has historically focused on equal access to physical spaces," n.d.)
[119] ("Stigler Committee on Digital Platforms," n.d.)

algorithmic over-regulation of speech and weed out smaller competitors that wouldn't have the means to moderate the massive amounts of content they host. More importantly, it does not address the way data is collected and used by platforms, a key component of the issues they cause as shown earlier.
In the European Union, on the other hand, the E-Commerce Directive of 2000 ensures that while platforms cannot be held accountable for problematic user publications if they are not aware of that particular publication, they can be liable for failing to remove them under national law if they are notified of them by a third party. Overall, the European approach so far has been to foster soft law, recommendations agreed upon by internet giants such as the 2016 Code of Conduct on Countering Illegal Hate Speech Online (signed by Facebook, Microsoft, YouTube, Twitter and Tik Tok) and the Code of Practice on Disinformation (signed by Facebook, Google, Twitter, Mozilla, Microsoft and Tik Tok)[120]. The upcoming Digital Services Act, however, is expected to enforce tougher requirements from platforms in terms of moderation. This includes measures to ensure content can be flagged by users more easily, oblige platforms to suspend the accounts of users who repeatedly publish illicit content, oblige platforms to inform users clearly of their content moderation policies, and ensure users can appeal to an external dispute resolution organism in case of a disagreement between them and the platform[121]. More importantly, the text requires the largest platforms (with over 45 million EU users) to evaluate the impact of their moderation, recommendation, and targeted advertisement systems, and be subjected to annual audits. They will also be required to be especially transparent when it comes to their online advertising practices as well as their recommendation systems.

Competition regulations suggest Meta's harms are mostly due to its position on the market. Indeed, when such scandals as the ones mentioned earlier happen, users do not really have an alternative service to turn to in order to hold the platform accountable. In the the wake of the Cambridge Analytica scandal, many users deleted their accounts, only to return to the platform later on[122]. Moreover, while the outage of Meta services in October 2021 disrupted the activity of many businesses which relied on them[123], it also caused the services of competitors like Google and Twitter to slow down as people temporarily switched to them instead[124]. This suggests that Meta services are so well cemented in their market that its competitors are not prepared for its users to switch to them. Breaking up the platform could create the kind of competition that would reduce the platform's power, making it easier for users to leave it and choose alternatives when scandals occur, based on factors such as improved privacy. Nonetheless, scholars such as Fiona Scott Morton suggest breaking up the company would not be the best solution to achieve the intended outcomes[125]. For one, it is likely that the increase in competition would be temporary, as people would concentrate towards the service where most of their friends are, eventually turning it into a monopoly. Moreover, competition alone won't necessarily solve the more structural harms of Meta, as a service could win over the market without compromising on data collection and

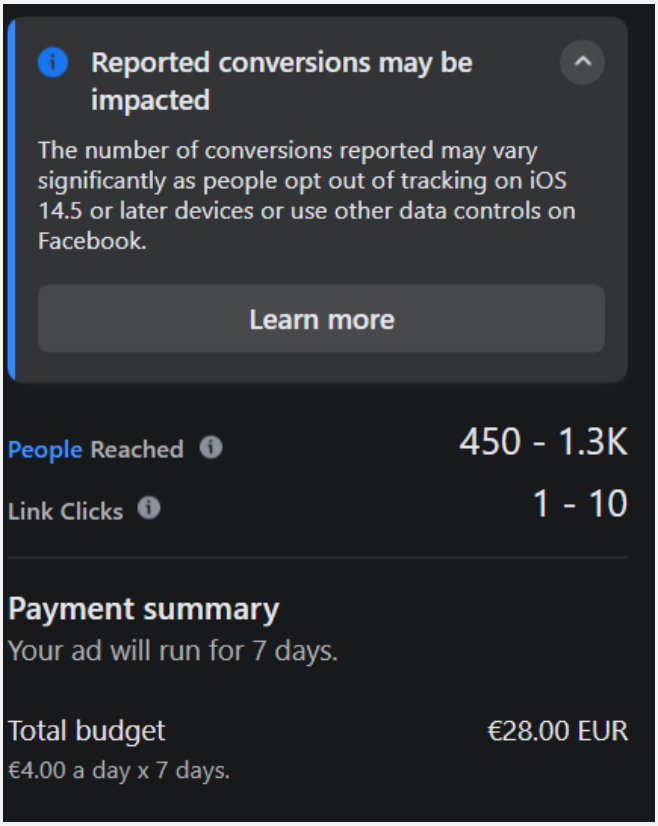
[120] (G'sell, 2021, p. 36)
[121] (G'sell, 2021, p. 41)
[122] (Hughes, 2019)
[123] (Subin, 2021)
[124] (Schoon, 2021)
[125] ("Opinion | Why 'breaking up' big tech probably won't work," n.d.)

manipulation by luring users emotionally or using financial incentives, which could prove more convincing than promises of better privacy. Platforms could use the data of users to create a sense of personal connection to the platform, or set up micropayment systems to provide individual users with a percentage of the ad revenue the overall user base generates. A more promising approach to competition regulations is ensuring interoperability and data portability. If a user could port their data, including contacts, conversations, calendar and interests from any Meta service to a non-Meta service, they could move to a competitor more easily based on actual personal preference, rather than the benefits Meta enjoys in virtue of its domination on the market, such as the size of its network or the amount of information it has on its users.

c) The impact of self-regulation from third parties

In 2022, when you create an ad with Facebook Ads aimed at individuals living within the United Kingdom, you will be warned that "The number of conversions reported may vary significantly as people opt out of tracking on iOS 14.5 or later [...]"[126], as shown below:

Figure 3.1 Facebook ads warns of lower effectiveness on iOS 14.5



[126] ("Advertising on Facebook," n.d.)

Indeed, on the 26th of April, 2021, Apple chose to let its users opt-out from cookie tracking by default, severely limiting the amount of information third-party platforms such as Facebook could have on user activities outside of its platform. This in turn limits the ability to assess the efficiency of ad campaigns, which goes against Meta's economic interests. According to the platform, the update caused product sales attributable to personalised ads on the platform to decrease by up to 60%[127]. This is a result of companies cooperating with the UK and EU guidelines on cookie usage, and anticipating harsher regulations in the future[128]. Apple already blocked third party cookies within its own browser Safari in 2020, as did Mozilla Firefox back in 2019[129]. More importantly, Google is expected to do the same with its Chrome browser by 2023[130], which controls 64% of the browser market worldwide as February 2022[131]. All of these will cause further disruption to Meta's business model, and the company will have to find new ways to acquire user information in order to sustain itself.

3.1.4 How Meta could save Facebook's business model without reducing its harms

As I have argued earlier, Meta's business model relies on the collection of user data in order to design environments which manipulate user behaviour in a way that maximises exposure to and interaction with ads. The way this model currently operates is unsustainable, as it relies on other services' willingness to share information in the form of cookies. Meanwhile, regulators have been pressuring individual service providers to keep their data to themselves, especially in the UK and the EU. In the following section, I will describe how launching its own 'metaverse' could enable Meta to sustain its economic activities, by decreasing reliance on other services for data collection, as well as providing them with means to take ownership of user data through the 'avatarisation' of individuals.

a) New possibilities for the collection of data on the metaverse

Meta developing its own 'metaverse' can be seen as an attempt to limit its reliance as much as possible on third parties for data. Owning its own immersive virtual world allows Meta to ensure its users can purchase items from other brands and visit their stores without leaving the platform. On Roblox, an existing platform which features and avatars within a virtual environment, users can buy a Gucci purse for their character[132] and visit 'Nikeland' to learn more about Nike's brand and latest products[133]. This enables Meta to gain knowledge on its users' interests based on the brands they consumed and interacted with within its metaverse, which could replace the knowledge they no longer can acquire on online activity outside of it.
Moreover, if a user takes full advantage of the technologies Meta intends to put at their disposal in order to access this metaverse, such as VR headsets and motion-controllers, the platform gains

[127] ("Speaking Up for Small Businesses," n.d.)
[128] (Browne, 2021)
[129] (Bohn, 2021)
[130] ibid.
[131] ("Browser Market Share Worldwide," n.d.)
[132] ("A Virtual Gucci Bag Sold For More Money on Roblox Than The Actual Bag," 2021)
[133] ("NIKELAND," n.d.)

potential access to a range of data it previously couldn't. For instance, it could gain knowledge on a users' physical traits based on the positioning of the VR headset and the controllers in space, as well as the user's movements[134]. It was reported in January 2022 that metaverse was recently granted patents involving technologies which track eye movements and facial expressions[135], the purpose of which include helping advertisers "understand whether people engage with an advertisement or not." according to Nick Clegg, the company's head of global affairs[136].

b) How avatars could be a grey area for the GDPR

Importantly, some of the ways in which the platform can acquire data are no longer connected to the user, but to their avatar, which is itself a product of the platform. It serves as an incentive for the user to purposefully provide pictures and details about themselves, in order to replicate them within an avatar[137]. Yet the way this personal data is replicated within the avatar is not straightforward, nor is the avatar itself necessarily related to an identifiable natural person, as explained in table 3.3 below. Avatars could thus be used to circumvent the GDPR, which considers personal data to be "any information which are related to an identified or identifiable natural person"[138].

[134] ("Surveillance will follow us into 'the metaverse,' and our bodies could be its new data source," n.d.)
[135] (Hamilton, n.d.)
[136] (Mance, 2021)
[137] (Murphy, 2022)
[138] ("Personal Data," n.d.)

Table 3.3 Why avatars don't need to be made of personal data to enable the monitoring of the user

Personal data will most likely not be used directly in the creation of player avatars. Data regarding a user's eyebrow shape could be used in a single instance to automatically select a specific eyebrow model within Meta's library of proprietary assets. As such, avatars within the metaverse might resemble an individual, but they are not explicitly tied to the individual, as not only are they owned by Facebook but the same individual asset within an avatar could theoretically be tied to any user, and the amalgamation of assets resulting in a given user's specific avatar is the product of Facebook's own technology. Determining who owns an avatar is already contentious in copyright law, and avatars within most online immersive environments are the exclusive properties of the IOE owner[139].
Alternatively, it could be argued that avatars are not tied to identifiable individuals, given that this connection is arbitrary. A middle aged Chinese man named Jackie might not give any of their personal data, and instead choose an avatar which resembles an American little girl, which could lead him to act in the metaverse in distinct ways than he might do in the real world, as argued in section 2. It is unclear whether the data which pertains to little-girl-Jackie relates to real life Jackie, as little-girl-Jackie is completely distinct from Jackie both in terms of physical traits and in terms of behaviour. Yet data pertaining to little-girl-Jackie could be sufficient to influence Jackie's consumer behaviour within the metaverse. In fact might prove to be more valuable to brands wanting to sell within the metaverse than data pertaining to real Jackie.

c) New ways to monetise user data on the metaverse

Not only does the shift to the metaverse provide Meta with new ways to collect user data, it also provides the platform with new tools to manipulate user behaviour in ways that align with their economic interests. Some of the mechanisms already used by Facebook are transferable to the metaverse, such as the 'fear of missing out' induced by the fact that things happen on the platform even when the user isn't on it, making them want to come back regularly.
More importantly, as mentioned in section 2.2 of this thesis, the ways individuals are represented through their avatar has a direct impact on the way they interact with each other[140]. In the context of the metaverse, Meta could harness this in order to make its virtual world more addictive, as well as incentivise users towards buying virtual goods.
Avatars, along with broader features within the virtual environment, could foster emotions within the individual that would make the 'real world' less appealing, making them want to stay longer. As Frances Haugen told the Times: ""So, just imagine this with me. When you go into the metaverse, your avatar is a little more handsome or pretty than yourself. You have better clothes than we have in reality. The apartment is more stylish, more calm. And you take your headset off and you go to brush your teeth at the end of the night. And maybe you just don't like yourself in the mirror as much. That cycle… I'm super worried that people are going to look at their apartment, which isn't as nice, and look at their face or their body, which isn't as nice, and say: 'I

[139] (Ochoa, 2012)
[140] (Yee and Bailenson, 2007)

would rather have my headset on.' And I haven't heard Facebook articulate any plan on what to do about that."[141] While it isn't in the interest of Meta to be associated to an uptick in mental health issues due to the usage of its products - in the way an internal study suggested Instagram is toxic for the self-esteem of teenage girls[142] - ensuring users spend as much time as possible in the virtual world maximises their potential exposure to ads and the opportunity to collect data on the individual, which is key to sustaining its economic model.

What's more, the shift to the metaverse allows Meta to make money in ways that are no longer directly reliant on an individual's data, by selling virtual products to its users. As Zuckerberg said in his company's Third Quarter 2021 Results Conference Call: "If you're in the metaverse every day, then you'll need digital clothes, digital tools, and different experiences. Our goal is to help the metaverse reach a billion people and hundreds of billions of dollars of digital commerce this decade."[143] Making large profits from the sale of virtual outfits has proven to be a viable business model, as shown by the success of existing 'free to play' online video games such as Fortnite[144] and Roblox[145], which make large profits mostly from the sale of purely cosmetic virtual items (which we will explore further in section 3.2). As mentioned previously, given the centrality of the avatar in Meta's project and its potential in making the virtual world more addictive to the user, it is likely that these purchasable items will be integrated within the world in a way that manipulates the user into buying them, a sort of corporate-led social engineering hacking (see table 2.3). For instance, in order to make the most out of a sponsorship deal with a real-world clothing brand, Meta could make its users feel left-out and isolated for not owning those items, in personalised ways. A user could be told that their friends or favourite users own them, that people who visit their favourite location love those items, or that a new virtual location that is designed to please people like them is inaccessible to them unless they own the right items. In this situation, virtual clothing would be purchased not because the user enjoys it, but because the purchase would relieve the user from negative emotions the virtual environment itself made them feel in the first place[146]. This exemplifies how the metaverse could enable Meta to apply the same principles of emotional manipulation it currently uses through the Facebook feed as mentioned earlier, but in potentially less algorithmically heavy ways, using data collected within the platform, thus circumventing upcoming regulation.

[141] ("Why Frances Haugen Is 'Super Scared' About Facebook's Metaverse," n.d.)
[142] (Seetharaman, 2021)
[143] Facebook Q3 2021 earnings call transcript
[144] (Tassi, n.d.)
[145] ("Forever 21's metaverse venture lets Roblox users customize virtual fashion stores," n.d.)
[146] See table 2.2 for additional explanations of this phenomenon

3.2 Roblox, a glimpse into the metaverse

3.2.1 The reasons for Roblox's success and moderation controversies

a) Roblox, largest video game company in the United States in 2022

Roblox has been credited by some as being a 'lifeline' for children during the worldwide lockdowns induced by the Covid-19 pandemic[147]. In 2020, over half of all children below 16 in the United States were playing the game regularly[148], and it was the most popular video game in all of North and South America, as well as 20 European countries and many other countries in Africa, Asia and Oceania, based on Google searches according to a study by Comparethemarket.com[149]. Roblox isn't really a game in itself, rather it is a platform which hosts three-dimensional free-to-play games dubbed 'experiences', created by its users. In some ways, it already embodies some of the promises of the Web 3.0: it is accessible to everyone given it is free to play, and it is interoperable, meaning players can join each other from a computer, a phone or a video game console. It is centred around user generated content, from the experiences to avatar customisation features, and it lets its users generate economic profit from their creations[150]. In 2017, the Vice-President of the company told alistdaily that "From the very beginning, it was about having kids develop games for other kids."[151] As a result, although buggy and visually rough at times, and in many cases almost unplayable, the platform hosts a total of over 24 million 'experiences' as of 2022[152]. In comparison, Steam, the largest online shop for video games on PC, reached a total of 50 thousand games in 2021[153]. A positive effect of this is that some of these games are made by people whose interests aren't as represented in the broader video game industry, such as little girls[154]. For example, Wired journalist Simon Hill describes his time with the Roblox experience *Royale High* as having a "delightful sweetness":

"In Royale High, I attend English class in a school that resembles a castle. There's an interactive spelling test (10/10 for me), then I rush to get the right book from my locker before chemistry. Later, I get ready for a dance by bathing and choosing a new outfit. After dancing around and drinking punch, I'm touched when I get voted king of the ball, a prize that comes with a bouquet of flowers and 500 diamonds."[155]

[147] (Hill, n.d.)
[148] (Lyles, 2020)
[149] ("comparethemarket.com - The 2020 Global Gamer Index," n.d.)
[150] (Hill, n.d.)
[151] (Wong, 2017)
[152] ("Accueil," n.d.)
[153] ("Steam just reached 50,000 total games listed," n.d.)
[154] (Sarkeesian, n.d.)
[155] (Hill, n.d.)

Table 3.4 My Royale High walkthrough

Intrigued by the multitude of complex game mechanics this description seems to imply, I decided to undertake my own "walkthrough" of Royale High, in order to better identify the platform's vision and intended use through its core product, experiences[156]. After selecting "Royal haut" on the map (a poor translation of 'Royale high' in French), I faced a massive 3D castle surrounded by an impressively detailed forest. After wandering around for a bit, a message appeared informing me that the ball was now over and I needed to go to the dorm before 2am, unless I was a mermaid, in which case I could stay in the pool. Feeling pressured and confused, I desperately floated around searching for the dorm, in vain. I resorted to asking for help in the general chat, which came shortly afterwards as another player's stylish blue avatar appeared by my side, seemingly out of nowhere. The screenshot below captures my confusion and relief at this moment. After 30 minutes spent on this experience and a few others, it seems to me that many game mechanics within Roblox experiences rely heavily on the patience and imagination of the player. As such, I believe they mostly appeal to very niche audiences besides children. Moreover, most players had fancy clothing and facial expressions, which made me and my default blocky character stand out to other players as both an outsider and a newbie. This humbling experience made me feel incentivised to invest virtual currency in virtual items in order to 'fit in', if it wasn't for the fact that I personally felt quite bored by experiences overall.

b) Roblox's appeal for extremists

[156] (Light et al., 2018)

Indeed, another underrepresented demographic within the industry which was empowered by Roblox is that of teenage fascists. Contrast the accounts of the *Royale High* experience above with this one of *Washington, District of Columbia* by Cecilia D'Anastasio for Wired in 2021:

"On our way to federal prison, Ferguson explained that, like *the Senate* and *People of Rome*[157], this role-play had a strict hierarchy—senators, FBI and NSA agents, and so on. We exited the car as it did a midair triple--flip beside a mob of people just standing around talking. As I was escorted in, a Department of Justice official with beaded hair asked a man in a headscarf what he thought about Black Lives Matter. We were forced into an interrogation room. The interrogator, our driver, jumped on the table. He demanded to know what race we were."[158]

D'Anastasio's investigation suggests that online environments such as Roblox have been used as a recruitment tool for far-right communities, based on messages recovered from white supremacist Discord servers by the activist collective Unicorn Riot[159].

c) Roblox's insufficient moderation apparatus

Many elements of the experience above are not allowed by Roblox's Community Standards, which prohibit discussing nazism or any form of discrimination[160]. These community standards are enforced through algorithmic text detection for screening purposes, and at least 400 moderators to review potential account suspensions[161]. Roblox' automated moderating consists in seeking out forbidden terms in conversations between players or text embedded within experience interfaces. It also seeks out designs within experiences which might have been stolen from another player or has been copyrighted by external parties. However, with 45.5 million daily active users[162], the platform hosts more content than it can efficiently moderate. This is only one of the hurdles Roblox's moderation faces however. For one, algorithmic detection of problematic content is limited in its effectiveness. Automatically banning experiences that reproduce the 2019 Christchurch mosque shooting in New Zealand would require banning all mention of the city of Christchurch, according to a Roblox representative[163]. In addition, relying too heavily on algorithmic detection has caused issues where users were banned for having unintentionally benefitted from a bug caused by Roblox itself[164] (More details in the "How Roblox can both cause and punish wrongdoing" box below).
Appeals are seen by users as a waste of time in most cases, as moderators don't have time to spare on cases where there is any sort of evidence, even if it the evidence in question is misleading[165].

[157] Two other Roblox experiences
[158] (D'Anastasio, n.d.)
[159] (Kamenetz, 2018)
[160] ("Règles de la communauté Roblox," n.d.)
[161] ("Understanding Moderation Messages," n.d.)
[162] (PC Gamer, 2022)
[163] (Brandom, 2021)
[164] ("Roblox's Moderation Needs To Be Fixed - Feature Requests / Website Features," 2018)
[165] ibid.

Table 3.5 How Roblox can both cause and punish wrongdoing

Tools provided by Roblox enable developers to draw from a common pool of resources which includes virtual items and designs which they can include in their experience. Developers themselves can add their own designs to the common pool for other players to use. If a player puts an item in the common pool that is later detected as having been protected by copyright and stolen, all other players who used that item in their experience will be penalised by the platform in ways that can include the automatic removal of their entire experience.

d) Roblox's cross-platform sexual grooming networks

Another issue is that problematic experiences can be difficult to find, as they are joined through hyperlinks on other platforms, such as Discord servers. They can also include a hacked version of Roblox' code[166], which allows the players to do without many of the platform's safeguards, such as prohibited language. This is the case of 'condos', servers where users role-play sexual relationships with their naked avatar[167], fully expecting the experience to be removed within a few hours and having to join a new one later on, when this one is found out by Roblox moderators. In a context where 67% of Roblox players are under 16[168], the idea of a child and an adult potentially socialising in these spaces is worrying. It is important to note however that these issues are not merely a matter of players misusing the platform for inappropriate entertainment purposes. The authors of such servers are often motivated not only by excitement, but also by money (more information in the box below).

Table 3.6 How teenagers can make money by running virtual brothels on Roblox

In an interview with Fast Company, a 16-year-old 'condo' operator explains that they bought the code for the experience for 1000 Robux (the equivalent of 10 USD in in-game currency) because it felt like an easy way to get rich on Roblox[169]. They decided to buy the code after failing for years to make an experience they developed into a hit on the platform, and feeling jealous about other players with massive Robux accounts and many expensive virtual items. The way they made money was by selling virtual t-shirts through a separate account. Players wearing these t-shirts when entering the condo could be granted a range of privileges, such as specific character animations, being able to fly, or kicking out other players. By operating their servers on a separate platform such as Discord and using multiple accounts, as well as hiding any information that could be used to identify them such as VPNs, players of any age can make large amounts of in-game currency before they reach high school.

[166](Helm, 2020)
[167] ("Roblox," 2022)
[168] ("Registration Statement on Form S-1," n.d.)
[169] (Helm, 2020)

e) Effective moderation clashes with Roblox's economic interests

These issues could be more efficiently tackled by taking more structural steps to police Roblox content, such as limiting the number of accounts per person, or limiting the ability to upload content or the number of authorised connections on it based on developer trustworthiness. Such measures would go against the company's broader economic interests, as the company fundamentally relies on incentivising players to create their own experiences and finding ways to monetise them. This has led some to accuse the company of exploiting child labour[170], a claim we will explore further in the following section.

3.2.2 Roblox's ethically dubious business model

a) Turning the dreams of children into 'almost free' labour, and profit

"Make Anything. Reach Millions. Earn Serious Cash." Until recently, this was the slogan advertised on Roblox's website to encourage its users to make their own experiences[171]. Success stories exist, as in the case of two British teenagers who paid off their parents' mortgage from games they started making on Roblox when they were 13[172]. This is made possible by the child-friendly tools provided by Roblox which allow anyone to make their own game, as well as charge other users for cosmetic items or privileges in the in-game currency, Robux. Robux are themselves convertible to real-life currency, such as US dollars, allowing its users to potentially make large amounts of money. Most of the platform's income is derived from the sale of its online currency[173], and according to their website around 24.5% of that income is shared with developers who are profitable enough to be allowed to convert their currency into real life money[174]. While the platform might present itself as a way for users to make money to convince them to invest time in creating experiences, it is also in its financial interest to ensure developers take out the lowest possible share from the value they create.

[170] (Parkin, 2022)
[171] ibid.
[172] ("Roblox: 'We paid off our parents' mortgage making video games' - BBC News," n.d.)
[173] ("Registration Statement on Form S-1," n.d.)
[174] ("Developer Economics," n.d.)

Table 3.7 How to convert robux to real-world currency on Roblox

In order to be eligible for Robux to dollar conversion, developers need to have at least 50,000 Robux in their account[175]. Before the first of February 2022, developers wanting to cash out needed 100,000 Robux in their account, as well as a Roblox premium membership which cost at least 5 US dollars a month[176]. Consequently, among the over 960,000 developers on the platform who earned virtual currency through their game between September 2019 and September 2020, 3800 met set criteria to exchange Robux for real-world currency, and only 2800 actually did so[177]. The conversion rate offered by the Developer exchange programme is 0.0035 US dollars per Robux. In addition, Roblox takes 30% away from every in-game transaction.

b) In Roblox's developer competition, most people lose, but the house always wins

Concretely, in order to get money from Roblox, a developer needs to get users to spend a cumulated 61,500 Robux on their experience, at minimum, which is equivalent to roughly 615 dollars of purchased Robux. This will allow the developer to receive 50,000 Robux after the 30% Roblox transaction tax, which they can convert to 175 dollars. This is why 99.47% of community developers made less than 1000 US dollars a year on Roblox in 2020[178]. On the other hand, the same year, 32 developers made over a million dollars[179]. This is in part because Roblox deliberately chooses to only show experiences which already have a few thousand users at a given moment on its main page, and the "up-and-coming" section also only shows games that are already very popular. As such, it is easier for already popular games to remain popular and maintain a steady income stream, than for recently launched games to become popular. Furthermore, Roblox pays extra Robux to developers whose experiences are best at retaining users for extended periods of time, especially 'premium' users, and successfully convince free users into getting a 'premium' subscription[180]. A premium subscription can be purchased for a minimum of 5 US dollars a month, and provides advantages such as better rates on Robux purchases and discounts on virtual items. Within individual experiences, a premium account can lift effective paywalls which developers put in place to encourage users to purchase a subscription.

c) Advertising as a way to limit labour costs by keeping profits in the ecosystem

Not only does Roblox promote the experiences that are the most profitable to them, but it also ensures that most developers convert as little Robux into real-world currency as possible. If a developer does not reach the 50,000 Robux threshold required to convert them into dollars, the

[175] ("Developer Exchange (DevEx) FAQs," n.d.)
[176] ("Developer Exchange Program Requirements Changes - Updates / News & Alerts," 2022)
[177] ("Amendment No.2 to Form S-1," n.d.)
[178] ("Roblox developer and creator breakdown by rewards 2020," n.d.)
[179] ibid.
[180] ("Premium Payouts," n.d.)

platform incentivises them to reinvest their funds within the platform. In order to get more users to play their experience, developers can either rely on word-of-mouth, or invest some of their Robux into advertisements on the Roblox website. Advertising space is allocated based on bids, meaning that the amount of time an ad will appear will depend on the amount of Robux spent relative to other bidders. An ad on which a user spent 100 robux will appear 6 times less than an ad on which another user spent 600 robux. Some of the ads even try to compensate for the lack of funds invested in them by poking at the system, like the one below:

Figure 3.8 Screenshot of a randomly encountered ad at the top of Roblox's website

d) Why buying ad space on Roblox is akin to gambling

As such, a significant amount of Robux earned needs to be invested back into the platform in order to ensure an experience doesn't immediately flop, let alone be profitable enough to allow its author to reach the 50,000 Robux threshold required to convert them into real-world cash. In addition, if ads cannot be shown due to an outage (Roblox servers temporarily crashing because of a major update on a popular experience, for instance), there is no mechanism to refund the money spent by a developer[181]. In other words, purchasing ad space on Roblox is akin to gambling, as a user is incentivised to spend more for a higher return on investment, but the return itself is highly variable and can even be uncertain.

In an interview with video game journalist Quintin Smith, 11 year old game developer Emil explains that he wished he had Robux so that he could "advertise [his 'experience'] and maybe have a chance."[182] This system is frustrating to users who were incentivised to "Make anything. Reach millions." but don't realise they cannot unless they have sufficient capital to promote it initially, and aren't necessarily focused on earning "serious cash", in reference to the website's earlier slogan. This also implies that the website's claims that "You only pay *after* earning on Roblox"[183] and "There is no significant user acquisition cost" are misleading, as it is very difficult for a game to be successful unless its developer invests a significant amount of time and virtual currency to promote it.

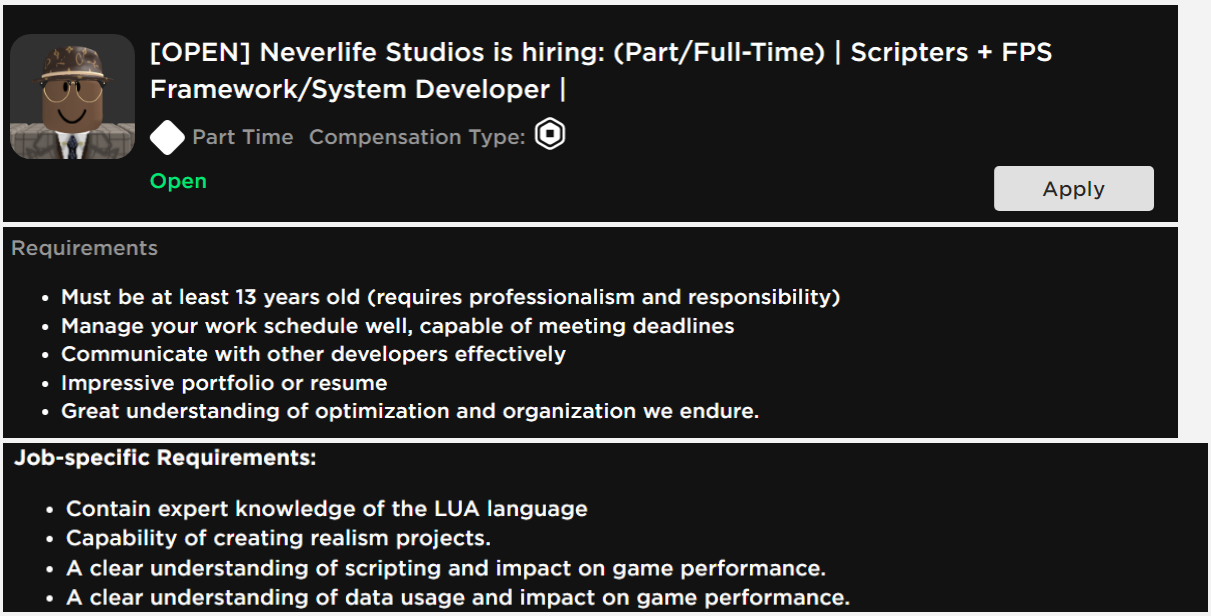
e) The professional and responsible 13-year-olds behind Roblox's success

In other cases, however, users are able to create a popular game, often taking part in broader projects within larger teams with the initial capital and talent required to be successful on the platform. Roblox encourages this type of practice, and even hosts recruitment ads for users to

[181] ("Pay Per Click Advertising - Feature Requests / Website Features," 2021)
[182] (People Make Games, 2021a)
[183] ("Developer Economics," n.d.)

work on projects together on its "Talent Hub"[184]. Notice the uncanny similitude between the jobs advertised there and any ad for an experienced software developer on a regular job board, besides the fact that they accept "professional" and "responsible" 13-year-olds[185], and pay in virtual currency, as shown below.

Figure 3.9 Screenshot of an advertised job on Roblox's Talent Hub



f) Roblox wants the labour of teenagers, not the responsibility for their protection

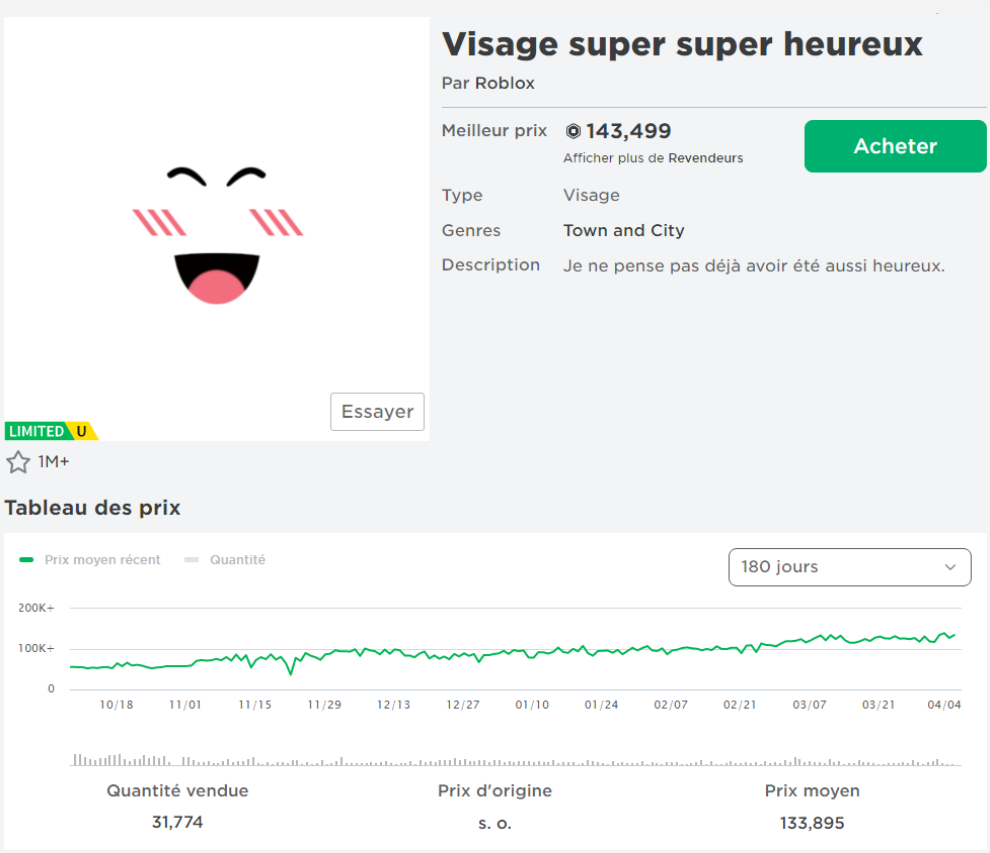
Roblox's Talent Hub itself only serves as an intermediary between players however, and takes no responsibility for what happens within projects. This is because these are mostly organised outside of the platform, as users prefer to rely on other services more suitable for project management and communication, such as Discord servers[186]. The Hub itself thus requires no age verification, has no mechanisms for drafting contracts or securing a guardian's consent and offers no tools to resolve disputes. Consequently, situations where developers - including children below 13 - are subjected to various kinds of abuse and financial exploitation are rife. These includes reports of sexual grooming of children by manipulative teenage bosses, and financial exploitation with project management unilaterally cutting the pay of developers without any repercussions[187]. Not only does Roblox not intervene for any activity which happens outside of its platform, but posting about the situation on the platform's developer forum can get a user in trouble for harassing the user who abused them, on top of the reputational risk associated with speaking out against well-regarded developers[188].

[184] ("Talent Hub," n.d.)
[185] Ibid.
[186] (Parkin, 2022)
[187] ibid.
[188] ibid.

e) Roblox incentivises children to buy luxury cosmetic items

Finally, in cases when users have managed to generate a substantial amount of Robux with an experience they developed, they still might lose it without being able to convert it to real-world currency due to poor investments in the collectible items market. Accessible from the website's front page, the "avatar shop" features a "collectibles" section where a user can find limited-edition cosmetic items a user can purchase for prices that can reach impressive heights when converted into real-world currency. The interface which presents individual items features not only its description and price, but also a curve which indicates the fluctuation of the item's price in the last 180 days. For instance, the screenshot below shows a 'face' a user can purchase for their avatar for the price of 143,499 thousand robux, the equivalent of 1495 US dollars.

Figure 3.10. Screenshot of a collectible in Roblox' avatar shop



f) A stock market designed to waste the earnings of children

Multiple elements incite the user to consider this item not merely as a cosmetic item for their personal enjoyment, but as a sound financial investment. After all, the curve below suggests the price has only gone up in the last 180 days, starting at roughly 50,000 robux. Based on this information, it seems reasonable to expect it to reach 200,000 robux at some point. As mentioned earlier, most users on the platform are children and pre-teenagers, who are thus unlikely to have

the skills and knowledge necessary to wisely invest the equivalent of multiple hundred dollars on speculative assets. Moreover, the virtual items a user possesses and their value is publicly visible on their profile, which make them positional goods, i.e. items that users acquire because they convey a high relative standing within this online society. In an interview with Quintin Smith, one player explains that they decided to spend all of the 200,000 Robux they earned through an experience they designed on virtual items, "[because] I had been playing the game for four years at that point, and I'd always been looking at the catalogue, always wanting those items. Just finally being able to afford them, my mind just told me to go for it, you know ? [...] I would never spend that much money in real life."
Regardless of the player's motive to invest in these items, given that Roblox takes 30% of the value of each transaction, the company benefits financially from these operations which reduce the total supply of Robux that can be converted to dollars.

g) Increasing the vulnerability of children to scammers

Not only does this collective market create morally dubious incentives for children to invest in speculative assets, it also puts the users who invest in it at risk. Since anyone can see a user's virtual item collection, every expensive item collector becomes a prime target for scammers and hackers. Those seeking to get rich by stealing virtual assets can simply take advantage of the gullibility of young users by pretending to be Roblox or a friend and convincing them to send their login credentials, then selling all their items on an external platform, a practice known as beaming[189]. To prevent this, Roblox merely encourages users to keep their communications and exchanges on-site, where they can be monitored[190]. Nonetheless, the low price Roblox offers for Robux, the minimum amount required for conversion and the 30% transaction fee work as incentives for users to find alternative ways to monetise their labour on the platform. Besides dedicated Discord servers where users can organise themselves to trade items and currency, specialised websites exist which are easy to find and, in some cases, have been functioning for multiple years[191]. Unregulated platforms like those expose users to risks such as being scammed or having their credit card or login details stolen. Still, removing the incentives within Roblox which make these websites popular, such as setting up forums for users to trade their items or allowing users to negotiate better conversion rates for their robux, would undermine the platform's business model.

3.2.3 The legality of Roblox's practices

Regarding scandals linked to inappropriate content being hosted on the platform and potentially exposing children to them, Roblox can argue that it benefits from the same protections that Facebook does. This means that they cannot be held accountable for every piece of problematic content they host, but they are expected to take action in good faith, especially when they are notified of problematic content by third parties. As mentioned above, Roblox's mix of human

[189] (Cox, 2022)
[190] Ibid.
[191] (People Make Games, 2021b)

moderators and automated content removal mechanisms allow the platform to claim that they fulfil these requirements. Nonetheless, as I argued in sections 3.2.1 and 3.2.2, not only is their moderating apparatus insufficient to efficiently police the massive amounts of content produced on the platform each day, but other parameters linked to the economic incentives of the platform also put its users at risk. In order to be effective at protecting users, especially children, regulations would have to tackle structural parameters of the platform and account for the way they happen within a metaverse. These can be summed up within four themes: Worker protections, recognition of labour, virtual tender, and gambling.

a) Worker protections in an IOE 'gig economy'

Roblox hires gig workers, but has unique ways to hide it. As I explained in section 3.2.2, developers within Roblox provide labour within informal structures to produce economic value through 'experiences'. Under the status quo, developers can be abused verbally and economically exploited, as their entitlement to a wage and decent working conditions is entirely dependent on the benevolence of other users. As Roblox doesn't officially hire workers to produce monetizable content for them, it does not incur a legal obligation to provide protection to its workers. The platform itself merely provides its users with tools to make content and a place to share it with other users in order to earn virtual currency. It cannot track what users do on other platforms, but that is also in its interest, as ensuring exploitation and abuse happens elsewhere makes it easier for them to escape liability for letting it happen. This economic model is analogous to those of other platforms such as Uber and Deliveroo, which operate as intermediaries between supply and demand for services. To this day, there is no broad consensus regarding the legal status of workers in these circumstances and the protection these 'intermediaries' owe them. In the past decade, in Europe alone, judges throughout the 27 member states have handed out more than a hundred decisions and hundreds more are still pending[192]. Still, on the 9th of December 2021, the European Commission submitted a proposal to clarify the status of platform workers based on local rulings on the issue throughout the continent, which provides some degree of clarification[193]. According to this proposal, Roblox could legally be considered an employer (see table X below for more details).

[192] ("EU seeks to clarify status of delivery app workers," 2021)
[193] ("Improving working conditions in platform work," n.d.)

Table 3.11 Evaluating Roblox's employer status according to the European's Commission's proposal

According to the proposal, any company which meets two of the following requirements would be considered an employer[194]:

(a) effectively determining, or setting upper limits for the level of remuneration;
(b) requiring the person performing platform work to respect specific binding rules with regard to appearance, conduct towards the recipient of the service or performance of the work;
(c) supervising the performance of work or verifying the quality of the results of the work including by electronic means;
(d) effectively restricting the freedom, including through sanctions, to organise one's work, in particular the discretion to choose one's working hours or periods of absence, to accept or to refuse tasks or to use subcontractors or substitutes;
(e) effectively restricting the possibility to build a client base or to perform work for any third party.

According to these, Roblox developers could be considered an employer on at least three counts.
First, they determine the level of remuneration of a user as they determine the proportion of Robux a user gets from each transaction, and how many extra Robux a user gets for attracting premium users.
Secondly, the platform sets specific rules regarding the experiences users develop, and can unilaterally remove an experience if it does not follow them.
Thirdly, the platform supervises the performance of users by tracking the user base of each experience, and their ability to attract 'premium' users.
Additionally, it can be argued that by ensuring experiences users develop cannot be exported and used outside of Roblox, the platform restricts a user's ability to build a community or make money from their experience outside of it. This point will be detailed further later in this section.

That being said, this proposal is likely to be watered down before it is implemented in national legislatures, and more importantly, Roblox's online nature provides it with specific tools to circumvent it. Unlike workers within platforms which monetise 'real-world' labour, developers on Roblox arguably do not produce labour for a wage. The platform could argue that users are merely playing, and the Robux they receive is not compensation for labour, but an additional tool to have fun on the platform which *can* be converted to currency. These claims will be clarified and assessed in the following.

b) Online 'gamified' labour is real labour

[194] ibid.

Developing experiences is labour, even if it is fun. In order to clarify whether Roblox users produce labour, it is necessary to clarify what developing 'experiences' entails. At face value, it could seem fair that users are granted a right to use Roblox' engine and platform for their own leisure, and in exchange cannot claim to own their experience which effectively operates within the engine and constitutes a portion of the platform. This is not a straightforward agreement however, and the benefits Roblox enjoys from its developer community are multiple. The creativity of developers significantly reduces research and development and marketing costs[195]. For one, developers are responsible for creating and establishing the brand for their experience, which in turn draws people to the platform. This cuts down the marketing costs of the platform, according to Roblox chief business officer Craig Donato, who describes the games' popularity as an "organic phenomenon"[196]. Furthermore, new experiences being constantly created ensure the platform remains relevant and popular through time, whereas the average app mostly loses its entire user base within a few months[197]. These experiences also drive innovation within Roblox, as users experimenting with new ideas helps the platform to develop successful updates and partnerships, helping them determine what features need to be added and which cultural references are popular within the user base.

Moreover, by relying on its user base to create entertainment, Roblox outsources the risks that a traditional game company would have to bear in this situation. As mentioned earlier, it doesn't need to worry about the working conditions of developers, and it lets users bear the total weight of the failure of their experience in terms of time and money invested in it.

Finally, the idea that users contribute to Roblox voluntarily, motivated by the common purpose of having fun together, is mostly an ideology which disguises the power structures within which the community operates[198]. Rather than a place to collaborate, or even a free market where content is assessed and rewarded by other users, Roblox provides a financial incentive for users to provide labour and compete with each other according to parameters which align with the platform's own economic interests, as detailed in section 1 of this thesis.

[195] (Kücklich, n.d.)
[196] (Dredge, 2019)
[197] ("New data shows losing 80% of mobile users is normal, and why the best apps do better at andrewchen," n.d.)
[198] (Huhtamo, 1999)

Table 3.12 Roblox and modding

Roblox developers share similarities with 'modding' communities, which use the engine of an established video game to make new content for it. For example, players have contributed many new outfits and other features to The Sims, a life simulator video game, which led its creator Will Wright to assert in 2002 that game production would become "a very collaborative process between the game developers and the players"[199]. In truth, while one of the primary motivations for 'modding', and by extension developing experiences, is the 'sense of community they derive from the experience'[200], this does not mean it is voluntary work. It could be the case if leisure was its primary outcome, however, as detailed earlier, Roblox is highly profit-oriented and presents making money as an incentive for creation on the platform. In fact, in a context where the platform doesn't recognise or protect users as labourers, the platform creates incentives that effectively go against the 'collaborative' ideology. Nothing stops a player from stealing the idea or design of a popular experience to recreate it and appropriate some of the revenue generated by it. On online forums, players who complain about their creations being stolen are advised by other players to try to sort it out by themselves, by adding a visible signature on each asset they create for instance[201].

As such, Roblox makes its young user base especially vulnerable to exploitation. Given Roblox users might fail to recognise themselves as genuine workers and organise to claim the relevant rights (again, 67% of players are below 16 years old), we could hope the platform would at least recognise the value provided by user creations, and implement technologies to recognise legal ownership of in-world content by the users who make it, as Second Life did in 2003[202]. This would not solve the entire issue, but it would remove some incentives for parasitic behaviours which stifle community-led innovation.

Alternatively, this issue could be solved by making Roblox experiences portable, so that players could upload and make their experiences available on a platform where they could be better protected and better compensated for them. A traditional game developer could, for instance, upload their game on an online game shop like Steam, and later on remove and upload it on Epic instead. On the other hand, while a Roblox developer can export 3D models created with the platform's tools, experiences themselves can only be played on the platform. This issue shouldn't be considered in isolation however, as it is constitutive of a broader strategy the platform operates in order to make its users dependent on it.

c) How currency creates dependency

Making games non-portable outside of the platform means developers rely on Roblox in order to

[199] (Au, 2002)
[200] Postigo, Hector. 'From Pong to Planet Quake: Post Industrial Transitions from Leisure to Work', Information, Communication & Society 6.4 (2003): 593-607. p.599
[201] ("How to prevent and react to stolen models?," 2021)
[202] ("| Linden Lab," n.d.)

monetise their labour. This labour, in turn, is only compensated in the currency issued by the platform, Robux. Robux themselves can only be used in order to purchase goods within the Roblox platform. Finally, while Robux can be converted into real-world currency, the conversion can only happen under conditions set by the platform and at a rate unilaterally set by the platform, which is part of a broader set of tactics that disincentivise players from converting their currency, as explained earlier.

Robux thus enable Roblox to have specific powers over its user base. It ensures most of the money earned stays within the company, it ensures players comply with company rules as the company has the ability to confiscate their paycheck, and it makes it harder to quit the platform as that would mean leaving money behind. Consequently, Robux themselves constitute an incentive to invest in advertising on Roblox and the collectible items market, both poor investments for reasons detailed earlier. They make players afraid of complaining about issues they face on the platform in public, as upsetting the platform could put them in financial trouble with no way to appeal. Finally, they incentivise users to remain on a platform not because they have the most fun on it, but because leaving it would mean leaving behind valuable assets and currency which cannot be removed from the platform, unless converted into an amount of real-world currency way inferior to what it is worth within the Roblox platform. Unless laws on company issued tenders are updated to take into account their current use, the metaverse could enable the return and standardisation of unethical business practices from the last century, as further explained in the box below.

Table 3.13 Robux and Scrip

Wages issued in the form of company tender for reasons such as these are known as ‘scrip’ in the United States[203], where Roblox originated. Scrip was a popular form of payment for wages in coal mining towns in the 19th and 20th century, where coal companies hired most of the workers and had an effective monopoly on businesses which operated in the town[204]. It served as a way for the companies to increase their profits at the expense of its workers, and was officially outlawed by the US congress in 1969[205].

d) The border between purchasing, investing, and gambling

Roblox features multiple instances of ‘purchasable’ items which, in effect, provide the user with varying or random rewards. These are the ad bidding system, the collectible items market, and in-game gambling activities. All of these are accessible to players regardless of age, as the only instance when the platform verifies the age of the user or requires parental consent is when Robux are initially purchased with real-world currency. Once these Robux are bought and loaded into a player’s account, or they are earned by the player in other ways, the player is free to use them as they please. This is because age requirements for online purchases are ordinarily bound to regulations regarding the processing of personal data, as the sale of an item requires collecting

[203] (Oneida and Us, n.d.)
[204] ibid.
[205] (Guilford, n.d.)

data from the buyer. For example, in the US, the Child Online Privacy Protection Rule illegalises the collection of data of children under 13 without parental consent in most cases[206], and article 8 of the EU's GDPR sets that age to 16 or 13 depending on national regulations[207]. Roblox circumvents these regulations by removing the need for data collection by making transactions occur with its own currency - data is collected from the bank account used to initially buy robux, however when Robux are earned through the platform or used for transactions within the platform, the only data needed is that of the Roblox account of players involved. This also allows the platform to enable transactions which would be deemed illegal offline, such as allowing children to gamble real money in a virtual casino.

Children can buy what are effectively lottery tickets. As mentioned earlier, the system to buy advertising space on Roblox is in effect similar to gambling. Users invest a set amount of Robux that will get their ad to be aired for an amount of time that depends on how much other players have invested, which can be equal to zero if the website is unable to air the ad for technical reasons. One could be tempted to compare this bidding system with that of online shops which feature auctions, such as eBay, where the price of some items is variable depending on what the highest bid is. There are multiple important differences between the two systems, however. On eBay, users who bid lower amounts do not spend any money, and if the item purchased cannot be delivered to the buyer, they are refunded[208]. On Roblox, purchasing ad space resembles purchasing lottery tickets, where a player is incentivised to purchase a higher worth of tickets in order to receive higher returns, without any guarantee. More importantly, eBay requires users to be at least 18 years old to open an account and take part in auctions[209].

Children can invest in speculative assets. Although the collectible items market allows users to buy items which have a real cosmetic function, the interface presents these as both positional goods which derive function from their perceived value, and financial investments which could be sold at a higher rate for a profit, as explained in section 3.2.2. In both these cases, the incentive for the purchase is speculation regarding the item's value in the future, much like investing in stocks (or non fungible tokens, which will be mentioned later). However, like eBay, most trading platforms require users to be at least 18 years old[210].

Children are provided with means to actually gamble. Roblox allows players to implement gambling elements into the experiences they develop, "Except where prohibited by local law or regulation, we allow the portrayal of gambling in experiences, no real money, Robux, or anything that can become real money or Robux, may be exchanged in these experiences. We also require that the odds of winning be fair and not skewed in the developer's favor."[211] This does little to mitigate the harms of allowing children to gamble, and a lot to help Roblox dissimulate the fact

[206] ("Children's Online Privacy Protection Rule ('COPPA')," 2013)
[207] ("Art. 8 GDPR – Conditions applicable to child's consent in relation to information society services," n.d.)
[208] ("eBay Money Back Guarantee," n.d.)
[209] ("Underage user policy," n.d.)
[210] (StockMarket.com, n.d.)
[211] ("Roblox Community Standards," n.d.)

that they provide children with ways to invest money into gambling through experiences such as 'My restaurant' and 'Adopt me', see the box below for more details.

Table 3.14 How to gamble real money as a child on Roblox

'My restaurant' feature slot machines where players can invest the experience-specific currency "Cash"[212], not to be confused with real-world cash. *Cash* itself can be purchased with Robux, which, as mentioned earlier, can be bought with real-world currency. *Cash* cannot be converted back into robux however, as this would breach Roblox' policy outlined above. More insidiously, one of Roblox's most popular experiences "Adopt me!" features eggs which can be bought with "Bucks" and provide the player with a random pet of a varying rarity[213]. These eggs are effectively "loot boxes", which allow players to spend real money to unlock random in-game items with an element of chance, as there is no guarantee the player will receive what they want or anything of value[214].

Gambling in video games has caught the attention of legislators worldwide in recent years. Loot boxes in different games have been accused of pushing people into 'under the radar' gambling by the UK's National Health Service[215], and there is evidence of their structural and psychological similitude to gambling, especially amongst younger players[216]. To this day, judgements which have deemed loot boxes illegal in virtue of national gambling regulations have occurred in Belgium[217] and the Netherlands[218]. Nonetheless, neither *My Restaurant*'s slot machines nor the eggs of *Adopt Me!* have gotten Roblox into legal trouble, which demonstrates how immersive environments and virtual currencies can be effective means of dissimulating these practices, as well as how specific the law has to be in order to effectively include them.

3.2.4 Roblox's next steps

a) Roblox's strategy to become a metaverse

In February 2021, Roblox Corporation CEO David Baszucki explained to his investors that the company was building what "some people refer to as the Metaverse"[219]. What is meant, more specifically, is a threefold shift in the company strategy. Firstly, the company is pushing towards avatar realism, in contrast with the lego-like characters it currently features[220]. Secondly, the

[212] ("Slot Machine," n.d.)
[213] ("Eggs," n.d.)
[214] ("Gaming loot boxes," 2019)
[215] ("NHS England » Country's top mental health nurse warns video games pushing young people into 'under the radar' gambling," n.d.)
[216] (Zendle et al., n.d.)
[217] ibid.
[218] ("Understanding the Dutch 'lootbox' judgment," n.d.)
[219] (Roblox, 2021)
[220] ("Roblox pushes toward avatar realism, plans to add NFT-like limited-edition items," n.d.)

company is working towards attracting more people above 13[221]. Thirdly, the collectible items market will open up to include items created by players, creating a new way for players to attempt to earn money through the platform[222]. Roblox's goals in terms of pushing towards avatar realism are similar to those of Facebook, in that it is seeking to make it easier for players to identify with the avatar and feel like it is an extension of themselves. To this end, the platform is developing its own facial expression tracking technology[223].

b) Implementing age verification for profit rather than safety

In order to extend its appeal to an older demographic, the platform is introducing features alongside its own age-verification technology, such as a proximity-based voice chat that requires users to prove they are above 13[224], as well organising in-game events targeted at older demographics, such as concerts[225]. The goal of this shift is both to keep users on the platform as they get older, and to attract older demographics through events that incentivise people to bring their friends with them. Roblox is seeking a compromise between making its platform appear more 'mature', and keeping it intact for its current young user base. As such, Roblox's incentive for the development of safeguards such as age-verification technologies is merely its economic interests, rather than the protection of users, even though these could be of great use to protect users from experiences which are unsuitable for them.

c) Going further in the luxury cosmetic items market

Finally, Roblox wants to bring its collectible items market to the next level by opening it up to user creations and introducing proprietary technologies to it, presenting it as "yet another lucrative opportunity for creators to earn Robux through design and sales"[226]. Its 'Layered Clothing' technology allows for an individual piece of clothing to fit any size or shape of avatar, whereas most games require designers to tailor outfits to specific body types[227]. This functionality allows Roblox to incorporate limited edition items that are interoperable within its own ecosystem, making them appealing to brands and creators which can make one design that works across every game. On the other hand, it makes designs very difficult to export outside of Roblox, much like it is already the case with experiences, as detailed in section 3.2.3.b.

d) Why regulating the metaverse is especially important for child protection

The structure of this project resembles that of play-to-earn games such as Axie Infinity, which is based around speculative assets known as "Axies" players can invest in and use in-game to

[221](Khaled, n.d.)
[222] (Bedingfield, n.d.)
[223] ("Roblox pushes toward avatar realism, plans to add NFT-like limited-edition items," n.d.)
[224] ("Spatial Voice," n.d.)
[225] (Levy, 2021)
[226] (Bedingfield, n.d.)
[227] ibid.

increase their value, in order to sell them later on for a profit[228]. Axie Infinity's story shows how placing speculative assets at the core of a game's appeal puts pressure on creating and maintaining a class of players who invest in the game to enhance their own experience (see table below). Given Roblox's current user base, this means Roblox is incentivised to maintain and even increase the pressure it currently applies to under-16s in order to coerce them to invest their money into speculative assets, in ways they never would in real life. Unless new regulation is passed to prevent this from happening, Roblox's metaverse could be founded on the manipulation and exploitation of children and teenagers by adults seeking to make money by investing in collectible items.

Table 3.15 The rise and fall of Axie Infinity

Axie Infinity was initially praised for launching a new era of 'play-to-earn' gaming, attracting large investments and allowing many to make a living off it especially in lower-income countries[229]. As of April 2022 however, the game is in financial dismay due to factors which can be tied back to its reliance on blockchain technologies, as both the assets themselves (non-fungible tokens) and the cryptocurrency used to buy them (known as SLPs) were subject to high variations in value. The game effectively functioned as a ponzi scheme, where a constant stream of new entrants injecting money into the game was required in order for both the currency and assets to maintain their value, let alone increase[230]. Thus when the decrease in enthusiasm for the game was exacerbated by a 600 million dollar worth theft of cryptocurrency used to back the value of the assets[231], the value of all the assets plummeted. The game is now forced to radically reinvent itself by shifting towards a free-to-play model[232]. This would allow the game to include a group of players who inject money into the game for the pleasure of playing it, in order to be financially sustainable[233]. Unlike Axie Infinity, the currency used to invest in speculative assets in Roblox is directly convertible to real world currency at a fixed rate, and the game includes a transactional tax, which decreases the risk of radical inflation.

[228] (Newton, 2021)
[229] ("Into the Metaverse," 2021)
[230] (Robertson, 2022a)
[231] (Robertson, 2022b)
[232] (Robertson, 2022a)
[233] (mgoesdistance.eth, 2021)

Conclusion: Policy recommendations based on findings

The study of Meta has shown how IOEs can provide a platform with new ways to gather data without relying on third parties and exploit grey areas in the law. As such, the metaverse could enable Meta to maintain their business model without having to mitigate the harms linked to it. Additionally, the ways IOEs amalgamate consumption, character customisation and social status provides Meta with a new way to capitalise on their expertise in using data to manipulate behaviour. User data collected and used within the metaverse can be an even more powerful tool to nudge behaviour than personal data on Facebook. It can be used to alter the design of the physical environment to create specific emotions in the individual, as well as targeted coercive mechanisms, and modify the behaviour of the individual through by altering the design avatar of their avatar. In order to protect users, regulators should:

1. Ensure legislation regarding personal data includes avatars. Avatars are company owned assets which are provided by the company to the user, and they can be distinct from the individuals that interact with the metaverse through them both physically and in terms of behaviour (see table 3.3). Nonetheless, data collected from an avatar can be powerful in order to influence the behaviour of the user within the world where the avatar exists.

2. Seek to protect those who are most prone to becoming addicted to virtual worlds. This could include restricting the use of nudges which seek to incentivise specific behaviours by making the individual feel left out. Additionally, limits could be set on the amounts of money that an individual can invest into cosmetic virtual items, as these investments can be motivated by a will to improve one's own social standing in the metaverse to compensate for low self-esteem in the real world, and thus lead to unreasonable spending.

3. Enable users to have effective ownership of their personal data, by setting requirements for its portability across platforms. As IOEs can create a specific sense of home and connection to the user, they can be even more difficult to leave than social media platforms, even when the user perceives them to be harmful. In order to mitigate this, enabling users to bring with them some of the parameters which make a virtual environment feel like home to them
.

The study of Roblox displays the wealth of ways in which an IOE can amplify the labour shedding practices of platforms. By facilitating and incentivising labour for its metaverse while ensuring it is organised entirely informally on external platforms, Roblox reaps the benefit of all labour without any responsibility for the associated abuse and exploitation. Additionally, its virtual currency serves as a powerful tool to ensure the amount of profit that workers can enjoy from their labour is minimised, by unilaterally setting the conditions according to which it might be converted to real currency. It also provides users with a wealth of methods and incentives to

waste it within the platform, and serves as a deterrent for leaving the platform, as it would mean leaving money behind. As ‘early adopters’ of Roblox’s metaverse, minors are also the most vulnerable to these practices. In order to counter these harms, policymakers should:

4. Ensure upcoming regulations for the gig economy consider labour as it happens in a metaverse. Just because it is done voluntarily and resembles a game doesn’t change the fact that it creates value and avenues for exploitation. In fact, such regulations should be even stricter when they apply to labour which happens within a metaverse, given that those who are currently at risk are children who do not have the knowledge or political capital required to defend their own interests and bargain for better conditions.

5. Ensure labour within informal structures which platforms facilitate and benefit from is paid a fair wage in real currency or easily convertible to real currency in parameters set according to fairness rather than the platform’s economic interests.

6. Ensure currency and assets with real world value are easily convertible to real world liquidity, so that their ownership doesn’t induce dependency from users who cannot leave a platform because of a fear of leaving their pay check behind.

7. Set a requirement for some form of ID check to occur before any user is allowed to partake in any transaction of an asset which can be converted to real world currency, or create environments within which a large amount of players can be hosted. The purpose of this is to make it harder to escape accountability for creating rule-breaching environments for the purpose of spreading hateful ideologies or making a profit from enabling the sexual grooming of children, for instance. Currently, the deletion of such an environment or the ban of an account is inconsequential for users as they can merely create a new one by creating a new account with a different email address.

8. Set age requirements for specific types of transactions. This should include gambling with virtual currency, as the gambling mechanisms themselves can cause psychological harms such as dependency, as well as speculative assets which can mislead a minor into spending large amounts of money, or make them ideal preys for scammers. Additionally, regulation should be phrased specifically in order to prevent metaverses from dissimulating these practices.

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Avatar capitalism: Policy implications of the metaverse as the future of platforms

Guillaume Guinard

Abstract

This thesis seeks to anticipate legal and ethical challenges induced by the move of established platforms towards becoming metaverses. By identifying key mechanisms for profit and control within existing platforms and immersive online environments (IOEs), I describe specific issues linked to their combination in an analysis of Meta and Roblox. My investigation shows that (1) IOEs provide means for data collection and consumer manipulation which could help Meta maintain and even amplify its business model, as well as the associated harms (2) a metaverse like Roblox provide means and incentives for exploitative labour practices which put children especially at risk (3) virtual currencies within a metaverse constitute a powerful tool for platforms to exert control over users.

Key words

Metaverse, Meta, Roblox, Web 3.0, gig economy, social media